An Archaeological Survey of West Canyon and Vicinity, Utah County Utah

Edward A. Wheeler II

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AN ARCHAEOLOGICAL SURVEY OF
WEST CANYON AND VICINITY
UTAH COUNTY, UTAH

A Thesis
Presented to the
Department of Anthropology
and Archaeology
Brigham Young University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Edward A. Wheeler

May 1968
I hereby acknowledge my indebtedness and express my gratitude to the following persons and institutions without whose valuable assistance this field report could not have been completed: Dr. Ross T. Christensen, chairman of Brigham Young University's Department of Anthropology and Archaeology, for his aid and cooperation in arranging my graduate program and facilitating its completion; Ray T. Matheny for his unselfish giving of valuable time to guide, counsel and encourage me and direct my efforts along what we both hope will be productive paths.

Especial thanks go to Dr. Jesse D. Jennings, who also gave, not only good counsel, but financial assistance in cooperation with the National Science Foundation and The Department of Anthropology, University of Utah. Others included with Dr. Jennings in the above special recognition for their considerate aid to my cause are: John Dewey, Mel Aiken, Floyd Sjarrock, and Richard Bland.

To those few who gave so much in physical effort, with little to show for it but the dirt and dust which enveloped them, thanks, for nothing could have been carried out without their often minuteman responses to my calls. They are: Richard and Alta Bland, Judy Connor, Beverly Earle, Leland and Pat Gilsen, Aileen Ingram, Kjartan Magnusson, Eugene Mendonsa, James Mock, Mavis Molto, Erlinda Montillo, Clair Nelson, Judy Pruden, Janis and Teri Wheeler, and Sue Worth.

Appreciation to the Wood family, who own the land on which the majority of sites in West Canyon are located, has been, I think, best
indicated by officially recording the site designation as "the Wood Site, 42Ut119."

Thanks are also due to Judi Cutright and Monte Miller for their aid in manuscript preparation.

Lastly, I must pay special tribute to my parents.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREFACE</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>vii</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>PROBLEM</td>
<td>13</td>
</tr>
<tr>
<td>PHYSIOGRAPHY</td>
<td>15</td>
</tr>
<tr>
<td>Physical Features</td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td></td>
</tr>
<tr>
<td>Climate</td>
<td></td>
</tr>
<tr>
<td>Hydrology</td>
<td></td>
</tr>
<tr>
<td>Ecology</td>
<td></td>
</tr>
<tr>
<td>AREA SURVEY</td>
<td>24</td>
</tr>
<tr>
<td>Listing of Sites</td>
<td></td>
</tr>
<tr>
<td>EXCAVATIONS</td>
<td>37</td>
</tr>
<tr>
<td>Unit A</td>
<td></td>
</tr>
<tr>
<td>Unit B</td>
<td></td>
</tr>
<tr>
<td>Test Pits</td>
<td></td>
</tr>
<tr>
<td>STRUCTURES</td>
<td>46</td>
</tr>
<tr>
<td>Unit A</td>
<td></td>
</tr>
<tr>
<td>Unit B</td>
<td></td>
</tr>
<tr>
<td>ARTIFACTS</td>
<td>51</td>
</tr>
<tr>
<td>Non-ceramic</td>
<td></td>
</tr>
<tr>
<td>Projectile Points</td>
<td></td>
</tr>
<tr>
<td>Drills</td>
<td></td>
</tr>
<tr>
<td>Knives</td>
<td></td>
</tr>
<tr>
<td>Gaming Pieces</td>
<td></td>
</tr>
<tr>
<td>Bone Tools</td>
<td></td>
</tr>
<tr>
<td>Scrapping and Chopping Tools</td>
<td></td>
</tr>
<tr>
<td>Hammerstone</td>
<td></td>
</tr>
<tr>
<td>Shaft Smoothers</td>
<td></td>
</tr>
</tbody>
</table>
Manos
Metates
Bone Materials
Other Organic Materials

Ceramic

Snake Valley Gray: Provo Buff Variety
Snake Valley Gray: Provo Variety
Sevier Gray: Goshen Variety

INFERENCES ......................................................... 86
SUMMARY .......................................................... 100
BIBLIOGRAPHY ..................................................... 102
LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Western Utah County</td>
<td>ix</td>
</tr>
<tr>
<td>2.</td>
<td>West Canyon site locations</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Gaming pieces display from Hutchings' Museum</td>
<td>9</td>
</tr>
<tr>
<td>4.</td>
<td>Hutchings' Museum displays</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Hutchings' Museum displays</td>
<td>11</td>
</tr>
<tr>
<td>6.</td>
<td>Hutchings' Museum displays</td>
<td>12</td>
</tr>
<tr>
<td>7.</td>
<td>Mound-unit-trench relationships for Units A and B</td>
<td>38</td>
</tr>
<tr>
<td>8.</td>
<td>Projectile points, classes I-IX</td>
<td>67</td>
</tr>
<tr>
<td>9.</td>
<td>Projectile points, classes X-XVIII</td>
<td>68</td>
</tr>
<tr>
<td>10.</td>
<td>Drills, classes I-IV; knives, classes I and II</td>
<td>69</td>
</tr>
<tr>
<td>11.</td>
<td>Gaming pieces, classes I-III</td>
<td>70</td>
</tr>
<tr>
<td>12.</td>
<td>Gaming pieces, classes IV-V</td>
<td>71</td>
</tr>
<tr>
<td>13.</td>
<td>Bone tools, classes I-V</td>
<td>72</td>
</tr>
<tr>
<td>14.</td>
<td>Scrapers, classes I-IX</td>
<td>73</td>
</tr>
<tr>
<td>15.</td>
<td>Chopping and scraping tools</td>
<td>74</td>
</tr>
<tr>
<td>16.</td>
<td>Hammerstone</td>
<td>75</td>
</tr>
<tr>
<td>17.</td>
<td>Provo Gray Variety whole pot from Unit A</td>
<td>77</td>
</tr>
<tr>
<td>18.</td>
<td>Handle decoration of whole pot</td>
<td>78</td>
</tr>
<tr>
<td>19.</td>
<td>Rimforms</td>
<td>80</td>
</tr>
<tr>
<td>20.</td>
<td>Trench A profile and Unit A</td>
<td>90</td>
</tr>
<tr>
<td>21.</td>
<td>Artifact plot from Unit A</td>
<td>92</td>
</tr>
<tr>
<td>22.</td>
<td>S-Rim-Incised sherd</td>
<td>98</td>
</tr>
</tbody>
</table>
23. Scraper of the "Classic Plains" variety . . . . . . . . 99
24. Double-strap-handled pot . . . . . . . . . . . . . . . . 106
25. S-Rim- Incised pot . . . . . . . . . . . . . . . . . . . . 107
26. Vessel fragment and decorated sherds . . . . . . . 108
27. Painted sherds . . . . . . . . . . . . . . . . . . . . . . 109
28. Ceramic decorative examples . . . . . . . . . . . . 110
29. Shaft smoothers . . . . . . . . . . . . . . . . . . . . . 111
30. Palette and associated manos. . . . . . . . . . . . . 112
31. Mano and maul . . . . . . . . . . . . . . . . . . . . . 113
32. Bison bones . . . . . . . . . . . . . . . . . . . . . . 114
33. Fish mandible from 42Ut119 . . . . . . . . . . . . . 115
Fig. 1. Western Utah County with Cedar Valley and West Canyon area shown in relief.
INTRODUCTION

West Canyon is located about eleven miles west of Lehi, Utah, (Fig. 1) in the northwestern corner of Utah County. The canyon is a part of the southeast Oquirrh mountain range and provides an access to the southeastern slopes of that range. The area has long been known among local people as a source for the amateur weekend collector of Indian artifacts. The largest single collection from the canyon is that of Mr. John Hutchings of Lehi. The Hutchings Museum in Lehi, Utah, displays approximately one-half of the materials collected by Mr. Hutchings from West Canyon (personal communication). Mr. Hutchings' collection, as seen by this author, consists of the following major categories:

Ceramic vessels, whole and restored
Sherds
Projectile points
Stone drills
Chopping tools (stone)
Scraping tools (stone)
Cutting tools (stone)
Gaming pieces (stone)
Bone tools
Grinding stones
Pigment preparation stones
Clay pipes (and stone)
Shaft smoothers (stone)
Figurines (clay)

Food materials

According to Mr. Hutchings, he has been collecting in West Canyon since 1905, which makes the present report a late-comer in terms of the recovering of artifacts from the canyon. Mr. Hutchings claims to have excavated twenty-two mounds, largely on the southeast side of the canyon estimated to cover a twelve-acre section of land extending in a relatively narrow strip along either side of the canyon. According to his recollection, the mounds averaged four to six feet in height before agricultural activities so leveled them, that today they are generally indistinguishable in mounded form. In excavating the twenty-two mounds Mr. Hutchings sought the most prominent mounds in each group. One mound in particular, was described as being six feet high and some sixty feet in length. Not all the mounds were prehistoric in origin, however. One mound approximately three hundred yards south of Wood's buildings on the south ridge (Fig. 2), but not as far down as the old farm buildings which still stand today, contained, at the time Hutchings excavated (no date given), five caskets of two-inch-thick planking, within which were the partially decomposed bodies of five of "the soldiers from Johnston's army who had apparently been a part of a lumber gathering camp sent there by General Johnston." (Hutchings, personal communication).

When Hutchings described what he had found, he said that he knew they were from Johnston's army by the remains of the brass buttons which were still visible upon removing several of the planks. He reported that he thought it was an Indian mound there and that on discovering the more recent nature of the interments he quickly covered them back
(from)

TICKVILLE SPRING QUADRANGLE
USGS
1:24,000

- "site (42Ut is understood)"
- road
- permanent water
- buildings
- heavy juniper (shaded area)
- intermittent water
- T3S R2W

Fig. 2. West Canyon site locations
up and leveled out the mound so that they would not be disturbed by future "less scrupulous excavators." As far as I know, according to the information given me by Mr. Hutchings, the graves of these five troopers remain intact today.

Mr. Hutchings received training in archaeological excavation techniques as a young man (he is now in his eighties) from the Smithsonian Institution in Ohio, and claims to have followed the techniques learned there in the excavation of the mounds in West Canyon. This means, according to Hutchings, that while the excavations were taking place he mapped, noted, and photographed every feature of the excavated mounds. However, although some of the photographs have been observed by myself, I have not gained access to the notes and charts which he claims do exist and I therefore cannot make a statement on the detail or quality of his record. He gave me to understand that his son desired to compile and publish these records in some form for monetary gain, but no action to this effect has been taken, according to my best knowledge of the matter, and the notes remain in the original form.

Some of the features Hutchings discovered, of which I have seen photographs, are standing stones purportedly chinked with mud and making up parts of a wall of one of the structures (42Ut169). Another photographed feature is a circular mud-rimmed fire pit located roughly in the center of the structure floor (personal communication).

Mr. Hutchings has built a model reconstruction of a house which is very much like the Paragonah, Utah, house type as illustrated by Meighan, according to Matheny (personal communication). This house is constructed of four main upright posts connected with four cross beams, which act as basic support for parallel slanting poles which run from
the ground and lean upon the cross beams, with the whole overlaid with mud and smaller sticks. Entrance into the structure is gained by way of a single-pole ladder in the roof center. The lower portions of the wall-roof extend outside a shallow pit and form a narrow bench along the inside of the structure.

