Contributions to Anthropology, Number 7: Camas and the Flathead Indians of Montana

Richard T. Malouf

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CAMAS AND THE FLATHEAD INDIANS OF MONTANA

RICHARD T. MALOUF

A Colony of Blooming Camas Plants, Evaro, Montana
CONTRIBUTIONS TO ANTHROPOLOGY, No. 7. Department of Anthropology, University of Montana, Missoula, Montana.

CAMAS AND THE FLATHEAD INDIANS OF MONTANA

by

Richard T. Malouf

1979
ACKNOWLEDGEMENTS

I owe debts of gratitude to many people for assistance. I thank all those people who contributed materially to this research by means of personal communications. Their names are listed at the end of this paper, but I would here like to express special appreciation to Mrs. Mary Ann Combs, my principal Flathead informant. I also want to thank Mr. O.K. Estes and Dr. Dee C. Taylor for their help in archaeological investigations, and I thank Mr. Robert O. Raffety, who aided me in nearly all of my original fieldwork. I owe thanks to my father, Dr. Carling I. Malouf, for many favors, including the use of unpublished field notes. In addition, he and Mr. Jack R. Williams kindly provided camas bulbs for nutritional analysis generously performed by Dr. James E. Kolande. For helpful criticism I want to thank Dr. Joseph G. Jorgensen, Dr. Richard I. Ford, and James B. Griffen. They and Dr. Roy A. Rappaport read and commented on an earlier version of this paper which was submitted for an advanced degree at the University of Michigan. Last, but certainly not least, I thank my wife, Mary, for continually encouraging me, and for typing the final drafts of the manuscript. For whatever shortcomings that remain, despite all the help I have received, I accept full responsibility.

Richard T. Malouf, Rolla, Missouri

The Front Cover Photograph: A colony of blooming Camas plants. View looking north from Evaro, Montana, on the reservation of the Confederated Salish and Kootenai tribes. (Photo courtesy Peyton Moncure, Missoula, Montana.)
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I. INTRODUCTION

The purpose of this paper is to bring together, for the first time, all available information on the subject of camas, particularly as it pertains to the Flathead Indians of Western Montana; and this, in turn, should provide a basis for recognizing certain types of archaeological remains in this area, a few of which are to be discussed in this study.

The study began May 8, 1965, when O. Karl Estes, an amateur archaeologist from Missoula, Montana, took Lewis K. Napton and me to examine a site on Blixit Creek, near Potomac, Montana. Here we examined a number of pits which were approximately one foot in depth and about 12 feet to 15 feet in diameter. Each of these pits was encircled with earth that had been removed during its original excavation.

Subsequently, information was obtained from published sources such as was found in history, ethnographies, and archaeology as well as from botany and from biochemistry. Some additional data came from certain newspaper articles, from typed theses, unpublished manuscripts, and from personal communications. These were supplemented with some limited ethnographic observations of my own, and from some archaeological investigations I have conducted myself.

Features similar to these pits had once been photographed by Morton J. Elrod, about 1910, but these do not seem to have been published. They were probably located along Ashby Creek, which is also in the Potomac Valley. (University of Montana Archives, negatives #65-ID. II.b-I through 65-ID.b-9). Elrod had simply labelled the photographs, "Indian Circle Mounds," but he provided no further explanation of them. Neither did Gillett Griswold and David Larom (1954-21) offer an explanation in their brief description of another of these pit sites "northeast of Potomac and just below the site of a former A.C.M. lumber camp."

The examination of archaeological, ethnographical, and historical sources permitted the formulation of three hypotheses regarding the origin and function of the pits. First, many such features in Western Montana have been thought to have been battle pits used during warfare between intruders such as the Blackfeet, and Indians in Western Montana such as the Kutenai, Pend d'Oreille, and Flathead (White, 1952; C. Malouf, 1963). This interpretation of the Blixit Creek site could be partially supported with the fact that one of the favorite trails of the Blackfeet raiders traversed the Potomac Valley.

Residents of the Potomac Valley area have provided a second possible explanation for the pits. They have often considered them to be the remains of Indian semipit dwellings. Although ethnologists have not generally found evidences that the Native Americans in Western Montana constructed semi-subterranean lodges (Ray 1942:177-8; Teit 1930:331; Turney-High 1937:97, 1941:64), there is, however, the half legendary "Foolish Folk," or possibly the SEMTE'USE who are said to have "lived in holes in the ground (pit lodges?" (Turney-High 1937:16). The
SEmte'tuse are thought to have occupied the Potomac Valley area until their extinction about 1801-1802. (Teit 1930:311, 315; Stearn and Stearn 1945:75-76.)

A third possible explanation of the Blixit Creek pits is that the Indians cooked various plant foods in earth ovens, and it included the liliaceous bulbs. The Flathead, the SEmte'tuse, and the Upper Pend d'Oreille are all said to have dug camas plants in the Potomac Valley and adjoining areas. (Teit 1930:341.)

On October 29, 1966, Estes and I did some archaeological testing of the pits on Blixit Creek. The presence of charcoal and fire-cracked rocks, and the absence of artifacts and architectural features in Pit 1 (Figure 8) supported the earth oven hypothesis.

Other sites were found which disclosed cracked rocks and hearth features have been found elsewhere in Western Montana. For example, on May 20, 1967, William LaCombe and I conducted an archaeological survey of the Frenchtown district, west of Missoula. During this survey Mrs. Marguerita Demin, of Ninemile Canyon, described three pit sites along tributary streams of Ninemile Creek. The correlation between the forms of pits along Ninemile Creek and those on Blixit Creek led me to inquire if camas were abundant along Ninemile Creek, to which Mrs. Demin replied in the affirmative.

Mr. Ernest Wills (personal communication, October 1966), a resident of Potomac Valley, reported another pit site above his home on Nelson, or Game Creek. The site situation here appeared to be identical to that at the Ninemile Creek sites, and the Blixit Creek site, and were quite similar also to the sites illustrated in Elrod's photographs. Together they suggested the possibility that the location of camas roasting sites could be predicted to be found on higher, semi-forested flatlands adjacent to meadows where the plants were growing. The possibility was tested on June 26, 1967, when Robert O. Raffety and I investigated an entire wooded area where it boarded a meadow. This was in T13N, R15W, Section 13, and between Highway 20 (Montana) and Union Creek, in the eastern half of Section 13, we found pits which we labelled the Case Site. This site may, however, be the same pit feature to which Griswold and Larom (1954:21) had referred.

The Aims of This Paper

Up to this time, most archaeological investigations in Western Montana had been surveys along various stream drainages, and they were oriented toward establishing chronologies. Usually in these surveys the archaeologists listed plants and animals, or "foodstuffs" available, but seldom did they relate them to specific sites. Ethnographic reports, and writings of some other authors provided details enough to have been useful to archaeologists in their searches, but the information was frequently scattered among so many sources as to be left unused.
These deficiencies were found to be the case with the data on camas and its preparation; thus, I began to assemble all that was available in order to present as full an account as possible on its use, the structural features connected with the process of cooking camas, and the role of camas in the total Native American culture in this region.

The topics covered in the following pages vary in their relevance to archaeology. However, special attention has been paid to those items which might be observed archaeologically—viz., dwellings, digging tools, collecting containers, cooking and storage facilities, and pulverising implements. From ethnographic records I have attempted to provide a means of inferring the non-material aspects of the use of camas such as seasons involved, the frequency and duration of site occupation, group size, and its social composition. Some camas was also collected and sent to a biochemical-nutritional laboratory where it was prepared and studied for its nutritional value. Thus, the study encompassed an effort to determine some of the relationships between cultural and biological variables in the use of camas.

Finally, I have assembled information concerning words, rituals, and folktales which are unlikely to be inferred from archaeological remains, but which are certainly relevant to an evaluation of the role of camas in a total culture.

The ethnographical information is concentrated on the Flathead both because of the relative abundance of documentary sources on these people, and because of the ready availability of informants still among them. Indeed, contributing to a knowledge of the Flathead people is, in itself, one aim of this paper.

Since gaps remain in the Flathead data, information has been sought on the use of camas by Native Americans in adjoining groups who lived in close proximity to them. A brief survey of the literature on the use of camas among more distant tribes and bands, under diverse conditions, reveals even greater variations in camas use and practices than is evident from western Montana alone. Such cross-cultural data sheds light on the interrelationships of factors which affected the Flathead use of camas, and they suggest some of the variations which archaeologists might encounter in prehistoric sites in the region. Temporal changes in the uses of camas by the Flathead will also be discussed.

II. A SKETCH OF FLATHEAD HISTORY

Since this paper covers both the prehistory and history of tribes in western Montana, with emphasis on the Flathead, a brief sketch is appropriate here. The following is based primarily on the work of James A. Teit (1930), and summarizes the drastic changes which have occurred during the past 250 years of Flathead history. Their history, and that of their immediate neighbors, may be roughly divided into four periods: Prehistoric (pre 1730), Protohistoric (1730-1781), Historic (1781-1891), and Reservation (1891 to present).
Prehistoric Period.

The knowledge of Flathead prehistory is sketchy. About 1000 A.D. Salishan speakers appear to have moved southward from British Columbia onto the Columbia Plateau (Sanger, 1967). After the Coeur d'Alene settled in northern Idaho, the Salishans of the Flathead dialect group moved southward into Montana (Elmendorf, 1965.) These Salishans became the Flathead, Upper Pend d'Oreille, Lower Pend d'Oreille (or Kalispel), Spokane, SETme'use, and the Plains Salish. Collectively they may have numbered 15,000 (Teit 1930:314). Their distribution about the time horses were introduced to these Salishans, about 1730, is shown in Map 1.

The prehistoric Flathead occupied the ecologically diverse country of southwestern Montana, east of the continental divide. They consisted of at least four autonomous bands, apparently centered at present day Helena, east of present day Butte, and in the Big Hole Valley. (Another may have been located on the Upper Yellowstone river). Each band probably had its own headman (Teit 1930:309, 347). The prehistoric Flathead were pedestrian hunters and gatherers. In the springtime each band subdivided into smaller groups, and the units probably consisted of a number of extended families which then wandered in different directions from one seasonal ground to another hunting, root digging, berrying, trading, and visiting (Teit 1930:309-10).

Protohistoric Period.

When the horse and its use was introduced into western Montana, about 1730, there began a period of transition. Horses facilitated the hunting of bison, and they became increasingly dependent on them to the exclusion of certain other kinds of foods. The horse also permitted them to travel in larger groups, and helped secure for them a measure of protection from marauding Blackfeet raiders who began to appear from the north, and whose acquisition of guns from the east came about this same time. (Teit 1930:346).

The Historic Period.

In 1871 a severe smallpox epidemic swept the upper Missouri River country, and it decimated the Shoshoni, Plains Kutenai, and Plains Salishans. It hastened their abandonment of their territories which were already under pressure from advancing Blackfeet. (Curtis 1907-30:VII, 44, 119; Ewers 1958:29). Soon afterward the Flathead were driven westward into the Bitterroot Valley, west of the continental divide, where they eventually formed a major center near Stevensville. By this time the prehistoric Salishan way of life was gone and a new one had emerged. (Teit 1930:316, 319).

During historic times the Flathead were reorganized into a tribe, led by a head chief, a sub-chief, and four "small chiefs." The latter, whose duties were primarily connected with food procurement, were probably equivalent to prehistoric
TRIBAL DISTRIBUTIONS IN WESTERN MONTANA


MAP 3. Locations of present-day Indian reservations in the western half of Montana. After C. Malouf 1958:iii.
band headman. The historic bands lost much of their autonomy, but they did continue to maintain rights to root and berry plots. (Ray 1942:229-31; Teit 1930: 373-76; Burns 1952.)

Except for a few years after 1781, the Flathead did not abandon their hunting on the Plains, nor in the broad valleys of the Rocky Mountains east of the continental divide as long as there were buffalo available. Continued Blackfeet hostility, however, required that such hunts be strictly controlled by a temporary war chief, and his assistants. The Flathead were frequently accompanied on their hunts by Upper Pend' Oreille, Kutenai, Nez Perce, Shoshoni and other western Indians with whom they had formed alliances against the Blackfeet. (Teit 1930: 310; Turney-High 1937:116.)

In 1801 the Flathead population was said to number 50 tents (Josephy 1961:324-25.) That year another smallpox epidemic exterminated the SEmte'use. Their territory was first claimed by the Upper Pend d' Oreille, and later by the Flathead (Stearn and Stearn 1945:76; Teit 1930:308, 315.) The Flathead themselves were apparently reduced severely by the disease. In 1805 Lewis and Clark, the first whites known to have visited the Flathead, were estimated to have had 33 lodges or about 40 people. (Coues 1965: 582.)

For the next thirty years fur traders came in the wake of Lewis and Clark Expedition. Then came missionaries such as Father Jean De Smet, and Father Nicholas Point, and they, in turn were succeeded by traders, particularly John Owen, and Angus McDonald. All of these intruders had a dramatic effect on the local natives. Few of these persons, however, claimed much of the land as theirs. When gold was discovered during the 1860's, however, there came came into the area large numbers of miners and settlers to feed them. Now began the real quest for land. Throughout all of this period of Flathead history the estimates of their population ranged between 300 to 600 persons.

The basic treaty for the area, which included the Flathead, was negotiated in 1855. The Flathead were promised the Bitterroot Valley as their reservation, unless a government survey showed that the Upper Pend d' Oreille and Kutenai reserve was thought to be more suitable for them. In 1872, however, President Ulyses Grant arbitrarily decided to remove the Flathead from the Bitterroot Valley to the reservation of their allies. Some Flathead agreed to go, but others held out until 1891. (Garfield 1962.)

The Reservation Period.

The Flathead, once on the northern reservation, settled mainly around the town of Arlee, at the southern end of the reserve. They were allowed to leave the reservation only with the permission of the Indian Agent. Thus, the chief's
authority was undermined by government control of police and court powers. For many years it was called "The Flathead Reservation" even though these people were outnumbered by the Pend d'Oreille and Kutenai. Under the Wheeler-Howard Act the three tribes, however, officially were named The Confederated Salish and Kootenai Tribes, and the establishment of an elected tribal council ended the line of individual tribal chiefs.

III. GENERAL FLATHEAD SUBSISTENCE

Comprehensive lists of plants (Stubbs 1966; Hart 1974) and animals (Weisel 1952) consumed by the Flathead have been compiled. Unfortunately, statements of seasonality and their relative importance are frequently lacking. There is a minimal account of historic Flathead seasonal rounds which Indian Agent R.H. Lansdale offered about 1860 (Weisel 1955:112):

They go to buffalo every year—first in April, "to Bulls," as it is called, returning the latter part of June; the second, or fall hunt, "for Cows," they start in August, and get back generally in December or March following. The "bitter root" is dug and cured in May; the "camash" in June and July.

It has been estimated that the Flathead diet was derived about 40% from hunting, 30% from gathering, and 30% from fishing (Murdock 1967:110). Presumably, this estimate relates to historic times when a somewhat greater part of Flathead subsistence came from hunting large mammals (Weisel 1952:350; Stubbs 1966:33). Buffalo were among the most important game sought, but deer, elk, moose, antelope, bighorn sheep, and mountain goats were also hunted, as were smaller mammals such as rabbits, ground squirrels, badgers, and game birds. Turtles and turtle eggs were eaten, as were the eggs of birds, especially magpies, ducks, and geese. Franklin grouse were killed with sticks, and sharp-tailed grouse were snared. Snow buntings and waxwings, which flew into the country in large flocks during early winter, were also trapped or shot (Chitten-den and Richardson 1905:231-232; Weisel 1952).

The plant foods of the Flathead included all parts of such as stems, leaves, berries, roots, and nuts or seeds. The major root crops were bitterroot, camas, desert parsley (cous), and wild carrots; the major berry crops were service berries, huckleberries, and chokecherries. More than three dozen plant species were utilized to a lesser degree (Stubbs 1966:33-34).

Fishing was less important to the Flathead than was hunting. Of the native western Montana species, dolly varden and cutthroat trout were most favored, although squawfish were widely sought too. The great Pacific salmon runs did not reach western Montana, but the Flathead sometimes traded with the Lemhi Shoshoni, on their south, for dried salmon or they fished themselves in the Snake and Salmon rivers. Often they fished with their neighbors, the Shoshoni, Nez Perce, and Bannock. Apparently, they did little fishing when they were living east of the
continental divide (Weisel 1952:347; Teit 1930:349).

The same foods were probably used prehistorically, although in different proportions. With the introduction of the horse: (Teit 1930:346).

Fishing, digging roots, and gathering berries became of less importance, because these industries could not always be executed when buffalo hunting. Good berrying and root-digging grounds were not usually places best suited for buffalo hunting, and people often found themselves far away at the proper season for berrying and root digging. Thus there arose a tendency to neglect these sources of food supply, as well as the hunting of other game. A certain amount of roots and berries was gathered and cured by old people, who did not go with the regular buffalo-hunting parties.

During the second half of the historic period the missionaries and government personnel encouraged the Flathead to abandon buffalo hunting and to take up farming instead. (Partoll 1962:201; Donnelly 1967:43). At first the Flathead managed to farm while still retaining some of their ability to maintain their hunting and gathering rounds. For example, Major John Owen (Dunbar and Phillips 1927 I:29; II:125) reported that the Flathead would dig bitterroot and cache them for use when they returned from the summer buffalo hunt to harvest their wheat. After the wheat was ground they would leave for their winter buffalo hunt. When the buffalo herds became extinct in the 1880s the Flathead became impoverished. Those who chose to remain in the Bitterroot Valley were cut-off from government aid, and thus they were forced to abandon nearly all of their farming and to rely again on hunting and gathering of the wild resources still remaining in the area, including plants and animals not usually sought before. They were literally starved onto the reservation chosen for them in 1891 (C. Malouf 1957; Stubbs 1966:20-21).

On the reservation, most of the arable land was homesteaded by whites between 1910 and 1934. In 1939 "some of the Flathead" were reported to "depend on fishing and hunting for one-fourth of their food supply" (Federal Writers Project 1939:299). In 1954 the most important means of livelihood were, respectively, wage work, timber operations, grain farming, dairy and cattle raising, hunting and fishing, and tourist trade (Watkins 1954:780). The fullbloods and near fullbloods comprised the lowest economic class and depended on hunting and fishing for part of their existence (Brockman 1968; Watkins 1954:959). It is from this group that informants are now generally drawn.

IV. CAMAS CLASSIFICATION AND DISTRIBUTION

The common name, "camas," at present refers to all plants of the genus *Camassia*. Of the five species recognized, *Camassia quamash* was most important to Indians. Other common names have been applied to *Camassia*, and in Indian taxonomies plants other than *Camassia* sometimes have been considered to be camas. This may have been the case with the Flathead.

Words for camas were sometimes used in place names, tribal names, and
perhaps personal names. Even today the word "camas" appears in the names of a number of places where the plant is prominent. Camas grows abundantly in moist meadows or "camas prairies," which were numerous in western Montana. The two major camas prairies utilized by the historic Flathead were at Evaro, Montana, and Potomac Valley which is also in Montana.

**Botanical Taxonomy**

Camassia is the common name applied to plants of the genus *Camassia* (formerly *Quamasia*) of the family Liliaceae. Five species have been distinguished: quamash, howelli, leichtlinii, cusickii, and scilloides (Gould 1942.) *Camassia scilloides* grows in an area extending from Texas to southern Michigan, but since there is no evidence that it was eaten by Indians (Fernald and Kinsey 1958:133) it will not be dealt with here. Map four shows where Gould (1942) obtained samples of the other species. With the exception of *Camassia cusickii*, the bulbs of which are said to be nauseating (U.S. Forest Service 1937:W160), the western species, especially *Camassia quamash*, figured prominently in Indian subsistence.

Camases are perennials which grow from coated, ovoid bulbs 1.0 to 3.5 cm. diameter. The plants reach total heights of 20 to 60 cm. above ground, and have smooth, linear, keeled leaves, and a stalk which is leafless or has leaf-like bracts. Each stalk is topped by a blue, blue-violet, or white racemose inflorescence. The flower appears from May to early June, but lingers after withering, when wrinkled black seeds form pod-like capsules (Gould 1942:719; U.S. Forest Service 1937: W160).

Common camas is sometimes called blue camas to distinguish it from the poisonous green-flowered camases (*Zygadenus* spp.) (U.S. Forest Service 1937: W160). *Camassia scilloides* is commonly called wild hyacinth, a name sometimes applied also to the western species (Chamberlain and Coville 1907). Camas is botanically related to sego (*Calochortus nuttalli*) and is sometimes referred to as swamp sego, a translation of the Shoshonean *paseego* (Stuart 1865:58). Occasionally camas is called biscuit root, a name more properly applied to *Lomatium cous* (Blankinship 1905:8). In Canadian French, camas is sometimes called pomme blanche or pomme des prairies. These names more properly are applied to *Psoralea esculenta* (Chamberlain and Coville 1907).

The word "camas" came to the English language via the Chinook jargon, a Pacific Northwest trade language composed of Indian, English, Spanish, and French words. The ultimate source is chamas, which meant "sweet" in the Nootka language of Vancouver Island (Chamberlain and Coville 1907). In English the word has variously been spelled camas, camass, camash, camus, comas, kamas, quamash, etc.
The Chinook jargon word, "camas" sometimes was used to encompass a number of plants which had separate names in individual Indian languages. Only some of these belonged to the genus *Camassia*, to which the common name camas is now applied. The Sanpoil, for example, identified five camases, two of which were not *Camassia* (Ray 1932:99-100). Among Western Montana Indians, two camases were recognized. According to Turney-High (1937:111; 1941:33-34), the two were Quamasia esculenta, but these botanical names are actually for the same species. Western Montana camas is all of the same species, quamash, and the same subspecies, *typica* (Gould 1942).

**Flathead Taxonomy**

According to Pierre Pichette, the camases recognized by the Flathead were "the real camas and another kind that is smaller" (C. Malouf n.d.:22). The "real camas" was called /1t'xe / (Krueger 1960:36), the Flathead version of the word given by all the Interior Salishans for camas (Curtis 1907-30:(7), 182, 185; Giorda 1877-79 (2), 320; Ray 1932:99; Teit 1930: 88, 238, 343; Vogt 1940b:7). The term /1t'xe / referred to *Camassia quamash* after it had been cooked, but by prefixing a morpheme meaning "raw," the word for camas in the ground, freshly dug, or uncooked was derived. In Flathead this word was /sx'ei /.

Incidently, black tree moss (*Alectoria* sp.) was sometimes cooked with it. This camas was called /'se°e / in Flathead Salishan (Combs, personal communication, July 1967) but cognates of this word refer to a kind of onion, possibly *Allium geyeri*, in Upper Pend d' Oreille, Spokan, and Coeur d'Alene languages (Curtis 1907-30; (7), 185; Giorda 1877-79: (2): 321; Teit 1930:89, 343). The Flathead word for onion, in species *Allium cernum*, and in Salishan is /koleUl/, which is nearly identical to words generally used by all the Interior Salishans for onion (Giorda 1877-79: (2), 321; Teit 1930:89, 238, 343).

Interestingly, the Kutenai make the same large and small distinction for camas. As among the Flathead, the smaller camas is considered to be sweeter, and moss is sometimes cooked with it. Among the Lower Kutenai the word for small camas is the same word the Upper Kutenai use for wild onions, but again it was not the usual word given for onion (Boas 1918:372; Schaeffer 1940:48; Turney-High 1941:23).

The reasons for the large and small distinctions are not clear. Verne Ray (personal communication, June 10, 1970) believed it might have resulted from "varying conditions of growth: soil, water, sunlight, exposure, etc. Also, small roots may have been selected out from the total crop." No bimodal distribution of bulb size has been reported for western Montana, but according
to Marion Ownby (personal communication 11 November 1970), if such a
distribution did exist "it would be genetic (some races with larger bulbs than
others), environmental (larger bulbs in some places than others) or semantic
(something besides camas included in the aboriginal concept.)"

The camas at Evaro has been identified by Gould (1942:731) as Camassia
quamash subsp. typica. All the bulbs collected there on July 18, 1967, were
identified by Mary Ann Combs (personal communication) as small camas.
Based on Ownbey's suggestion and the discussion of Indian words one might
think that "small camas" also included some kind of Allium. When questioned
on the likelihood of this, however, Gould (personal communication, 22 April
1970) replied, "I could hardly imagine that odoriferous onions, with umbellate
flowers, could be confused with the bland camas, with racemose flowers." It
is clear that more original research on Flathead taxonomy is needed.

Trade Languages

In some cases the Chinook jargon name seems to have completely supplanted
earlier words for camas. For example, this was the case among the Hoh, Lummi,
and Nez Perce (Reagan 1933:59; Gunther 1945:24; Curtis 1907-30: (8), 163). The
Flathead, apparently, seldom used Chinook jargon (Teit 1930:373). Instead,
they used sign language, in which camas was represented by the general concept
of the curved stick used in digging the root:

Partially curve the index finger of the right hand, others and thumb
closed, and make motion downwards, as though thrusting stick in the
ground. Sometimes signs for EAT, GOOD, and perhaps signs to denote
the blue flower, are made. (Clark 1885:94)

Personal Names

Words for camas apparently were sometimes used by Indians as personal
names. Chief Washakie of the Shoshoni "was born somewhere in the present
Montana, perhaps in the upper (southern) part of the Bitter Root Valley. His
father, Paseego, was said to have been of mixed background, Umatilla, Flathead,
and Shoshoni, and belonged to the Flathead Tribe" (Hebard 1930:48), although his
name may be Shoshonean for "camas." I found no examples of Flathead words for
camas used in connection with personal names.

Tribal Names

Although its precise derivation is unknown, informants have generally agreed
that the name Kalispel refers to Camas (Curtis 1907-30: (7), 165, (8), 163; Hill
1966:375; Teit 1930:297-298). Michel Revais thought the name came from a word
for young, sprouting camas (Teit 1930:296). The same word may appear in the
Shuswap name for the Okanagon (Teit 1909:452), and in the name by which the
Kutenai were known to the Flathead and other Salishans (Curtis 1907-30: (7), 165;
Teit 1930:202n, 300). In all three cases the tribal names came from place names.
Place Names

The Flathead name for their camas ground near Potomac meant, translated, "possessing camas," and the SEMTE'USE name for the prairie may also have referred to camas (Teit 1930:311). According to Giorda (1877-79:1, 256) the Pend d'Oreille name for Camas Prairie near Hot Springs, Montana, was Kalnii, or Kalnittgua "from being wet." The latter name also included a word for camas. The present town of Kalispell, Montana, may ultimately have derived its name from a Salishan word for camas. The jargon word presently appears in a dozen or more places on modern maps as Camas Prairies, Camas Creeks, Camas Lakes, and Camas Peaks. Camas still abounds in nearly all of these places today.