On August 13th, 1966, Mr. Bruno Mittler, a fellow student, and I, photographed as much as we could of the artifacts found in Mr. Hutchings' museum displays which relate to West Canyon (Figs. 3-6). Of the artifacts displayed and photographed, the gaming pieces are most worthy of description here. Most of the pieces consisted of various-sized, smooth, green-black slate. The majority of the pieces on display were inscribed with designs, largely geometrical, though a few of them were recognizable as artistic representations of specific natural features. Of the several stone balls in case number one, the majority were grooved to a depth of approximately 1/16 of an inch. One well-smoothed and rounded stone had been painted with a mineral pigment which was impervious to the acid cleanser used by Mr. Hutchings. Some of the slate gaming pieces were zoomorphic. One in particular was definitely a representation of a bird with the eye drilled out. This may have served equally as well as a necklace or pendant ornament of some kind, as may be true of some of the other so-called gaming pieces (Fig. 4 a).

Of the organic materials displayed (other than bone tools) fish and rodent mandibles and deer and buffalo teeth were very common, and a vial containing charred corn cobs that looked to be of a twelve row variety (Fig. 4 b) was also reported to have come out of the canyon. In relation to human organic remains, Mr. Hutchings reported that most of the burials recovered from West Canyon sites were found in one corner of the
structures as they were excavated and were mainly those of infants or very small children. As to which corner the burials tended to be found in, no pattern was reported by Mr. Hutchings.

Mr. Hutchings noted that with the infant burials, little fibre "diaper" pads were found, over one hundred of them with one burial. Since Mr. Hutchings was acquainted with local Indian groups and their life ways from early childhood, his interpretation of diaper pads may well be correct.

He claims that one of the jars that he found intact within one of the twenty-two mounds was full of the remains of dried grasshoppers and also that some houses contained flattened stones on the floor, beneath which were caches of apparently unused projectile points, more than six hundred in one cache alone. The total number of projectile points Mr. Hutchings claims to have in his possession is in excess of ten thousand, many of them found in such caches as well as by screening the excavated dirt.

One mortar is particularly interesting in that it has a band in the upper one-third incised in a zig-zag geometrical pattern with a serpent's head. The accompanying pestle, has what could be interpreted as a serpent's head carved in relief on one end. It appears that the tail end of the serpent was the grinding end of the pestle and the head formed a hand grip. Red and yellow ochre stained mortars and pestles are on display and were reportedly found within some of the structures excavated by John Hutchings. The pestle in one of them is a round stone ball. The pigment is still present on the specimens on display.

As before mentioned, Mr. Hutchings said that he dug in the
most prominent of the mounds as he thought they would represent those structures which were of most significance to the group inhabiting them and may have been the ceremonial centers of the structural clusters. If the artifacts on display, which reportedly have come almost entirely from these larger mounds, can be considered an indication, Mr. Hutchings' assumption of their ceremonial use may well be correct.

Other information concerning West Canyon and the prehistoric ruins which are there, came from the owners of the property on which Site 4U2t119 is located. I was told that when the Wood brothers began to clear the northeast rim of West Canyon for agricultural purposes a series of mounds was encountered along the entire length of the rim which is found in Section 8 of T.55., R.2W., whose estimated heights agreed with the four to six feet given by John Hutchings. One mound in particular, which made up a part of the structure cluster of Site 119 and which was excavated by John Hutchings, was large; the bulldozer had to go over it three to five times in order to bring it down to a tillable level. From further conversation with Mr. Elmer Wood, I was given the impression that the mounds were in small groupings with approximately three hundred yards of unmounded area existing between each group. Mr. Wood said that they commenced clearing the land of "cedar trees" (Juniperus utahensis) in 1929, and that the trees on the bench then were as thick as they are now on the slopes northwest of 119. Mr. Wood also noted that farther east in a "clump of cedars" was an earthen and pole structure still standing intact, which they believed to be of more recent Anglo-American construction. The Woods also told me that where 4U2t122 was located (recently destroyed by further bulldozing; see map on p. 3) a homestead dwelling once stood which was
constructed by a gentleman locally known as "The Cedar King," who used to raise hogs in the area. All that remains of his structure are a few bits of barbed wire, some late nineteenth-century bricks and broken china. The aboriginal remains are evidenced only by very sparsely scattered bits of pottery and a few mano fragments.
Fig. 3. Gaming pieces display from Hutchings' Museum.
Fig. 4. Hutchings' Museum displays.
a: Gaming pieces and other artifacts;
b: Vials of vegetal matter, stone and clay pipes, other artifacts.
Fig. 5. Hutchings' Museum displays, a: Worked lithic artifacts; b: Painted sherds only are from West Canyon.
Fig. 6. Hutchings' Museum displays.  
a: Projectile points (proveniences are mixed but most are purportedly from West Canyon;  b: Drills and scrapers.  
Many of the central scrapers are of the "Classic Plains" variety.
PROBLEM

This section is a statement on the reason behind my conducting archeological excavations in West Canyon. In light of the large collections which had come out of the area, it was deemed important to excavate before any further destruction of sites in the canyon took place in order to establish, if possible, the cultural affiliations of the prehistoric inhabitants of that area. It was felt before excavation began that there was enough evidence already on hand to suggest Fremont culture affiliation, but this was not sufficient to demonstrate the same with confident conclusiveness.

A second goal was to obtain a knowledge of the structural design used by the inhabitants of West Canyon insofar as it could be determined by excavation.

A third aim was to locate evidence of agricultural activity in a demonstrable form. As previously mentioned, Mr. Hutchings had some charred corn cobs in his display case which reportedly came from West Canyon, but these are not displayed or visibly recorded in association with other specific features of a specifically designated site as they appear in the display, so that the associations remain in question.

A fourth project was a survey of the area to determine the extent of occupation and as well as the kinds of occupation, whether they were sedentary groups with definite evidences of sedentary constructions and activities, or nomadic groups whose habitation of the
area was transitory. An extension of this same problem was a determination of the overall economic activity if possible, of either kind of group.

As suggested in the introduction, I believe the previous archeological work that has been conducted in the canyon has not been sufficient to date. Therefore it was my goal to complete a general research in what must be considered a previously untested area. It is unfortunate that with so much activity of this kind in West Canyon, I must use the term "untested area."
PHYSIOGRAPHY

Physical Features

The Oquirrh Mountains run generally parallel to the Wasatch Front from north to south commencing near the south end of the Great Salt Lake and terminating about thirty miles south in a pass which connects Cedar and Rush Valleys just west of the town of Fairfield, Utah. The width of the range varies from six to twelve miles.

McFarland, (1955:1) in his thesis on the geology of West Canyon puts the relief of the area at 5,172 feet "with a maximum elevation of 10,572 feet above mean sea level and a minimum elevation of 5,400 feet." From the mouth of the canyon, one is immediately impressed by the height of Lewiston Peak and the precipitous slopes leading up to the peak, but one is not immediately aware of the extent to which West Canyon and Left Fork penetrate toward the base of the highest visible landforms. In fact, one has to enter into the canyon more than a mile before becoming aware that he is in a canyon at all. Once one is well into the area, the true ruggedness of the slopes and the exploitable water and other natural resources are much more apparent.

The rugged nature of the topography is subdued at the southern end of the range and the slopes are less precipitous as alluvial deposits fan out to the south forming the pass between the two valleys mentioned above. The alluvial deposits overlay formations that were apparently thrust up at their northern end forming the high peaks,
including Lewiston Peak, thus giving the southern slopes a more gradual angle than those on the east and west such as make up the heads of West Canyon and Left Fork.

These two canyons converge about two miles above the mouth of West Canyon and are major drainages for the area. A small perennial stream is still an important water source in the area today.

Geology

The earliest geologic event recorded in the West Canyon area was the deposition of upper Mississippian sediments. These sediments, represented by the Deseret limestone, indicate that the area was subsiding beneath a shallow sea in the Cordilleran miogeosyncline, under conditions favorable for invertebrate life and devoid of terrigenous clastic material. During a short interval, represented by the Humbug formation, shallow water or currents which were stronger than usual prevailed, permitting the accumulation of sandy clastic material. Except for a period of lime deposits in quiet offshore waters during Great Blue time, the remainder of the Mississippian period and early Pennsylvanian time was marked by shallow water conditions with only occasional deepening. The sediments were chiefly clay with some sand and an occasional lime deposit. The remainder of the Pennsylvanian time, recorded in the West Canyon area, was marked by first, a period of lime accumulation in an area that must have been just below wave base but with occasional currents that were strong enough to cause cross-bedding. This was followed by a period of rapid accumulation of sand that must have been laid down in shallow water but with inter-bedded marine lime sediments, which indicate that the area was constantly submerged.

A sedimentary record of the interval between upper Pennsylvanian and Quaternary is not found in the West Canyon area.

The area was folded most likely during mid-Cretaceous time and possibly faulted during late Montana or early Paleocene time. After a period of erosion, late Eocene or Oligocene volcanics invaded the area in the form of quartz monzonite sills with large latite flows just north and east of the mapped area.

During the Pleistocene time there was periodic glacial
activity in the highlands, followed by stages of Lake Bonneville in Cedar Valley. In the period since Pleistocene time the geologic history of the area has been marked by continued erosion in the mountains and deposition in the valleys.

(Mc Farland 1955: 20)

Climate

The climate of West Canyon ranges from Shelford's (1963) "Montane Coniferous Forest and Alpine Communities" down to "Cold Desert and Semidesert Communities." According to Bullock (1951: p.10) the weather station, which is located on the north end of Utah Lake, reported a forty year average of 12.45 inches annual precipitation for its area. However, since Utah Lake is lower (c. 4500) in altitude than even the lowest portion of West Canyon (5520' at 42U119), this figure is probably low for the West Canyon area. My own observations while in the field (1965-66) were of numerous thunder showers that came over the tops of the Oquirrh Mountain peaks directly west of the mouth of West Canyon and seem to be funneled by the land topography over the sites undergoing excavation even during the middle of the warmest periods of summer. These showers ranged from very light to moderately heavy, judging from my own observations of soil absorption of moisture. The heaviest rain fall noted only penetrated less than one-half inch and the storms succeeded more in cooling off the general atmosphere rather than providing moisture in sufficient quantity to more than superfluously affect the grain in the bordering fields.

Throughout the summer, temperatures from midday to early afternoon ranged largely in the high 90's. Some days this was increased to several degrees over the 100 mark. Heat effects were most severely
noticed after long exposure to direct sunlight. However, when shade accommodations were available, the movement of convective air currents up and down canyon, were sufficient during the day to offer a cooling effect. It was noticed that the wind currents moved in two general directions, the first (during mid-day) coming from the south end of Cedar Valley, moving northwards and then veering west when reaching the canyon mouth. It is presumed that this change or veering is caused by air currents coming off of Utah Lake across five mile and seven mile passes at the north end of the Lake Mountains and pushing the air from east to west moving up the canyon, which acts as a funnel. Wind squalls were noticed commonly in accompaniment with the thunder storms above mentioned, but severe wind squalls were in sufficient strength to buffet the car and the secured tent fly so severely as to rock the automobile and tear the tent fly from its moorings. At the same time, heavy amounts of dust and pebbles were hurled through the air. One squall in particular was observed for more than thirty minutes to the southward before it reached a parallel with West Canyon. It was pushing a heavy concentration of dust and small whirlwinds before it and shortly after veering up canyon as though the original air currents had ricocheted off the mountain face.

The second major wind direction was diurnally down canyon from west to east and tended to dominate both in the morning and late afternoon through evening.

In driving through the area on Highway 73 during winter, at no time in the last four years have I noticed snowfall to be more than approximately two feet deep except where drifted on the more open parts of Cedar Valley, just below the mouth of West Canyon. In the middle of
July of this year, however, there was still a small amount of snow on the north slope of Lowe Peak at the head of West Canyon near the mouth of Jackson Hollow.

Hydrology

The main stream course of the West Canyon drainage is bisected near the joining of Left Fork with West Canyon by the Cedar Fork irrigation ditch. All during the late fall of 1965 and the summer of 1966, there was water in sufficient quantities to be of irrigational value flowing from the canyon through the ditch. While tracing the water courses up West Canyon and Left Fork, it was observed that West Canyon produced water more prodigiously than did Left Fork. After proceeding three miles up Left Fork the water in the main drainage became increasingly less and dissipated into a few small springs and seepages where the road ended and became a trail. In West Canyon, however, at least a dozen major and minor springs and seeps added to the main drainage of the canyon along the roadway from either side before the road ended where Fox Hollow, Jackson Hollow, and Mill Canyon converged below the old Mayflower Mine, with each of these tributaries providing a small but steady stream to the main drainage. In talking with local inhabitants they confirmed that West Canyon had always, so far as they knew, provided sufficient water for economic use and in fact, the town of Cedar Fort depends upon this source as a major supply of its irrigation water. The ditch, although running low, has a reasonably strong stream even late in the season.

It is felt by this author that the small amounts of rain which fall during the summer months are generally insufficient to be considered
a major source of moisture to crops in this area and that most of the moisture utilized either comes from water sheds of the higher elevations, or from the moisture absorbed during the wetter winter and spring months into the water table. West Canyon provides by far the most strongly permanent water source for the whole Cedar Valley area with the possible exception of Fairfield Springs which are located approximately ten miles to the south of the mouth of West Canyon beyond Cedar Fort.

A second nearby water source most probably available in prehistoric times, is that of Oak Springs Hollow which is about two miles north of the Wood site. The spring comes out of the ground on the south slope of an eastern extension of Sheps Ridge in Section 32 of T.45.R.2W below some volcanic outcappings and runs for approximately fifty yards before being absorbed back into the ground. The spring itself is not very strong judging from surface observations but is sufficient at its initiation to create a 20 x 20 yard mud and grass basin. Most of the water which is visible is in small seepage pools where game animals and cattle have walked through.

A third water source is that of Tickville Spring which is located about four miles northeast of the Wood Site on the other side of the series of ridges and low hills which lay between Oak Springs and Tickville Spring. The springs are mapped on the Tickville Spring quadrangle (USGS) as erupting in three locations, two in Section 35 and one in Section 26 of the aforementioned township range coordinates. However, only two of the three sources was found to be active during the Fall of 1965 and the northernmost spring manifests itself at a lower elevation than appears to be mapped on the above mentioned quadrangle;
the lower of the two springs still active is mapped in at its proper location. Both of these active water sources were more seepages similar to that of Oak Springs rather than tributary water sources such as found in the several springs in West Canyon.

A fourth small spring is found on the west slope of the southernmost extensions of the Oquirrh Mountains where Cedar Fort is today and its stream, when observed by this author, was running generally along the sides of the westernmost streets of that settlement with only minimal control.

A fifth water source is that of Fairfield Springs and these springs come forth to form large ponds just west of Highway 73 in Fairfield, Utah. These ponds drain along a southeasterly course and disappear into the ground in the Fairfield Sinks area which, at the time of observation (Fairfield Sinks) were dry though showing signs of subsurface water being present in November of 1965. The major concentration of water then remains the Fairfield Springs pond areas and a short distance along its drainage course.

Another drainage area on the west slopes of the Lake Mountains was investigated but was found to contain only evidences of annual run-off with no apparent perennial water source. The above mentioned are the only areas covered by this report since the southern areas of Cedar Valley did not show much promise according to visual and map observations of containing many prehistoric site locations.

Agricultural activity in Cedar Valley and West Canyon has altered the water shed in the area and lowered the water table considerably in historic times.
Ecology

Due to the elevation variations in the West Canyon area (5,400 - 10,626 feet) the ecology of West Canyon and its associate environs is similarly variable, and the classification of the area into the following ecological communities is helpful: (1) Montane Coniferous Forest and Alpine, (2) Cold Desert and Semidesert, and (3) Ecotone Woodland and Bushland. (Shelford, 1963)

The first community is characterized by the presence of fir and spruce conifers as dominants, with groves of aspen where the conifers have not yet asserted their dominance. Mc Farland reports

. . . Dense growths of Douglas fir, with a few Spruce and some Pinon and Yellow pine, are found in the high areas, especially on the north-facing slopes.

Aspen is abundant in the higher canyons and gulches, along with scrub oak, box elder, choke cherry and alder. The lower slopes support a large growth of cedar (Utah juniper), buck brush, bulb cactus, sagebrush and bunch grass. Dry land wheat farms and open range land occupy the southeast part of the area. (Mc Farland, 1955: p. 3)

The species of spruce noted by myself is engelmanni and appeared to be subdominant to the fir, while aspens were subdominant to both and occupying largely a transition zone between the Ecotone Woodland group and the Montane group.

Oaks and choke cherry seemed to be the most exploitable tree food sources due to their numbers, while Pinyon pines provide an excellent if somewhat numerically inferior food resource.

Oak groves are abundant in the bottoms of both West Canyon and Left Fork with Quercus gambelii dominating and achieving heights of 20
feet or better in the canyon bottoms and more altitudinous slopes, particularly on north, east and west. The Pinyon-Juniper Woodland community covers nearly all lower slopes and southern slopes to altitudes in excess of 7,000 feet.

Below 5,000 feet the Cold Desert and Semidesert Communities replace the Pinyon-Juniper Woodland and Sagebrush mixed with bunchgrass predominates.

While only a few species of fauna were actually observed (due in part to agricultural alteration) it must be assumed from studying Shelford's work (1963) that there must have been in pristine times, as indeed there must be now, a greater variety of species than observed actually available for exploitation as a food source for man.

Mule deer, jackrabbits, cottontails, mourning doves, owls, and gray (probably "rock") squirrels were seen throughout the summer around the mouth of the canyon. Shelford's descriptions of plant-animal communities would enlarge the above meagre tally by two dozen or better, of exploitable species of rodents and larger mammals (including the pronghorn antelope and bison; p. 279, 281), not to mention edible insects and reptiles, fish or birds. Several times large dark brown eagles and smaller hawks were seen circling the area, as also a few ravens and magpies (Fig. 32).

As a note of interest concerning the presence of bison this far west of the Great Plains, Shelford records:

Previous to 1825, small herds of bison moved south through Surprise and Alturas valleys in northeastern California, which is an area frequented by pronghorns and deer. It is probable that the bison fed on grass in the well-watered Surprise Valley, but they were also known to browse. (p. 281)
AREA SURVEY

In the autumn of 1965 an areal surface survey of Cedar Valley in general was undertaken by this author. It was decided that with the small amount of help available only major water sources could be surveyed with reasonable comprehensiveness and that larger, drier portions of the valley would be left unsurveyed.

The survey commenced with Tickville Spring and vicinity and turned up some possibly exploitable wild resources but only one lone chert flake as evidence of any prehistoric activity of the area. The survey then moved to West Canyon where five archaeological sites reported by Jones (1961) were revisited. These site numbers are 42Ut119 - 123. Five other locations were mapped and site numbers 42Ut169 through 173 were assigned. However, the last of these site numbers I have decided to withdraw due to insufficient recovery of material evidence after subsequent visits to justify the assigning of a site number to this locale. 42Ut169 is a site where John Hutchings did a major portion of his excavation and is near to the confluence of West Canyon and Left Fork.

The surface survey was conducted by walking two, three or more abreast along the edges of West Canyon on either rim and making test trenches where possible structure locations might be. Potsherds were generally considered to be indicative of house sites; however, by subsequent testing, I was able to demonstrate subsurface structural evidence in only one case (42Ut120). The other three structures found
were 42Ut169 and two structures in 42Ut119, but these evidences were not the result of testing by the surface survey party. The former was excavated by Mr. Hutchings and his photographs and artifacts recovered as observed in the museum in Lehi demonstrated more than amply the presence of a structure. The latter was the site whose excavation forms the basis of this report and was verified during the summer of 1966.

The surface survey of West Canyon resulted in the collection of several projectile fragments, 460 potsherds (largely plain gray ware) some organic material, fired mud bits and grinding stone fragments. The survey was next carried to Fairfield Spring area and the Sinks where not one artifact was recovered. After visiting the Sinks the survey crew investigated the western slopes of the Lake Mountains which also had negative results. Next the survey covered several miles of Tickville Gulch from north of Utah Highway 73 south and east toward Utah Lake surveying both the rim surface and the bottom and sides of the gulch which is an erosive drainage channel more than thirty feet deep in some places. No artifacts were observed or recovered but deer and other smaller forms of wild life were observed as well as large pieces of core chert.

The area next surveyed was that of the ridge tip which terminates just west of the Cedar Fort cemetery. Near the top of this ridge and several hundred yards up the dry wash at the base of the western slope of this same ridge were found petroglyphs of indistinguishable cultural affiliation. The petroglyphs were badly worn and very difficult to see and could not be photographed. It is to this site area that the number 42Ut173 has been reassigned.
The survey next examined the upper reaches of West Canyon and Left Fork where no artifactual material was recovered but the resources that could have been exploited in the area were noted. The last area of investigation in the survey was Oak Springs Hollow where was found a large quantity of volcanic feldspar material which is the same as that found in site 42Utl19, and used there for grinding stones.

In accordance with the general results of the survey it was obvious to this author that West Canyon provided the logical place to conduct further archaeological investigation and since site 42Utl19 showed greatest surface indication of structural presence, it was decided to excavate it.

Listing of Sites

42Utl19 T5S R2W-House site

Location: On the edge of a large grain field on the north rim of West Canyon. It is on the right, just where the access road tops the grade after leaving the canyon road, .3 of a mile west of the cattle guard, in Section 8. First reported by Jones (1962).

Description: Badly pot-hunted low mound with pottery scattered over the surface of what remains of the mound. A suspected second mound 5 m. to the south has been disturbed by pot-hunters also.

Structures: Two.

Pottery:
570 Snake Valley Gray: Provo variety
366 Snake Valley Gray: Provo buff variety
12 Sevier Gray: Goshen variety
14 Unnamed Black/White: Goshen variety
7 Snake Valley Black/Gray: Goshen variety

Projectile Points:
1 Class I.
1 Class II.
2 Class III.
3 Class IV.
1 Class V.
1 Class VI.
1 Class VIII.
2 Class IX.
2 Class X.
1 Class XI.
1 Class XII.
1 Class XIII.
3 Class XIV.
5 Class IX.
2 Class XVI.
1 Class XVII.
1 Class XVIII.

Drills:
4 Class I.
3 Class II.
3 Class III.
6 Class IV.

Knives:
1 Class I.
1 Class II.

Gaming Pieces:
4 Class I.
2 Class II.
2 Class III.
4 Class IV.
1 Class V.

Bone Tools:
1 Class I.
2 Class II.
1 Class III.
1 Class IV.
2 Class V.

Flaking Tools: One.

Antler Tine Tips: Two.

Scraping and Chopping Tools:
12 Class I.
9 Class II.
5 Class III.
6 Class IV.
4 Class V.
5 Class VI.
4 Class VII.
1 Class VIII.
3 Class IX.
2 Class X.
3 Class XI.
5 Class XII.

Hammerstones: One.