Habitat of Camas

Camas usually grows in low, open meadows, often in large and conspicuous colonies when the habitat is wet during the spring growing season. In the spring some of these prairies are so blue with blooming camas that from a distance observers would often mistake them for a lake. It is less common on damp grass flats and slopes, and in drier portions of swampy areas (Phillips 1940:101; Gould 1942:712; U.S. Forest Service 1937:W160).

Distribution of Camas

There were numerous camas prairies throughout the Northwest. In Shoshoni country there was a large Camas Prairie north of the Snake River in east-central Idaho. The Nez Perce collected camas on the flats near Weippe, in north-central Idaho. In northeastern Washington there was a famous camas ground near Calispel Lake.

Camas was not generally found on the semi-arid plains, but it did grow in some places east of the continental divide. The historic Blackfeet dug it where it grew abundantly along the east slopes of the Northern Rocky Mountains in Alberta, and in northern Montana (Gould 1942:731; Grinnell 1962:204; McClintock 1910:443). Camas grew in the Big Hole Valley (Gould 1942:731) where it was collected by historic Flathead (C. Malouf n.d.:30) and Shoshoni (Coues 1965:1124). The prehistoric Flathead probably collected it there and elsewhere in southwestern Montana, such as along various tributary headwaters of the Missouri and Yellowstone rivers (Cowan 1903:180; Gould 1942:731). In historic Crow country to the east, some camas grew along the Clark Fork River, a branch of the Yellowstone River, (Loendorf 1967:35) and in the Lower Bighorn Canyon (Brown 1969:4). Root roasting pits have also been found archaeologically along the Missouri River, in the Canyon Ferry Reservoir area, near Helena, Montana (C. Malouf 1952).

West of the continental divide in Montana camas grew in many places. Among
MAP 4. DISTRIBUTION OF CAMASSIA SPECIES

INCLUDING SUBSPECIES OF Camassia quamash

(After Gould 1942)
As previously mentioned, the historic Flathead also obtained camas from outside their own territory. For example, some was obtained in the Big Hole Valley (C. Malouf, n.d.:30), and in 1833 they were observed digging some in a Shoshoni Camas Prairie (Young 1899:202). They apparently also dug camas at least once at a place called "Peter's Cave" (Peirre's Hole, "from le trou de Pierre? Point, 1966:166). Other places may have been used as well.

V. SEASONALITY AND DEMOGRAPHY

Although the digging and cooking of camas is reported to have taken place at various times of the year, specific historical statements indicate that among the Flathead it was done mainly during June. Small family groups visited their favorite grounds year after year, selecting a spot where camas was abundant, easy to dig, and where there was a reasonable amount of safety from enemies. For convenience, the lodges were pitched among trees bordering the camas meadows where they also dug root roasting pits. Digging camas was a woman's task; accommodation to male activities was apparently of little concern.

Seasonality

If one were to generalize for all the Indians who used camas, they would be justified in saying that digging occurred mostly during the month of June. At Round Valley, in California, however, the Yuki and Wailaki dug camas in June or July (Chestnut 1902:327), and among the Modoc it was considered ripe in late June or early July (Ray 1963:181). Western Washington Indians in general dug camas in the late Spring (Gunther 1945:24). Among the Quinault, June was the favored month for camas gathering, although special trips to the camas grounds were often made to satisfy the whims of the feeble and ailing (Olson 1936:52-3). The Lummi dug camas in May (B. Stern 1923:42), and the Nisqually camas season was the latter part of May and June, as well as during the fall when sunflower was dug (Gibbs 1877:192). June and July were camas digging months at the Dalles, in Oregon (Alvord 1855:656); while of the five camases recognized by the Sanpoil three were collected in April and May, one late in May or in June (Ray 1932:99-100). Of the two camases favored by the Kutenai, the larger was collected by Tobacco Plains women "towards the end of May," while smaller camas ripened earlier (Schaeffer 1940:47). Among the Blackfeet Grimmell (1962:204) has written that camas was "gathered while in bloom - June 15 to July 15," while McClintock (1910:535, cf. 53) has recorded that "the roots were generally dug in the fall after the blossoms had fallen." Ewers (1958:86) simply stated that the Blackfeet dug camas in June and July. Southward, among the Nez Perce:

Camas was dug to a slight extent in the spring before the growth of the stem had exhausted the stored-up energy of the bulb. The great harvest came during June and July, after the plant had nearly finished blooming. At this time the soil dried rapidly and the bulbs matured. Another great
harvest occurred in the fall. It will be remembered that Lewis and Clark encountered the Nez Perce September 20, 1805, on Welppe prairie, when the Indian women were laying in a winter food supply of this root (Spinden 1908:201).

Finally, "in July [Shoshoni] whi fished in the Snake River usually traveled to Camas Prairie to gather yamp, camass, and other roots and remained there until the fall salmon of run." (Steward 1938:28).

"Camas Moon" in the Flathead calendar corresponded to the month of June (Curtis 1907-30:(7), 185; Turney-High 1937:24, 252), yet the Flathead are said to have dug camas primarily "in the early spring" (McDermott 1904:6), "in the spring-time" (Ronan 1932:301, "in June and July" (Lansdale, quoted in Weisel 1955:112), "and in July or August" (Stubbs 1966:52).

One authority has asserted that the Flathead collected camas "after it had finished blooming and black seeds had formed within the pods (Stubbs 1966:52). This was reported as well for the Blackfeet (McClintock 1910:535) and the Indians of western Washington (Gunther 1945:24). At this stage the bulbs contained a maximum of stored energy (Haines 1955:12), and were easier to peel (Stubbs, personal communication, 14 February 1968). Furthermore, at this time the summer sun had often dried up the camas grounds making digging itself easier (Spinden 1908:201; Turney-High 1941:33). Allowing the seeds to form had added benefits of assuring replenishment of the fields, but there is no evidence that the Flathead deliberately attempted to aid camas growth except by prayers and dances. The Lummi of western Washington were apparently the only Indians in the entire area who made a conscious effort to seed the camas. They are reported to have dug up a small section of earth, removed the bulbs therefrom, crushed the soil, and planted the seeds (B. Stern 1934:42-43).

The time of year in which camas bloomed and then went to seed varied from place to place and year to year, depending on such factors as temperature, rainfall, sunshine, and elevation (Ownbey, personal communication, 11 November 1970; Stubbs 1966:52). Camas apparently could be dug during any season, including winter (Chittenden and Richardson 1905:467); thus, camas digging could be scheduled around less flexible activities. These facts may account for the wide variety of statements which have a bearing on the time of year camas was dug. On July 4, 1806, Lewis and Clark reported that the Nez Perce believed the Flathead were "near the quamash flats on a Easterly branch" of the Clark Fork River, possibly in the vicinity of Hot Springs (Thwaites 1904-05:(5), 179; Coues 1965:1070). Wyeth (Young 1899:202) observed a mixed party of Flathead, Nez Perce, and Pend d'Oreille digging blooming camas in Idaho on June 21, 1833, and John Owen (Dunbar and Phillips 1927:(1), 65) noted the Flathead encamped at Evaro on June 20, 1852. In 1856 Owen (Dunbar and Phillips 1927:(1), 122-234) noted that, after hunting buffalo, the Flathead returned to the Bitterroot Valley in mid-April. Then, after harvesting bitterroots, they moved to the camas grounds on May 31, and by June 28 camas digging was finished (Dunbar and Phillips..
the historic and Upper Pend d'Oreille territories it has been noted in Glacier National Park, particularly along the South Fork of the Flathead River. Elsewhere along the Flathead River system it has been found near Kalispell, and west of Flathead Lake as well as along a tributary of the Flathead River, in Hot Springs in the Little Bitterroot drainage system. Along the Kootenay River it has been reported from near Libby, and Rexford, Montana. Along the Clark Fork River in western Montana it has been seen near Thompson Falls, and Crow Creek (Gould 1942:731; Schaeffer 1940:45, 47-48; Teit 1930:341; Turney-High 1933:262). Some of these prairies were used by the Flathead after the reservation period began.

Historical sources indicate that in the 1880's the Flathead used two main camas prairies, one at Potomac and the other at Evaro. Ferris (Phillips 1940:234) called the latter, "Little Camas Prairie," a name presumably relating the size of the prairie and not the camas bulbs found there. Mary Ann Combs identified all of the bulbs collected there July 18, 1967, as small camas. However, in the 1840's Father DeSmet (Chittenden and Richardson 1905:345) wrote that the camas at Evaro was "where the Flatheads come every spring to dig up that nourishing root." It was undoubtedly camas rather than "bitterroot" that the Rt. Rev James O'Conner (1891:88) observed the Flathead digging there June 20, 1877. Yet, Eneas Granjo and Pierre Pichette said that the Flathead preferred not to dig at Evaro because the bulbs grew too deep (C. Malouf n.d.). Unless the bulbs were not so deep in the 1840's, more preferable grounds must not have been available to all of the Flathead during parts of the historic period.

The other main camas ground of the historic Flathead was near Potomac. Teit (1930:341) called it "Big Camas," again probably in reference to the size of the prairie and not to the camas bulbs. "Big Camas" had been once in the territory of the Semtlesuse, but when they became extinct claims to the prairie were assumed by the Pend d'Oreille (Teit 1930:307-308). By the 1850's it was the "Kamas Prairie of the Flatheads," while the "Kamas prairie of the Pend d'Oreille" was near Hot Springs (Stevens 1855:178, 211). The Potomac Valley was an "extensive, beautiful, and well-watered valley nearly 12 miles in length" (Coues 1965:1073). It had "rich soil of black loam, covered with luxuriant grass: (Stevens 1855:187), and "there was such an abundance of camas plants in the flat meadows surrounding Camas Creek that the entire area was brilliant blue when the flowers blossomed in spring" (Omundson 1961:30).

In the historic Flathead territory camas also grew in various places such as in the Bitterroot Valley, and included Lake Como, Lolo Pass, Lolo Hot Springs, along Nine Mile Creek, near Missoula, flats near Sunset, and near Butte (Gould 1942:731; Thwaites 1904-05;(5), 170; C. Malouf 1952:23, Map IV; Demin, personal communication 20 May 1967). In addition, the Flathead are specifically reported to have dug camas at Moose, Seeley, and Placid Lakes (Stubbs 1966:10, 52-53), at Schley (Combs, personal communication, 18 July 1967), and along Elk Creek (Nelson, personal communication 18 July, 1967). I am unsure, however, whether digging at these localities has occurred only since the establishment of the reservation, or whether camas was also dug there throughout the historic period as well.
On July 3 of the following year Owen (Dunbar and Phillips 1927:(l), 91, 170) believed the Flathead were in Grass Valley drying camas, and on July 9, 1858, he wrote, "A few Indian women arrived from Root ground with no news of buffalo party" (Dunbar and Phillips 1927:(l), 219). On June 10, 1861, Granville Stuart (Phillips 1925:(2), 171) reported that Bannack Indians stole horses from Flathead camped at Camas Prairie (Potomac?). Owen (Dunbar and Phillips 1927:(2), 59) again wrote in his journal entry of June 14, 1867, "Indians all leaving Some for Camash & others for the Buff grounds." Ten years later the Rt. Rev. James O’Conner (1891:88) observed Flathead digging camas (he said "bitterroot," an obvious error) at Evaro on June 21st.

Group Size

When camas was ready for digging the Flathead packed up all of their belongings and went to areas where the plants were to be found (Ronan 1932:301). This was not done communally, but small family groups would split off from the main body of the tribe (Turney-High 1937:112).

The size of the group which visited each prairie was no doubt limited by the quantity of camas there, and was relative to the amount each family desired to collect. Verne Ray (1963:181) reported that "camas was highly valued, but rather scarce in Modoc territory. Consequently, this season saw the most widespread dispersion of the population, and frequent movement from camp to camp was necessary." On the other hand, W.P. Clark (1885:94, emphasis mine) observed, "The high moist mesas of the Rocky Mountains furnish large tracts of camas prairies, where the Indians annually congregate, dig, and prepare the root for use." (Curtis (1907-30:(8), 41, emphasis mine) said that the Nez Perce "would assemble at Oyaip (Welpppe prairie) for the harvest of camas." Teit (1930:341, emphasis mine) was told that "many Pend d'Oreille, SEmtE'use, and Flathead gathered for digging" near Potomac.

Among the Shoshoni, "individual families traveled and camped independently" (Steward 1938:28). Klamath "parties of two or three families [would] fan out along the flats and meadows to dig roots" (T. Stern 1965:12), while Sanpoil "groups comprised of four or five families usually traveled together" (Ray 1963:181). Evidently Nez Perce groups were sometimes much larger, for "at the summer root-digging camp, many pitched single lodges covered with matting, but sometimes a group of families would erect a long structure housing from fifty to a hundred people" (Curtis 1907-30:(8), 43).

John Owen encountered "a small camp of Flathead Inds" at Evaro in 1852 (Dunbar and Phillips 1927:(l), 65). The diggers that the Rt. Rev. O'Conner (1891:88) saw there in 1877 presumably occupied the "several tepees" he noted. According to Leonard Nelson (personal communication, 26 June 1967) a party of 50 or 60 Flathead visited the Big Blackfoot River in the early 1900's.
Land Tenure

Although each Flathead family returned to its same area year after year, there is neither family nor individual property rights to digging grounds. Such rights rested with the bands (C. Malouf, n.d.,: 31; Ray 1942: Cf.; Turney-High: 112). Unfortunately, anthropologists have not clearly delineated these bands or their respective territories. The following details are offered. Teit (1930: 352) was led to believe that sub-chief Arlee and the 25 lodges who followed him to the Jocko Valley in 1873 were more closely related to the Pend d'Oreille than were other Flathead. Those who remained with Charlot in the Bitterroot Valley may have descended from the prehistoric Big Hole Band since they wanted to share a reservation with the Shoshoni if they had to share one at all.

Evidently, different families used different areas of the Flathead territory. The family of Eneas Granjo frequented the Big Blackfoot River area (C. Malouf n.d.: 43). As noted earlier, Mary Ann Combs and Mary Red Crow dug camas at Schley. Mrs. Combs (personal communication, 18 July 1967) indicated that her family had formerly exploited the Bitterroot Valley and areas southward, but her sister, Ellen Big Sam, once went up the Blackfoot Valley with Eneas Granjo's wife (See Johnson 1969:373; C. Malouf n.d.,: 16). Agnes Vanderberg has lately dug camas at Placid Lake, which is in a tributary of the Big Blackfoot River system (Stubbs 1966:52). The family of Sophie Moiese traditionally used the Blackfoot River Valley (C. Malouf n.d.: 43). A member of the Moiese family by marriage, Sophie had also been married to two Vanderbergs at different times (C. Malouf and Phillips 1952: 2, 9). Finally, the "chief" of the group that visited the Blackfoot Valley in the early 1900's was Poker Jim (Nelson, personal communication, 26 July 1967), a relative of the Moiese family (C. Malouf and Phillips 1952: 2). According to Teit (1930:374) a "small chief" would have been in charge of such a party.

Favored grounds were visited year after year, but if dry weather or extensive digging in previous years caused a poor stand in one area, a more bountiful ground was sought (Stubbs 1966: 35-36). Camas requires four or five years to grow and mature from a seed to a flowering plant (Leffingwell 1930: 82; Ownbey, personal communication, 11 November 1970).

Apparently the pre-reservation Flathead never experienced a total failure of the camas crop as they did with bitterroot in 1857. That year they moved to the bitterroot grounds on April 30th. On May 3, John Owen wrote (Dunbar and Phillips 1927:(1), 162):

From the Severity of last Winter a great deal of Bitter Root is killed out. The Ind's say that it is so thin that it is hardly worth digging I hear they intend to Move down in a day or two and try the Bitter root ground below--It is quite a disappointment to them the failure of their principal
roots and Main Stay of subsistence.

Three days later Chief Victor "announced his determination of going to Bulls immediately as the bitter root is Nearly an Entire failure" (Dunbar and Phillips 1927:(1), 163).

Camps

As did the Nez Perce (Haines 1955:12) and the Nisqually (Gibbs 1877:193), the Flathead pitched their camps on the higher ground in the groves of stately pines which surrounded the camas prairies. This was depicted in the 1840's by Father Nicholas Point (Donnelly 1967:126) in his painting of camas preparation. In 1877 the Rt. Rev. James O'Conner (1891:88) saw Flathead digging roots at Evaro, where he noted several tipis "on the skirts of the woods." Archaeological evidence such as sites can be found on the drier flat land adjacent to the camas prairies (See also C. Malouf 1956:46), frequently in the canyons of small side streams, such as Blixt Creek, near Potomac. As previously observed, however, it is impossible to attribute these sites specifically to the Flathead.

Prehistorically the Flathead used conical mat-covered lodges as well as a few smaller ones covered with buffalo, moose, or elk hides. By historic times, however, tipis of buffalo hides were almost exclusively used until canvas became available. The habitations were made and set up by the women (Ray 1942:178-179; Teit 1930:332; Turney-High 1937:97-104; Cf. Curtis 1907-30:(7), 163, 167).

Division of Labor

The digging and preparation of camas was universally the task of women (e.g. Chestnut 1902:327; Curtis 1907-30: (8), 41; Gibbs 1877:193; McClontock 1910:443; Ray 1932:98; Schaeffer 1940:47; Spinden 1908:201), although girls (Olson 1936:52), or children in general (B. Stern 1934:43) assisted. Among the Flathead (Donnelly 1967:166; Teit 1930:330; Turney-High 1933:263) men aided with firewood and old men sometimes dug. Prehistorically Flathead men probably went to the camas grounds with the rest of the family, but information is lacking on their activities during the time when it was being dug and cooked. Among the Lummi, men trolled for spring salmon (B. Stern 1934:43), while among the Quinault "men and boys spent the time in hunting or in gathering plants and woods for special purposes (Olson 1936:52). Modoc men fished "whenever trout-bearing waters were at hand, and they also hunted water fowl and small game" (Ray 1963:181). Flathead men likewise might have hunted and fished; but whereas Spinden (1908:201) wrote that the Nez Perce men were busy with "fishing, hunting, and war parties" during the camas season, Curtis (1907-30:(8), 41) reported that the men "engaged in all manner of festivity." The latter may also have been the case with the Flathead during the camas season, although Turney-High (1933:263) claimed that this came during the bitterroot gathering season.
MAP 5. CAMAS PRAIRIE, MISSOULA COUNTY, MONTANA.
MAP 6. THE BLIXIT CREEK SITE NEAR POTOMAC, MONTANA.

Pruyn property

Wills property

NORTH

SCALE
IN FEET

Camas cooking pit 8

Datum

Pine tree

Deciduous tree or bush

High power line
Elk, deer, and bear are still abundant in the vicinity. In 1806 Meriwether Lewis noted antelope near Potomac (Coues 1965:1073). These and smaller animals would have been available for hunting during prehistoric times. In addition, fish could have been taken from the Blackfoot River.

In historic times the Flathead summer hunt for buffalo bulls often took place during the camas season. The size and composition of hunting parties varied. In 1833 the entire tribe was absent from western Montana (Young 1899:199ff), while in 1858 only a few Flathead went because they could not agree on the route to be taken (Dunbar and Phillips 1927:1, 216). Generally, however, the summer hunt was conducted mostly by able-bodied men and a few women. The rest of the women, the children, and the older men remained behind in the mountain valleys (Turney-High 1937:116-117). Besides offering some protection from possible enemies, these older men also probably helped to dig roots at these times. (Teit 1930:346; Turney-High 1937:129). The absence of the main body of the tribe, however, left them relatively unprotected (Turney-High 1937:116). Thus, to hasten their return, and to avoid contact with hostile Blackfeet, the hunt was made quickly. Choice of camas sites was undoubtedly affected by these conditions.

VI DIGGING AND PREPARING CAMAS

Digging and preparing camas were made of wood, antler, and later, iron. The bulbs were carried in bags or baskets, then were taken to the nearby camps and readied for cooking. They were almost always cooked in earth ovens within one to three days after they were dug. Then they were dried, and sometimes afterwards were pounded and dried, and then made into cakes or loaves and stored for winter use.

Sometimes camas was boiled instead of being pit roasted, especially when being prepared in various meals. Cooking camas made it sweeter by breaking down inulin into fructose, thus increasing its energy value for humans.

Digging Implements

Since camas usually grows in moist areas which produce heavy turf, wooden digging sticks were often impractical, and sticks made of elk antler were preferred (Stubbs 1966:52; Turney-High 1937:111). As among the Coeur d’Alene, such digging sticks were probably used only “long ago” (Teit 1930:91); none was known among the Flathead by 1966 (Stubbs 1966:52).

The Flathead also used curved digging sticks of “thorn” (hawthorn?), or service-berry wood, with horn, antler, or wooden transverse handles (Donnelly: 1967:166; Ray 1942:145; Teit 1930:342). Other tribes used birch (Teit 1909:514), mountain mahogany (Blankenship 1905:31), syringa (Teit 1930:91), yew, hazel, and ironwood (Ray 1942:145). These were characteristic of Columbia Plateau
people and were generally two to three feet long (e.g. Spinden 1908:200; Teit 1900:231; Turney-High 1941:33), according to the height of the owner among the Sanpoil (Ray 1932:98). The points were fire-hardened (e.g. Teit 1900-231, 1930:91; Turney-High 1941:33) and sharpened by burning and then shaving (Ray 1932:98) or rubbing against rough stones (Lowie 1909:188). They were an evident improvement over knob-handled diggers used elsewhere (e.g. Kelly 1932:101; Lowie 1909:188).

Wooden digging sticks were quickly replaced among the Flathead with iron shafts when available from whites, and so did other Indians in the region (Stubbs 1966:52; Chestnut 1902:327; Downing and Furniss 1968:49; Kelly 1932:101; Lowie 1909:188; Teit 1900:231). A local blacksmith, for example, made them for the Flathead women (Combs, personal communication, 18 July 1967). Mary Ann Combs' lack of familiarity with any other kind suggests that only digging sticks of iron were used among the Flathead throughout the reservation period.

Digging stick handles have been found in archaeological sites, and some have been reported in the literature. A twelve-inch long artifact was found by Mary Black in 1962 near a sewage lagoon by the Flathead River, at Polson, Montana. Another digging stick handle was found with a burial at Flathead Lake (C. Malouf 1956:51). Both had ladder designs incised, running longitudinally. Both are very similar to specimens reported from Washington and British Columbia. Mary Ann Combs (personal communication, 26 July 1967) thought that the designs may have been mnemonic (Cf. Turney-High 1937:25), but in British Columbia they were said to represent snakes or worms (Smith 1899:156-157).

Root Digging

The Flathead root digging commenced about at sunrise, and lasted until about four o'clock in the afternoon (Donnelly 1967:166; Cf. Downing and Furniss 1968:49; Ray 1932:98). Differences in individual weights may have had some bearing on the following description of the use of the digging stick, hence the paucity of literature on the subject means that this is offered only on its own merits.

Mary Ann Combs took her wooden-handled, iron digging stick in both hands, palms down, and stabbed it into the ground six or eight inches to the right of the plant she intended to uproot. She loosened the soil by working the stick back and forth. Then, with the digging stick in her right hand, she pried the soil while pulling up the plant with her left hand. (Cf. Downing and Furniss 1968:55; Curtis 1907-30: (7), plate following page 8; Stubbs 1966:26; Teit 1900:232, figure 213). If this effort was unsuccessful, Mrs. Combs would then thrust her digging stick into the ground six or eight inches from the plant on the opposite side from where she was standing. She worked as before, trying to uproot the plant (Cf. Downing and Furniss 1968:50; Lowie 1909:188; Donnelly 1967:166; Spinden 1908:200).
ELK ANTLER DIGGING STICK HANDLES

ARCHAEOLOGICAL SPECIMENS

A) FROM POLSON, MONTANA
B) FROM EASTERN WASHINGTON (COLLIER ET AL. 1942:83)
C) FROM LYTTON, BRITISH COLUMBIA (SMITH 1899:137)

Figure 2.
FIGURE 5. MARY ANN COMBS WITH WOODEN-HANDED, IRON DIGGING STICK AND RAWHIDE COLLECTING BAG.

Digging was a strenuous task (Chittenden and Richardson 1905:488; Downing and Furniss 1968:49; B. Stern 1934:42), but in fields where the camas plants grew close together a woman skillful with a digging stick could uproot bulbs with great rapidity (Donnelly 1967:166). Among the Sanpoil, "each woman dug over about one-half acre in one day," and a "good day of camas digging often netted as high as a bushel of roots" (Ray 1932:98). Nevertheless, by the 1900's, some Indians dispensed with digging sticks. Some men at that time used plows to make a long furrow across the meadow. The women followed and collected a large quantity of upturned roots in a short time (Teit 1930:342).

Collecting Containers

Among some Salishans a small collecting basket was carried on the back or left side, and when full of roots or bulbs it was emptied into a larger container (Ray 1932:98; Teit 1900:231). Prehistorically the Flathead gathered roots in baskets, but after the introduction of the horse, Nez Perce-style woven, or hide bags gradually took their place (Teit 1930:342; C. Turney-High 1937: 137). Mary Ann Combs used a small rawhide bag which she had obtained from the effects of a deceased relative. The bag had formerly been decorated, as was evident from faint traces of colored designs still on it.

Precooking Preparation

Very little has been reported about the preparation of camas prior to cooking, and I found almost no information pertaining specifically to the Flathead. Various writers, however, have mentioned removing the onion-like coverings (Ray 1932:98; Spinden 1908:201-202; Stubbs 1966:54; Williams, personal communication, 2 November 1970), cleaning the bulbs (Olson 1936:198; Schaeffer 1940:48; Spinden 1908:201), and drying them (Ray 1963:198; Schaeffer 1948:48). Drying took from several days to a week.

The Earth Oven Process

Among the Flathead, as among other Indians, camas was almost always cooked in earth ovens before being eaten or stored. Although some Indians, such as the Modoc (Ray 1963:198) and the Quinault (Olson 1963:53), carried their camas back to home villages for cooking, most Indians, including the Flathead, cooked their camas at the digging camps.

Near the northwest corner of the present Duck Valley Indian Reservation, in Oregon, Peter Skene Ogden (Rich 1950:186) encountered an abundance of camas on June 14, 1826, but he noted with surprise that the natives did not collect the bulbs. Ogden was inclined to attribute this lack of activity to laziness, but the Indians claimed that firewood was so scarce that they could not find a sufficient quantity with which to prepare the camas. Thus, the availability of firewood may have affected site selection for root oven cooking. It is unlikely, however, that
FATHER NICHOLAS POINT’S PAINTING DEPICTING THE PREPARATION OF CAMAS.