Shaft Smoothers:
6 Class I.
2 Class II.
3 Class III.
3 Class IV.

Manos:
2 Class I.
2 Class II.
6 Class III.

Metates: One.

Palette: One.

Other Artifacts: Fired-mud.

Organic Material:
- Deer bones.
- Buffalo bones.
- Rodent bones.
- Bird bones.
- Fish bones.

Beam and charcoal fragments (incl. charred corn cob)

Debatage: Chert.

42Ut120 T5S R2W-House site

Location: ca. 200 yd. northwest of 42Ut119, this site is
reached by an extension of the same access road as used to reach 119. Northwest quarter of Section 8. (Jones 1961)

Description: As is the case with all the sites near the grain field, they are detected by a change from long grass vegetation to short, bunchy grasses over the occupation area. It is easily missed without a careful search for sherds as well as vegetation changes.

Structures: One.

Pottery:

80 Snake Valley Gray: plain variety.
55 Snake Valley Gray: buff variety.
5 Snake Valley Gray: punctate and incised variety.
1 Snake Valley Gray: red/buff painted variety.
1 Snake Valley Gray: fug.-red/buff variety.
3 Sevier Gray: plain variety.
3 Unnamed Black-and-White: plain variety.

Projectile Points: None.

Other Artifacts:

2 Scrapers, one of which is 5.5 cm. the other 2 cm.

Organic Material:

3 Rodent bones: one rib and two femur fragments.

Debatage: Chert.
42Ut123 T5S R2W-House site

Location: On the middle ridge between the Left Fork and West Canyon proper, on the north side of the east end of the air strip in the southwest quarter of Section 6. First recorded by Jones (1962).

Description: A low flat ridge covered with sage and juniper. There is a concentration of material on and around the remains of a house mound which has been partly bulldozed. Scattered and concentrated artifacts cover an area of about 50 X 50 yards. Present condition is quite poor due to the construction of the air strip.

Pottery:
10 Snake Valley Gray: plain variety.
129 Snake Valley Gray: buff variety.

Projectile Points:
3 Fragments

Other Artifacts:
1 Drill base
2 Discoidal scraper

Debatage:
Chert
Green stone (1 small, smoothed piece)

42Ut169 T5S R2W-Village site

Location: The northwest corner of the northeast quarter
of Section 7. It overlooks the confluence of West Canyon and the Left Fork drainages, and the livestock corrals.

Description: A sage and juniper bench with the remains of houses scattered about. Most are almost indistinguishable were it not for vague depressions. It is quite certain that many of these depressions, like the obvious, deep pits, are largely of pot-hunter origin.

Pottery:

4 Snake Valley Gray: plain variety
11 Snake Valley Gray: buff variety
1 Sevier Gray: plain variety

Projectile Points: None.

Other Artifacts:

2 Scrapers.

Organic Material:

1 Cow or buffalo tooth fragment.
1 Rodent mandible.
1 Cranial (?) fragment, possibly a human infant.

Debatage:

Chert
1 Obsidian flake.

42Ut170 T5S R2W-Chipping Area.

Location: Beginning approximately at the intersection
of Sections 5, 6, 7, and 8 and continuing along the north rim of the canyon, in a several yards wide strip, into Section 8 to the edge of the tilled area.

42Ut171 T5S R2W-House site (?)

Location: Thirty-five yards north of 42Ut119 (Jones, 1962) in Section 8.

Description: Vegetation change was the clue to this site's existence; shorter, variant colored grass. A house ruin may lie beneath.

Pottery: None.

Projectile Points:

2 Class VII.

Other Artifacts: None.

Debatage:

Chert.

42Ut172 T5S R2W-House site (?)

Location: Just as one reaches the southern boundary of Section 8 on the main approach road to West Canyon, a second road departs on a westward line and half way through Section 8, is in turn dissected by a northbound road. About 200 yards northward along the latter road there is a lone juniper on the east side of a fence. The site is at the base of the juniper.
Description: A relatively level area covered with sage and grasses and seemingly little-disturbed by pot-hunters.

Pottery:

\textsuperscript{4} Snake Valley Gray: buff variety.

Projectile Points: None.

Other Artifacts:

1 Drill.

Debatage:

Chert.

\textsuperscript{42Ut173 T5S R2W-Chipping area}

Location: Commencing 150 yards southeast of \textsuperscript{42Ut172} it forms a strip of varying width which follows the fading canyon rim from the southeast quarter of Section 8 along the eastern portions of Section 17 where it terminates.

Description: The site is variously vegetated with grasses, sage, cottonwood, grain stubble, willow and juniper depending on the distance from the rim lip to the Cedar Fort Irrigation Ditch which runs generally parallel to the rim. Artifacts, or chips rather, are thinly scattered and wane rapidly as the distance from the rim to the water course (old) increases.

Artifacts: None.

Debatage:

Chert, scattered.
42Ut174 T5S R2W-Chipping area.

Location: Occupying a parallel position to 42Ut173, only 17\(^{1/4}\) is on the other rim of the canyon and generally closer to the original water course.

Description: The site in the southwest quarter of Section 9 is heavily plowed and only in a narrow fringe of sage were there any artifacts observed in any quantity. As the rim proceeds into Section 16, however, it is not plowed now, and has a sage and grass vegetal covering instead. It is thought that some house sites may eventually be found in this site area since it is closer to the old water course than 173.

Artifacts: None

Debatage: Chert, scattered.

42Ut175 T5S R2W-Hunting site

Location: The Fairfield "Sinks", Sections.

Description: The "Sinks" are a series of generally connected depressions in the valley floor with numerous ridges cropping up throughout to a height of some 6 - 8 yards, though most of them are the normal valley floor level only 1 - 2 yards higher than the depression bottoms. The area shows signs of holding water during part of the year, though dry when visited. The "Sinks"
may have been a more permanent water source
before the drilling of wells in the vicinity,
grain farming and other agricultural practices
lowered the water table.

Artifacts:  None.

Debatage:

Chert, scattered.
EXCAVATIONS

Unit A

As mentioned in the previous section, the surface manifestations of this site were most indicative of a structure having existed there at one time, more so than was evidenced at any other relatively undisturbed location, therefore, 42Ut119 was selected for excavation.

On June 22, 1966, a trench was marked out with string and stakes on an east-west axis. It was planned that the trench be five feet wide and was laid out forty-eight feet long in order to insure discovery of any structural remains that might lie in its path. Datum was established by driving a wooden stake securely into the ground and sinking a nail into the top end around which one end of a line-level line could be looped and extended along the border of the north side of the trench. It was observed that the land sloped generally to the north and east.

Excavation commenced at the east end of this trench with five-foot squares and was sunk to a depth of approximately four feet below surface or four feet nine inches below datum level. Sherds and chips, the latter predominating, were found scattered to a depth of approximately three feet where a hardpack layer was encountered and first thought to be a floor and a wall segment. By extending the trench farther toward the west, however, it was found that the hardpack layer was a natural calcareous hardpan (caliche) layer.
Fig. 7. Mound-unit-trench relationships for Units A and B (H2Ut119).
As the trench proceeded westward, charcoal bits mixed with the soil became more frequent and on the north side of the trench, eleven feet out from datum, a charred section of beam was discovered which broke off after two feet for a two foot space and resumed again for another two feet, terminating in a position even with a mano fragment beside which, and sunken into the caliche, were fragments of an upright post. The post material was in contact with the mano fragment. From this point the trench extended for another nine feet (without contacting any major cultural evidence on the north side of the trench) dissecting a pot-hunter's pit to the north, and cutting through a section of burned roof fill on the south.

Twenty six feet west of datum was encountered a group of five deer mandibles lying on a thin lens of earth above the natural caliche. They were mixed with numerous charcoal fragments. The trench excavation continued to the westward for another nine feet where a low wall of mud and stones was detected.

At this point it was decided to remove the pot-hunter backfill, which began just beyond the upright post remains by about one foot, continuing along the north side of the trench to the thirty-two foot point and extending to the north in a semicircle averaging three to three-and-a-half feet. It was found that the pot hunting had not been carried on to an equal depth in all parts of the disturbed area, although most of the "potted" area extended down to the caliche level at a depth of eighteen inches. The greatest depth of disturbance was on the west end of the area, the east end not being so deeply dug into; leaving two parallel and one angularly bisecting charred beam fragments in position one foot nine inches below surface. At the west end
of the northernmost of the two parallel beam segments was a rodent's nest filled with shredded juniper bark and a number of juniper berries. One foot, to the south of the southernmost beam, was found on the floor, or caliche level, a jointed bone awl at a depth of two feet, two inches at the twenty-nine foot point on the north wall of the first trench.

From this point it was decided to move southward along the edge of the previously mentioned low wall. Less than six inches south of the south wall of trench A was discovered a major beam partly charred and partly preserved, unburned wood. The beam at one time apparently had a diameter of six inches or more. The charred and unburned sections of the beam extended from beyond the edge of the low wall in the west for ten feet to the east, one part overlying a whole mano (Fig. 31). Ten inches further to the south, even with two more charred beam fragments extending from below the wall, were two arrow shaft-smoother fragments and a large overturned metate of the Utah type. Three more beam fragments, parallel with the first major beam described above, were discovered extending from the wall towards the east as the trench moved five feet farther to the south.

Three-and-one half feet beyond this point the low wall turned abruptly to the east breaking its north-south configuration. The extension to the east, however, only ran for two feet, and then dissipated into a few stones continuing roughly in a configuration that may have indicated an extension of this wall.

As clearing continued to the south, it was noted that the thickness of the low wall decreased to caliche level in approximately three feet. Excavation thence moved eastward again, parallel with trench A, and on a nine foot front removing the southern wall of
trench A.

As the excavation proceeded eastward, a palette of sandstone with the upper surface heavily coated with red ochre was discovered. On the west side of the northernmost tip of the palette, as it lay in situ, was a small feldspar mano fragment and on the east side of the same end of the palette was a fine whole mano of volcanic stone with red ochre on the major grinding surface (Fig. 30). Six inches beyond the end of this second mano was found the fragments of a large jar; one of the fragments had a handle on it and an incised neck decoration (Figs. 22, 25). One foot west of the latter pot was found large pieces of the base of what turned out, in reconstruction, to be another pot (Figs. 17, 18, 24). Two feet beyond this was found a flaking tool and the bottom (Fig. 26) of another pot. Two feet farther east the remains of a restorable single-handed pot with a coffee bean applique ring around the base of the neck was discovered and the fourth and final posthole depression beside it.

A small balk extending westward from the east wall was left intact to determine thickness of roof fill in relationship to other features excavated. The roof fill was approximately one foot below the surface and the balk extended four feet, ten inches, into the interior of the house. It was three inches side, north to south. The roof material was one foot, two inches thick.

When excavation was in its early stages the earth was removed in six inch levels, but when screening of several wheelbarrow loads of this material showed an extremely low yield (c. ten sherds to the wheelbarrow load on any level) it was decided that shortness of time and lack of available manpower should take precedence over any attempts
to obtain stratigraphic control by arbitrary means over what was obviously a one occupation site. Therefore, complete excavation of at least one structure before the close of the season was established as the primary objective with screening of backdirt, undifferentiated by level of excavation, taking a secondary position. This decision was subsequently justified when screening of backdirt continued the very low artifactual yield and added relatively little to the overall artifact count with the exception of a dozen small projectile points missed in trowel and shovel excavation.

As major features were uncovered they were photographed in situ and proper depth and coordinate measurements were made. The more delicate excavation was handled with the aid of a one-inch soft bristled brush, knife blade, and a small dental syringe (rubber air bulb).

Unit B

A second unit was partially excavated. This unit is found twenty-five feet west of Unit A discussed above. One twenty-foot trench running north and south and a second fifteen-foot trench bisecting the first trench revealed a portion of a low stone and mud wall structure, very similar to that discovered on the west end of Unit A. However, the area inside the wall had been greatly disturbed, so much so as to render continued clearing and excavation hazardous guesswork. It was thought that perhaps repeated bulldozing of this mound by the Wood's when they were clearing the land for agricultural purposes, had caused this disturbance but it was subsequently discovered through personal communication with Mr. John Hutchings that this, the largest of the mounds of the east side of the canyon, had
been excavated by himself. Consequently, the artifacts recovered from that site were very few. Therefore, excavation of Unit B was discontinued at that point.

Test Pits

On August 6, 1966 a special survey crew was organized for the specific purpose of putting test pits into sites that had been previously located by surface surveying of the area, and which were thought, because of surface ceramics to be structure-sites.

The test pits were sunk in the most likely place in the area of each surface find according to the best evidence available (ceramics, manos, metates, vegetation variations, or any mounding noticeable). The site numbers, in the order tested are: 42Ut120, 42Ut121, 42Ut122 (no longer existent as a recognizable site due to fresh land-clearing activity), 42Ut123, 42Ut172 and a peculiar vegetation pattern c. 100 feet west of the midpoint along the road which makes up the eastern border of Section 17 (T. 58, R.2W). It was one of several circular patterns springing up in an otherwise recently-disked grain field (the first plowed area west of the road above mentioned).

The results of this testing are as follows: In 42Ut120 was recovered surface and sub-surface sherds, two mano fragments (sub-surface) and half of a metate (surface), two bones, one scraper, one projectile point fragment, bits of charcoal, and wood and a rodent's den. In comparison with what is known about the excavated house (119), it was concurred that there was a structure there and that the mounding and vegetal surface indications further support this conclusion.

42Ut121 presented another picture entirely. There were two
surface (one partially exposed) metates and a sub-surface hammer-stone recovered, but no ceramics or flakes nor other reasonably identifiable structure evidences were present.

It was said by the owners of the property that the "Cedar King," previously mentioned, had built his house on top of 42Ut122, but other than some widely scattered mano fragments, and one sherd, a bulldozer had wiped out all but a few bricks of a type manufactured around the beginning of this century, and some modern china sherds and one arm from a ceramic doll. There were no evidences of aboriginal habitation that were visible and sufficiently concentrated to suggest a plan for a test pit.

42Ut123 is located on the north side of the remains of a C.C.C. constructed emergency airstrip, about 150 yards west of the eastern end. Surface sherds and lithic chips were present, but digging revealed nothing to indicate a structure's remains being beneath the surface in what was concluded to be the most likely spot in that area. Word-of-mouth reports say that a whole village was bulldozed there, but if such was the case, no substantial evidence of such a grouping of structures remains now, nor of a single structure, for that matter.

42Ut169 needed no testing since vandals had scattered charcoal, wood fragments, and sherds about the perimeter of a five feet deep pit. There had been structures there at one time, but the area is very disturbed now.

Walking from 42Ut169 to 42Ut172 revealed one small, buff-colored sherd along the edge of the grainfield on the south rim of the lower canyon, and at 42Ut172 only one more surface sherd was sighted and a nearby mound had a sandstone core. Two pits revealed one stray
charred stick, six inches below surface, and mostly fist-sized rocks.

The last area visited was that of the peculiar vegetational circles in the grain field. At the base of the plow zone was discovered a natural, hard-packed clay which was found at several other places outside and away from the circular growth in other parts of the field. The vegetation seemed to be a variety of morning glory (in bloom). My conclusion is that either seeds or starter fragments of this plant had been picked up by farm machinery from a nearby ditchbank, deposited in a relatively straight line during cultivation activities, and from there spread out in a circular pattern via root-runners, since there is no other vegetation to restrict the plant. It is not felt that there is any structure underlying the vegetation, since absolutely no artifactual material was found in that area.
STRUCTURES

Unit A

The internal measurements of Unit A are at best indefinite due to the disturbed condition of the soil caused by bulldozing, plowing, and pot hunting. The reasons for this seem most logically to be a destruction of the south and east walls by agricultural activity, destruction of the major part of the north wall by pot hunter activity leaving only the west wall intact for the entire length of the side of the structure and only short appendages where the south and north walls were. The results are a conclusive measurement north to south on the west wall, conjecturing the same measurement, or nearly so, on the opposite or east wall. The lengths of the north and south walls are hypothetically determined according to the scattering of small stones in greater profusion than found in house center, but less compactly organized than the west wall.

The established wall measures thirteen feet, six inches, north to south. The proposed east-west wall is fifteen feet. This gives an interior floor space of 13.5 X 15' or 202 square feet overall. The area within the central portion of the house, within the post pattern would only be c. one hundred square feet. The proposed bench as established on the west wall was one foot eight inches wide, up to eight inches high and sixteen and a half feet long approximately, including the corners at each end based on the assumption that the
wall fragments of the north and south walls which do still exist made up a bench of similar width. The sloping beams were from ten to eighteen inches apart and some of the fired-mud recovered showed impressions of smaller interlacing sticks, indicating that the space between the major beams was filled with sticks, brush, and mud. The roof fill material averaged thirteen to fourteen inches in thickness and showed impressions of large and small beams with the same criss-crossing of smaller material evidenced in the mud.

A small, ash lense was located in a shallow, natural (?) depression in the caliche layer about three feet east of center and approximately four feet north of center. This was distinguished largely on the basis of very fine ash which was concentrated in the depression and had a different texture, color and general appearance from other evidences of charred materials, more generally attributed to the remains of wall and roof structures.

Nearly all artifacts were found within the central portions of the structure. The large metate was the first major artifact to be discovered in the excavation. It was found two feet east of the west wall, and one foot three inches south of the largest beam. It was one foot six inches below surface, with one-and-a-half inches of soil between it and the caliche layer.

Smaller beam segments were found within six inches of the large metate. The angle of two of them, seemingly a part of the same beam, is about thirty degrees south of being parallel with the major beams. By the northwest end of the metate were found two fragments of arrowshaft smoothers made of sandstone. One foot and ten inches east of the northernmost corner of the metate and underlying one end of the
major beam, was found a complete mano. This put it three inches south of the wall of trench A and five feet three inches east of the west wall of the structure.

One and one-half feet north of the northernmost end of the above mentioned metate, and also one and one half feet east of the same, were found five deer mandible halves. They were arranged almost semi-circularly around the north end of the mano and mixed with charcoal concentration.

Five feet north of the mano and six inches north of the north wall of trench A below the potted zone, was found a jointed bone awl lying on the floor. It was one foot south of three beam fragments. Approximately two feet southeast of the southeast end of the metate, was found a red ochre palette (Fig. 30) and in direct association was a whole mano and a smaller mano fragment. The whole mano, being a flatter and finer textured type than the one found in association with the metate, was coated on one surface with red ochre. The other surface was more rounded and had been deliberately shouldered and thinned at one end. Near the northeast end of the whole palette-manö was found one-half of a handled pot with an incised, banded neck. One foot three inches southeast of the above pot fragment, was found a double-tined antler fragment. Another antler fragment was found beside the palette (west). A third tine had been partially cut and partially broken at the base end when it was removed from the whole antler. It showed signs of attrition at the tip and was found two-and-one-half feet east of the handled pot described above, directly beside the bottom of a second pot, the rest of which was never recovered.

Two-and-one-half feet farther east, the remains of a restorable,
handled pot was discovered with some of the pieces apparently stacked on top of one another. Others were scattered in close association beside a rock which seemed to be a part of the roof fill. Less than six inches southeast one half of this restorable pot was found intact though badly cracked. Beneath the intact half was two inches of windblown fill. It was also noted that the same depth of windblown fill was also found between four to six inches of fired-mud roof fill and the floor, where the pot with the incised neck was recovered. Ten inches southeast of the restorable pot was found the fourth posthole, and three feet beyond that were found numerous small stones in the same general condition, size, and placement as was found along the destroyed portion of the south wall of the structure. Seven feet north of this hole, yet short of the first posthole discovered, was a smooth-topped stone which had been imbedded three inches or more into the caliche and had apparently become cemented in due to the calcareous nature of the caliche layer. It did not appear that this stone, which measured eight inches across the top, was a part of the natural caliche conglomeration, but rather had been imported and used as a preparation stone of some kind since the surface showed signs of both pecking and smoothing.

Two beam fragments about two feet long each, were found lying parallel with the north wall of trench A but were east of the postholes and possibly were all that remained of the leaning beams which were braced in a semi-upright position by the four major upright posts.

**Unit B**

Unit B was excavated only partially by means of one eighteen
inch wide north-south trench and a bisecting four foot wide east-west trench. The north-south trench uncovered a small segment of an east-west wall built up of small stones and mud which was three feet wide tapering into nothingness on the north side and increasing to an eight inch height on the south wide where it dropped off abruptly inside Unit B. The inside of the east-west wall was followed for four and one half feet, but further excavation was rendered impossible due to the extremely disturbed condition of the interior fill and the very broken up caliche layer which made distinction of any change in wall direction impossible.

The cultural material recovered from structure B consisted of two projectile points, one of them barely subsurface and just within the inside edge of the low wall, the other recovered from the floor (?) level, a large buffalo femur fragment (Fig. 32) charcoal bits, and a possible mano fragment.

Due to the severe destruction of Unit B, the only specific comparison that can be made between the two structures is that of a similarity of wall construction and house alignment. The configuration of the wall, found in the first trench that was cut through Unit B, matched up very specifically in terms of components: small stones and mud, packed and stacked together and the alignment of the wall in structure B running east and west was parallel with the wall in Unit A, such as remained of it, running in an east-west alignment also. Beyond this point further statement would be idle speculation, but at least it does help to establish for any future work that may be done in the area, the possibility of finding more of the same kind of structure.

50
ARTIFACTS

As an introductory note to this section it should be pointed out that in the "Non-ceramic" section the listing of artifacts in classes does not constitute any analytical taxonomy beyond that of useful description, and that most artifact measurements (which follow each set of definitions respectively, and contain figure references) are averages for groups or estimates in the case of fragmentary items.

The format for this arrangements was first seen by the author in the University of Utah anthropological Papers series, and adapted to this report for standardizing purposes since one copy is to be filed with the University of Utah as stipulated in the agreement whereby National Science Foundation funds were obtained to help defray the expenses of the field operation.

The "Ceramic" section utilizes an adaption of the Type-Variety concept in ceramic classification, in an attempt to keep from complicating Fremont ceramic nomenclature any more than is already the case.

Non-Ceramic Artifacts

Projectile Points

Definition of classes

Class I. A triangular slightly side-notched point. The base flares wider than the main blade and there is flaking on both sides
on all edges thinned at the base.

**Class II.** A triangular mono-side-notched point, flaked on all three edges and slightly convex on one side with the exception of the one side-notch, the point forms a nearly perfect triangle. The one notch extends to the mid-point of the blade.

**Class III.** A triangular side-notched point with a flaring base wider than the blade. Flaking is on all edges with serration of the blade in some cases. Thinned base. Blade face may or may not be worked.

**Class IV.** A delta-shaped short-bladed point, side notched with an expanding base equal to, or slightly greater than the blade width. Base is thin.