1. COLONY OF BLOOMING CAMAS
2. TIPIS LOCATED NEAR TREES AT EDGE OF PRAIRIE
3. CAMAS COOKING OVEN WITH FIRE BURNING ON TOP
4. INDIANS, PROBABLY GATHERING FIREWOOD

a lack of firewood very often prevented the Flathead from preparing camas, particularly after they moved west of the continental divide.

Flathead men sometimes helped gather the firewood (Louis Ninepipes, personal communication, 15 October 1966), but the actual cooking of the camas was considered to be women's work. Turney-High reported (1937:127) that men were forbidden to go near the cooking pits while they were in use, "lest bad luck and famine overtale all." The situation was nearly identical among the Kutenai: "Although men might aid in gathering the firewood, they were not permitted near the roasting pits, else the camas would not be roasted properly" (Schaeffer 1940:48). Among the Blackfeet as well, "men were supposed to keep at some distance from the cooking place" (Wissler 1910:25; also McClintock 1910:442). Mary Ann Combs (personal communication, 18 July 1967), however, considered this tabu to be merely a means of keeping the men out of the way.

The actual process of cooking camas was similar to that used throughout North America for cooking large quantities of fish, meat, or vegetables (Curtis 1907-30: (8), 41). Although the Flathead also employed the earth oven for a variety of foods, they used it primarily for camas (Ray 1942:137). Five accounts pertaining to the Flathead are paralleled with sixteen other accounts in the Appendix to this report. The descriptions are quoted verbatim, but to facilitate comparison, have been divided here into six steps: (1) digging a pit (2) heating it (3) adding a layer of vegetation (4) depositing the camas bulbs (5) covering them with vegetation and earth, and (6) building a fire on top. A composite of some of the data from the Appendix follows, with the additional data from other sources. Full citations are not given here for material which appears in the Appendix.

The Flathead probably dug their cooking pits with digging sticks, as did the Kutenai, or they used flat rocks and wide pieces of wood, as did the Nez Perce. If a Flathead family returned to the same camas ground year after year, they tended to reuse the same cooking pit (Ninepipes, personal communication, 15 October 1966), and excavation of a new pit was then not necessary. The same was probably true for other tribes as well. "Ambrose Gravelle mentioned that the Kutenai used to dig large roasting pits in which they cooked game animals. These he maintains were cleaned out after use so they could be utilized again by passing groups" (Tro 1968:21). Such a practice would account for the fact that Dr. Dee C. Taylor, Robert Raffety, and I found no charcoal in the pit we test excavated at the Case Site, in Section 13, Ti3N, Ri6W, near Potomac, on July 12 and 21, 1967.

The habitations at camas stations were erected amongst the trees, and the earth ovens were in more open areas. This is illustrated in Father Point's painting. Figure shows an area near Schley, Montana, where Mary Ann Combs and Mary Red Crow cooked camas "long ago." The photograph shows the kind of locality selected whether or not it actually was the exact spot. The earth oven could not be too near the trees lest a forest fire be started (Mary Ann Combs,
FIGURE 6. MARY ANN COMBS CONSIDERED THE DISTURBED AREA IN FOREGROUND AS THE PLACE WHERE SHE AND MARY RED CROW HAD COOKED CAMAS "LONG AGO." THEY HAD DUG THE BULBS IN THE OPEN FIELD IN THE BACKGROUND.

FIGURE 7. THE BLIXIT CREEK SITE AS SEEN FROM DATUM OF MAP 6, LOOKING TOWARD PIT 10. COMPARE VEGETATION IN FIGURE 6.
FIGURE  BLIXIT CREEK CAMAS COOKING PIT NO. 1.

Above: Northwestward view showing beginning of excavation of pit, October 29, 1966.

Upper right: Diagram showing area of pit excavated.

Lower right: Diagram of cross-section along line A-B-C-D.

- Dark brown loam containing fire-cracked rock throughout and chunks of charcoal near lower edge of soil zone.
- Black sandy soil formed from admixture of fire-cracked rock, ash, and charcoal flecks and chunks to light brown sandy sub-soil.
- Light brown sandy sub-soil containing no charcoal or fire-cracked rock.
personal communication, 18 July 1967).

The camas pits observed archaeologically, with the exception of Collier et al. behind the Grand Coulee Dam, in Washington, and early travelers in the area such as Point, De Smet, and Ferris, as well as later ethnographers such as Curtis, Spinden, Williams, Downing and Furniss all described circular pits while some later ethnographers, such as Turney-High, Wissler, and Stubbs reported square or rectangular pits. It may be possible that the latter type of pit is a twentieth century innovation. The two kinds were comparable in size. The round pits, listed in the Appendix, varied from 14 to 235 cubic feet capacity (Ferris, Spinden), and the square or rectangular versions of pits ranged from about 13 cubic feet (Collier et al.) to 300 cubic feet (Wissler).

The capacity of the pit was determined by the amount of camas to be cooked, but the data assembled here are inadequate to derive a very accurate proportion. Only three accounts in the Appendix (Stubbs, Phillips for Ferris" accounts, Spinden) provide both pit dimensions and the amount of camas cooked, and the percentage of pit capacity filled by camas ranges from 7.7 to 29.2. The general tendency for twentieth century Indians to rely less and less on camas is clearly shown by the small size of recently used pits (Turney-High; Stubbs; Williams; Collier et al.; Downing and Furniss).

After the pit was dug the second step in root roasting was to preheat the earth oven. Although the Flathead may have preferred cottonwood for this fire, the charcoal recovered from Pit 1 at Blixit Creek was Pinus ponderosa.

The accounts (See Appendix) vary as to whether stones were placed on the firewood, or the firewood on the stones, or were in alternating layers of stones and wood. Fr. Point said stones were added after the fire died down. Williams, McClintock, Wissler, and Clark imply that rocks were heated elsewhere before being put into the pit. The report of "a layer of wet clay worked into a consistency of cement" is unique (McDermott) and may be a faulty paraphrase of "a closely cemented pavement" of an earlier report by DeSmet, or may be comparable to a recent account of Nez Perce Indians who "mixed water with dirt for mud to be thrown around the rocks to make a smoother surface" (Downing and Furniss 1968: 51).

The stones used have been variously described as small river boulders, small pebble stones, smooth stones averaging about five inches in diameter, cobbles, flat stones, or flat rocks. Among the Nez Perce, if an old pit was being reused, "a new supply of rocks was not gathered, but use was made of the old stones left in the oven year after year."(Downing and Furniss 1969:50). When they were heated in the cooking pit, the fire burned for several hours, or until the stones became red hot. Then the stones were allowed to cool a little. Finally, the pit floor was levelled, and the ashes, coals, and charred sticks were removed from the pit.
The third step in the process of bulb and root, earth oven cookery was to place some vegetation over the hot stones. Different plants were utilized for this purpose, and in different combinations. Grass, however, was most frequently used, but other kinds of vegetation included tule, alfalfa, alder leaves, ferns, Balsamorrhiza sagittata leaves, pine needles, green wood, twigs or branches, sunflower leaves, leaves of the skunk weed, sunflower stalks, and willow leaves and/or branches. Soil was sometimes used instead of vegetation, or it was used in addition to it. About one-fourth of the descriptions include the addition of moisture to the soil.

A fourth step in bulb and root cooking was to deposit the foods into the pit. Mary Ann Combs (personal communication, 18 July 1967) and Mary Red Crow put their camas into the pit in cloth bags like potato sacks. Likewise, in one of the Nez Perce descriptions bulbs were placed in white flour sacks and laid evenly over the leaves (Williams). Another Nez Perce cooked "two cloth bags of camas bulbs arranged side by side," but originally as many as seven gunny sacks full of camas would be baked at one time" (Downing and Furniss 1968:50-51). An 84 year old Oganagon-Lakes woman cooked "six sacks of camas," but recalled that in her childhood her mother had roasted as many as fifty sacks of camas at one time in a large pit (Collier et al 1942:38). Formerly bags were not used, but the quantities prepared ranged from "two or three bushels" (Phillips 1940) to thirty bushels (Morgan, Spinden).

The amount cooked in one pit depended in part on how many women contributed to its contents. Among the Kutenai, large and small camas "were prepared at the same time, but in separate pits...Each family roasted its own camas individually" (Schaeffer 1940:48). I obtained no information on this for the Flathead except that Mary Ann Combs and Mary Red Crow cooked their camas together in a single pit. Among the Yuki "several families would get together," and when the camas was cooked it was "divided among the owners" (Chestnut 1902-327). The Blackfoot, too, pooled their camas, "each woman dividing her portion from the others" (Wissler). "Five or six Nez Perce families often joined together to bake camas. Each family's supply was separated in the earth oven by grass dividers" (Downing and Furniss 1968:51). Likewise, there were "a few handfuls of tye grass separating the piles of different families" (Kelly 1932:102) among the Surprise Valley Paiute. Sometimes camas was said to have been deposited in layers separated by grass and/or leaves, without any indication that the intervening vegetation was to separate the camas of different individuals or families (McDermott; McClintock).

Occasionally, black tree moss (Alectoria sp.) was cooked in the same pit with the camas, but among the Flathead (Combs, personal communication, 18 July 1967) and the Kutenai (Schaeffer 1940:48) this was done only with small camas. According to Ellen Big Sam the layering began with the heated rocks, "then grass, then you wet the moss and put it on top, then camas, then more grass, then moss, layer by layer as much as you want, then on top a solid layer of moss if you want it." (C.
Wild onions and skunk cabbage were also sometimes cooked among the layers in the pit along with the roots or camas, but the skunk cabbage was there only to provide moisture during the cooking, and was not eaten.

In the fifth step of cooking camas the foods were finally covered with a top layer of vegetation, and last of all, earth was placed on top. The top layer of vegetation usually filled the pit to the ground level (Stubbs). Among the Flathead, water was apparently poured on whether (C. Malouf, n.d., 31) or not wet moss was being cooked with the camas. One-third of the descriptions in the Appendix mention moisture in this fifth step.

Sometimes a layer of bark was placed over the green vegetation on top. Among the Flathead fir bark was used (Ray 1942:132), while the Kutenai used fir or psruce bark (Schaeffer). Man Ann Combs (personal communication, 18 July 1967) said the bark was to keep the fire from getting into the camas. She may have meant it was to keep the steam in as with mud hearth cooking mentioned by Morgan. Dirt from the original excavation was piled over the vegetation. Clark stated that stones were used rather than soil. Morgan reported the use of "pebble stones" and earth in separate layers. Collier et al. said sod was laid over the soil layer. According to Father Point, however, the addition of soil alone constituted step five; he mentioned no vegetation.

Ellen Big Sam stated that a canvas or robe was thrown over the camas to keep the steam in, and grass was put over that (C. Malouf n.d.:31). The Nez Perce have lately used burlap bags. In one description the camas was overlain "by a layer of wet rye grass and another layer of wet alfalfa. On top of these layers were placed wet gunny sacks, and finally, a 12 inch layer of dirt which was trampled down so that it was about four inches in thickness (Downing and Furniss 1968:51). Similarly on another occasion "burlap sacks were used as cover and a layer of about 6" of moist earth was spread over all." (Williams).

In the final and sixth step a fire usually (but not always) was built atop the earth oven. The cooking was said to take from twelve to seventy hours, and one author (Grinnell) claimed the length of time varied "according to the quantity of the bulbs in the pit." This is not borne out by the figures in the Appendix, but this may be due to other variables involved. For instance, very little information is available on the intensity of the fire, i.e., whether it was a hot fire or a glowing fire, a large fire or a small fire. Often, we cannot be sure whether the fires were maintained for the full cooking time, or only during the day, or in the evening. Among the Nez Perce, "in the days when large quantities of camas were baked, the same baking time was required, but two fires were often built over the pit in an evening instead of one." (Downing and Furniss 1968:51).

The successful baking of camas required a great deal of care, skill, and experience, and among the Flathead "success at this undertaking is a mark of distinction for the women" (Donnelly 1967:166). Among the Blackfeet, if any camas bulbs were burned, "ill-luck would most certainly befall the woman to whom they
belonged.... 'some of her relatives would die soon.' " (Wissler 1910:25).

The Blackfeet were reported to have determined when the camas was cooked by the odor that arose from the oven (Wissler 1910:25), but the Nez Perce claimed to have opened the oven after 48 hours and judged its color to be indicative of being cooked (Downing and Furniss 1968:51). Prior to cooking the bulbs were white, and tasted somewhat like raw potato, though more mucilaginous. The cooked camas, however, was dark brown or black and was sweeter. "It was sweetly insipid, with a sort of pungent taste" (Ronan 1932:302) akin to that of sweet potato (Downing and Furniss 1968:51; Grinnell 1962:204; Palladino 1922:4; Donnelly 1967:166), Licorice (Phillips 1940:102; C. Malouf n.d.:12), and prunes (Donnelly 1967:166). When the pit was opened and the camas uncovered, "a cloud of steam arose." (Wissler 1910:25).

Among the Blackfeet one recorder said that when the pit was opened the small children gathered around to suck the sweet syrup which had collected on the twigs and grass (Grinnell 1962:204; Judson 1928:162-163). However, Nez Perce children were not allowed to eat hot camas, and were told it was bad for their stomachs. Downing and Furniss (1968:51) agreed with their Nez Perce informant that this was probably just to keep the youngsters away from the newly-cooked supply of camas. I was unable to obtain comparable data for the Flathead.

Further Preparation

Cooked camas retained its shape, but was moist and soft (Morgan n.d.: (5), 56, 109), with "a consistency equal to that of jujube" (Chittenden and Richardson 1905:488-489). According to Stubbs (1966:55), "Upon removal from the pit camas was ready for eating." For storage, however, it was dried (Grinnell 1962:204; Kelly 1932:102; Ray 1963:198; Alvord 1855:656; Stuart 1865:58) or made into loaves and dried (Curtis 1907-30: (8), 41; Chittenden and Richardson 1905:489; Downing and Furniss 1968:52; Gunther 1945:24; Judson 1926:162; Lowie 1909:188; Morgan n.d., (5), 56, 109; Olson 1936:53; Ray 1932:99; Schaeffer 1940:48; Spinden 1908: 202; B. Stern 1934:43; Teit 1930:93). Among the Flathead, cooked camas to be stored was left whole, or was squeezed into little cakes, pulverized and made into round loaves (Anonymous 1919; McDermott 1904:6; Stubbs 1966:55; Turney-High 1937:127). When the camas was cooked with moss, the camas-moss combination became a 'black gelatinous mass' (Turney-High 1937:127). When removed from the oven, it was pounded first because it shortly got sticky (C. Malouf n.d.:31). In all cases, the camas which was not consumed on the spot was dried. The Kutenai allowed five or six days for the camas to dry, and three days for the camas-moss mixture (Schaeffer 1940:48).

The Flathead used bulbous-ended, stone pestles for pulverizing (C. Malouf 1962:5; Ray 1942:143), although earlier these implements were just conical-shaped averaging about eight inches in length. Ellen Big Sam had a bulbous-ended pestle which had been made by the mother of her mother-in-law (C. Malouf n.d.:32).
Mary Ann Combs (personal communication, 27 August 1969) obtained hers from her mother's cousin's mother-in-law, Ann Red Crow. The pestles were used on plain flat grinding stones which had parfleche or flat rawhide hoppers (Ray 1942: 143). Several years ago Mary Ann Combs sold her pestle to a collector at Elmo, Montana. Nowadays the Indian women use meat grinders instead of pestles for pulverizing camas (Combs, personal communication, 18 July 1967; Stubbs 1966: 55).

Storage

Camas had remarkable storage qualities. If kept dry it could be preserved indefinitely. Indeed, in 1847 David Thompson (White 1950:57n) recorded the following about camas bulbs:

A short exposure to the sun dries them sufficiently to keep for years. I have some by me which were dug up in 1811 and are now thirty six years old and are in good preservation. I showed them to the late Lord Metcalfe who ate two of them, and found them something like bread; but although in good preservation, they, in two years lost their fine aromatic smell.

This would account for statements that camas could be kept for two years with no difference in flavor or quality between it and freshly baked camas (Alvod 1855: 656; Turney-High 1941:34 as examples).

Among the Flathead, dried camas bulbs and cakes were stored on platforms in trees, or on limbs of trees (Ray 1942:180; Turney-High 1937: 121). Mary Ann Combs (personal communication, 18 July 1967) said that in historic times camas was stored in parfleche bags which were kept on platforms mounted on tipi-like frames. Larger animals did not bother such storage places, but the chipmunks did. Some tribes used storage pits (Ray 1963: 198; Steward 1938: 28; Teit 1900: 198-199; 1930:63, 229, 342). However, Mary Ann Combs (personal communication, 27 August 1969) denied the use of storage pits by the Flathead, but the possibility of finding them archaeologically warrants mention. Heavy stone implements, such as pestles, were sometimes cached in regular seasonal camps in order to avoid having to carry such loads on their backs - this, of course, was in pre-horse days.

Boiling Camas

If there were not sufficient time to cook camas by the pit method, the Flathead boiled it (Stubbs 1966: 53). Without referring to a particular tribe, W. P. Clark (1885: 95, emphasis mine) said, "Late in the fall the roots are at times prepared by boiling." Among the Flathead boiling was done in a pit one foot deep and one foot in diameter, lined with a removable sewn and fitted bag of bison skin. This was filled with water, which was brought to a boil by adding hot stones from a nearby fire (Turney-High 1937: 127-128) In addition, however,
wood boiling and utility pots... were often used in permanent camping grounds. They were made by hollowing out large burls which are sometimes found on the trunks of pine, fir, and larch trees. The wood of these burls usually contained a large amount of pitch so that it did not deteriorate rapidly. Some of these pots were large enough to hold several gallons of liquid. Food was boiled in them by the usual hot rock method, but they had every advantage over the hide bag, other than being difficult to transport. Wooden pots were generally left at the camp site where they were made, to be used during subsequent return trips. Although they were individually owned, they were sometimes used by other Indians. My informants said that at one time there were many of these wooden pots in use in various Flathead camping grounds, but the only one known of in recent times was at a camping ground near Placid Lake (Stubbs 1966: 38–39).

The Shoshoni have been reported as having boiled camas in pottery vessels (Steward 1938: 28), but none have been described for the pre-reservation Flathead, (Ray 1942: 137; Teit 1930: 326; Turney–High 1937: 262). During the early 1900's, however, Leonard Nelson (personal communication, 26 June 1967) observed the Flathead cooking camas in a kind of mulligan in crockery vessels obtained from whites. By that time, boiling camas "to a gelatinous consistency in modern kettles" was apparently the only way in which the Shoshoni prepared it, although they too formerly used the earth oven (Lowie 1909: 188). In 1933 Turney–High (1933: 262) feared that "the rapid diffusion of the easy Woolworth-pot-and-pan-complex" had had the same result among the Flathead, but the use of the earth oven has survived with a few elderly women who still dig and prepare camas.

Meals Prepared With Camas

Baked camas was sometimes boiled to make a sweet-tasting hot beverage which the Flathead used to make like coffee (Stubbs 1966: 55). Powdered camas-moss in simmered blood was the most highly-prized soup delicacy. The broth from fresh meat was a favorite liquid in which to boil camas (Turney–High 1937: 123). Father De Smet (Chittenden and Richardson 1905: 489; Morgan n.d., (5), 56) especially liked camas boiled with meat. Nowadays baked camas bulbs are sometimes boiled and thickened with commercial flour to produce a thick gravy (Stubbs 1966: 55).

Nutritional Value

Camas has been called "the great northern Plateau staple" (Turney–High 1941: 33) and the "queen root of this clime" by De Smet (Chittenden and Richardson 1905: 488). Among the Flathead in the 1840's Father De Smet wrote (Chittenden and Richardson 1905: 345) that camas "together with the game they are able to procure, forms their chief nourishment." As the daughter of an Indian agent described it, camas "was valued highly by all the Indians;... it was a luxury delectable to the Indian palate... and he would deprive himself of almost anything to obtain it." (Ronan 1932: 301).

The results of a biochemical analysis by Yanovsky and Kingsbury is presented
in Table I. Camas is nearly two-thirds moisture, but is about one-sixth inulin, a non-reducing sugar which is not hydrolized by any of the enzymes of the gastrointestinal tract, and thus is not utilized by the body as food. Note that, contrary to popular belief (e.g. Haines 1955:12), camas contains no starch. It does contain a small amount of unspecified protein. Energy must be derived from reducing starch and perhaps hemicellulose, which together comprise about one-tenth of the weight of the camas bulbs.

This analysis was of raw camas. The cooking process has long been suspected of causing important chemical changes. In 1902 Chestnut (1902:327) wrote: "While raw the substance of the bulbs is crisp, white, and very mucilaginous, but almost tasteless: when cooked..., however, they are remarkably sweet, the long baking having evidently converted the mucilaginous substance into sugar."

It has been shown that inulin breaks down into fructose in boiling water (Verstaeten 1966). Recent research by Dr. James Konlande, of the Nutrition Unit, University of Michigan, School of Public Health, illustrates that this breakdown takes place in earth ovens as well as in boiling water. His work confirmed that done by Yanovsky and Kingsbury (1931, 1938) with uncooked camas. Raw bulbs were provided by Dr. Carling Malouf, of the University of Montana, and these were found to contain only 0.5% reducing sugars (calculated as fructose) on the basis of weight, or 1.1% based on dry weight (Konlande, personal communication, 12 March 1971). These bulbs were collected in the Jocko Canyon, on the Flathead Reservation, on July 26, 1970. By this date the stalks and leaves of the camas had partly disappeared, and it was difficult to find a large enough quantity. Therefore some of the bulbs included in the sample were smaller than the Flathead would have considered worth digging. To minimize the possibility of hydrolysis of inulin between the time of collection and the time of analysis, the bulbs were kept under refrigeration, except when being air mailed from Missoula, Montana, to Ann Arbor, Michigan (C. Malouf, personal communication to J. Konlande, n.d.).

For comparison, a second sample of camas was supplied by Jack R. Williams, Superintendent of the Nez Perce National Historic Park, Idaho. These bulbs "were dug from the Misselsehll Meadow in July, 1970, and the outer layer was removed immediately. They were baked within two weeks in the traditional Nez Perce manner," as given in the Appendix (Williams, personal communication, 2 November 1970). These cooked bulbs were found to contain 32.9% reducing sugars (calculated as fructose) on the basis of wet weight, and 42.9% based on dry weight.

Thus, the cooking process used by the Flathead Indians resulted in a considerable breakdown of the carbohydrate in the camas bulbs. Konlande cautions that one must be careful in identifying all of the reducing sugar content as fructose since this analysis did not distinguish between fructose and reducing sugars containing two or more fructose units (personal communication, 12 March 1971).
TABLE I. CHEMICAL COMPOSITIONS OF CAMAS BULBS
(After Yanovsky and Kingsbury 1938: 652)

Camassia quamash

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>MOISTURE</th>
<th>REDUCING SUGAR</th>
<th>INULIN</th>
<th>STARCH</th>
<th>HEMICELLULOSE</th>
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Camassia leichtlinii

| ORIGIN   |  |  |  |  |  |  |  |  |  |  |
|-----------|  |  |  |  |  |  |  |  |  |  |
| Washington| 69.5  | 0.5 | 11.2 | 0.0 | 4.9 |
|           | --   | 1.6 | 36.6 | 0.0 | 15.8 | 11.7 | 3.2 |

*Percentages by weight. Second line for each origin represents analysis on dry basis.
VII DANCES AND FOLKLORE

Published data on dances and folklore relative to camas consumption and gathering are meagre, but the Flathead are said to have held two Camas Dances a year. One of these was held in January, and the other was in June. In contrast to its ceremonial importance, camas seems to have figured very little in folklore. I found only one published tale dealing with this subject.

Camas Dances

Neither of the two Camas Dances seem to have been held in recent years (Stubbs 1966:34), but the Flathead at one time held such ceremonials. One of the dances, as mentioned, was held in January, but it has only been described by Turney-High (1937:38). In this dance a prayer was made for an adequate supply of vegetable food the next spring. The dance, however, was also for social purposes since it was a favorite time for marrying, riotous joking, and familiarity. In the dance both men and women danced alternately in the same circle. Men would step inside the circle and sing medicine or /sumesh/ songs, although these were not their primary, personal secret songs. Sometimes new songs were inspired then and there. The songs and dances were of variable length and rhythm.

The Camas Dance was of four days duration, but it initiated the Midwinter Festival, and the second half of the total ceremony was the Bluejay Dance. The Bluejay Dance is said to have been "taken over from the Kalispel during the early part of this century (1906-07)" (Schaeffer 1938:318), although some Indians had been dancing it at the Jocko Station some years earlier (McDermott 1904:38). I do not know about the antiquity of the Camas Dance portion of it.

Some informants claim that the Midwinter Festival was later called the Jumping Dance. The two were very similar, but the Jumping Dance was held a little earlier in January than the Midwinter Festival. Due to drunkenness and the passing of the old timers, neither dance is held anymore (Johnson 1969:127n; Merriam 1967:117-118).

The other Flathead Camas Dance was recorded by Ray (1942:253), but it was a relatively minor ceremonial. It was held outdoors during the summer and it was of variable duration. Men, women, and children danced clockwise in a circle. Music consisted of special songs rather than individual spirit songs. Spirit visions, however, lead to the sponsorship of this Camas Dance. Ray (personal communication 10 June 1970) recalled that the celebration was held immediately following the first gathering of the camas crop, and that it took place in the camps or villages rather than at the gathering places.
While the Camas Dance fell into the same general ceremonial category, the Bitterroot Ceremony constituted the First Roots Ceremony, ushering in the plant gathering season for the year. Thus, the bitterroot was gathered before the camas season commenced, and thus deserved the position of First Roots Ceremony as well. It was a tribal affair in which a prayer for an abundance of both bitterroot and camas was offered. (Turney-High 1937:34-35). Both dances were still being celebrated in 1939:

The annual bitterroot feast is held in Camas Prairie [near Hot Springs, Montana] in the spring before the bitterroot blooms; the camas feast in June. All full-bloods participate. Prayers are offered for good crops, and dried camas and bitterroot are eaten. (Federal Writer's Project 1939:299).

An abbreviated form of the Bitterroot Ceremony was still being held until the early 1960's, when the two old women who urged its perpetuation died (Merriam 1967:114-115). It is not recorded when the Camas Dance was discontinued.

Camas In Flathead Folklore

In the summer of 1967 I asked Mary Ann Combs to tell me some Flathead folktales involving camas, but she refused, stating that if she told such stories during the summer she would meet with bad luck--snakes might wrap themselves around her legs, or bears might come and frighten her (See also Weisel 1960:2). However, a knowledgeable white woman, Mrs. Mildred Chaffin (personal communication, 26 June 1967) related a mythological explanation for the varied distribution of plants. According to the Flathead, Coyote, their culture hero, went through the country distributing various plants here and there. The small size of the camas near Hot Springs was due to the fact that by the time Coyote reached that area all he had left in his bag was some small bulbs (Cf. Stubbs 1966:53). Jerome Hewankorn, A Kutenai, informed Phyllis Ward (personal communication 31 July 1967) that places where Coyote defecated became camas prairies.