**Class V.** A delta-shaped short-bladed point with wide notches. Expanding base is less than the width of the blade.

**Class VI.** Parallel-sided point with side-notch. An expanded base slightly less than blade width. Thinned base.

**Class VII.** A corner-notched point with expanded base which is less than blade width. Small tangs, thinned base, and a short delta-shaped body. Both faces of the blade are worked with diagonal flaking from each edge meeting at center.

**Class VIII.** A triangular corner-notched point with non-expanding base.

**Class IX.** Elongated triangular point with corner notching and expanding base to slightly less than blade width. Both faces are worked.

**Class X.** A triangular side-notched point with expanding base to greater than blade width. Base is concave. Blade edges are
slightly serrated and both faces are worked.

Class XI. Small lanceolate corner-notched point with slightly expanding stem. Both faces are worked.

Class XII. Tanged-triangular point with corner notching and slightly expanding stem. Both faces are worked.

Class XIII. End-notched point with a slightly expanding stem. Tanged. Tangs extend parallel to an equalling length with the stem.

Class XIV. A triangular un-notched point with all three edges worked.

Class XV. An un-notched expanding based triangular point.

Class XVI. Shouldered point. One worked edge with worked and thinned base.

Class XVII. Double shouldered stemmed point. Stem is slightly expanded.

Class XVIII. Triangular tanged point with off center angular stem. Slightly expanded stem.

Measurements and totals by class

Class I. Fig. 8

Size: Length 3/4"
Width 1/2"
Thickness 1/8"
Total: 1

Class II. Fig. 8

Size: Length 7/8"
Width 1/2"
Thickness 1/16"
Total: 1
Class III. Fig. 8

Size: Length 7/8"
Width 1/2"
Thickness 1/8"

Total: 2

Class IV. Fig. 8

Size: Length 3/4"
Width 1/2"
Thickness 1/8"

Total: 3

Class V. Fig. 8

Size: Length 7/8"
Width 3/8"
Thickness 1/8"

Total: 1

Class VI. Fig. 8

Size: Length 5/8"+
Width 7/16"
Thickness 1/8"

Total: 1

Class VII. Fig. 8

Size: Length 1 1/8"
Width 13/16"
Thickness 1/4"

Total: 1

Class VIII. Fig. 8

Size: Length 7/8"+
Width 9/16"
Thickness 1/8"

Total: 1

Class IX. Fig. 8

Size: Length 1 5/16"
Width 9/16"
Thickness 3/16"

Total: 2

Class X. Fig. 9

Size: Length 5/8-3/4"
Width 1/4-1/2"
Thickness 1/16-1/8"

Total: 2
Class XI. Fig. 9

Size: Length 1 1/16''
      Width 1/2''
      Thickness 1/8''

Total: 1

Class XII. Fig. 9

Size: Length 1''+
      Width 1 1/8''
      Thickness 3/16''

Total: 1

Class XIII. Fig. 9

Size: Length 13/16''+
      Width 1/2''
      Thickness 1/8''

Total: 1

Class XIV. Fig. 9

Size: Length 15/16- 1 5/8''
      Width 1/2 - 1''
      Thickness 1/8-5/16''

Total: 3

Class XV. Fig. 9

Size: Length 1 1/8''
      Width 1/2''
      Thickness 1/8''

Total: 5

Class XVI. Fig. 9

Size: Length 1 7/16''
      Width 7/16''
      Thickness 1/8-3/16''

Total: 2

Class XVII. Fig. 9

Size: Length 1 1/4''
      Width 9/16''
      Thickness 1/8''

Total: 1

Class XVIII. Fig. 9

Size: Length 1 1/4''+
      Width 5/8''
      Thickness 1/8''

Total: 1
Drills

Definition of classes

Class I. Winged based drill with rough flake point.
Class II. Winged based drill with finely worked point.
Class III. Slightly expanded base drill. Rough flaked point.
Class IV. Slightly expanded base drill. Fine worked point.

Measurements and totals by class

<table>
<thead>
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<td>1/8-1/2&quot;</td>
<td>4</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class II</td>
<td></td>
<td>1 5/16&quot;</td>
<td>3/4-1 1/8&quot;</td>
<td>5/16&quot;</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Class IV</td>
<td>Fig. 10</td>
<td>1 1/2-2&quot;</td>
<td>7/16-1&quot;</td>
<td>3/16-3/8&quot;</td>
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</table>

Total: 4

Total: 5
Knives

Definition of classes

**Class I.** Half-trapazoidal, unnotched blade. Flaking on three edges. Edges on either side of the single point are worked to a cutting edge. Upper cutting edge dissipates when meeting upper unworked edge. Lower cutting edge meets rear cutting edge. Rear cutting edge dissipates on contacting upper edge.

**Class II.** An almost triangular cutting point one corner of which is deliberately blunt leaving the remainder of the other three edges worked to a cutting edge.

Measurements and totals by class

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<tr>
<th>Class I. Fig. 10</th>
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<tr>
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<td>Thickness 1/8''</td>
<td>Thickness 1/8''</td>
</tr>
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<td>Total: 1</td>
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</table>

Gaming Pieces

Definition of classes

**Class I.** Small smoothed pieces of green-black slate. Lightly incised surfaces with undiscernible design. General shape
is elongated. Some are similar to miniature stone axe heads.

Class II. Smooth green-black slate with deep grooves or light inscriptions around entire circumference. Irregular elongated pieces.

Class III. Flattened discoid to rectangular curvalinear pieces of smooth green-black slate. Some lightly inscribed surface lines.

Class IV. Circular ceramic sherds. Centers may or may not be drilled. Red ochre on inner surfaces of some.

Class V. Semi-spherical sand stone pieces.

Measurements and totals by class

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<thead>
<tr>
<th>Class I. Fig. 11</th>
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<td>Width 3/8-9/16&quot;</td>
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</tr>
<tr>
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<th>Class IV. Fig. 12</th>
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<tr>
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<td>Size: Diameter 1 1/8-1 1/2&quot;</td>
</tr>
<tr>
<td>Width 1 1/4-2&quot;</td>
<td>Thickness 3/16-1/4&quot;</td>
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<tr>
<td>Thickness 1/4-3/8&quot;</td>
<td></td>
</tr>
<tr>
<td>Total: 2</td>
<td>Total: 4</td>
</tr>
</tbody>
</table>
Class V. Fig. 12

Size: Diameter 1 1/4-1 1/2"

Total: 2

Bone Tools

Definition of classes

Class I. Jointed bone splinter awl.
Class II. Unjointed bone splinter awl.
Class III. Polished antler tine awl.
Class IV. Cut antler flaking tool.
Class V. Antler tine tips.

Measurements and totals by class

Class I. Fig. 13

Size: Length 3 3/8"

Total: 1

Class II. Fig. 13

Size: Length 3 1/4"

Total: 2

Class III. Fig. 13

Size: Length 1 3/4"+
Thickness 1/8"

Total: 1

Class IV. Fig. 13

Size: Length 3 1/2"
Thickness 1/2"

Total: 1
Class V. Fig. 13

Size: Length 7\(\frac{3}{8}\)-1 1/2"

Thickness 1/4"

Total: 2

Scraping and Chopping Tools

Definition of classes

Class I. Discoid scrapers shaped something like the end of a thumb and broken off at the first knuckle. One surface may be flattened by flaking across the face or concave according to the natural shape of the fracture. Upper surface tends to have a prominence or ridge in the center thinning toward the outer edges. Sides and rounded ends of the scraper are secondarily flaked. The remaining edge opposite the curved edge is generally broken off in a straight line (striking platform).

Class II. A nearly flaked scraper with only minor secondary flaking around its perimeter. Opposing surfaces are convex and concave respectively.

Class III. A discoid scraper with a strong tendency to be keel-back-shaped. Generally circular around outer edges.

Class IV. Keel-shaped scraper/cutting tool. Broad surface shapes similar to the keel on a sailboat. One surface tends to be flatter than the other through natural flaking processes. Secondary flaking around cutting edges particularly keel shoulder.

Class V. Tri-sided scraper with rounded end and nearly
parallel sides. Inner surfaces tend to be naturally smooth to concave along fracture surface.

Class VI. General outline similar to Class I, but seems to be a core rather than a flake tool. The two longest non-parallel sides are slightly worked and the shape of the scraper nose is steeply blunted and shows the most secondary flaking.

Class VII. Keel-backed scraper. Generally circular to tear drop outline with secondary flaking on all edges. Top surface is prominently ridged, and the bottom surface ranges from concavity through slight convexity. Both top and bottom surfaces are secondarily flaked.

Class VIII. Blunt end scrapers. Roughly rectangular shape. The inner surface is concave along natural fracture surface. The outer surface is convex and secondary flaking causes thinning of one end. Opposite end is vertically flaked forming abruptly blunt end.

Class IX. Flake blades which are generally elongated flakes with secondary flaking commonly found along the longest edges.

Class X. Large-flake and core cutting-tools. These tools consist of large thick lithic pieces secondarily flaked along one or more edges to form a cutting edge. Some are pointed at one end and others are rounded. No evidence of hafting.

Class XI. Chopper and scraper tools. These are large flake and core pieces of chert and sandstone with one or more edges showing light or heavy secondary flaking. Shapes are round to curvilinear. Advantage has obviously been taken of naturally irregular shapes.

Class XII. Irregularly flaked cutting and scraping tools. These consist of small single flakes which show signs of secondary
flaking along one edge. Shapes are variable.

Measurements and totals by class

**Class I.** Fig. 14
- Size: Diameter 1-1 1/4"
- Thickness 1/8"
- Total: 12

**Class II.** Fig. 14
- Size: Diameter 1 1/4"
- Thickness 1/8"
- Total: 9

**Class III.** Fig. 14
- Size: Diameter 1 1/4"
- Thickness 3/8-1/2"
- Total: 5

**Class IV.** Fig. 14
- Size: Diameter 7/8-1 1/2"
- Thickness 3/16"
- Total: 6

**Class V.** Fig. 14
- Size: Width 1"
- Thickness 3/16"
- Total: 4

**Class VI.** Fig. 14
- Size: Length 2 1/4"
- Width 1 1/2"
- Thickness 1/4"
- Total: 1

**Class VII.** Fig. 14
- Size: Diameter 2"
- Thickness 1 1/2"
- Total: 4

**Class VIII.** Fig. 23
- Size: Length 2"
- Width 1 1/2"
- Thickness 1/2"
- Total: 1
Class IX. Fig. 14

Size: Length 1 3/4-2 1/2"
      Width 1/2-1 1/4"
      Thickness 1/8-1/4"

Total: 3

Class X. Fig. 15

Size: Diameter 2-3"
      Thickness 1/4-1/2"

Total: 2

Class XI. Fig. 15

Size: Length 2 5/8-3 1/2"
      Width 2-2 1/2"
      Thickness 1/4-7/8"

Total: 3

Class XII. Fig. 15

Size: Length 1 3/4"
      Width 1/2-3/4"
      Thickness 1/16-1/4"

Total: 5

Hammerstone

Definition

Ovoid semi-flattened stone which is three and three quarter inches long by two and one quarter inches wide by one inch thick. Edges are well rounded and apparently achieved by pecking in some cases. One end of the oval is broken off. It is made out of sandstone cemented together by calcium carbonates (Fig. 16; 42Ut121).

Shaft Smoothers

Definition of classes

Class I. Smoothly shaped. Elongated to rectangular shaped
sandstone smoothers with a single groove. Grooved surface is flattened and the opposing surface is rounded something like one half of a bathtub. Ends are either blunt or rounded.

Class II. Smooth shaped multi-grooved shaft smoothers. The outline is roughly that of an elongated rectangle. Grooves may be on all four surfaces lengthwise.

Class III. Unshaped shaft smoothers. Irregularly shaped pieces of sandstone with one groove. Surface is semi-smooth.

Class IV. Mano fragment shaft smoothers. Single grooves worn into grinding surface of a mano fragment.

Measurements and totals by class

<table>
<thead>
<tr>
<th>Class I. Fig. 29</th>
<th>Class II. Fig. 29</th>
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</thead>
<tbody>
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<td>Width 1-1 1/4&quot;</td>
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<tr>
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<td>Size: Length 3&quot;</td>
</tr>
<tr>
<td>Width 1 1/2&quot;</td>
<td>Width: 2 1/2&quot;</td>
</tr>
<tr>
<td>Thickness 1 1/4&quot;</td>
<td>Thickness 1 3/4&quot;</td>
</tr>
<tr>
<td>Total: 3</td>
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Manos

Definition of classes

Class I. Single grinding surface; elongated.
Class II. Dual grinding surfaces; elongated.
Class III. Multi-grinding surfaces; elongated.

Measurements and totals by class

<table>
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<th>Class</th>
<th>Fig.</th>
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<tr>
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<td>Length 4&quot;+</td>
<td>3-4&quot;</td>
<td>3-4&quot;</td>
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</table>

Metates

Only one complete Utah-type metate was recovered, along with numerous unclassifiable fragments (42Ut119).
Palette

Only one complete palette with accompanying ochre manos was recovered (Fig. 30; 42Ut119).

Bone Materials

Bone materials, other than those recorded in the bone tool section consist largely of fragments from limb and body skeletal material from rabbits, fish (Fig. 33), deer, buffalo, large and small birds and other small rodents. One of the highest single representations of faunal types according to skeletal remains is that of the deer, represented by five mandibles including incisors and molar intact and numerous knuckles and long bone fragments. The buffalo is represented by one large limb fragment from Unit B and a section of rib much too large to be deer (see Fig. 32 for rib comparison) and found in sufficient depth to eliminate modern bovine, one end of which shows signs of intentional attrition by some sharp edge instrument.

Other Organic Material

This category includes a charred corn cob fragment recovered from the central portions of Unit A and numerous charcoal beam fragments, a soil sample taken from beneath the overturned metate, and the unburned portion of the major beam found at approximately the structure center. No other vegetal remains other than a charred pinion pine cone fragment were found with the exception of rodent nests, and rodent caches of juniper berries of which three were found in Unit A and one in Unit B.
Fig. 8. Projectile points, classes I-IX
Fig. 9. Projectile points, classes X-XVIII.
Fig. 10. Drills, classes I-IV; knives, classes I and II.
Fig. 11. Gaming pieces, classes I-III (two views each).
Fig. 12. Gaming pieces, classes IV-V.
Fig. 13. Bone tools, classes I-V.
Fig. 14. Scrapers, classes I-IX (Class VIII, Fig. 23)
Fig. 15. Chopping and scraping tools.
Fig. 16. Hammerstone
Ceramics

As mentioned in the Laboratory Section, the ceramics were studies under a binocular microscope. The general coloring of sherds ranged into grays, buffs, browns and painted ware. Most surface features were in keeping with the general descriptions ascribed by Rudy in his general classification, Desert Gray Ware (1953). The major differences noted are largely in the tempers of the ceramic remains with some variations in surface treatment. Of particular interest were the complete and partly restorable pots.

One pot, though largely fragmented, some of the fragments found stacked one upon another stood eight inches high after reconstruction and had a pseudo double-strap handle running from the rim to the neck-body joint (Figs. 17, 18, 24). The rim diameter was five and one-half inches--the body diameter seven and one-half inches with the opening set off-center providing for the attachment of the handle. Around the neck-body joint was a string of coffee bean applique all molded together with the coffee beans being elongated.

Another partially restorable pot (Fig. 25) stood approximately seven inches high. The major sherd representing this pot contained a recurved, S-rim which was decorated with a quarter-inch wide rim ridge followed by alternating bands and grooves each approximately one-eighth inches wide. These grooves and bands ran parallel to one another though slightly diagonal to the neck of the pot itself causing bands and grooves to dissipate upon reaching the quarter-inch wide coffee bean string band at the neck-body joint of the jar. The handle ran from the rim to approximately the mid-width point of the
Fig. 17. Provo Gray Variety whole pot from Unit A
Fig. 18. Handle decoration of whole pot (actual size).
neck and was much more rounded than the handle on the previously described pot. The total number of bands around the neck of the pot is nine. The general shape of the pot is one, judging from the gradual arc of the rim sherd, of a round bottomed, wide mouthed jar with a three inch wide, fingernail punched band extending from the neck-body joint a little bit past mid way of the body proper. A third, partially restorable pot, offered only enough sherd material to reconstruct a rather thick bottom which did not match up with the banded pot described above (Fig. 26). Among the sherds were several that were worked into a circular shape. Two of them were drilled in the center and two were not (Figs. 12, 28).

A good sampling of rim sherds was obtained, and the surface treatment on the gray and buff variety rims (unpainted) was that of real (?) and false corregating, stick-punching, coffee bean applique, linear and finger nail incising and some polishing. The painted sherds were in three categories, black on white, black on gray, and red on white (Figs. 26-28).

The general consistencies of the sherds' paste and temper ranged from buff-colored fine-tempered, to dark-gray and black coarse-tempered. Buff coloring tended to be associated with the finer grained sherds or in sherds with some coarse grains but in lesser amounts. The gray sherds varied from fine to quite grainy textures depending on temper granule size with a finer texture predominating. Red ochre was found on several sherds and tended to be associated with the more highly polished or painted surfaces.

Among the materials gathered from the site were a number of lithic artifacts constructed from a volcanic feldspar permeated stone.
Fig. 19. Rimforms.
This same kind of stone was observed in Oak Springs Hollow and when taken to Dr. Myron Best of the BYU Department of Geology was identified by him as being composed mostly of coarse fresh and decomposed crystalline feldspar, cemented together by finer feldspar. When this material was crushed and examined under the microscope, it demonstrated the same qualities present in the temper found most commonly within the sherds taken from the site and when pieces of the same two materials (one from 42Ut119 and one from Oak Springs Hollow) were placed side by side, they were observed to be identical. Another common ingredient either as a part of the temper, where it was observed to exist, or as a part of natural clays, was biotite along with some pyroxene and scattered crystals of horn-blende. The overall tempering material was at first mistaken when viewed inside the sherd as quartzite, and it was not until the tempering material was compared directly with the crushed feldspar, that the initial mistake was realized. Though there was still some doubt in this author's mind as to the range of colors existing in the feldspars, and that the material observed as the temper within the sherds might still be quartz in spite of its obvious comparison with the feldspar, a check with Dr. Best, brought a reply that decomposed feldspar turns milky in color and may even adopt shades of violet. Dr. Best also noted that the mining districts of Tintic and Mercur are largely composed of feldspar formations. Mercur is located just over the main ridge of the Oquirrh Mountains from West Canyon and the Tintic district is at the south end of the same valley into which West Canyon drains. Dr. Best also pointed out that these formations were common for hundreds of miles, all the way down into Arizona. Reexamination of the
sherds in light of this new information confirmed the tempering agent to be largely of feldspar and not quartz. On this basis and assuming that other temper identifications made by Rudy, et.al. identifying tempering agents in so many kinds of desert gray wares as quartzite are correct, I must propose that this variation be noted either with a new name or at least a variety designation since much of the gray ware differentiation in the Fremont area is based on temper differences. More will be said on this point at a later time.

What follows is a descriptive categorization of the kinds of ceramic material recovered.

Snake Valley Gray: Provo Variety

Temper

Fresh and partly decomposed feldspar crystals .5-.75 mm in size. Decomposing feldspar predominant in colors ranging from semi-transparent through milky white to violet. Biotite mica from .5-1 mm. Mica may look granular and can be mistaken for volcanic glass but unlike volcanic glass, flakes easily when pried with a sharp pin. Makes up to thirty to forty percent of total paste constituents.

Paste

Sandy, fine granular texture under scope, but fine-grained in comparison with most plain gray ware sherds by unaided visual observation also. Clay is well mixed with finely crushed temper particles.
Surface Color

5YR6/3 through 5YR6/4 (light reddish brown) according to Munsell soil color chart.

Core

Most buff ware in sample is evenly colored all through the center. Some sherds have buff centers and darker bands on either side, others are the reverse, but both of these configurations are in a minority with solid colors throughout predominating. Another variation is for one-half of a sherd to be dark and the other half light in the core. This variety is more common than the previous two just described.

Decoration

Coffee bean applique. Fugitive red paint on the interior, plain.

Surface Treatment

Smooth to polished (lightly), a light wash or puddling up to a polished brown texture. Exterior surface tends to be more smooth or polished than the interior surface.

Snake Valley Gray: Provo Variety

Temper
Fresh and decomposing toward mineral clays feldspar crystals. Decomposing feldspar predominant over fresh, colors range from clear through gray-white and gray-violet. Biotite mica is common though recessive and ranges from deep black to rust brown in color. Temper is the same in both fine and medium grained ware compositionally, but differs in the size of the average individual grain. Fine measures .5 through 1 mm and medium ranges from 1.5 to 2 mm in grain size.

Paste

Looks porous - almost flaky. Tendency in some specimens to look silvery especially in the darker colored specimens. The overall texture looks granular under the scope though may look quite fine to natural eye.

Surface Color

5Y5/1 (gray) through 2.5YN2/ (black).

Core

Generally consistently 5Y5/1 (gray) ranging through 2.5YN2/0 (black). Most cores are consistently one color though surface may sometimes be lighter or darker than the core proper. The gray predominates over the black.

Decoration

Fingernail punching, incising, corregation, false corregation, punching and unmodified coils, strings of coffee bean applique
also. Some of the punching designs are executed three indentations wide and placed in such a manner as to form a diagonal strip from the neck joint part way down the body. Some red ochre on inner surface.

Construction

Construction by coiling and paddle and anvil.

Surface Treatment

Smoothing and polishing. Some surfaces are smooth but undulating. Some manipulation into corrugations.

Sevier Gray: Goshen Variety

Temper

Vesicular basalt fragments, and some biotite mica. The basalt is very dark and angular.

The tempering is the only distinguishing feature of this variety which seems to conform to Rudy's (1953) description in other particulars. Fugitive red was found on sherds of all the above varieties.
INFERENCES

Area Exploitation

One of the prime concerns of this research as stated in the problem section was to establish whether or not evidence of agriculture could be found in context. This was accomplished with the recovery of one fragment of charred corn cob. Having acquired the evidence for agriculture, it led next, to the consideration of possible planting areas. (The cob fragment is quite disintegrated).

The first area considered was that alluvial tract bordering on both sides of the West Canyon Creek stream bed. In modern times the local residents have cleared extensive acreages of juniper from the lower slopes at the canyon mouth, and diverted the creek into what is now known as the Cedar Fort Ditch for agricultural purposes. The upper reaches of the canyon and Left Fork are heavily utilized as summer range for livestock, and also for recreation.

The increased activity has had important effects on the area in general, and I am quite certain that the changes are drastic in comparison to the more pristine conditions probably existing at the time of the prehistoric habitation of the site. One of the most notable changes concerns the topography of the immediate area around the stream bed, which has been eroding rapidly during each wet period of any consequence, as I was able to observe in 1965 and 1966. I submit that the streambed is now 15 - 20 feet below its prehistoric
level, and also, that most of the erosion has taken place in the last 35 years (if the dating for clearing activity given me by the land owner is reasonably correct, and I have no reason for thinking otherwise). The drilling of wells by the Church of Jesus Christ of Latter-day Saints has also been reported to be a factor in the lowering of the water table.