I have found mention of camas in only one published tale, "The Coyote and His Neighbors," in which Coyote was introduced to camas:

The Coyote had five sons with his wife, and lived in a lodge a great distance from any other habitation. One morning he took his youngest son and started to visit the Elk, who also had five sons. When, after a long journey, they arrived at Elk's lodge, they found it empty and no signs of anything to eat. Then the Coyote said to his son, "I do not like this, not having anything to eat after such a long walk." Soon the Elk returned and after welcoming his visitors, stooped and picked up a
sharp stick with which he began to tear open his hips to dig out some Kamass roots. The Elk then said, "Eat some Kamass roots, they are very good; I always provide myself in this way when I am away from home and get hungry." "What," said the Coyote, "do you expect me to eat dung?" "That is not dung," said Elk, "but Kamass roots." Then the Coyote picked up one of them and after nibbling at it cautiously, discovered it to be very good, whereupon he and his son filled their bellies with Kamass.

When the Coyote was about to depart, he said to the Elk, "Come and see me tomorrow, and see how I live." "Yes," responded the Elk, "I will come to see you tomorrow."

Next morning the Elk took his youngest son and set out for the Coyote's lodge which he reached after a long journey. After the Elk was welcomed, the Coyote took a sharpened stick, as he had seen the Elk do, and commenced to tear his flesh in a painful manner, when the Elk cried, "Stop, stop, do not tear yourself so; I do not think you ever tried that before. It is my practice to do that when I am away from home and get hungry, so let me provide the Kamass roots this time." "That is just what I wanted you to do for me," said the Coyote, and handing the stick to the Elk, they soon had enough Kamass for all, and after they had filled their bellies, the Elk and his son left for home. (Hoffman 1883: 31-32).

Subsequently, Coyote visited the Bear and the Kingfisher and had similar experiences involving other foods. He concluded to continue providing his own food as he had been taught by his ancestors.

A very similar tale, "Coyote Goes Visiting," was told by the Kutenai. In it Coyote first visited Kingfisher, and the next day went to the tent of Moose. Moose "slapped his backside, and camas came out. They put it into the kettle. It was given to Coyote. He ate" (Boas 1918:11).

It is pertinent to note that the Blackfoot word for camas also means dung (Curtis 1907–30: (6), 169). From the above folktales one could conclude that the allusion was due to the similar appearance of cooked camas bulbs and the excrement of large members of the deer family. The Kutenai explanation of camas, however, explains that camas prairies occur where Coyote defecated, thus, the explanation based on similarities is a puzzlement. I obtained no further information on this matter.
VII. COMPETITION FOR CAMAS

It is argued in the following pages that the Flathead had little competition for camas per se. Animals generally consumed only insignificant amounts of camas, and white men seldom ate it except in emergencies. Alien Indians sometimes dug camas in Flathead country, but the Flathead sometimes dug camas outside their own territory too. Flathead camas reached other Indians chiefly by trade; trade, however, also sometimes supplied camas to the Flathead. The primary limitations on camas supplies were indirect: (1) Blackfoot horse raids and white land tenure prevented the Flathead from using some of their favored grounds, (2) White land use disrupted prairie ecology.

Camas is not found in abundance east of the Rocky Mountains, and it is said that the Plains Indians sought treaties with the Flathead to be allowed to enter the mountain valleys for root digging. In exchange the Flathead were to be allowed to hunt on the Plains for buffalo. Although these treaties were rarely kept, they indicate a desire on the part of the Plains tribes to obtain camas from the mountains, and the danger involved in getting it (Turney-High 1933:263). The solution, of course, was to trade, thus the commodity had considerable trading value. Camas, moreover, had considerable differences areally as well as in quality.

Camas was said to have been traded from the Shoshoni to Nez Perce (Steward 1938:48), from the Nez Perce to the Gros Ventre (Flannery 1953:81), from Upper Pend d’Oreille to Kutenai (Schaeffer 1940:45), from the Kutenai to Blackfeet (Schultz 1956:67), and so on.

The extent and regularity of this intertribal trading may now be impossible to ascertain.

Concerning Flathead trade with the middle Columbia, it was considerable. This resulted in part, from the great mobility of the Flathead and, significantly, because all of the tribes involved were unwarlike, indeed very friendly. There was trade in camas, yes, but it was not a special item of trade any more than by any other tribes. Supply and demand, varying from tribe to tribe because of different seasons, seasonal variations in plenitude or scarcity, and surplus or exhaustion in late winter of the stored supplies of dried camas, all were stimulating factors to trade. (Ray, personal communication, 10 October 1970).

"The Flathead did not value the size of the bulb so much as its sweetness since before the recent introduction of sugar camas was their principal sweetening agent" (Stubbs 1966:53). Since camas from the Nez Perce country was both larger and superior in flavor to that in Flathead country, it was an item
of trade between the two tribes (Turney-High 1937:137). In exchange for beads, pipes, and other articles from white man's world, the Flathead at one time frequently traded camas with the Crow, Shoshoni, and Blackfeet (C. Malouf 1952:14). Historic trade with the Blackfeet was probably primarily with the Small Robes Band of Piegan, who were friendlier to the Flathead than were other Blackfeet (Ewers 1958:185ff). One writer reported "that when the Flatheads went to trade with the Blackfeet they could get more in exchange for a few bags of camas than for anything else: [and] that they often got a buffalo robe for a few handfuls of it." (Ronan 1932: 301).

Whites

Early whites who came into western Montana used camas, especially as an emergency ration. However, its consumption sometimes resulted in discomfort. Sophie Moiese stated that prior to meeting the Flathead, Lewis and Clark did not know that camas was good to eat (E.E. Clark 1966:13ln). Shortly thereafter members of the expedition became very sick from the free use of foods to which they were unaccustomed. Presumably camas was among these foods, for Elliot Coues commented, "Taken in sufficient quantity, camas is both emetic and purgative to those who are unaccustomed to eat it" (Coues 1965: 615n). This may also account for an incident of July 3, 1811, when some Sanpoil women wished to give David Thompson some presents. He consented, "provided they brought us no Ectooway, as we found those roots bring on the colic" (White 1950: 100n). In the 1840's Father Point (Donnelly 1937: 166) also noted that camas "is eaten with pleasure, but its digestion is accompanied by very disagreeable effects for those who do not like strong odors or the sound that accompanies them." All of these cases may be due to the osmotic effects of unabsorbed sugars (Konlande, personal communication, 31 March 1971).

Despite unpleasantness, however, frequent mentions of the use of camas by whites may be found. In 1806 Captain Lewis and his men "obtained a great quantity of quamash" near Potomac, Montana, which later became known as a main camas prairie of the Flathead (Coues 1965: 1073). On April 24, 1833, Nathaniel Wyeth (Young 1899: 190) recorded that the Flathead Valley "abounds with the finest kamas I have seen yet as provisions are scarce in camp, the women dig much of it." Entries in the Fort Owen ledger, June 27, 1854, indicate that the members of the Mullan Road Survey also made use of camas (Weisel 1955: 76, 80n). John Owen himself recorded in his journal November 8, 1858, "Struck Sun river Near its [Mouth?]. Went to bed after a Supper of Camash & berries Which one of the Inds happened to have with him" (Dunbar and Phillips 1927: (1), 207). In 1877 the children of a family living on Trail Creek, south of Livingston, Montana, said that if they were captured by Indians, "they knew where to dig camas root, and they would escape to the brush and live on that" (Cowan 1903: 180).
Interestingly, it did not take whites long to devise new uses for camas. Although the Indians were not aware of the fact, it is possible to make alcohol from camas. On October 21, 1805, Captain Clark, of the Lewis and Clark Expedition, wrote: "Collins made some excellent beer of the Pasheco quarmash bread of roots which was very good" (Thwaites 1904-1905 (3), 142). Father Antoine Ravalli likewise wrote:

I once made two gallons of splendid alcohol from about three bushels of camas by fermenting, and with the aid of a zigzag worm of tin for a still. I took great care that the Indians should not know this, so as to learn the art. (W. Clark 1855: 178).

We are assured by Father Palladino (1922: 60) that Father Ravalli's alcohol was for medicinal purposes.

Animals

The Flathead had little direct competition from whites, other Indians, or animals for their camas resources. The pocket gopher, a species of Thomys, was called "the camas rat" because of its fondness for camas bulbs (Chamberlain and Coville 1907; Coues 1965: 993n-994n), but it is doubtful that any burrowing animals seriously threatened camas colonies (Ownbey, personal communication, 11 November 1970). In fact, in one Alsea tale an old woman tells her granddaughter, "You keep on trying to look for Mole; where there are many holes in the ground, there [you] will get lots of camas" (Frachtenberg 1914: 97). Chipmunks sometimes pilfered stored camas (Mary Ann Combs, personal communication, 18 July 1967).

As for grazing animals, elk and moose frequently crop camas early in the season (U.S. Forest Service 1937: W160). For the domesticated animals brought in by the white men:

The palatability of camases varies from fair to fairly good, occasionally good for sheep. On the high summer ranges camases are little grazed because they bloom, dry up, and disappear before the sheep are moved to those ranges. Camases occasionally grow on sites too wet for sheep. If given a choice, horses and cattle do not ordinarily graze camas, but they frequently eat these plants along with other meadow forage. Camases are not objectionable when cured in mixed native hay. (U.S. Forest Service 1937: W160, leaf 2).

Hogs are very fond of camas, and have been said to fatten better on it than on corn (Chestnut 1902: 327; Stuart 1865: 58). They uproot the bulbs and are able to totally destroy camas colonies (Ownbey, personal communication, 11 November 1970), but they were not numerous enough in western Montana to seriously affect the camas resources of the Flathead Indians.
Indirect Competition

Factors other than direct competition for camas were paramount in limiting the availability of this resource to the Flathead. Ownbey commented:

Camas is a member of the rich moist meadow community... In this habitat, it competes with grasses, sedges, and other semi-aquatic species, too numerous to list. Ordinarily it achieves dominance only over small areas. This competition with other plants is probably the most important factor in limiting its abundance. (Ownbey, personal communication, 11 November 1970).

In 1967, Agnes Incashola was able to find only a few small camas plants at the Camas Prairie, near Hot Springs, Montana. Mary Ann Combs supposed that weeds had killed off the camas. Similarly, Mrs. Combs noted that the grass at the digging ground near Schley grew much taller after it was turned into a hay field (Combs, personal communication, 18 July 1967). Whether or not ranchers intentionally eliminated camas in favor of more palatable species, the result was the same; plowing, haying, and heavy grazing has destroyed many camas colonies.

Major territorial changes during the historic Flathead period has imposed serious limitations on the availability of camas to these people. As discussed earlier, the Blackfeet forced the Flathead west of the continental divide about 1781. The Blackfeet aggression was not aimed at acquiring land, but in capturing horses (Ewers 1958:126).

The fact that horse raiding was conducted mainly during the spring and summer (Ewers 1958:128) undoubtedly also affected the Flathead's choices of which camas prairies they would visit, particularly when their numbers were felt to be insufficient for defense. The Blackfeet expeditions into Flathead territory were primarily via Cadotte's Pass and along the Blackfoot River trail (Ewers 1958:201). This area, which includes the Potomac digging ground, seems to have been avoided by the western tribes in the early 1800's (C. Malouf 1956:52). Moreover, whenever the historic Flathead dug camas outside western Montana they seem to have gone to places remote from Blackfeet territory; e.g., the Upper Big Hole valley, Pierre's Hole, and Camas Prairie, Idaho.

Even more severe limitations on land availability resulted from white settlement, as illustrated by the following discussion of the Potomac Valley. In the treaty negotiations of 1855, Governor Stevens attempted to get the Flathead, Upper Pend d'Oreille, and Kutenai to agree to a single reservation either in the
Bitterroot Valley, above Lolo Creek, or between Jocko Creek and Flathead lake. The only specific mention of camas in the proceedings came as Stevens enumerated the advantages of the Bitterroot location: "There is more land there for you, the land is better, the climate is milder, you are nearer to camash and bitterroot, it is more convenient to buffalo, you will be much better off there" (Partoll 1938: 299). Later Stevens stated the boundaries of the other proposed reservation and added, "You have the right however, to pasture your animals at other places if those places are not occupied by whites. You have in like manner the right to gather roots and berries, to take fish and kill game" (Partoll 1938:302).

The treaty negotiations were marred by numerous failures in communication (See especially Burns 1952). Perhaps in translation the Flathead did not realize the stipulation that they could dig roots on off-reservation land only if it were not occupied by whites. In any event, they mistakenly thought the government had promised them the Potomac Valley as a camas reserve. They did not get it (Teit 1930:341).

According to information in the files of the University of Montana Museum, George K. Vaughn became the first white settler on the "Kamas prairie of the Flatheads" when he moved there from Helena in 1881. Among those who followed was R.S. Ashby, who moved there from Virginia City, Montana, in 1883. He had once lived along the Potomac River, and it was he who applied the name "Potomac" to Camas Prairie (Federal Writer's Project 1939:311; Omundson 1961:118-119; Rowe 1933:298).

The record of settlement is incomplete, but The Weekly Missoulian of April 25, 1888, reported that three families had recently located at Potomac: The Morrises from Wisconsin, the Halls from Glendale, Montana, and the Gilberts from the Bitterroot. With its numerous streams, the Potomac Valley afforded good advantages for agriculture, and the ranchers were all in utilizing the ground. (Anonymous 1888).

Sometime during the 1880's a group of Flathead women were digging camas near Potomac, and a white man came and told them to leave. In the process of forcing their retreat he shot one woman in the side of the face, tearing away a part of her upper jaw and teeth. Such incident of violence to the Flathead were rare, but they were well remembered and served to intimidate the Indians (C. Malouf, personal communication, 2 February 1971).

I did not learn precisely when the Flathead ceased to dig camas in the Potomac Valley, but it was probably prior to 1920. In 1911 the Anaconda Copper Mining Company began the first railway up the Blackfoot River in order to obtain logs for its Bonner lumber mill. The railroad was later taken over by the Chicago, Milwaukee, St. Paul and Pacific Railroad, which completed it to Potomac and beyond, attracting new homesteaders to the Blackfoot area (Stout 1921:790).
Leonard Nelson settled at the mouth of Elk Creek in 1912. He recalled that until about 1916 a party of 50 or 60 Flathead used to camp opposite the mouth of Belmont Creek and dig camas in the meadow near his house (Anonymous 1967; Nelson, personal communication, 26 June 1967). I did not learn whether these or other Flathead were still digging camas in the Potomac Valley, but in 1919 Duncan McDonald said, "They used to get the camas near Potomac, but it is all fenced in now. They obtain it now at Camas ([Hot Springs], but that is getting also fenced in rapidly" (Anonymous 1919).

**CONCLUSIONS**

The purpose of this paper has been to bring together all available information on camas as it pertains to the Flathead Indians, and thereby providing a basis for the interpretation of archaeological remains. What follows here is a summary of the Flathead data, with recommendations for further research. A summary of the possible archaeological implications is offered.

**Summary Of The Flathead Use Of Camas**

The name "camas" came into English from the Chinook Jargon, a Pacific Northwest trade language. Now, camas is the common name applied to plants of the genus *Camassia*, of which *quamash* is the most important species. Although apparently all the camas in western Montana is *Camassia quamash* subsp.*typica*, Flathead taxonomy distinguishes two camas on the basis of size, and the "small camas" category may have included a kind of onion. Additional research is required for clarification.

Camas grows in moist mountain meadows or "camas prairies." Evaro and Potomac were among the many localities frequented by the historic Flathead. Abundance of camas, ease of digging, safety from enemies, and perhaps availability of firewood were factors in selecting which prairies to harvest. Further specification of some of these variables should be attempted by asking informants to point out stands that would not be worth digging, and why.

Although camas could be dug at any season, the primary harvest was just after the plants had finished blooming. This was usually in June, but varied with environmental conditions. The Indians tended to return to the same digging grounds year after year. The groups that visited each prairie ranged in size from a single family to perhaps more than a hundred individuals, depending on the abundance of camas there relative to the amount each family desired to collect. How much each family dug each year remains to be learned, however. Information on Flathead social organization and territoriality (which family dug where) is meagre.

Camps of conical lodges were set up among the trees on the dry ground...
bordering the prairies. Prehistorically the lodges were usually mat-covered, but historically they were of buffalo hide and, still later, canvas covers were used.

The digging and preparation of camas was women’s work. Men were forbidden to go near the cooking places while they were in use. Prehistorically Flathead men probably went to the camas grounds and hunted, fished, or merely amused themselves, but historically men frequently were on the summer buffalo hunt during the camas season.

Camas digging was carried out with the wooden or elk-antler digging sticks used for other roots. Later iron diggers and even plows were used to uproot bulbs. Woven and hide bags replaced baskets as collecting containers after the introduction of the horse. The amount of camas each Flathead digger obtained per day is not known.

The camas was taken back to camp where the onion-like coverings were removed, and the bulbs were cleaned and allowed to dry for up to a week. (This statement is based largely on non-Flathead data, and requires verification.) Then the bulbs were almost always cooked in an earth oven which was occasionally also used to prepare other foods as well. This required digging a pit, unless one from a previous season could be reused. The tools used by the Flathead for digging this pit are not recorded, nor is it known whether the Flathead cleaned out the pits after use. In the earth oven a fire was built to heat the stones real hot. Over the stones vegetation, and then the camas was placed. More vegetation, and then some earth was placed over the camas, and a fire was usually built on top. Cooking required from one to three days. The relationship between cooking time and quantity of camas requires additional investigation. In addition, the relationship between pit size and amount of camas cooked warrants further investigation with Flathead informants, and published literature on other tribes.

Raw camas tasted bland, but after cooking it was sweeter—like sweet potato, roasted chestnuts, licorice, or prunes. Cooking caused considerable breakdown of inulin into fructose. Upon removal from the earth oven the camas was ready to eat, but most was stored for winter use. It was squeezed into little cakes, pulverized and made into round loaves, or left whole, and then was, in any case, dried. The Kutenai allowed up to six days for drying, but there are no figures for the Flathead. As with other vegetable foods, pulverizing was done with stone pestles on flat rocks, but lately modern meat grinders have been used for camas. Historically camas was put in parfleche bags and stored in trees or on platforms on tipi-like frames.

The ethnographic literature contains only a few statements of how long the camas season lasted. Among the Modoc digging and preliminary drying took
about a month (Ray 1932: 98). In 1856 the Flathead spent from May 31 to June 28
digging and preparing camas (Dunbar and Phillips 1927: 122-134). Whether
or not a month was the usual time spent by the Flathead is not recorded.

Boiling was a common means of preparing meals of oven-cooked camas with
other foods. If there were not time for pit-roasting the camas in the first place,
it could be stone boiled in hide bags or in large wooden bowls. Boiling in crock­
ery and metal vessels became a common mode of preparation in reservation
times.

Camas was ceremonially important to the Flathead. Two separate Camas
Dances were held, one in June and another in January. Camas was apparently
unimportant in folktales, and when they were given it was typically done in the
wintertime. I found a camas tale mentioned in only one published source where
it was equated with elk dung.

Finally, the Flathead experienced little direct competition for their camas
resources from other Indians, from animals, or from whites; but Blackfeet
horse raids, and later white settlement, prevented use of certain camas grounds.
Agriculture destroyed some camas colonies, and discouraged Flathead use of
camas.

Archaeological Implications

Localities where the Flathead are known to have dug camas have been listed
elsewhere in this paper, and the borders of all of these prairies should be
searched for archaeological sites. At these sites it may be possible to find
evidence of lodges, and thereby be able to judge the size of the groups that used
the sites. Since camas was generally pit-roasted at the digging camps, remains
of earth ovens should also be expected. Lodges were set up amongst the trees,
while cooking pits were in more open areas. The proximity of some pits and
trees at the Blixt Creek Site means that the trees grew after the pits ceased to
be used. Digging and cooking camas were women's tasks, but as at the Blixt
Creek Site, the presence of men would be indicated by discovery of projectile
points and chipping debris. Since men were frequently forbidden to go near the
cooking places, male artifacts may not occur near the earth ovens.

Of course, words for camas could never be recovered by archaeologists;
but if, as with the Kutenai, large and small camas were cooked in separate
pits, and every woman cooked her own separately, the result would be many
rather small cooking pits.

The one pit tested at the Blixt Creek Site contained charcoal and firecracked
rocks, while one at the Case Site did not. The latter may indicate that the pits
were sometimes cleaned out after use. Square or rectangular pits at an archaeol­
ogical site would indicate a date in the 1900's. Circular pits were used exclu­sive­ly
prior to 1900, and these may well have also been used into the twentieth century.
Small pits may also be of recent date since camas became less and less important, and the size of the pit reflected the declining amount of camas cooked in it. The actual amount of camas cooked in a given pit may be roughly approximated from archaeological remains as 7.7 to 29.2 percent of the capacity of the hole. Pit capacities ranging from 13 to 300 cubic feet and quantities of two to 30 bushels per pit may be expected.

From the amount of camas cooked in a pit, the length of digging time required may be approximated from the Sanpoil estimate of one bushel per woman per day (Ray 1932: 98). In a month one woman could, thus, dig 30 bushels of camas, which is the largest amount that Morgan (n.d., (5), 55–57, 108–109) and Spinden (1908: 201) said was cooked in a pit. If determination of group size at the site suggests that more than one woman contributed to each oven, then the actual number of digging days would have been proportionately less. Apparently, the time required for cooking and drying would be about the same regardless of how many women were involved.

A lack of earth ovens near a camas meadow may mean that the archaeologist should seek evidence of stone boiling or recent occupation. A lack of ovens might also indicate that camas was transported elsewhere for cooking, or that the Indians did not dig camas there at all. At Saleesh House, built by David Thompson in 1809 among numerous root roasting pits, the camas field was about one mile away. This was in western Montana on the Lower Clark Fork River. (C. Malouf, personal communication, 1978). If the Flathead were still digging camas in the Potomac Valley around 1910, they must not have been pit roasting it there or Professor Elrod would have better identified the "Indian circle Mounds" he photographed since he was acquainted with these people.

Digging sticks (especially antler diggers and handles, which would preserve better than wood) and stone pestles may be found at camas camps. Since these artifacts were also used in the collection and preparation of other root plants, they most often would have been carried away at the end of the camas season. They may, however, be found accompanying burials, and over the years many Indians must have died in the vicinity (e.g. Dunbar and Phillips 1927: (1), 134). Probably the flat rocks used with pestles were not transported, and they might be recoverable at camas sites. Collecting, boiling, and storage containers would probably not be preserved.

Although it is unlikely that one could find archaeological evidence of Camas Dances, it is significant to note that one was held in June at harvest time, and the other was in midwinter when stored camas was being consumed. It was largely the abundance and storage quality of camas that enabled the Flathead to congregate and hold ceremonials in winter. Some other groups were forced to disperse during the lean months of winter (Chittenden and Richardsons 1905, 350; Phillips 1940: 235–236). Evidence of the heavy use of camas might point to large winter encampments.
Worth

If it serves no other purpose, a compilation of data such as offered here points out gaps in knowledge, thereby directing future research. It is true that the use of camas is now rare among the Flathead, but a few Native Americans are old enough to remember it. Similar studies of other food sources could also be undertaken, but if additional information is to be obtained, original fieldwork must be conducted soon.

In the preceding pages I have also discussed some of the archaeological implications of this study. It is difficult to speak so hypothetically, but the archaeological utility of this paper will be easier to judge when further excavations are undertaken at camas stations in western Montana. Only then will there be archaeological data to interpret in the light of the ethnographic data assembled here.
<table>
<thead>
<tr>
<th>FLATHEAD</th>
<th>FLATHEAD</th>
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</tr>
</thead>
<tbody>
<tr>
<td>(Donnelley 1967:166)</td>
<td>(McDermott 1904:6)</td>
<td>(Anonymous 1919)</td>
</tr>
<tr>
<td>Dig in the earth a circular hole a few inches in depth and with a diameter about equal to that of an ordinary wagon wheel.</td>
<td>Dig a hole twelve or fifteen inches deep, cover the cotton with a layer of wet clay worked to the consistency of cement and made red hot.</td>
<td>A hole is dug, and a layer of rocks is placed and covered with wood. They are heated red hot. They are allowed to cool a little.</td>
</tr>
<tr>
<td>This done, you fill the hole with wood, which you burn until you have a bed of embers. On this bed of embers you spread stones.</td>
<td>They covered this with a layer of wet grass, then put on a layer of camas root, and so on alternating till the pit was nearly filled.</td>
<td>then covered with clean leaves.</td>
</tr>
<tr>
<td>and cover the stones a layer of earth.</td>
<td>The last layer of grass they covered with bark and put soil on top of that.</td>
<td>On the leaves are placed a layer of moss, also some native onions and camas.</td>
</tr>
<tr>
<td>On the layer of earth you spread the roots.</td>
<td></td>
<td>This is then again covered with leaves. The hole is filled with dirt.</td>
</tr>
<tr>
<td>and over the roots a second layer of earth.</td>
<td></td>
<td>and a hot fire is built and the mixture is baked for 24 hours.</td>
</tr>
<tr>
<td>On this you place a sufficiently large quantity of wood to maintain a fire for thirty or forty hours.</td>
<td>On top of this they built a fire which they kept burning for fifty, sixty, or seventy hours.</td>
<td></td>
</tr>
</tbody>
</table>
### APPENDIX: COOKING CAMAS

#### FLATHEAD

**(Turney-High 1933: 252)**

A pit about ten feet long and from 2 to 3 feet wide is dug.

and a fire of intense heat is therein kindled. The Salish prefer to use cotton-wood limbs and bark for this fire, since they burn longer than the conifers so plentiful in this region.

When the wood is reduced to glowing coals, red willow sticks with the sap still in them are criss-crossed over the fire-bed in the form of a gridiron. Over this is laid a blanket of green grass, ordinarily the abundant bunch grass, some 2 to 3 inches thick. Upon this, in turn, is placed a layer of moist earth. The final layer of this blanket consists of another coating of green grass.

Then the camas roots are dumped into the pit.

The mass is covered with more grass and a thick layer of earth.

Another fire is now kindled

#### FLATHEAD

**(Stubbs 1966: 54-55 )**

A rectangular pit about two feet deep and approximately four by six feet was dug

and filled with wood. Small river boulders were placed on the wood which was then ignited and allowed to burn until the rocks were literally red hot.

The rocks were then covered with a layer of greenwood. A layer of small green sticks and leaves about two or three inches thick was placed over the wood. Then a layer of slough grass was added.

Several bushels of peeled camas bulbs formed the next layer. A black tree lichen, Alectoria sp., was usually soaked in water and spread over the camas,

followed by another layer of slough grass. A layer of leaves was then placed over the grass. This usually filled the pit up to ground level. If no wet moss was baked with the camas, enough water was poured on the leaves to produce a heavy

#### SHOSHONI

**(Phillips 1940: 102)**

The squaws... excavated round holes in the earth two feet deep, and three in diameter,

which are then filled with dry wood and stones in alternating layers, and the fuel fired beneath. When the wood consumes the heated stones fall to the bottom,

and are covered with a layer of grass,

upon which two or three bushels of kamas roots, according to the capacity of the whole [hole], are placed,

and covered with a layer of grass, and the whole coated with earth,

upon which a large fire is kept burning for fifteen hours.
on top of this heap, and kept alive from twelve to eighteen hours.

steam. The dirt from the hole was then heaped on the pit.

The camas bulbs were usually allowed to bake for three days. A fire was kindled on top every morning and maintained during the day.

---

**NEZ PERCE**

*Spinden 1908:201-202*

A pit from six to ten feet in diameter and about three feet deep was lined with split dry wood to the depth of almost a foot. Upon this wood was placed a layer of smooth stones averaging about five inches in diameter. The wood was set on fire and the stones allowed to become red hot. When the fire had burned down the stones were leveled and some earth and a layer of coarse grass were spread over them.

Then twenty or thirty bushels of camas bulbs which had been previously cleaned and the black outer layers of the bulb removed with the fingers, were thrown into the pit and arranged in a conical heap.

---

**NEZ PERCE**

*Curtis 1907-30:VIII, 41*

In this instance the excavation had a depth of a couple of feet and a diameter of perhaps ten feet.

In it they placed a quantity of dry fuel, and on that a layer of small stones. The fuel was then lighted and allowed to burn out until no fragment of wood was left to make a smoke.

They then spread over the hot stones a layer of grass, and on this placed the roots, which were then covered with another layer of grass and a final coating of earth.

---

**NEX PERCE**

*A pit was dug in the morning some 18" in depth and perhaps 5' in diameter.*

A layer of very hot stones was placed on the bottom of the pit.

Over the stones came a layer of green meadow grass with a little water sprinkled upon it, followed by a layer of green alder leaves. (the alder provides the flavor.)

The camas bulbs were placed in white flour sacks and laid evenly over the leaves.

Burlap sacks were used as cover and a layer of about 6" of moist earth was spread over all.

At nightfall a rather large
The white bulbs were then covered with a layer of grass two or three inches thick. After this, water was poured on till steam began to rise, and then the entire heap was covered with several inches of dry earth.

Sometimes a fire was kindled around the base of the heap. The bulbs were allowed to steam for from twelve hours to three days.

*Williams, personal communication 2X170. Description of preparation of the bulbs submitted for nutritional analysis.

<table>
<thead>
<tr>
<th>KUTENAI</th>
<th>KUTENAI</th>
<th>OKANAGON-LAKES</th>
</tr>
</thead>
<tbody>
<tr>
<td>(DeSmet 1905:488)</td>
<td>(Schaeffer 1940:47)</td>
<td>(Collier et al. 1942:38)</td>
</tr>
</tbody>
</table>

They make an excavation in the earth from twelve to fifteen inches deep, and of proportional diameter to contain the roots.

They cover the bottom with closely-cemented pavement, which they make red hot by means of a fire. After having carefully withdrawn all the coals,

they cover the stones with wet grass or hay;

then place a layer of camas,

The pit varied in width from four to six feet, and was about a foot and a half deep. It was excavated with digging sticks.

The bottom was covered with stones, upon which a hot fire was built. After the latter had burned down, the ashes were cleaned off and earth scattered about to smother any remaining coals.

Then layers of willow branches, sunflower stalks and leaves, and finally grass, was placed in the pit.

The six sacks of camas were placed on the tule and covered with tule and fire of wood was built atop the pit and allowed to burn out. This process was again repeated the next night. The morning of the third day (two days and two nights) the pit was opened and the bulbs checked. (They were almost always done. If not, more fire is placed on top for another day.)
another of wet hay, a third of bark overlaid with mold, whereupon is kept a glowing fire for fifty, sixty, and sometimes seventy hours.

The camas was then placed on top of the grass and covered with successive layers of the same materials, ending with fir or spruce bark and a layer of earth. A small quantity of water was conducted to the hot rocks by means of a hollow tube of willow bark or a hole formed by thrusting a stick into the pit.

A large fire was built on top of the pit and kept burning for three days.

Menake and Nitana dug a hole about three feet deep.

They placed hot stones at the bottom of the hole, covering them over with long grass and leaves of the A-pono-kauki (Paper Leaves), Balsamorrhiza sagittata.

The camass roots were placed in layers, with the grass and leaves between each layer.

When the hole was filled, it

BLACKFEET (McClintock 1910:442)

First, a hole about ten feet square and three feet deep was dug.

Stones, very hot, were placed over the bottom and covered with wet willow leaves and branches.

On top of this, the camas roots were placed, each woman dividing her portion from the others.

The pit is then lined with grass, and is filled almost to the top with camas bulbs.

BLACKFEET (Wissler 1910:25)

A large pit is dug in which a hot fire is built, the bottom being first lined with flat stones. After keeping this fire for several hours, until the stones and earth are thoroughly heated, the coals and ashes are removed.

BLACKFEET (Grinnell 1962:204)

Willow brush was placed on the top and earth heaped over

When the hole was filled, it
was covered over it.

and a fire was built on the top. In this way the camass was thoroughly baked. Menake said that it required two days and two nights to prepare it properly for food.

On this earth the fire was built and carefully tended for thirty-six hours or more.

Over these, grass is laid, then twigs, and then earth to a depth of four inches.

On this a fire is built, which is kept up for from one to three days according to the quantity of the bulbs in the pit.

HOH AND QUILEUTE
(Reagan 1933:60)

A pit is dug in the sand, partly filled with rocks, and a brisk fire built on top.

A large supply of fresh fern leaves was gathered and when the rocks were thoroughly hot, the fire was removed, the stones levelled, and a layer of fern leaves spread over them.

A hole of appropriate size is dug in the ground and lined with stones. A fire is then built in the hole and after it has died down the ashes are thickly covered with pine needles.

QUINAULT
(Olson 1936:53)

A pit was then dug in the sand, partly filled with rocks, and a brisk fire built on top.

A large supply of fresh fern leaves was gathered and when the rocks were thoroughly hot, the fire was removed, the stones levelled, and a layer of fern leaves spread over them.

The bulbs are spread upon this, another layer of pine needles is added, and the whole is well covered with dirt.

YUKI
(Chestnut 1902:327)

A pit is dug in the sand, partly filled with rocks, and a brisk fire built on top.

A large supply of fresh fern leaves was gathered and when the rocks were thoroughly hot, the fire was removed, the stones levelled, and a layer of fern leaves spread over them.

A small fire is kept burning over the hole for the remainder of the night and all the next day.
<table>
<thead>
<tr>
<th>NO TRIBE STATED (Morgan n.d.:V, 108*)</th>
<th>NO TRIBE STATED (Clark 1885:94-5)</th>
<th>NO TRIBE STATED (Judson 1928:162)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Indians make a pit about a foot or so deep,</td>
<td>Excavations are made in the ground,</td>
<td>After a hole was scooped out,</td>
</tr>
<tr>
<td>line it with small pebble stones,</td>
<td>and flat rocks are heated and put on the bottom and sides.</td>
<td>a hot fire was built into which plenty of stones were dropped, and the fire was kept up until they were red-hot. Then the charred sticks and ashes were cleaned out, leaving only the hot stones in the bottom.</td>
</tr>
<tr>
<td>and then put into it ten, twenty, and sometimes thirty bushels of the Root, which is a white onion.</td>
<td>a thin layer of leaves and grass is put on the rocks,</td>
<td>Camas roots were packed into the hollow,</td>
</tr>
<tr>
<td>Over the top they put a cover of pebble stones, on the stones grass, and over this a hearth of mud.</td>
<td>and the hole filled with camas-roots,</td>
<td>covered with twigs and grass, with earth over them.</td>
</tr>
<tr>
<td>Upon the hearth they build a fire with wood, and keep it burning for about two days. If the fire breaks through the hearth, which is shown by a rise of steam from the camash they cover the place with mortar. After two days, the Root is cooked sufficiently.</td>
<td>covered with grass, leaves, bark and stones,</td>
<td>On top of this earth a hot fire was built and kept burning for two or three days.</td>
</tr>
</tbody>
</table>

*Quoted by permission of the Department of Special Collections, University of Rochester Library, Rochester, New York.*
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PERSONAL COMMUNICATIONS

Mildred Chaffin. Resides in the vicinity of Seeley Lake, Montana. Mrs. Chaffin has spent much of her time in her life with the Flathead Indians.

Mary Ann Combs. Mrs Combs was born in the Bitterroot Valley about 1880, and was the last surviving Flathead Indian to have lived in that area of western Montana. She was one of about 190 Flathead who left the Bitterroot Valley in 1891 under the leadership of Chief Charlot.

Marguerita Demin. An amateur archaeologist, Mrs. Demin owns a ranch in the Ninemile Valley, west of Missoula.

Frank W. Gould. Author of "A Systematic Treatment Of The Genus Camassia Lindl.," Dr. Gould's subsequent work has dealt almost exclusively with grass taxonomy, and in our communications he referred me to Dr. Marion Ownbey.

James E. Konlande. Dr. Konlande is Assistant Professor in the Nutrition Unit of the University of Michigan School of Public Health.

Carling I. Malouf. Dr. Malouf (my father) is Professor of Anthropology at The University of Montana, and a long-time student of the Flathead.

Leonard Nelson. Mr. Nelson was born in Sweden in 1880, and homesteaded in the Blackfoot River Valley of western Montana in the early 1900s.

Louis Ninepipes. Mr. Ninepipes was a survivor of the Flathead exodus from The Bitterroot Valley in 1891. He had also served as an informant for Alan Merriam (an ethnologist,) and Verne Ray (1942:103) (Merriam 1967:xi)

Marion Ownbey. Dr. Ownbey is Professor of Botany and Genetics at Washington State University, Pullman.

Verne F. Ray. Dr. Ray is a noted ethnologist and authority on Native Americans of the Columbia River Plateau region. He is the author of three publications referred to in this paper.

Ron D. Stubbs. Mr. Stubbs was a fellow student at the University of Montana, where he wrote his M.A. Thesis on Flathead ethnobotany.

Phyllis Ward. Miss Ward, a graduate student at Tulane University, in New Orleans, conducted field work among the Kutenai during the Summer of 1967.

Jack R. Williams. Mr. Williams is Superintendent of the Nez Perce National Historical Park, in northern Idaho.

Ernest Wills. Mr. Wills is a rancher in the Potomac Valley, and owner of the land on which most of the Blixit Creek sites are located.
ERRATA

Township and Range designations for the following sites should be corrected:

Site 1.  T 27N  (Not 55N)

Site 2.  T 27N  (Not T 51.  T51 would be in Idaho)

Site 3 (Big Eddy)  T 27N  (not 54N)

Site 4.  R 33W  (Not 5 E)

Site 6.  T 24 N R 3W.

Site 9.  Sec 22,  (not section 23)

Site 11.  T22 N

Site 12.  T22 N  (Graves Creek)
A STUDY OF THE PREHISTORIC AND HISTORIC SITES ALONG THE LOWER CLARK FORK RIVER VALLEY, WESTERN MONTANA

By

CARLING I. MALOUF

The Clark Fork River And Its Valley

CONTRIBUTIONS TO ANTHROPOLOGY, No. 7. Department of Anthropology, The University of Montana, Missoula, Montana 59812 May, 1982
A STUDY OF THE PREHISTORIC AND EARLY HISTORIC SITES ALONG THE LOWER CLARK FORK RIVER VALLEY, WESTERN MONTANA

Carling I. Malouf

1982

CONTRIBUTIONS TO ANTHROPOLOGY, No. 7. Department of Anthropology, University of Montana, Missoula, Montana.
INTRODUCTION

The Clark Fork River Valley, in western Montana has been viewed as an ancient thoroughfare for people who traveled between the Great Plains, on the east, and the Columbia River Plateau, on the west. It is a river level gateway through much of the Northern Rocky Mountains, and it has been conceived as a main travel and migration route for east and west movements of people through these mountains as well as being a route for trade, and the diffusion of cultural traits and ideas. Other east and west routes passed over the tops of the Rocky Mountain ranges, but their altitude usually inhibited travel by foot during the winter since deep snows closed all trails for as much as five months of the year. A limited amount of winter travel was possible with snow shoes, but progress was slow during this season.

All of the conjectures regarding the Clark Fork River Valley as an ancient thoroughfare between two major geographical regions were proposed before the archaeology of this river valley was known. If it had, indeed, been a main center of Native American life, or if it had been a primary, all season thoroughfare for travelers moving east and west, then the expectations would be that archaeological remains could be found in relative abundance. Actually, the discovery of archaeological sites, and the yield of specimens has been very disappointing, although a few interesting discoveries were made as a result of our studies in this area. The finds, however, do not support the contention that this area must have been a major route of east and west migration, travel, or diffusion - at least at the magnitude proposed by earlier writers. There must now be some allowance for considerable movements over the mountain passes as well as along the Clark Fork River Valley.

Geography. The Clark Fork River system drains nearly all of the State of Montana which lies west of the continental divide. From the Canadian border on the north to Idaho on the south and west, the rivers and streams flow into the Clark Fork River and its tributaries. Only a portion of the extreme northwestern part of Montana is drained by another river system, the Kootenai River. In all, the drainage system of the Clark Fork River includes about 10,000 square miles of the Northern Rocky Mountains in Montana.

The Clark Fork River has its main source near Butte, Montana. Its general flow is toward the northwest until it enters Lake Pend d'Oreille, in Northern Idaho. The lake itself has its outlet, the Pend d'Oreille River, which continues its flow to

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In effect, this research was in response to an emergency situation. The impending inundation of the reservoir basin required a type of research which emphasized the gathering of data and information, but with less stress on solving problems of a temporal, or geographical, or distributional nature. The field work in the Lower Clark Fork River Valley, however, had been preceded by several studies in nearly all adjoining areas such as around Flathead Lake, around Lake Pend d'Oreille, in Idaho, below Noxon Dam, and along the Clark Fork River Valley above the reservoir basin. Some work had also been accomplished to the north, in the Kootenai River Valley. Thus, the findings in the Noxon and Cabinet Gorge reservoir basins could be interpreted within the framework of broader or more general tenets of archaeology and history.

The sites which were discovered were catalogued and numbered according to the Smithsonian Institution, River Basin Surveys Trinomial System. That is, the first number, 24, indicates a site is in Montana. At the time the system began the States were arranged in an alphabetical order and numbered one to forty-eight. Thus, Montana became "24." Two letters used afterwards indicate the County in which the site was located. Thus, SA stands for the County of Sanders. The final number denotes the site designation within that County in numerical order. The site numbering system during this survey began in the Clark Fork River Valley at a place about one and one-half miles above, or east of the Idaho border, and ended with the highest number at a site near Thompson Falls, Montana, about seventy miles upstream.

The Washington Water Power Company grants were provided in earlier years, in the 1950's, long before "impact," or "environmental studies" became required by law before a dam could be constructed. This gesture speaks highly for the management of this company and their concern for the heritage of their region. Their funds also has provided for the publication of this study, and is hereby gratefully acknowledged.

CARLING I. MALOUF
A view of Noxon Rapids Dam, Washington Water Power Company, and upstream along the Lower Clark Fork River Valley, in Western Montana.
the northwest for at least another 65 miles before it has confluence with the Columbia River.

Of course, there are many tributaries of the Clark Fork River; some of these are sizeable streams by themselves. These are the Blackfoot River, Flint Creek, The Little Blackfoot River, the Bitterroot River, and the Flathead River. The latter has its source in and near Glacier National Park, and its confluence with the Clark Fork River is at Paradise, Montana, above Noxon Reservoir. We shall regard the Lower Clark Fork River Valley, thus, as that portion of the drainage system which flows between Paradise, Montana, and Lake Pend’Oreille, in northern Idaho, where the river ends. Most of the findings in this report were discovered in the reservoir basins below Thompson Falls, and little or no attention could be given to the area between Thompson Falls and Paradise, Montana, farther upstream.

Geologically speaking, the local mountains are a part of the Belt Series of the Proterozoic Era, and these in turn have been modified by later intrusive action, and by other complications such as earth movements. The mountains in the vicinity are composed of highly metamorphized formations often consisting of materials such as quartzite and shale. Sedimentary deposits, except for recently laid unconsolidated debris, are scarce in western Montana. Thus, flint, chert, chalcedoney, and jasperoid are locally scarce. Obsidian, too, is scarce or lacking. For the archaeologists this means that the ancient occupants of the area had to make their tools, implements, and weapons out of quartzite, shale, or other metamorphic stones. Tools of sedimentary rocks are found here, but whenever flint, jasper, chalcedoney, etc., is found it is an indication that the materials were imported from the outside by humans into the Lower Clark Fork River Valley. The valley floors between the mountains are covered with water worn rocks topped with a thin layer of soil. Much of the valley area was modified during Pleistocene times by the waters of Glacial Lake Missoula. This very same glacial lake might have persisted long enough to have inhibited the occupation of the Lower Clark Fork River Valley until about 6,000 years ago.

The mountain crests vary from 8,000 to 10,000 feet in elevation while the valleys are cut as low as 2,200 feet. The timberline lies at approximately 9,000 feet in elevation. River valleys are usually narrow and rocky while parallel mountains are high and rugged. Most are heavily timbered. Some portions of the valleys have a dense cover of brush which impedes land travel, but at the same time it provides food for various types of animals, including elk and caribou.

Below Thompson Falls the Clark Fork River has carved a deep cut into the gravel deposits on the valley floor. Steep banks have thus been created which are occasionally broken by side streams. Although the modern dams impound water for as much as thirty miles along the river course these reservoirs are deep and narrow, at least when they are compared with the bottomlands inundated by dams along the Missouri River system east of the continental divide.
It should be noted that portions of this river which were not connected in any way with the construction of Cabinet Gorge Dam, and Noxon Dam were not surveyed. Our projects were funded for the purpose of making studies connected with the dams.

A SUMMARY OF ARCHAEOLOGICAL FINDS

In the Appendix there are details of specific archaeological and historical remains found during the surveys of the Lower Clark Fork River valley. The results of these surveys are summarized in this section.

The sites could be classified into several types:

Occupation Sites: Camp debris from the occupation by ancient inhabitants was often found at the junctions of side streams, and the Clark Fork River. These were on Blue Creek, Bull River, Vermillion River, and Graves Creek. One important occupation site was found away from the side creeks high above the Clark Fork River, on a benchland near an old trailway. This site was designated with a name, after that of the landowner, The Vavrick Site. (24 SA 9).

The usual signs of occupation consisted of stone chips, flakes, and a few worked specimens. Most were of chipped stones, but a few, particularly pestles, were ground stone implements. Sometimes there were signs of fire hearths while at other places there were burned stones found in a small pile, or in a cluster. Stones arranged in small piles could have been the remains of fire hearths, small root roasting pits, or they might have been piled up in connection with the use of a sweat lodge. In one instance some debarked trees gave indications of a possible occupation or campsite nearby. From ethnological sources it is known that tree bark was often collected by women, during the spring, who occupied camps nearby. Hence, debarked trees can sometimes be a clue to the presence of a nearby occupation site.

Debarked Trees: Debarked trees are not usually considered to be of much archaeological significance, but some trees in western Montana with portions of their bark removed are known to have been treated this way long before Lewis and Clark entered the region, one tree on Wildhorse Island, in Flathead Lake (still living) dating in the 1700's. The trees in the Lower Clark Fork River Valley, however, are mainly second growth, so most of them were too young to show signs of this type of ancient gathering activity. Yet, our crews were kept alert for such signs since the Indians in western Montana continued to collect bark, especially during the springtime, as a delicacy. In the 1920's the practice was discontinued. It is known ethnographically that the acquisition of the bark was a task performed by the women and children who remained near their camps while the men were away hunting, or were engaged in other pursuits.


Trails: Numerous segments of old trails were recognized during the survey. Most were located on the east side of the Clark Fork River. Locally, there is talk of "The Old Kootenai Trail" having passed through this area, implying a well defined road or trail. Actually, there were several old trails of rather poor and simple definition which passed through here. In some places ancient travelers preferred to pass along one which extended along the base of the mountains bordering the valley. In other places there were remnants of old trails which passed between the river and the mountains, on benchlands. At times, judging by the record of David Thompson, in 1809, they even found it easier to travel along the rocky beaches of the river than to try and traverse the trails through the dense brush, or along huge rock slides which extended from the mountains to the river. David Thompson complained about the lack of well defined trails, and the lack of grass and pasturage for his horses. Evidently, in those days, Indians utilized the rivers themselves for much of their transportation needs, and we know they were employing rafts and canoes on it until at least 1889. A few trails became somewhat better defined after David Thompson's day, but it should be obvious that in those days, as at present, the valley between Thompson Falls, upstream from the reservoirs, and Lake Pend d' Orille, downstream in northern Idaho, was merely a place that all travelers had to traverse. A few Indians occupied the area, but even in their case they were seldom full time residences. Even today, the population density in the area is small.

From Thompson Falls upstream to Paradise, Montana, there are some other places where the river valley widens more extensively. Trading posts were established in these more favorable localities, and still later towns were founded. David Thompson's post, called "Saleesh House," was located about three miles above present day Thompson Falls. Noxon Reservoir, and the smaller Cabinet Gorge Reservoir mainly covered the narrower canyons below these more favorable valleys upstream.

Mounds: No known counterparts to the tiny mounds of the type observed in the Noxon Reservoir have been reported elsewhere in Montana or northern Idaho. They merely appear to be of human origin; yet, testing them revealed nothing which would help in determining their origin. Their presence is merely mentioned in this report to alert investigators to a slight possibility that they may have been made by ancient Native Americans. Rock piles, of course, are well known as a prominent feature of the archaeology of Montana, but curiously, none of these piles were found in the reservoir basins. Rock piles consisted of cobblestones which have accumulated over many years as travelers added their contribution to the heap as an offering to their guardian spirits. Dirt and gravel mounds, however, represent something considerably different in their structures and purpose - if, indeed, they are human in origin.

Burials: No burials were discovered by the archaeological field party. Several years earlier, about 1935, a single inhumation was accidentally uncovered by a local highway worker and rancher. The information from witnesses was fragmentary, but it

3 M. Catherine White. The Journals of David Thompson. Montana State University Studies, No. 1. Missoula, 1950. (Montana State University is now the University of Montana, Missoula.)
View up the Clark Fork River Valley from an ancient Indian trail on the east side of the stream. Here the trail passed high above the river where it avoided a huge slide area known locally as, The Blue Slide.

Springs mentioned by David Thompson near Vavrick's Benchland. An important trailway passed by this spring.
seems to have been a primary burial made during late prehistoric times; the lack of trade goods from European or American sources indicated it must have been a prehistoric burial. The fact it was a primary burial instead of a secondary type showed that inhumation was during late prehistoric times. Secondary burials are characteristic of the earlier inhabitants of western Montana. Another indication of lateness was that the burial included a fine green stone celt (of nephrite?), or grooveless ax found beside the skeleton. Such celts are not Montana in origin, but are fairly common in archaeological sites to the west, particularly in the Fraser River Valley of southwestern British Columbia. Several have also been found in the reservoir behind Grand Coulee Dam, in Washington. Copper items also found in western Montana indicate that there was a strong impulse of trade goods coming from the coast just before even stronger influences began to stream in from the east from the Great Plains, just before history in this area began - elements such as grooved mauls, and corner-tanged knives.

Typically, the burial was in an unmarked grave in talus debris which extended from an outcropping of rocks above it. At Flathead Lake a primary burial was found in a stratified position above an earlier secondary burial, revealing the sequence of types. In secondary burials the remains were at first left on or above the ground. Then, a few months later, the relatives returned and interred in the ground what was left of the skeleton; and a few additional artifacts were added beside these remains. In a primary burial the corpse was placed in the ground or in a crevice immediately after death, and then it was covered with earth, stocks, and rocks.

The people in this area did not establish regular graveyards for they were wanderers devoted to hunting, fishing, and the gathering of plant foods. The dead were interred near where death occurred.

Pits: Battle pits were common throughout Montana. In western Montana they were usually made during recent times by local bands or residents whenever they were hard pressed by roving enemies. Such war parties seem to have been neighbors, but their tribal affinities are unknown today. They were active, however, during late prehistoric and early historic times. Between 1800 and 1820 some of the intruders, at least, were from the Blackfeet tribes, but after 1820 the fighting subsided.

Seldom are specimens found in these pits since they were only intended to be used as brief places of refuge during military engagements. Nearly always they were made irregular in shape since they were constructed in haste, and conformed to a variety of local conditions and circumstances. In the Noxon Reservoir area there was a problem in distinguishing some of these pits from natural holes, or from some prospectors' test digs. When large pine trees are blown over by heavy winds they can leave a sizeable scar, but some scars have also been left on the valley's benchlands and terraces by unknown white prospectors who roamed the area between 1870 and 1900.

Ethnographical sources suggest that pit lodges of a type made by Indians along the Columbis River may also have been made by Pend d'Oreille, or Kalispel Indians in western Montana. For this reason the field parties devoted a considerable portion of their time to the investigation of pits even though many of them showed rather dubious signs of having been made by men. Excavations in these cases failed to reveal any signs of floor levels, post holes, hearths, or definite walls which one would expect to be found in pit lodges.

Some Types Of Sites Not Found: Some types of sites not found in the Noxon and Cabinet Gorge reservoir basins, but have been identified in adjoining localities in this region are: low walls of undressed stones (such as those made for eagle catching pits, or vision quest compounds), tipi rings, and pictograph panels. It is probable, however, that some of these may be found on lands adjoining the reservoir basins which we were unable to investigate. Stone quarry sites were also lacking in these basins.

Specimens: Specimens found in Noxon and Cabinet Gorge basins included beads of native make, stone knives, stone scrapers, stone projectile points, a celt or ax, a conical-shaped pestle, and a bunt. The latter is a rounded or blunted projectile point which is often thought to have been intended to stun birds when shot with these points, thus reducing damage to their meat and flesh. Such points, however, have not been reported anywhere else in western Montana or northern Idaho. No grooved mauls were found in this vicinity although they occur frequently in recent sites in most adjoining areas.

Very few of these specimens were found by members of the field parties, and most of them were merely observed by us in private collections which usually belonged to the land owners. Thus, our ability to more fully analyse and study these specimens was very much hampered. At best, the quantity of artifacts collected by all has been small. Although it has been sufficient for us to make some comparisons with finds in adjoining areas where the yield has been far better. Thus, dating of the sites in the Lower Clark Fork River basins has been possible on a "Typological" basis.

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A. Points from the Vavrick Collection, Site 24 SA 9.

B. Conical Pestle, from Lower Clark Fork River Valley

C. Stone Celt from Burial Site 24 SA 2.
Since the forms, shapes and sizes of projectile points varied throughout the ages it is possible to utilize these distinctions in determining a local time sequence. The actual sequence may be established elsewhere, such as in stratified cave deposits, but comparisons can be made of these styles, forms, etc., and through this process it can also be assumed the same sequence occurred in the Noxon and Cabinet Gorge areas as well. This kind of dating is called, "Typological." We must examine sites around Flathead Lake, and still farther eastward for more precise information on these layers or sequences.

In summarizing the local prehistory it seems that all of the forms of points and knives found in the Noxon and Cabinet Gorge basins are comparatively late in origin, for none of them are more than four or five thousand years old in type. This is a short time when one considers that man has been in Montana and nearby Idaho for at least 10,000 years. The occurrence of flint artifacts and related materials indicates that in recent times there was an intrusion of these types of stones into this region through some trade channels, or they were brought in from distant quarries by local or outside traders. These types of materials seem to have increased in usage in this area after 1500 A.D., and certainly after 1730 A.D. or thereabouts when horses were introduced to the natives in the Northern Rocky Mountains. Horses, of course, provided the Indians with much greater mobility, and tremendous changes were made in their lifestyles as well as in their traveling range. Among its effects was that trade was intensified over larger areas then before.

Household tools were usually simple items made of stone, antler, or wood. Knives and scrapers were made by flaking or chipping the stones. Conical shaped pestles, about eight to ten inches in length, were made of igneous or metamorphic cobble stones which were pecked and ground down into the desired shape. The pestles were used by the Pend d'Oreille, Flathead, and Kutenai Indians in western Montana, and northern Idaho, for grinding berries and other plant foods. They were not (according to some Flathead informants) used for pounding or grinding meat. For pounding meat a grooved maul with a handle served this purpose. When using pestles there were no mortars made especially for grinding or pounding, but any simple flat stone sufficed. At least three conical pestles were found or observed in private collections during the archaeological surveys.

A SUMMARY OF ARCHAEOLOGICAL STUDIES IN ADJOINING AREAS

Flathead Lake: Unfortunately, no stratified archaeological sites have been found in this area. Hence, the primary basis for relating artifacts to time levels must come from specimens found along ancient lake terraces around Flathead Lake, to the northeast of the Clark Fork River area. Generally, on these terraces, the archaeological materials have been found to be distinctive on each of the lake's four major strand lines, or ancient beaches. After the Pleistocene ice age the lake was much deeper that it is at present, but as the water receded the inhabitants moved downward too. Over the ages the tools and

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implements, and particularly the projectile points were changed in their forms. Thus, the highest of the four terraces is the oldest which was occupied, and on it are found the most ancient type of artifacts. Specimens found along the present lake shore, in contrast, are of more recent origin. In fact, the lowest beachline even yields trade goods brought in by early European and American traders—items such as glass beads, metal pieces, and trade pipes made of catlinite. These are found associated with stone points made of jasper, flint, and chert instead of quartzite or basalt which is more typical of items of earlier make, found on higher beachlines. Flint, jasper, chert and related stone materials had to be brought into this vicinity by the Pend d'Oreille Indians from outside of this immediate area, and perhaps some of it came from far upstream, such as Drummons, Montana, or even from as far away as Helena, or Great Falls, Montana, east of the continental divide. It is unsafe to speculate on the political, ethnic, or linguistic affinities of the occupants of the higher lake levels, but it is clear from the ethnographic studies that the Pend d'Oreille have occupied the Flathead Lake area as well as all of the Clark Fork River drainage for at least several hundred years.

There is a second terrace about thirty feet above the present lake level while another is at sixty feet. Still a fourth is about one hundred and thirty-five feet above the present Flathead Lake level. Thus, at least four prehistoric horizons appear to have been involved in the occupation of these old lake terraces.

The earliest points in western Montana were usually of a basic, "laurel-leaf" shape which was modified with a wide stem about one third along the length of the specimen. Such points found elsewhere in adjoining areas, including nearby Canada, have variously been called, "Duncan Points," "Deadman Points," "Stemmed Indented Base Points," and other names, but regardless of their name they are nearly always have been dated about 2,000 to 4,000 years in age. In addition to representing the oldest type in the Montana Western Region they are almost always found to have been manufactured of local stone materials, primarily quartzite. Some were also of basalt.

During this early period there were also some side-notched points made which are found on the highest occupied Flathead Lake Terraces. The side-notches in these, however, are very wide, and the points themselves are fairly large in size, thus differing from recent types of side-notched points. Like most older specimens they too are found to have been made of quartzite or basalt. Accompanying artifacts in this complex also included perforators (or stone drills), plano-convex scrapers, simple flake knives, and a few non-diagnostic items of stone. Ground stone artifacts, on the other hand, seem to have been missing from the complex during this early period.

On the next two levels, between thirty five to sixty feet above the present lake, points which were corner-tanged were the most commonly made by the ancient occupants living here. Some scrapers and knife types utilized during earlier times remained popular, but there were some additional items such as ovoid-shaped knives. These knives continued to be made until historical times. As before, quartzite and basalt were the
On the higher and older terraces around Flathead Lake the points are mostly made of quartzite, or basalt. A few from the lower terraces, and thus of more recent make are of flint, or jasper. Occasionally, one is found made of black obsidian. Accompanying points of recent times are other specimens showing heavy influence from the Great Plains, such as grooved mauls, corner-tanged knives, and a few side-notched points.
stone materials preferred for making tools and points. Ground stone implements 
own appeared when conical-shaped pestles, averaging eight inches in length, came into 
use. With a few modifications these have continued in use and style until modern times 
among the Flathead, Pend d' Oregille, and Kutenai in Montana and northern Idaho.

Finally, on the lowest and most recent lake level, the present lakeshore, the points 
are predominantly found to have been made of chert, flint, etc., but they are still mostly 
of the corner-notched type (very few are side-notched, the most recent of all in the 
adjacent areas to the east of the continental divide.) One difference, however, in the 
later corner-notched type is that in earlier times they were appreciably larger. This 
probably is a reflection in the change from the use of a spear thrower as the principal 
weapon to its replacement by the bow and arrow, some 2,000 years ago. In addition 
to the points the inhabitants made what are called now, "corner-tanged knives," and 
they also added a triangular-shaped knife, and grooved mauls or hammers, all of which 
are characteristic of cultures to the east, in the Northwestern Plains and Northern 
Plains regions. This entire assemblage, or complex, reflects an actual migration of 
people from the high plains into some of the tributaries of the Upper Columbia River 
system, and the Northern Rocky Mountains. It is an archaeological story which is 
confirmed independently by ethnographic studies of the traditions of the Pend d' Oregille, 
Flathead, and Kutenai.¹⁰

Lake Pend d' Oregille. Lake Pend d' Oregille lies just 35 miles below the Noxon and 
Cabinet Gorge reservoirs, and the Clark Fork River has egress into this lake. The 
archaeological remains around this lake appear to be more abundant than they are in the 
vicinity of the reservoirs, and this was probably due to a greater population concentration 
here than it was in thena rrow canyons leading to the lake. Lake Pend d' Oregille, like 
Flathead Lake, was a major center of Pend d' Oregille (or Kalispel) Indian life during 
the late perhistoric period as well as during historic times. It is not surprising that 
the archaeological finds around these two lakes are nearly identical in their types and 
forms, and it shows that there were direct cultural connections between the ancient 
people as well as between historic inhabitants.

Published information on the archaeology of Lake Pend d' Oregille and its outlet, the 
Pend d' Oregille River, is scanty. An archaeologist, Tom Miller, found material which 
(from his verbal description, and letters to me) conformed to the types established also 
found around Flathead Lake. This included, moreover, their relationships to terraces 
along the lake shores. Besides projectile points here, as in Montana, there were some 
conical pestles and grooved mauls which had been used by the natives.

The construction of a dam on the Pend d' Oregille River, at Albeni Falls, by the U. S. 
Corps of Engineers, led to the organization of two archaeological parties from the River 
Basin Surveys, of Smithsonian Institution.¹¹ Albeni Falls Dam caused the water level at


¹¹ Joel Shiner, Archaeological Reconnaissance In The Albeni Falls Reservoir, 
Columbia Basin Project, River Basin Surveys, Smithsonian Institution, Eugene, Oregon. 
1953, p. 4.
Lake Pend d'Oreille to rise, so this lake shore, as well as the banks of the river outlet, had to be examined for archaeological remains before inundation destroyed them. In all, fourteen sites were initially reported, and four more were later tested and excavated.\textsuperscript{12}

Two types of sites were identified, viz., burials, and occupation grounds. Further details on these sites were lacking in Shiner's preliminary report, but he had to obtain some of his information from local collectors who, of course, had overlooked many important facts which would have been of importance to professional archaeologists regrading these sites. Evidently, it was not possible for the members of the River Basin Party to determine from these collectors who had found the skeletons whether they were secondary, or primary burials, or whether they had been associated with a fire, or whether artifacts had been placed with the inhumation. Although the field party under Shiner sought to discover burials they were not successful in their quest.

At occupation sites Shiner's crew noted that flaked stones were rare, shells of the mussel were not found, and there were no traces of dwellings along the river banks, nor along the lake shore.\textsuperscript{13} By combining amateur and professionally gathered data it can be determined that conical pestles, grooved mauls, net sinkers of stones, knives, scrapers, fire cracked rocks from hearths or sweat lodges, and corner-notched and side-notched projectile points were found at these sites. The net sinkers are the only artifacts which have not been identified yet from Flathead Lake. The pestles at both Flathead Lake and at Lake Pend d' Oreille were short in length when compared with those found elsewhere in the Middle and Lower Columbia River basins. At all sites in western Montana and northern Idaho they range from eight to ten inches in length, and some have slightly bulbous ends. Shiner adds\textsuperscript{14}:

The eight pestles that were recovered varied considerably in workmanship. All of them had been pecked into shape although some received but little attention. The tendency especially among the better made specimens was to produce a pestle with a cylindrical body and a muchroom grinding surface. The resulting beel shape was useful, according to white informants, in crushing berries. Besides the pestle a single maul was found. It is spherical in shape with a deep circumferential groove as a possible means of hafting. Both ends were battered indicating its use as a maul or hammer.

Those illustrated by Shiner\textsuperscript{15} reveal these specimens to be identical to those found in late prehistoric sites and early historic sites in Montana. Some bulbous type pestles are still being used by contemporary Indians on the reservation of the nearby Confederated Salish and Kootenai tribes, and I have encountered women there who can name their older aunts and uncles who had actually made them (although the makers have long been deceased.)

\textsuperscript{12} Shiner, \textit{Reconnaissance}, p. 14
\textsuperscript{13} Shiner, \textit{Reconnaissance}, p. 4
\textsuperscript{14} Shiner, \textit{Reconnaissance}, p. 7
\textsuperscript{15} Shiner, \textit{Reconnaissance}, p. 13
Projectile points found or observed by Shiner's party numbered forty-two. A photograph, reproduced in his report, shows that they correspond with types found on all four levels or strand lines around Flathead Lake. There was, in addition, a tanged point which is typical of the Columbia River sites, and Snake River sites, but is absent in nearly all sites in western Montana. The predominance of the cultural linkages, thus, are in western Montana and southeastern British Columbia, along the Kootenay River drainage.

Jasper, basalt, petrified wood, and agate were listed by Shiner as the most common materials used for stone tools and weapons. Three points were made, he wrote, of locally available stones, "a light colored quartzite." No local sources, or quarries, however, were found for the other materials. Twenty-six scrapers, fifteen of which had definite shapes, were identified as "side scrapers" while only two were "end scrapers." One specimen was listed as a combination side scraper and drill, with a "drill point flaked at one end." Four flaked drills were also found in the collections owned by local amateurs around Lake Pend d'Oreille. Three of these drills were long and slender while a fourth was a "key" type with an oval base. The remainder of these collections included choppers, and there was a single stone disk-shaped bead among the specimens observed.

Shiner's field survey was concentrated on the beachlines, and the outlet of Lake Pend d'Oreille. Yet, only one mention was made of the presence of lake terraces. At a site numbered 10 BR 11 he made an excavation "in the terrace above the beach," but it "proved to be fruitless," so the sand on the beach itself was "screened with some success." The fact that terraces are barely mentioned here, however, does not mean they did not exist as a factor which relates to various horizons of prehistoric cultures. Shiner was engaged to accomplish "salvage archaeology" work only in areas which were slated for inundation, and a more thorough examination of terraces was not possible.

Shiner was fully aware that his finds at Lake Pend d'Oreille, and farther down the drainage system at Albeni Dam, on the Pend d'Oreille River, were different in type from those that were found by earlier archaeologists along the Columbia River itself. He specified that they were quite unlike those found by Collier, Hudson, and Ford sixty to seventy miles to the west. Since western Montana archaeology had never been reported archaeologically at that time he could not have known that the ties of the natives around Lake Pend d'Oreille were with people to the east, such as

16 Shiner, Reconnaissance, p. 13.
17 Shiner, Reconnaissance, p. 7.
18 Shiner, Reconnaissance, p. 6.
19 Shiner, Reconnaissance, pp. 6-7.
20 Shiner, Reconnaissance, p. 7.
21 Shiner, Reconnaissance, p. 7.
22 Shiner, Reconnaissance, p. 5.
around Flathead Lake rather than with the Columbia River inhabitants. His discovery was made independently from that of University of Montana archaeologists working to the east. Comments made by Shiner were as follows:24

The most important archaeological investigations in that area have been made approximately 60 or 70 miles to the west on the Upper Columbia River. Surveys and excavations were carried out in what was once the territory of the Lakes, Spokanes, Colvilles, and Sanpoils, all interior Salish Peoples. In general the work produced a good study of the Upper Columbia region but the culture does not affiliate too closely with that of the Pend d'Oreille region. If we can believe the evidence of burial customs, types of dwellings, subsistence, and other major traits, considerable differences can be seen.

Kootenai River Sites. To the north, in extreme northwestern Montana, and north of Cabinet Gorge reservoir, the cultural materials found here are repeated from those found elsewhere in western Montana and around Lake Pend d'Oreille, in northern Idaho. While the Indians of recent times may have hesitated to traverse the area between the Clark Fork River Valley and the Kootenai River Valley, via the Bull River, the archaeological data indicates that considerable intercourse once existed between the inhabitants of these two major river courses. The restrictions of historic times are not necessarily traceable back to prehistoric practices. The evidences are very strong, now, that a large portion of the Northern Rocky Mountains, which includes the Clark Fork River, Kootenai River, and a part of the Missouri River headwaters in Montana are sufficiently distinctive to regard it as a separate region from that of the Columbia River Basin on the west, and the Northwestern Plains Region on the east. It is known that this intermountain region extended up the Kootenai River system into southeastern British Columbia, where Charles Borden, from the University of British Columbia has made archaeological investigations.25 Along the Kootenai River, in Montana, and Northern Idaho, a preliminary search for remains was made by a River Basin Surveys archaeological party.26 Subsequently, Carling Malouf, and particularly, Dee Taylor has conducted additional studies here.27

Lake Coeur d'Alene. While the areas to the north and east of Cabinet Gorge and Noxon reservoirs, and Lake Pend d'Oreille, manifest connections with the culture complexes in what has been named, "The Montana Western Region," a report by Miller on archaeological finds around Lake Coeur d'Alene, to the south, reveals a different

24 Shiner, Reconnaissance, p. 5.
set of conditions. Here were found some forms of points and specimens which were unlike those in western Montana, and to the north, around Lake Pend d'Oreille. Therefore, one can conclude that these represent part of a culture of a people who at some time during the past entered the Coeur d'Alene district, but did not penetrate farther north, or to the east. Thus, around Lake Coeur d'Alene, there is represented some cultural horizons which show affinities to the Montana Western Region, but there some others which show different connections.

HISTORIC INDIANS

The only known Native Americans who occupied the Lower Clark Fork River Valley were the Pend d'Oreille, or Kalispel. After trade relations were established with white men there were friendly Indians, such as Kutenai, and Flathead, who also entered the area and made their camps, usually for the purpose of trade and exchange.

The Pend d'Oreille are Salishan in speech, and are very closely related to the Flathead culturally as well as linguistically. Some of the distinctions of the Flathead were due to their somewhat different surroundings and geographic location, and the consequent impositions of environment on their culture. They lived to the south of the Pend d'Oreille. The Kutenai, on the other hand, were no the north.

There were at least two great centers of Pend d'Oreille life — three if one wishes to include a great center of Salishans near Great Falls, on the Sun River, far to the east. One major center was around Lake Pend d'Oreille, to the west of Cabinet Gorge and Noxon reservoirs, and the other was to the east, around Flathead Lake. Lesser centers were scattered throughout western Montana. The boundary line between these two Pend d'Oreille groups was ill-defined, but a sort of vague boundary might have been regarded to exist between Paradise, Montana, where the Flathead River, and the Clark Fork River converge. The "Upper Pend d'Oreille" spent much of their time well above Paradise, Montana, on the Flathead River system, including Flathead Lake. Before 1800 they had also occupied the area around Missoula, Montana, and even the Bitterroot valley was theirs. The Flathead, before 1700, were entirely east of the continental divide. Below Paradise, Montana, the inhabitants were referred to in some of the early literature as "Lower Pend d'Oreille." Actually, they were nearly all one people in view with only distances and geography to separate them from one another.

Between 1850 and 1857 two separate persons could not agree on the boundary lines between the Upper and Lower Pend d'Oreille. On both of their maps showing tribal boundaries they had placed arbitrary (not natural) lines directly across the Clark Fork River Valley. Such unnatural boundary lines must be regarded with skepticism, especially

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since the Pend d'Oreille themselves did not establish nor recognize the line as a political boundary.\footnote{Map by P. T. De Smet, 1851, on file. U.S. National Archives, Group 75, Tube 996, Map 251; Also, Map by Governor Isaac Stevens, on file, U.S. National Archives, Group 75, Tube 1033, Map 187. Copies on file, Library, University of Montana, Missoula.}

Early in the historic period there developed some distinctions between the Lower Pend d'Oreille and Upper Pend d'Oreille based primarily on their changing subsistence patterns. The Upper Pend d'Oreille began to rely more on the use of horses in the acquisition of buffalo in the Great Plains to the east, while the Lower Pend d'Oreille continued to utilize canoes and rafts for transportation, and to maintain their fishing habits together with their quest for local game animals and plants. Briefly, the culture of the Lower Pend d'Oreille will be outlined here emphasizing those traits which most readily reflected the situation during late prehistoric times in this region. Discussion of their religious, social, and political life will be attenuated.

**Subsistence:**

**Fishing:** Fishing was very important to the Lower Pend d'Oreille, but not to the extent that it was to Indians who lived farther downstream along the Columbia River system. The fish were not as large nor as abundant in the streams of western Montana, so hunting and gathering assumed more importance in the local economy. Game, in fact, was more abundant here than they were along the Columbia River. The fish sought in the mountains were various kinds of trout, and whitefish. Salmon were lacking because their migration was blocked by high waterfalls downstream. Devices employed to catch fish consisted of dip nets made of natural hemp, and other types of nets. A three-prong spear, or leister, was often used with canoes along the river and in lakes. Hooks were made of bones, and twigs, and were mostly used for winter fishing through the ice. Sometimes torches were used by fishermen to attract them during night fishing. After catches were made, the fish were carried back to camp in bags made of tule, or in a basket, although sometimes they were also hooked through their gills with a forked stick. Weirs and fish traps were utilized on side streams flowing into the Clark Fork River.

Weirs were made like a woven fence which they constructed across a stream, or some were made so that they could be rolled out across a stream of water. The latter could be rolled up and used again, or could be used elsewhere, or stored when not in use. To make a weir aspen or willows were twined. A cone-shaped trap was placed in an opening in the middle of the fence, usually, and it could either be faced upstream or downstream depending on the direction the fish were swimming during the season it was being used.

**Hunting:** Deer were commonly sought by the Lower Pend d'Oreille. In olden times caribou were also sometimes found, but by 1880 they were nearly extinct in
Montana. Louis Skulkah, a Pend d'Oreille, saw a caribou as late as 1888 near Alberton, Montana. Thus, at that time they were still ranging in Pend d'Oreille territory. In the Salishan language, he said, they were known as "loose-jaw moose," in reference to their manner of chewing. Afterwards, elk became far more numerous and competed as a browser for the food in the area, and being larger they caused the caribou to disappear. In addition to deer, elk, and caribou the Indians sought other large game animals such as bears, moose, mountain goats, and an occasional antelope in some parts of their territory. Smaller animals were frequently sought too for useful purposes, particularly rabbits whose fur was useful when placed in a cradle board since it could absorb bodily wastes from the baby. Water fowl were also popular for food. If big game became scarce, and smaller animals had to be sought more vigorously by necessity, then the Pend d'Oreille had a good variety of snares and deadfalls which could be used.

Hunters usually went into the field in small parties, often consisting of a single person, or they traveled in pairs. The animals were merely stalked and shot, although disguises were also popular in order to approach even closer to their prey. A small party of men sometimes drove animals through a narrow defile where hidden marksmen shot them as they passed their stations.

Occasionally, big communal drives were made over cliffs, or into specially made compounds or corrals. For these occasions, however, a special person with spiritual powers, or a shaman, had to manage to operation. No evidences of communal drive lanes or compounds were found in the reservoir basins, but Eneas Granjo reported he was shown such a site somewhere in the mountains near Thompson Falls.

When hunting grizzly bears a hunter had to make special preparations. First, he took a sweat bath. Then he announced his intention to the villagers. After a kill was made the hunter "talked to" the bear, who was called, "grandfather." This special ritual was not extended to other animals, but the mighty grizzly bear was not only the most powerful animal physically - it also had great spiritual powers to consider.

Dogs were sometimes used for hunting deer, or bears. They were specifically trained to hunt down game, but occasionally they could be trained to kill game as well. Ferris, who was in the Noxon Reservoir area in 1834, saw a Lower Pend d'Oreille Indian named Pillet who had a large and powerful black hound. The Indian had named the dog, "Tloght," or "Fleetest.""On one occasion," recorded Ferris, "when Pillet was hunting with his faithful dog, the latter treed a lynx - which the Indian killed -

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30 Louis Skulkah, or "Daylight," was a Pend d'Oreille who lived in St. Ignatius, Montana. This information was obtained from him in 1951, when he was age 84.

31 Eneas Granjo, a Flathead and Councilman on the Confederated Salish and Kootenai Reservation, reported this data to me in 1951. Granjo was a leading Flathead hunter, and also had special hunting spiritual powers. He remarked that the place of the drive site was shown to him by older persons, but he had difficulties in giving me a more precise location. Granjo died in 1957.

treed a lynx which the Indian killed, and there found in the snow beneath the tree, no less than three fine deer, which the lynx had killed and buried there. Pillet had no horses so this dog was his most valuable possession. When the dog was later killed by a lynx the loss was greatly lamented by the owner.

The Pend d'Oreille had an abundance of dogs for they were seldom killed, and they were never eaten. Moreover, during times of scarcity packs of dogs actually became a menace for they ate articles made of hide, such as ropes, bags, and clothing.

Besides dogs, a few other animals were nearly tabu in the diet of the Pend d'Oreille. These included scavengers such as crows and buzzards, as well as reptiles, frogs, and insects such as crickets.

Uses of Large Game Animals: Immediately after an animal was killed its eyes were closed, although sometimes they were removed and placed on a pole. Then the skin was removed from the carcass, and tanned by the women. The meat was cut and dried for storage and future use. The tripe, too, was saved, or it was eaten immediately, and the blood was consumed raw.

Plant Foods: Modern white men seldom recognize or appreciate the extent to which the Indian people relied on plant foods. Instead, he conceives of them as being almost exclusively to be meat eaters. Yet, perhaps as much as one-half of their food consumption consisted of edible leaves, stems, moss, roots, nuts, berries, and even the inner bark of trees during certain times of the year when the sap was running, and it was regarded as a delicacy. A list of plant foods consumed by them could easily extend to one hundred and fifty items. Of these, the bitterroot and camas plants were the most utilized, but even a single tree sometimes could yield as much as four kinds of foodstuffs. Eneas Conko, a Pend d'Oreille who lived in St. Ignatius, explained that his people used the inner bark for food, gathered and consumed nuts from pine cones, chewed the gum from the tree, and cooked and ate the black moss which grew from its branches.

The yearly plant harvest began in March or April when the bitterroot plants first began to appear out of the ground. Digging sticks made of wood, such as that provided by service berry bushes, were used to loosen the soil around the roots, and then it was pulled up.

A special ceremony was conducted to usher in the entire plant gathering season, which began with the collection of bitterroots. The chief delegated a woman to act as the head of the ceremony. At the end of the first day the collection was piled in front of her dwelling. Then prayers were directed toward the sun, the bitterroot was cooked, and then eaten as a ceremonial meal. After this initial ceremony every family was

33 Ferris, "Life," p. 249
34 Ferris, "Life," p. 110
free to gather all of the bitterroot plants they desired. Briefer ceremonies were held for other plants too as they matured during the gathering seasons. In 1962 the ceremony for bitterroot plants was still being held by a small band of Pend d' Oroyle Indians living in Camas Prairie, south of Hot Springs, Montana. Instead of praying to the sun, however, the Jesuit missionaries had long ago substituted Christian prayers in lieu of the ancient forms of prayers.

Food Preparation: When food was to be cooked, red hot stones were placed in woven baskets, or in skin bags which contained water and foodstuffs. Spoons made of wood or mountain goat horns were used in the preparation and consumption of the food. Often, food was served on a small-sized woven mat made especially for this purpose.

Woven Mats: Mats of various sizes served many purposes, but one of the most important uses was that they could be used as bedding. Robes were placed on top of these mats for added warmth or comfort.

Land Travel: While canoes were widely used for river travel there were many trails which had to be negotiated by foot. When traveling on paths, a pack strap made of hide was passed over the forehead to a load which rested on the packer's back. The pack itself was a container made of rawhide, or it was a large basket.

Weapons: Weapons consisted of a self bow which was sinew-backed for added strength, and there were arrows and spears. Usually, the same weapon used for hunting was also used in warfare. Sometimes a compound bow made of three mountain sheep horns bound together was used. These were shorter than ordinary bows, but were very powerful. For defensive fighting shields were made by gluing layers of rawhide together, and a sort of armor was made by joining willow rods together into a jacket. Both armor and shields were made obsolete by the introduction of rifles and guns, and shields became only of ceremonial value thereafter, relying on spiritual powers to divert missles or bullets.

Canoes: Dugout canoes were used exclusively by the Pend d'Oroyle, but according to Teit, bark canoes had been made in more ancient times. He felt that dugout canoes were not made until metal tools were made available to them by white traders.

W.A. Ferris observed canoes being used by the Lower Pend d'Oroyle in 1833 and 1834. These were noticed near Flathead Post, a trading post a few miles above Thompson Falls, Montana, and above Noxon Reservoir.

36 In 1962 I observed the last of these bitterroot ceremonies of the Upper Pend d'Oroyle held at Camas Prairie by Susette Hemestoo. Earlier, the Flathead had lost their last woman to have performed the ceremony, Sophie Moiese.


There was likewise quite a village of Indians collected who never go for buffalo, nor do they in many cases possess horses to go with, even if they felt inclined to do so. Most of the families, have light canoes, with which they glide about on the river, and gather roots and berries, in their proper season; but in winter they separate into small parties, and not infrequently, into single families, who then seek the mountains, and pass the inclement season there, with little knowledge or communication with each other. They assemble here, at certain seasons to exchange with the traders.

Dwellings: Several types of dwellings were made by the Lower Pend d'Oreille. First, there were conical lodges. A three-pole foundation or tripod seems to have been preferred in olden days on which leaners, and finally, a cover rested. (Currently, tipis are based on a four-pole foundation.) Additional poles were laid against this three-pole foundation, and grass mats were laid on top of the poles, like a sort of thatching. Two to four layers of mats were used depending on the seasons of the year. Sometimes strips of bark were used for the covering instead of grass mats.

After horses were introduced into the intermountain country, and contact was made with traders, the Pend d'Oreille, like their neighbors in the Plains, made their covers of buffalo hides, or elk hides. Thus, the tipis of historic times are rather recent in use. Usually, if the covers were made of hides, they were left undecorated, although sometimes a shaman was required by his spiritual advisor to apply specific designs, or a decoration, but ordinarily the cover was left bare. Commonly, two families occupied a dwelling, but sometimes as many as three or four families were housed in a single lodge.

A second type of lodge was made like a lean-to, or a double lean-to. These had a framework of poles, and were covered with strips of bark laid horizontally with the smooth side up.

While in the mountains above the valleys temporary brush shelters or wickiups were made. Caves, on the other hand, were scarce in this country so they were infrequently relied upon for shelter. During the wintertime brush shelters, if used, were made more comfortable by adding more brush and bark to its sides. Even earth was placed on top of the vegetation to provide better protection from the weather. Ferris described some of these shelters which he observed during the winter of 1834. One was constructed of "weeds" which he said was "better calculated to exclude the warm rays of the sun, than to keep out the cold." A cheerful fire, though, compensated for this shortcoming in architecture. Another structure described by Ferris was merely a "large brush cabin," evidently a lean-to type of dwelling where seventeen people and two dogs slept in a ten foot circle around a central fire.

39 Ray "Plateau" p. 178
40 Ferris, "Life," p. 248
41 Ferris, "Life," p. 247
Descriptions such as those furnished by early travelers in the area, and by some ethnographers have provided real life explanations of the uses once made of what are now archaeological sites in the Cabinet Gorge and Noxon reservoir basins. Many of the things made by the Lower Pend d'Oreille, including their homes or dwellings, were of perishable materials, and they simply did not survive to modern times for the archaeologists to find.

Ethnographic information has provided valuable data on the enigmatic pits which are found in the lower Clark Fork River Valley. Teit, for example, described some very irregular-shaped pits among the nearby Coeur d'Alene, who lived just to the south and southwest of the Pend d'Oreille. The pits described by Teit were almost identical to some Kutenai "Koyokee" battle pits described by Thain White. The Kutenai lived to the north of the Pend d'Oreille. Thus, we have this trait located in areas on nearly all sides of that of the Pend d'Oreille. In these cases the pits seem to have owed their origin to battles and wars fought between Indians who once dwelled in the region, or who intruded into it with military intentions.

It is known that in late prehistoric times the Pend d'Oreille sometimes battled with the Coeur d'Alene, and with the Kutenai. Moreover, during early historic times the Pend d'Oreille were often on the defensive against Blackfeet and other intruders, and pit warfare was probably utilized as a part of their defensive tactics.

Also included among their structures were stockades made either by arranging logs and poles vertically along a line, or they were placed horizontally atop each other. Inside were pits and trenches which were also dug. Often, such structures did not surround a campsite, or community but were built as a place of refuge from raiders. Actually, they were not great forts since many were small enough to cover with poles, brush, and earth. Slots were provided for the defenders to observe and fire on their attackers. Sometimes there were interconnecting trenches dug between pits, and in some instances secret passageways or tunnels were dug toward a river or lake embankment where defenders, if under seige and hard pressed could crawl to safety. Perhaps Pit 5, at the Graves Creek Site (24SA12) originated this way. Several other suspicious pits were also found in this vicinity. In all cases their shapes were varied, and ranged from round, to oval, to squarish.

After horses were introduced into the life of the Upper Pend d'Oreille the Indians around Flathead Lake, for some unknown reasons, moved their great center southward to a place now called, St. Ignatius, Montana. This occurred about 1800. Possibly, the

shift may be explained because their new residence was nearer to an important new thoroughfare that was developing along the Upper Clark Fork River valley between the Great Plains, on the east, and the country to the westward. Most of the Pend d'Oréille who were living adjacent to the Plains changed their emphasis toward a buffalo hunting economy. Some Lower Pend d'Oréille began to prefer this activity too, and moved upstream to the vicinity of St. Ignatius, joining with those from Flathead Lake. Decade after decade these parties, some small, some large, moved seasonally to the east in the Plains. The process began just before whites entered the area, and as early as 1775 there was a group which left their main camp near Plains, Montana, and migrated to the Mission Valley, south of Flathead Lake, where St. Ignatius is now located. Their first camp was near present Ronan, Montana, and their chief was the grandfather of a later subchief named Ambrose. Others, however, preferred to remain behind along the Lower Clark Fork River because they felt they might have a harder time making a living if they lived in the Mission Valley.  

One of the biggest movements of Lower Pend d'Oréille Indians to Upper Pend d'Oréille country occurred about 1830 when Alexander led them upstream. A few comments might be added on the life of Alexander since he became the most prominent chief in the history of the Upper Pend d'Oréille. A brief notation made by Gustav Sohon in 1854 indicates that he was born about 1809. His father was said to have been a Shoshoni, but his mother was Pend d'Oréille. His Indian name was "Tum-cle-hot-cut-se" which is translated as, "No Horses." He was selected as their "First," or main chief, and by 1848 the Jesuits reinforced his position by regarding him as the chief. Under his guidance this tribe extended their range from the crest of the Rocky Mountains to Kettle Falls, in Washington State. Thus, he continued to have some influence on the Lower Pend d'Oréille and their neighbors. Some of his people in the Mission Valley continued to make camps on the Lower Clark Fork River, although the Mission Valley was usually regarded as their main center. Stories about the bravery and exploits of Alexander have been recorded. Once in 1853 he was with a war party on the Missouri River, at Fort Benton. He started with only five men, but they succeeded in passing through the camp of their most feared enemy, the Blackfeet Indians. As a young man he had volunteered to travel alone to a trading post in the country of hostile Crow Indians to obtain badly needed powder and lead. Later, in 1856, he accompanied Major John Owen, a trader in western Montana, to Fort Benton in order to obtain ammunition for his people. On the return trip he decided to travel alone through Blackfeet country where he killed nine buffalo enroute. Later he rejoined Major Owen at the base of the Rocky Mountains.

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44 Nick Lassaw, a Pend d'Oréille, about age 48, said in 1952 that this was the reason his grandfather, a member of Alexander's band, decided to remain around Lake Pend d'Oréille instead of moving farther into Montana.


46 Ewers, "Sohon's Portraits," p. 48

Perhaps his most significant contribution to written history was his agreement to the Stevens' Treaty of 1855, the basic legal instrument which established "The Flathead Indian Reservation" in the Mission Valley, Pend d'Oreille country, instead of in the Bitterroot Valley, farther south, where Chief Victor, of the Flathead Indians, wanted it to be located. By this Treaty, and a similar one negotiated by Stevens with the Kalispel in Washington, the separation between the Lower Pend d'Oreille, and the Upper Pend d'Oreille became more complete. Alexander's Upper Pend d'Oreille in Montana were placed on the "Flathead Reservation" while the Lower Pend d'Oreille became the "Kalispel" in Washington, north of Spokane.

Later, the Jesuits at St. Ignatius attracted a few more Lower Pend d'Oreille into the Mission Valley, but some of these Indians continued to retain a portion of their land in their old domain on a private basis. One Montana family, for example (The Lassaws) still owned forty acres at the town of Clark Fork, Idaho, just below Cabinet Gorge Dam, and this was during the 1950's.

HISTORICAL NOTES

A few minor historical sites were to be doomed by the inundation of Cabinet Gorge, and Noxon dams. Miss Jacquelyn Greenough was assigned the special task of recording as much of the local history as was obtainable. Two main objectives were sought: (1) Data on historic sites which were to be destroyed by construction work, or to be inundated, were to be identified and noted. (2) Persons who had lived within the area for many decades, but were now being moved from their properties, were to be interviewed about local history. Some of these people were original homesteaders since settlement here was comparatively late in Montana. The record was essentially primary data. A more complete history, embodying other sources of data, such as newspapers, county records, and other sources will have to await the future. The stories recorded here, however, provide some glimpses to life in the valley prior to World War I, or 1918.

The role of the trapper in this area has already been mentioned several times in this report. Jacques Finley, or "Jaco," the "half breed" trapper, was already in a camp just above the Bull River when David Thompson first passed through the Lower Clark Fork River Valley in 1809. To David Thompson the vicinity seemed to be a place they had to traverse to reach more desirable areas - it offered little else. During the winter of 1812, however, T.J. Farnham, and Ross Cox, representing a company competing with the one which Thompson represented, opened a trading "house" near the Bull River, between Noxon, Montana, and Heron, Montana. Farnham represented the Astor Company while Thompson was with the Northwest Fur Company. In summary we might note that the main effect on the local natives was to enrich their material culture with trade goods, and thus there was created a sort of florescence in their lifeways. There were some population adjustments with a few minor migrations occurring as a result of these contacts. A few Kutenai, for example, came into the area to trade and to hunt when formerly this was entirely out of their range. The Flathead, too, came into this area to trade. After 1860 the whites began to appropriate some of the land causing a period of decadence and uncertainty for the Indians for the land is the basis of anyone's economy. The pace of the change was slow at first, but by 1890 it had accelerated to such a pitch that the Indians had almost disappeared from the Lower Clark Fork Valley.

Like the trappers who preceded them, later travelers, such as Major John Owen, and the Jesuit missionaries from St. Ignatius, merely regarded the Lower Clark Fork River area as a place they had to pass through enroute to supply centers in Washington, and Oregon. Sometimes they made a few comments on the nature of the land, or about its native inhabitants, but more often they failed to mention it at all. The area continued to be a thoroughfare for occasional travelers through the 1850's.

During the late 1860's a few prospectors seem to have entered the area. Probably, some of them had been disappointed in the gold fields of southwestern Montana, and Idaho, and had examined this area for signs of this precious metal. So far, however, little is known about their activities, but they were to be the first to appropriate portions of the land for their use. Maybe some of the pits and mounds were made by the prospectors.

Evidently, traffic was extensive enough during the 1860's to encourage steamboat travel on the lower Clark Fork River. During the Spring of 1866 the Mary Moody ascended the river as far up as Cabinet Gorge Landing. During the next winter two more boats, the Cabinet, and the Missoula, were added to the fleet to shuttle between the impassable portions of the river. The Cabinet traveled from Cabinet Gorge to Rock Island which was just below what later became Furlon, Montana. The other steamed between Rock Island and Thompson Falls. The service was discontinued about 1870 when travel fell, and the boats were taken downstream to Lake Pend d'Oreille.

In 1883 the Northern Pacific Railroad was constructed through the river valley. Since this venture was done without the consent of the Indians who still occupied some of the area, there were a few minor incidents which occurred between Paradise, and the town of Thompson Falls, on the river. While these did not happen directly in the reservoir basins it may be appropriate to mention at least one incident.

Once, when Big Canoe and his Pend d'Oreille tribesmen were traveling to their customary hunting grounds, they happened to select as an overnight campground a piece of land now regarded by the whites as railroad property. The Indians were ordered to move out - they were told to be gone by morning. When morning came Big Canoe and his hunters remained defiantly still in camp, refusing to move from the spot. However, after they felt they had sufficiently humbled the railroad men they resumed their journey to the hunting grounds.

The completion of the railroad ushered in a new and far more active era in the valley. Whites began to settle in mining camps, lumber camps, and on homesteads.

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50 Story from a Pend d'Oreille informant. Big Canoe was one of the Pend d'Oreille Indians who signed the basic Treaty of 1855 with Governor Isaac Stevens. It appears that he felt that the railroad had been allowed to violate this treaty when they constructed their line on the reservation without further negotiations with the Indians.
Localities away from the railroad were also being settled, and these were reached by stage coach lines as well as by wagon freight lines with terminals at the railroad stations. Sometime between 1882 and 1887 (the informant was not certain about the year) Mr. G.H. Adams witnessed an incident at a stage station at Belknap, about six miles below Thompson Falls. His account to Thain White was as follows:51

In the Spring of 1887, (or thereabouts,) while I was eating dinner at the stage station in a small dining room used for serving meals to passengers, a rough looking fellow entered and shot a man that was eating at a single table. The dining room was rather crowded, but within a few seconds not a soul was in the room except the dead man. The people vanished through any immediate exit possible - windows, doors, and out through the kitchen, which was in back. I do not know the reason for the shooting and neither do I care to find out. The stage passengers, including myself, made a hasty retreat and we continued our journey on the stage line.

Cap Berray and his brother moved to Noxon, Montana, in 1887, shortly after the Northern Pacific Railroad was completed. There were some section houses still standing at this camp which had been built when the railroad was under construction, but they were not now being used by railroad personnel. Instead, they were occupied by some other people who lived in them. There were still some employees of the railroad residing in Noxon who worked in the station house. Cap Berray, who was still living in 1958, when this information was recorded, recited some early day railroad stories.52

The Chinese laborers on the trackline were paid $7.00 a day, and rice, plus fruit and nuts issued on their Chinese holidays. One of these holidays was their New Year celebration. The Chinese were plentiful in those days. Thirty graves of them are at Smeads, halfway between Noxon and Heron. There was a work train engineer who hated them, and he felt they had stepped on his toes. So he took a train and backed it up toward Thompson Falls where there was a steep grade. First he had turned the track switch which led toward the side tracks where there were sleeping cars housing the Chinese. When up the grade he opened the engine's throttle, jumped from the train, and let it come down the grade into the Chinese. He disappeared from this country after that.

Lumbering began to prosper after the railroad was able to provide transportation, and small businesses appeared after its completion. A typical operation near Noxon was a shingle mill up the Bull River a few miles where Cap Berray was employed when he first arrived in Montana. He and his brother had agreed to come from Wisconsin, where he had been similarly employed as a skilled laborer, and were to operate the mill. Cap Berray described it thus:

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51 Mr. G.H. Adams passed this information on to his son-in-law, Mr. Thain White. The content of the story also indicates that they traveled west from Belknap, which in part would parallel the railroad as well as operating along a tangent line. A station beyond Thompson Falls would suggest it was near or in the Noxon Reservoir Basin. Possibly, too, the stage line could have preceded the railroad through here.

52 Cap Berray, born in 1858. He was nearly 100 years old when he was interviewed by Carling Malouf in 1958.
"Cedar logs were plentiful, especially up the Bull River. The shingles were marketed around Montana in such places as Missoula, and Deer Lodge. We were paid good wages for our skills, $15 to $16 a day. The railroad provided transportation for the products. After about one month, however, I developed a bad case of asthma, and had to quit or lose my life. Fish and game were abundant, and I did a little outdoor work logging. The outdoor life was good for me. Later I started farming on the Bull River."

"The next winter I cut logs under contract. The mill had acquired another lawyer from Michigan, but he didn't understand how to use the equipment used in making shingles, and they were being poorly made. He kept monkeying with the machinery, and he always upset it. I would be called to set it right again, and he would monkey with it some more. He was an ugly tempered Irishman, and was on the job just ten days before he was fired. He couldn't operate the machinery too well and allowed the log flume to clog. Then, when he demanded to be paid by the day instead of by piece work he was fired."

Mr. Berray was able to describe the lifeway of the last few Indians who occupied the Noxon area before they finally disappeared when they were moved permanently to the Flathead Reservation. Actually, by this time they had been living on the reservation during the Winter months, but during the Spring they often returned to their old fishing and camping grounds along the Lower Clark Fork River. The vivid description of their activities, as given by Cap Berray, is worthy of inclusion in this report:

"The Indians fished and traded with the whites for their living. Rafts were made by the women, and they'd nail an old tomato crate onto it for a seat. There were several small rapids which they negotiated with these rafts, but they didn't go below the Bull River junction because of the very rough water, particularly at Heron Falls. I never saw them fishing much at Heron Falls. Usually they camped at the mouth of the Bull River, and here they sold fish and huckleberries to the people who were working in the mills in this vicinity. When fishing they left early in the morning and dragged their raft upstream with a rope. Then they placed a hook in the water and let the raft drift down through the small rapids."

"Afterwards the women wrapped the fish and placed the bundle in a bucket while the men continued fishing. When fishing became poor they moved to another rapid. About two or three families were all that stayed in these camps together."

"The fish was traded for goods. For example, we gave a loaf of bread for two or three fish. We never paid them cash. At other times they would accept less, such as two slices of pork, or maybe a half a loaf of bread. Sometimes a half a loaf of bread would get us enough fish to last us for two or three days. They usually stayed around until Autumn."

"One time we got a barrel of fried fruit from St. Louis. (Shipped by train). My wife made some pies and we showed one to some Indian women.
One of the women just sat and stared at that pie, not saying much. Finally, she took it and nibbled around the crust leaving the fruit center. My wife asked her why she did this, and she replied, 'Buck eat rest.' We got all the fish we wanted this way. Then some of the other whites began to trade this way too."

About ten years after the railroad was completed a mail road with bridges over the Bull River was constructed from Noxon, northward, toward Troy and Libby, which are on the Kootenai River. Berray said that Libby was just a camp before the Great Northern Railroad was built through there, and Troy was merely a trappers camp. Very few Indians were ever seen on the road or trail along the Bull River in spite of its easy grade and convenience of access to the Kootenai River country. Clearly, the Indians were awed, and even feared to traverse it. Cap Berray remarked that in all the years he lived on the Bull River he saw only one Indian at the head of Bull Lake, and this man was in an unusually great hurry to reach his destination. Berray asked him, "Why is this Bull Lake Country avoided so much?" The reply was, "Bad medicine." The reason was given in an ancient tradition that Berray learned. "At lightening Creek, just on the west side of Bull Lake, there was a tremendous slide where a mountain side is said to have slipped down and covered an entire Indian camp." It left some "chimney rocks above," and, according to Berray, "Several were still there when I first arrived in this part of the country, but the stub of one of them is left now. Often I could hear them coming roaring down the mountainside from time to time. I didn't actually go up there myself very much."

After 1890 mining activities were resumed, although this time it was on a smaller scale. Berray said, "There was a mine on Blue Creek (See Site 24 SA 1). Gold was also discovered in a sand spit. It was just sniping though." Blue Creek was farmed soon afterwards, and by 1951, when the Cabinet Gorge study was made, the owner was Lawton Clayton. Mrs. Marion Clayton had found the mining scars near the union of the East Fork and the West Fork of Blue Creek, about two or three miles upstream from its mouth on the Clark Fork River. Here she found the debris from an old prospecting operation, and a campground. There were hand wrought nails, and a gold pan which she donated to the museum collection at the University of Montana. There were other mines in this vicinity too; and Berray said, "There were several of them." He added to his information on local history as he witnessed it remarking that, "There were 150 people at one mine after I moved up the Bull River, in about 1890. There are still two or three tunnels there. One mine also had some copper in it, but it ran out. Another mine was run by a Doctor from Sandpoint, Idaho, and this was about 1910 or 1911."

There were also some mines between Noxon and Thompson Falls. The Silver Butte Mine continued operations until 1914. Local lore says that it is still regarded as "rich." An older resident in the vicinity said that it is presently "tied up in an estate." Mr. Otto Voltz said, "When it was working they used to haul ore down Lion's Hill with a team of horses. It was loaded on a train at the town of Vermillion. The town no longer exists." (See site 24 SA 6). In fact, it is now inundated by the waters of Noxon Reservoir. There was said to have been an old gold trail which extended between Larchwood to the hills
behind town. The Anaconda Copper Company is said by some local residents to have possession of forty acres on "Copper Mountain." There was another copper mine up Beaver Creek which was operated for about forty years; it was known as, "The Jack Walt Mine." The ore from this one had to be taken to the Idaho side of the mountain as there was no road on the Montana side. The "Carpenter Mine" operated until about 1920, but "a man from New York" is said to have bought it more recently, and "plans to open it again soon."

There was a ferry boat at Vermillion which provided access to the railroad to those who lived and worked across the Clark Fork River from the tracks. The railroad is on the west side of the river. Old cables were still at the ferry site in 1956 when our archaeological party investigated the area. (Site 24 SA 6).

Roads throughout all of this area were more like wide trails, but usually they were adequate for work wagons and logging rigs which passed over them. For more comfortable traveling most people preferred to ride on horseback. The wagons were pulled either by teams of horses or oxen. Otto Voltz, for example, recalled that his father preferred to haul logs with a yoke of oxen.

For several years there were two sets of tracks on the west side of the river. According to Mr. H. Wuerl, one of these, called the "Highline," was intended to be the only one. However, the grade proved to be too steep, and the second and lower line was retained as the mainline. When the "Highline" tracks were removed the roadbed was converted into a highway.

In 1900 a sawmill was in operation at the mouth of Tuscor Canyon, on what is now (1956) the William Page Ranch. This was destroyed by the great forest fire of 1910. The mill was sawing cedars which, in those days, were plentiful in this region.

A Mrs. McCann was born in Utah, but in 1905 she moved with her parents to Montana. This family and three others traveled in covered wagons and finally settled at Trout Creek where she remained until she was interviewed, in 1956. Both her father and grandfather had made homesteads in this locality.

She described Trout Creek community in 1906 as having been, " Quite impressive." At that time it was a railroad division point, but later it was moved to Kootenai, and the old town of Trout Creek became present day Larchwood. Old Trout Creek had about eleven saloons, and one general store. "Local government," remarked Mr. Voltz, "was no problem - there was none. There was a deputy sheriff all right - from the railroad, not the county."

Mrs. McCann said that her family never went to town, except her father who shopped on Saturdays for groceries and supplies. To illustrate the process of law in old Trout creek she described how a man with his wrists slashed, and his throat cut was said by the local law authorities to have committed suicide, and no further investigations were made. In another incident a jealous husband was involved. This "two-gun carrier" resented it when a certain man talked to his wife. The husband has warned this man to cease talking to his wife, but soon afterwards he and his wife were seen talking to each other
anyway, so the husband shot him. Again, there was no investigation and no arrest was made.

Up Little Trout Creek, in a blind canyon, there was a large family by the name of Lee. They were said to have been counterfeiters. Originally they were from Utah where their grandfather was the Lee who had been executed for his role in the "Mountain Meadow Massacre." After his execution a part of his family, now in disgrace, migrated to Montana. Mrs. McCann recalled some of the legends which developed locally around this family.

"Everyone around Trout Creek thought that they were just mining, and it was only a 'slip up' that led to their discovery and arrest by Federal Agents. They were so good at counterfeiting that they usually passed the money at the bank. They were a tough bunch, and even the women wore two guns. There was a grandfather, a grandmother, three sons and their wives and children. The old grandmother was a gypsy who always wore a bandana because she had been partially scalped by Indians. She also wore braids."

"One of them acted as a preacher who would marry them, and bury them, but if any of them got tough he would shoot them without any qualms of conscience. One member of the family acted as a lookout at the entrance of the canyon. They must have had a gold mine up there, but no one has been able to find it yet."

"Earthen molds were used to make coins. The grandmother swore the 'Feds' would never have gotten there if they did not have the oldest son in their custody. Instead, they all went to jail. Afterwards, they seem to have gone 'into business' again in Wyoming someplace."

The great forest fire of 1910 caused tremendous changes in the Lower Clark Fork River Valley lifeways. There had been other big fires earlier. Mr. Voltz recalled one in 1894, but on the 23rd of August, in 1910, the greatest of them all came over the mountain in back of Vermillion. At eleven o'clock at night it came like a tremendous red blanket over the sky. The flames came and leaped over the valley, and in about an hour the fire itself reached the farms in the valley. The fire front, according to Mrs. McCann, was nearly 25 miles wide, and extended from Trout Creek to Thompson Falls. Fortunately, large portions of land had been cleared by the homesteaders for farming so it was possible to save many of the buildings. For at least five days the pall of smoke was very heavy, and local fires burned for many days more. Then the holocaust was drenched by rain.

In September of 1857 a party of overzealous Mormons in southern Utah, aided by some Ute or Southern Paiute Indians, massacred a non-Mormon immigrant train which was enroute to California. The "Mountain Meadow Massacre," where the killings occurred, is in southwestern Utah. About 121 men, women, and children died in the attack. John D. Lee was the leader of the party which led and planned the attack on the immigrants. For this reason he was hunted down for many years by law officials. Finally, he was captured, tried, and executed on March 23, 1877.
The McCann family saved their property by setting a backfire. They could not escape since there were fires both in front of them, and in back. The railroad had run a "stub" through to pick up as many people as they could, but the McCann family had chosen to remain. The railroad had also set their own backfires and these blocked off flight in one direction. The McCanns had a two months old baby daughter, and for her they dug a hole in the ground. Then she was placed in it, and a wet rag was placed over the top to filter the air.

Then the fire came roaring in from back of their land. The stumps of the burned trees can still be seen testifying to the ferocity of the fire. Much of the original growth consisted of cedars, but these have been replaced with a new growth of pines and firs which are now maturing.

About 1914 the Blackfoot Development Company attracted farmers to western Montana by offering plots of 40 acres and 80 acres for sale. A Mr. and Mrs. Wuerl came from Nebraska and bought a 40 acre parcel. Later they were able to add to their land holdings.

The Johnson House was about one-half a mile from Vermillion. It had already acquired a considerable history when it was bought by a Mr. Stultz. It had once been the property of a sawmill company, so there was a railroad spur leading toward it. Before prohibition days it became what the local people called, "A blind pig joint." Gambling was among the activities for which it gained its reputation. Mr. Voltz recalls seeing a man jump through the front window, followed by another man with a shotgun. There had been a gambling quarrel.

The Johnson House was at a railroad stop just beyond Vermillion, and was known as, "Beason Spur." Three telegraph operators lived there. The rest of the residents in this community were homesteaders, although some of them added to their income by making fence posts, and railroad ties for the railroad company. There seemed to be too much timberland, and too little of it was cleared for extensive farming.

Some attempts were made to start dude ranches around Thompson Falls, but these were not successful, and they reverted back to ordinary farms and ranches. One of these was on Graves Creek. With the dam constructions now completed tourism may show some economic improvement in the area.

The hills no longer resound with the hunting calls of the Pend d'Oreille Indians, nor with the squeals of laughter from their women and children, but with the addition of Cabinet Gorge Dam, and Noxon Dam and their reservoirs, there could be an increase in the importance of hunting and fishing as a recreation activity. The Indians are on or near reservations where they have lost many of their ancient techniques for taking care of themselves in the wilderness as they did in olden times. Perhaps Eneas Conko expressed it most vividly when he remarked:

"We would starve in our own country if the whites were taken away now. We neither know how to farm by white mens' methods well enough nor do we remember how our fathers made a living."

CONCLUSIONS

Certain recurring themes appear through the several phases of human occupation of the Lower Clark Fork River Valley. Whether the inhabitants were Indians or whites it has been primarily an area where people passed through when they were traveling between more densely populated areas on the east to another population center to the west. The land was utilized for the acquisition of game, plants, and fish by the natives, but their camps were small and widely scattered up and down the valley. During historic times, too, it has been one of the last places in the State of Montana to become settled, and today its occupation by ranchers, lumbermen, and miners is relatively sparse. To a considerable extent farms and ranches have been built on or near old archaeological sites, and the campsites of historic Indians for the simple reason that modern man, like the ancient, found few places which were suitable for dwellings, and for obtaining a living.

Today, as in the past, there are centers of living around Flathead Lake, and Lake Pend d'Oréille where a greater population can be sustained than in the Lower Clark Fork River Valley. This testifies, of course, to the close relationship between man and the land upon which he depends for his living.
1. PREHISTORIC  

Ca. 5,000 B.C. to 1600 A.D.

Small Indian encampments with a preference for the mouths of side streams with clear, running water suitable for domestic use, and for fishing. The campers left projectile points, stone knives, and scrapers. Pestles were also used for the preparation of food. Habitations were relatively flimsy, but were adequate. They were usually made of local plant materials. Coverings of the lodges were not usually made of animal skins until the historic period. Instead, bark or grass mats were usually used. The real cultural centers were at the lakes, such as Lake Pend d'Oreille, and Flathead Lake, and the valleys between were for fishing, hunting, gathering plant foods, or just to pass through on journeys.

2. PROTOHISTORIC  

1600 A.D. to 1808 A.D.

European appropriation of the land in North America led to the displacement of many native tribes and bands. The effects were felt across the continent from the very first colonies on the Atlantic coast, thus the Indians of Montana were influenced by white men long before they actually entered the Northern Rocky Mountains. There was a brief period when Indians or their cultural traits moved up the Columbia River system into Montana introducing celts, ocean shells, and other items. This eastward movement, however, was literally overwhelmed by the impact of Plains Indians when horses, tipis, mauls, and numerous other materials were introduced. Horses appeared about 1730 A.D. to change the Indian way of life.

3. TRAPPERS AND EXPLORERS  

1809 A.D. to 1855 A.D.

David Thompson's trading posts, such as Saleesh House, and later, Flathead Post, brought numerous white trade goods into the country. These commodities caused a florescence in the Indian culture. The intensified warfare patterns, typical of the tribes of the Great Plains, to the east, were not as strongly felt in western Montana, but some battle pits may have been constructed during the very early years of this period, or during the phase immediately preceding. The various treaties of Governor Isaac Stevens, in 1855, terminated this period, and ushered in the white settlement of the country.

4. TRAVELERS  

1856 A.D. to 1883 A.D.

The Lower Clark Fork River Valley was just regarded as an area that people passed through while enroute to points east or west. A steamboat service was inaugurated to facilitate this travel, but the venture was not successful.
5. RAILROAD

1883 A.D. to the present

When the Northern Pacific Railroad was constructed in 1883 the Lower Clark Fork River Valley was still a country where people passed through, but did not settle. Later, however, there came a few homesteaders, lumbermen, and miners. Finally, towns were established, usually at existing railroad stations. Public utility power projects are among the latest additions to be made in the economy and landscape of the valley.
APPENDIX

Archaeological And Historical Sites In The Lower Clark Fork River Valley, Montana

A total of twelve archaeological sites was found in the Lower Clark Fork River Valley, three in the Cabinet Gorge basin, and nine in the Noxon Reservoir basin. Each is described in this Appendix by site numbers which are arranged according to its position on the river, the farthest downstream being the first, and each one successively with higher numbers as one ascends the river. The lowest one on the river is near the Idaho border, a few miles above Lake Pend d'Oreille, while the highest numbered site approaches Thompson Falls in its location.

Site 24 SA 1. Occupation Site, (prehistoric) Blue Creek, Sec. 19, T55N, R34W. This site was located at the confluence of Blue Creek, and the Clark Fork River. Blue Creek is a small, but fast-moving stream about one rod in width. As it nears the main river its flow is toward the south where it cuts through high banks about seventy-five feet high on each side. A small flat area was located once at the mouth of the stream, but it was first seriously damaged by the construction of a highway, and later was completely inundated by the waters behind Cabinet Gorge Dam.

In spite of the steepness of the high river banks, it was crossed by at least two old trails. Another old trail may still be observed on the benchland above. All of these must have been a part of the "Old Kootenai Trail," or "Walla Walla Trail" which had served as the main route of travel through this country during the last century before the railroad was constructed. The "Old Kootenai Trail" did not consist of just a single pathway here for the banks were criss-crossed by several narrow paths barely wide enough for a mountain man or pack train to negotiate.
The bank is composed of unconsolidated gravel, and is topped with a thin layer of soil.

The flat area at the mouth of Blue Creek scarcely covered a few hundred square meters, yet undoubtedly a small occupation site was once located on the tract as was evidenced by old hearth stones. The construction of the original U.S. Highway 10, which is now relocated on the benchland above the terrace, passed over the site and obliterated most signs of occupation. Presently, the area is inundated by Cabinet Gorge Reservoir. There was another area suitable for occupation on the terrace above the reservoir basin; the discovery of a few quartzite and basalt chips, and a conical pestle about eight inches in length proved it had been occupied during the prehistoric period.

Site 24 SA 2. Burial Site. Located at "The Big Eddy," on the north side of the Clark Fork River. In this vicinity the general flow of this river is from east to west. SW1/4, Sec. 27, T51N, R34W.

The burial was found nearly a quarter of a century before the University of Montana archaeological survey party entered the area in 1951; hence, most of its anthropological value was lost. However, sometime between 1934 and 1936 a road crew was removing slide debris from U.S. Highway 10, which at that time was located below its present routing, and the grave was accidently exposed. The site is now covered by Cabinet Gorge Reservoir. At the time of its discovery the highway had been constructed across an outcropping of rock, and an adjoining talus slope. The talus debris passed down through a narrow cleft in this formation. This same outcropping extended down to the river where it created a turbulence in the water which was known locally as, "The Big Eddy."

Mr. Joe Brooks, who discovered the remains, recalled that there were no surface sign of a burial here, but when the highway crew cleared away loose rocks the talus moved and some bones were exposed. The burial was said to have been alongside an old Indian trail which once passed above the top of the slide area, and was immediately beneath a large boulder outcropping. The inhumation was typical of most of those that have been found elsewhere in western Montana. It was a primary burial accompanied with a few specimens, and had been interred in talus debris.

The archaeological party recovered a portion of a human mandible, but the rest of the skeleton could not be found. Observers of the earlier find, however, said that it had been badly decomposed and broken so that no other parts could be saved. The motion of the flow of the talus, however slow, was apparently sufficient to have caused severe damage to the remains before it was discovered. Some small, flat beads, evidently cut from segments of a fossil crinoid, were found with the burial. A portion of a green stone celt (a sort of stone ax), possibly made of nephrite, or "jade," was also found with the burial. This specimen is a trait which immediately links the individual somehow with the inhabitants of the Columbia River and Fraser River valleys, farther to the west.
The jaw had several interesting characteristics. The angle of the ascending ramus was low, indicating the individual was somewhat aged at the time of death. Excessive wear on the teeth also suggested an old age for the deceased. Incidentally, a single large cavity on top of the third molar, or "wisdom tooth," must have caused this person considerable pain.

Sketch Map, Site 24 SA 2, Burial site
At "The Big Eddy, near Noxon, Montana. Data compiled by Thain White

Site 24 SA 3. A Campsite. Located at Heron Falls, on the Clark Fork River, Sec. 34, T54N, R34W.

Here was a small fishing camp alongside a cascade in the Clark Fork River known as "Heron Falls." There were no surface signs here which would substantiate this as an archaeological site, but historic accounts show that it was occupied during the early 19th Century. David Thompson made an early notation of native activity here in 1809.5

"We went along the beach, composed of ugly bad stones, until 9:30 a.m., when we went into the woods course 80 east five and a half miles. At 9:40 a.m. we stopped at a strong Rapid where we found 3 tents of Saleesh fishing Herrings with a small dipping net. Of these fish they take great quantities, they gave us about 20 of them for which I paid them a foot of tobacco."

55 Catherine White. The Journals of David Thompson. Montana State University Studies, No. 1. Missoula, 1950. p. 46. A footnote by the editor on this page adds that the name of "Heron" seems to be a corruption of the original, "Herrings."
Note the small size of the encampment at 24 SA 3: "3 tents." This provides us with a clue to the reason for the scarcity of archaeological sites in the Lower Clark Fork River Valley. Typically, Indian camps were temporary fishing or hunting centers which consisted of, perhaps, three or four dwellings while the larger, more permanent communities were located around Lake Pend d'Oreille, to the west.

Site 24 SA 4. Occupation Site. SE 1/4, NE 1/4, Sec 9, T26N, R5E. This was an ancient occupation or campsite at the mouth of the Bull River. It was mostly located on the west side of this tributary stream which entered the main river from the north. A trail branching from one paralleling the Clark Fork River was also located along the Bull River where it passed northward to the Kootenai River country, emerging into that river valley near Troy, Montana.

This occupation site was one of the largest in the valley, and extended over an acre of land. It might have been primarily a fishing camp since the early accounts of the travelers in the area indicate that there was a scarcity of game in this vicinity. The description made by Cap Berray, an early homesteader in this area, also locates an Indian camp here during the 1880's and 1890's, and they consisted of "three or four families."

Specimens found at the site included a conical pestle identical with that found on Blue Creek, farther down the valley (Site 24 SA 1). The presence of pestles indicates that plant foods were also procured in this vicinity. Such implements were used for grinding berries and other plant foods, but some modern Indian informants deny that they were used for processing meat or fish. Other artifacts found here included several chips of stone which had been knocked off a core during the process of stone tool and implement making. A few simple stone scrapers were also found. Clearly, these were all signs of domestic activities at a campsite.

During 1960, when Cabinet Gorge Reservoir was drawn down unusually low, the site was revisited by Thain White who used a metal detector over the grounds. A mule shoe was found near a fire hearth on the south-central portion of the site. Thus, it was probably a favorite camping ground during historic times as well as in prehistoric times.

In 1813 Russel Farnham and Ross Cox were directed by the Astor Fur Company to establish a fur trading post on the Clark Fork River. Thus, in 1813 one was built at the mouth of the Bull River in competition with the Northwest Fur Company establishment at Saleesh House, near present day Thompson Falls.

Along the Clark Fork River, upstream from the mouth of the Bull River, there are several tributary streams which were examined for archaeological remains, but the results of the search were negative. For the record, however, the localities are listed as follows:

Government Creek. Campsite locations not favorable here. Results negative.

Pilgrim Creek. Campsite locations not favorable here. Results negative.

McKay Creek. Heavily wooded in this vicinity, and dense brush makes sites very difficult, if not unlikely, to discover. Results were negative. The stream bed of McKay Creek is dry during much of the year, but there are a few small springs or seepage areas along its banks.

Stevens Creek. This stream passes through a narrow side valley, and the area is heavily wooded. The locations of possible campsites were badly disturbed during the 1880's when the original Northern Pacific Railroad track bed was constructed through here. Archaeological results were negative.

Site 24 SA 5. Occupation Site. Swamp Creek. Sec. 15, T53N, R32 W. At the time of the archaeological survey this was on the property owned by Mr. Dewey Duffel. The mouth of the stream was heavily wooded with trees and undergrowth. One projectile point found by Mr. Duffel, when he was digging a well, was corner-notched at the basal end, and was made of yellow jasper. The jasper was probably brought into this vicinity during ancient times. The length of the point was one and one-half inches. In its shape and form, as well as is indicated by the kind of material out of which it was made, all indicate that it was late prehistoric in age.

The area around Swamp Creek was of special interest to the archaeological field party because it seems to have been here that David Thompson noticed a fish weir which was being used by the local Indians in 1809. At least M. Catherine White, the editor of David Thompson's Journals published in 1950, has identified this stream as the one where Thompson observed the weir. Thompson wrote:

"..we made our Canoe, and finished it on the 5th of June, on the banks of a small River, where the Indians had a Weir for fish; on all streams that come from, or form lakes, there are Weirs at which the natives catch Mullets, gray Carp, and small Trout..but all Streams that have no Lake are without fish."

Swamp Creek, incidently, has its source in Wanless Lake, about twelve miles up this side stream, and in the mountains to the east.

In spite of these hopeful signs of occupation it was without positive results during the survey. Unfortunately, much of the area had been heavily bull-dozed before the field crew arrived in this area. The work of the heavy machinery, however, was for private purposes, and was not connected with the construction of the Washington Water Power dam at Noxon.

Martin Creek. (On some maps this stream is spelled "Marten Creek.") The valley formed by Martin Creek is fairly wide, and it seems to have been adequate naturally as a place for camping. Nevertheless, the archaeological results here were negative.

Trout Creek. This stream, after absorbing several small tributaries, flows into the Clark Fork River from the west. Near its junction with the main river the creek has cut a narrow and deep gorge through the gravels of the Clark Fork Valley benchlands. These benchlands today are fairly extensive, and ranching activities dominate, thus assuring that much of it is cleared of trees and brush.

A few small mounds were found on the benchland south of the town of Trout Creek. One of these was about four feet high, and it was selected for testing. Despite its impressive size and form, however, it yielded no special signs of a human origin for the mound, modern or native. It merely consisted of a pile of gravel and dirt.

View downstream near the confluence of Trout Creek, and the Clark Fork River. The timber and brush here had been cleared for the reservoir behind Noxon Dam. (Members of the archaeological crew, left to right: Sue Beckwith, Leslie Davis, Reuben Santiago. The fourth member unidentified.)
Tuscor Creek. This stream drops precipitously into the Clark Fork River, and the land beyond its confluence with the main river is heavily wooded. Conditions appear to have been unfavorable for campsites. Nevertheless, a single, ovoid-shaped knife made of quartzite, was found about one and one-half miles up Tuscor Creek, just above a fork in the stream. Mr. William Page, the owner of the land here, found the tool but chose to retain it in his possession. Thus, a more careful study of its characteristics is impossible. It was a well-chipped knife, and a small amount of secondary pressure chipping was noticeable on one edge.

Knife Blade, Tuscor Creek.

Local settlers here said they had observed occasional Kutenai Indians in this vicinity. The Native Americans seemed to favor a promontory between the forks of Tuscor Creek, but absolutely no evidence of their occupation was found in the present survey. Their small camp was said to consist of a single tipi, and it was occupied between 1900 and 1910, during the Summertime, when the men were employed at a nearby lumber mill. The great fire of 1910 destroyed the sawmill, and the Indian occupation thereafter ceased.

Site 24 SA 6. Vermillion River. SE 1/4, Sec. 22, T23N, R30W. The Vermillion River is slightly larger than most of those which enter the Lower Clark Fork River in this vicinity, and its mouth extended over more than the usual amount of bottomlands. Considerable land was available for camping sites. About 100 acres of land were available for this purpose here, but a farm had been developed by a homesteader seriously damaging whatever archaeological sites there may have been here. Earlier, perhaps, there might have been a small railroad spur to a community here - the evidence was not too clear.
A few small, low mounds were noticed, one of which was tested by trenching. This mound was originally ten feet long, eight feet wide, and three feet high, and apparently it had been made by human activity. It proved to consist entirely of gravel and dirt mixed together, although two inches below the topsoil a thin clay layer was encountered. Like other such mounds excavated, the shape was the only characteristic which caused it to appear to have been made by humans. No chips, bones, or hearth materials could be found in its vicinity.

One informant locally reported that this had once been a favorite campground for Indians in Historic times. She had obtained this information herself from an older woman who had lived on the tract before 1900. Other people reported having found the remains of old sweat lodges along the river bottomlands.

A examination of the land on the north side of Vermillion Creek was negative in its results.

Remains of a homestead site near Vermillion, before inundation after the completion of Noxon Dam. The Dam is located just beyond the small, sharply peaked hill on the right of this view. The scene is downstream. (Jacquelyn Greenough, in this photo, served as historian for the field party.)

Site 24 SA 7. Vermillion River Benchland. (Owner at time of survey: Ida K., and Wallace Gregory) This site was on a benchland or ancient terrace about 100 feet above the Vermillion River where the land is clear and relatively level. An ancient occupation site was located here. The finds included one conical pestle, five chips of basalt, and two chips of quartzite.
Beaver Creek. The archaeological party found no sites on this Creek. However, the stream was not examined along its entirety since most efforts were made toward examining areas to be inundated by the Noxon Reservoir. Beaver Creek parallels the Clark Fork River, on the west side of the valley, for several miles, absorbing White Pine Creek along the way. Much of the areas outside the reservoir basin were not examined for archaeological remains, and further surveys are needed.
Site 24 SA 8. Pits. Deep Creek. NW 1/4, Sec. 21, T23N, R30W.

Some pits were found along both banks of Deep Creek extending from near its confluence with the Clark Fork River to about one-half a mile up this stream. An old trail extended through the area following the bank of the Clark Fork River. When it reached Deep Creek, however, it turned upstream where there was an easier crossing than was present at the mouth of this side stream.

In the first pit, located near the mouth of Deep Creek, the dirt was piled on the downslope side. Another pit, about one-half a mile up Deep Creek, the dirt had also been thrown on the downslope side.
Deep Creek near its confluence with the Clark Fork River.


This site was on a very high benchland several hundred feet above the Clark Fork River, on the east side of the river valley.

Just to the south of the benchland, upstream, there is a great U-shaped bend in the river toward the base of the mountains on the east side of the valley. A huge slide area has been created where the river cuts into the mountain, and is known locally as, "The Blue Slide." All trails and roads on this side of the river have been forced to converge into one which extends above the slide area, and as it passes downstream it traverses the Vavrick benchland. Several springs along the high trail area were mentioned by David Thompson, in 1809, and these, as well as the trailway, made the benchland an attractive place for a campsite for natives in the past as well as for whites who later traveled along here.

A number of lithic specimens have been collected by the landowner, Mr. Vavrick, mostly points and knives. Specifically, the collection consists of 15 points, one scraper or plano-convex implement, and one knife. The knife is made of red jasper, and one corner-notched point is of obsidian. Otherwise, the specimens are made mostly of local materials, primarily quartzite. Besides these specimens numerous chips and flakes have been recovered from the site indicating that it could have been a chipping
and finishing area; possibly a quarry might have been located nearby, but we made no attempt to locate it.

Bear Creek. This is a sizeable, permanent stream which enters the Clark Fork River from the east. Archaeological remains were entirely lacking along its course between the river, and adjoining mountains.

Site 24 SA 10. Occupation Site, Pits. SW 1/4, Sec. 35, T23N R30W.

The pits in this vicinity were so crudely formed that it was not fully determined whether they were man made or natural formations. In ancient days such pits were sometimes hastily dug by Indians for defensive purposes, and were not regular in their shape. It is known that the natives in this general area were capable of constructing rather elaborate pits and underground structures when time was available for this purpose. Some of the more elaborate trenches for example even had interconnecting trenches. These particular pits however were ill-defined and they could have been formed naturally. There is a possibility for example that some large ponderosa pines once stood here and had been felled by a heavy wind and uprooting it. An examination of wind-felled trees disclosed to us that pits originating from this source usually had the dirt piled up just on one side where the root system deflected the soil and rocks as it was up rooted. It is known however that some man-made pits also have the dirt piled on one side only, and that these too show great variation in their features.

The pits were located on the edge of the bank overlooking the Clark Fork River, and no specimens were found in or around them. For the record, however, they are being mentioned in this report.

**Site 24 SA II.** Pit and Mound. SE 1/4, Sec. 3, T23N, R30W.

A single large pit was located about 40 feet away from the bank of the Clark Fork River. There were no major tributary streams in this vicinity, but there was a shallow, dry gulch to the north. The pit was about 14 feet in length, and it was rock lined with earth piled up evenly on all sides. Its general outline was oblong with one dimension about two feet longer than the other. The longer measurement laid perpendicular to the contour lines of the terrain at this site.

About 60 feet up the slope was a mound 15 feet long, four feet wide, and four feet high. At its base was a shallow pit with one side of it slightly deeper than the other. A test trench dug across the mound revealed it merely consisted of gravel and dirt. A few trees nearby had been partially debarked by humans suggesting an old Indian camp must have been located nearby. Coursing parallel with the longest axis of the mound, and a few feet farther up the slope, there were traces of an ancient trail. Evidently, this was part of a maze of trails which once extended along the Clark Fork River Valley.
Open lands are characteristic of the area around the site now, but the landowner claims that it was once timbered. He adds that he never saw game around the land during previous years, but now that the timber has been replaced with grasslands game has become fairly abundant.

Site 24 SA 12. Graves Creek. Sec. 11, T23N, R30W. The stream derives its name from two separate burials which were made along its banks. One dates to the 19th century while the other is that of Mrs. Gray, wife of the homesteader of this plot. Both grave sites, which lie several yards apart, are slightly above the highwater level of Noxon Reservoir. The daughter of Mrs. Gray, Mrs. Elizabeth Sayer, of Missoula, discovered the archaeological site along this creek, and guided us to the area. As a child she grew up in this area and had learned something about its history; some of the information was conveyed to the historians on our survey staff.

The mouth of Graves Creek lies about eight miles north of Thompson Falls, on the east side of the Clark Fork River. Besides two occupation areas, one on each side of Graves Creek, there were several pits which extended in a line along the high bank of the Clark Fork River. The area remained a favorite fishing place for Indians and non-Indians because of the favorable camping conditions, and good access to the river water. Our own camp was located here during the period of the investigations.

Specimens found (including those in Elizabeth Sayer's collection) included knives, points, and scrapers. Test trenches and screening of the occupation areas failed to yield specimens or information, hence, our knowledge of the site has to be based on surface finds. However, the survey crew did find six pits in this vicinity which may all be described as being very irregular in form. One or two of these might have been caused through natural processes, but the others must have been of human make. Number 5, for example, was so long and deep that it could only have been made by humans. The pits are described as follows:

Pit 1. This was about six feet across and four feet in depth. It was irregular in shape so that precise dimensions could not be obtained. Due to deposition inside the pit the bottom was rounded.

Pit 2. This pit was located about 30 feet northwest of Pit 1. It was square in shape instead of being oblong or rectangular, and was approximately three feet across. A juniper tree 15 feet tall was growing out of the pit, but Mrs. Elizabeth Sayer said she could remember when the tree was growing about 1935. Otherwise, there were no other changes in the pit over the decades.

Pit 3. Pit Number 3 was selected for testing. It was located about 120 feet northeast of Pit 2, and its original form was roughly rectangular. Its longest dimension, north and south, paralleled the Clark Fork River. It was ten feet long and approximately six feet wide. A test trench was cut across one end of the pit, and through part of the adjoining dirt pile, in an attempt to locate possible floors or walls in case it proved to be the remains of an ancient pithouse. Another hole was sunk into the deepest portion of the other end of the pit. It seems the digging was haphazard, and without
efforts to maintain its sides vertically, or with uniformity. At least it could be concluded it was not part of an ancient dwelling.

About four inches beneath the ground in the center of the pit the skeleton of a small horse was found. Many of its bones were missing which gave the general impression that the animal had fallen into the pit and died. Soon afterwards some of its bones were scattered, and the remaining parts were gradually buried through wind and water deposition. Mr. Gray, the original homesteader, and longtime resident on this property, denied having ever lost the animal so its history must extend back into the 19th century or earlier.
Pit 4. This was a small pit located on the bank of the steep slope which dropped into the Clark Fork River about 50 feet below. Its shape was irregular.

Pit 5. This pit was actually a long, deep ditch which opened out into the river bank above the Clark Fork River. It was distinctly man made as if some one wanted a drainage ditch for some purpose. Dirt and rocks were piled up on each side of the ditch itself reaching a maximum depth of four feet, and a length of twenty feet.

Pit 6. This pit was about 50 feet from the edge of the river bank along the Clark Fork River. At the time of study it was on the edge of an abandoned logging road which terminated here. The pit was about 10 feet long and 5 feet wide. Like Pit 3 the dirt and rocks from its interior had been piled on the river side or downslope side of the pit.

Besides the pits there were other features of interest at the Graves Creek site. Two fire hearths along Graves Creek were found near the edge of the high bank leading to this stream. Besides darkened earth and smaller bits of charcoal, the hearths contained broken stones. These fire hearths had a diameter of two feet and were exposed on the surface of the ground where recent erosion had washed the soil from above them.
A single projectile point of basalt was found on a small spur along the river bank downstream from Graves Creek. Its shape was somewhat unusual for this area.

There were no pits on this spur, but a very small stream of water passed just to the north where it dropped precipitously into the Clark Fork River. A few chips were found nearby indicating that at one time this probably had been an occupation site.

Squaw Creek. No sites. Sec. 22, T50N, R30W. At the mouth of this creek there was a benchland approximately 50 feet above the Clark Fork River. Once there was considerable timber on this bench, but trees had been cleared off for farming.

Mosquito Creek. No Sites. Sec. 11, T50N, R30W. This stream, like several others in the Lower Clark Fork River Valley, had very steep sides where it entered the main river; heavily timbered benchlands were beyond the gorge, but archaeological finds were lacking.
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Note In several of the publications above the references to "Montana State University" refer to what is now called, "The University of Montana," in Missoula, Montana, and not to the University unit by this name now in Bozeman, Montana. The change in names was made by the State of Montana during the 1950's.