It is felt that the combination of these events has made a drywash out of the creek, and that thick brush which now is found on the banks of the irrigation canal is similar to that which may have bordered on West Canyon Creek, before the stream was diverted and the land put under intensive use in modern times. It is also quite certain that it is the loss of the vegetation and the lowering of the water table that have increased the rate of runoff after each wet period, and increased the cut depth as the runoff moisture seeks the level of the water table. Judging from the amounts of moisture observed by myself early in the season of 1966, and by the degree of erosion so evident, not only in West Canyon, but in Tickville Springs Hollow, and Tickville Gulch as well, one can also postulate that the banks of West Canyon Creek could not always hold all the water fed to the creek in wet periods. The resultant flooding and deposits of alluvial soil (in good evidence as crop producing land today) could have served aboriginal horticulturalists in a manner somewhat like the Nile in the case of Egypt. It was also observed that modern grain fields in West Canyon have benefitted from alluvial deposits, producing a larger kernelled wheat crop because the soil there holds moisture better than the soil on the higher slopes where the excavated site is located.
I submit therefore, that even though the varieties of maize available to these people were very probably the deep-rooted varieties, most of the planting was probably done on the canyon floor, with the higher ground serving as a backup planting area after the manner of the present day Pueblo people.

Another factor concerning the inferred subsistence economy of the prehistoric inhabitants of the sites under consideration, is the role of hunting, gathering and fishing. Archaeologically speaking, the evidence for hunting has been the best preserved in the form of numerous rodent and deer bones, plus some bird, reptile, and buffalo bones, the latter three being much less in evidence. However, the recovery of one fish mandible is demonstrative of either trade with lake-shore dwellers or occasional forays to Utah Lake, or the Jordan River. These sources were by far the most easily accessible that the author is aware of, in terms of terrain, if not distance, as well. I doubt that the trips were made too often though because of the distance, and may have been seasonal migrations. It is realized that a method of preparation and curing is suggested here, but there is no information regarding such other than the seeming necessity, and a rather substantial collection of fish remains in Mr. Hutchings' collection, which he affirms are from West Canyon sites.

Gathering activities were least represented archaeologically, but to think that the substantial number of edible plants available were not utilized, is untenable. Pine nuts are too well known to the Indians of the Great Basin as a food source to have been overlooked by West Canyon inhabitants. (An unidentifiable cone fragment was found.)
As for tool-making materials, there is an abundant supply of chert, feldspar, and other lithic and organic sources throughout the area. One large feldspar-producing site is only about two miles away in Oak Springs Hollow, and the number of feldspar manos as well as a fine Utah-type metate are represented in the artifact tally. Large chert boulders were also found in abundance. Timber for structures and other uses is still amply in evidence.

It may also be of some significance that the placement of all sites showing evidence of occupancy over any time length is on the higher ground where either military, or perhaps just garden-watching advantages were available. This also lends to the hypothesis that the lower areas were used for horticultural plots, preferably, and that because of occasional flooding they would not be as suitable for dwellings as the more secure high ground.

**Structures**

Of the several structural remains encountered, only those at 42Ut119 were investigated in depth because the surface indications suggested that hopefully these two mounds had not been too severely destroyed. As it turned out, the larger of the two was one of those that Mr. Hutchings reported having excavated very thoroughly. The remaining mound's yield of information constitutes the central body of this report.

There are two main points that I wish to consider in relation to the excavated units (42Ut119, Units A and B): (1) Structural reconstruction (Fig. 20) and (2) internal area usage (Fig. 21).

The recovered artifacts representing construction consisted of fired-mud, charred timber fragments, a mud and stone bench on the
west and parts of the north and south wall, four post depressions (three containing wood fragments), one of which was supported in an upright position by a mano fragment, and numerous loose stones around the floor perimeter. Because of agricultural and pot hunting activity it is impossible to more than suggest that the bench actually extended around the entire floor area. Since the structure was on a sloping tract of ground, the back side of the benched mud and stones may have served as a water-runoff diversion device, thus helping to retain the base portions of the wall supports from eroding away. It could be that the structure was not even a semi-pithouse, and that the caliche floor level was gained access to, by a general clearing of top-soil rather than by digging a pit. This is quite possible if the shallowness of topsoil today is indicative of the past. In any event the caliche would have been as tough an obstacle to aboriginal digging sticks, as it was a solid floor for a structure. The floor area is estimated as being 13.5 X 15 feet with a central area of c. 10 X 10 feet.

Using the charred beam fragments, and the numerous impressions baked into the fired-mud roof fill as a basis, it is thought that beams were leaned against the upright frame (suggested by the posthole pattern) and overlain with mud and sticks to a thickness in excess of one foot on the roof, and increasing in thickness toward the wallbase. The general exterior configuration was probably somewhat like a truncated pyramid with the interior base having a full, or partial raised bench.

Turning now to the question of internal area utilization, one can see that the artifact plotting in Figure 21 suggests that at
Fig. 21. Artifact plot from Unit A. The small broken circle (center) is the fire area.
the time of its destruction or abandonment, the south central part of the interior was being used ceremonially, based on the ochre palette and mano, the decorated pot, and antler fragments. Ceremonial activity might also be postulated for other areas of the house on the basis of the number of deer phalanges, and mandibles (of small nutritional value) concentrated on the floor, and in the fill of the north central section of the floor, which contained the greatest number of projectile points (perhaps forty in all, including the points from the potted area).

In general the small, shallow fire area, the finely worked metate and accompanying mano, the number of shaft smoothers (14), and a general paucity of refuse that one would expect to be the result of familial activities, seem to lend themselves to an interpretation as men's club, shaman, or ceremonial useage, at least at the time of abandonment. An alternative is to suggest that most familial activity took place outside the confines of the structure except in severe weather. But then the lack of refuse and evidence of a more utilitarian inventory, in the form of potsherds etc., would suggest a short period of use for the structure, in keeping with its shallow stratigraphy.

If the strength of cultural influence from the Southwest in the Fremont area is as strong as Wormington (1955), Rudy (1953), Taylor (1956) and others seem to assert, then one is not necessarily being too speculative to assert that the concept of a separate mens' and/or ceremonial structure in the community might be included in the inventory of Southwestern influences on Fremont culture. However, it is the artifacts themselves that suggest ceremonial purpose, and
rather than speculate on conceptual origins, one might turn more profitably to consider the potential community size, and support potential for such a structure.

Most of the evidence to date seems lost, due to private collecting, and agricultural destruction, but just as this one meagre site could still yield some information, I suspect that additional field work could still be carried out in West Canyon, with worthwhile results.

**External Cultural Relationships**

In 1965, Floyd Sharrock suggested, at the outset of this survey, that what I would find in West Canyon would be indicative of a transition zone between the Southwest influenced Fremont at Nephi, and the Northern Fremont of the Great Salt Lake and Promontory areas. Just how far north the Fremont may have drawn on for ideas and techniques is discussed in detail by Aikens (1967). The lack of a good sampling of C14 dates for Fremont have caused Wedel (personal communication) and others who have Great Plains interests to take a justifiably cautious attitude toward acceptance of Aikens' thesis, pending further substantiation.

It is within this context of joint northern and southern influences, that I wish to discuss the relative cultural position of West Canyon sites. Even the few sherds recovered by the survey seem to substantiate Sharrock's remarks in that a more northern attitude toward ceramics is definitely manifest via the paucity of Southwestern varieties. The preponderance of sherds display decorative techniques common to Great Salt Lake Gray (Rudy, 1953), if they show decoration
at all. The tempering agent used is predominantly feldspar, and a reexamination of sherds from the Hinkley Site reported by Christensen (1947) and Green (1961) confirmed a large number of sherds containing this same feldspar temper, which had been placed in Great Salt Lake Gray and Snake Valley Gray categories. It is on this basis of prior reporting and recovery that the designation of "Provo Variety" was given. The variety designation should serve both Great Salt Lake and Snake Valley Gray established varieties with equal facility to future taxonomists, and may be useful in other associations, as well.

Another local variation involved the use of vesicular basalt as a tempering agent. The source for this material, which shows up most commonly in a variety of Sevier Gray sherds, seems to be the Goshen Valley according to Leland Gilsen (personal communication), a fellow student who is surveying the Goshen Valley area. The identification of the feldspar and basalt in their uncrushed form was made by Dr. Myron Best of the Brigham Young University's Department of Geology. The relationship between the tempering in the sherds and the crushed feldspar and basalt was observed to be as close to identical constituency as this author's eye, with the aid of a binocular microscope, was able to determine.

The importance of this observation is twofold: (1) it provides a Great Basin example with an opportunity to utilize a developing taxonomic system which could conceivably help clear up the jumble of literature on Fremont and Fremont-related ceramics, and (2) the noted variation may serve as an identifying mark on locally made ceramics that could turn up as trade pieces in other sites.

Ceramically West Canyon is in a transitional zone, but with
the greater affiliations toward the Provo Fremont area. (Matheny, Green, and Ambler have suggested that the Provo area is a Fremont center). Two items in particular indicate a possible connection with Aikens' Fremont-Promontory-Plains relations hypothesis: an incised, banded-necked, S-rimmed jar (Figs. 22, 24) and a "classic Plains scraper (Fig. 23).

To be sure, only two artifacts do not of themselves constitute verification of such a relationship, but they do make two more items to be plotted in with some of those selected by Ambler (1966) as a part of a Fremont trait list. Dent corn has also been found in Utah County Fremont sites indicating Plains influence. (Matheny personal communication).

The possible implications of these artifacts were the subject of a paper given by this author at the May, 1967 Society for American Archaeology's annual meeting held in Ann Arbor, Michigan. One of those comments arising from the presentation, was from Dr. Robert Euler of Prescott College. In effect, Dr. Euler remarked that the ceramic piece had incising as did some pieces he had seen before from the north, but never had he seen such from so far south as Utah County. Since the particular design was not common to the Fremont area insofar as I could determine, a search was made of some of the literature on Great Plains ceramics with the result that a series of photographs of Plains ceramics were found to correspond quite interestingly with the West Canyon pot's design. The degree of significance to be drawn here must await further field work in this and other parts of the Fremont area. It should be noted, however, that the Hutching collection contains more than twenty of the particular
kind of scraper noted above (Fig. 6 b). As for incised pottery, I have no good indications as to what correlations the collection in Mr. Hutchings' possession may hold.
Fig. 22. S-Rim-Incised sherd.
Fig. 23. Scraper of the "Classic Plains" variety.
SUMMARY

In summary may I say that West Canyon sites are of Fremont affiliation, from all indications of this survey, and that their strongest cultural ties are with the Provo Fremont area, of which it is a part according to Ambler (1966: 232, Fig. 80). This conclusion is based largely on ceramic evidence.

The West Canyon ceramics are generally a local variety of earlier established varieties of wider distribution, with some possibility of influence from northern and/or Plains cultures outside the normally defined Fremont area (Wormington 1953, Aikens 1967, et.al.).

I believe that 42Ut119 structure A, though largely destroyed, exhibits enough artifactual evidence to postulate structural reconstruction as previously described and illustrated, the existence of maize horticulture in the canyon, and the possibility of structure A’s use as a ceremonial place either in addition to, or separate from everyday familial activity.

I have included in my ceramics section three new names of varieties of established varieties, utilizing the Type-Variety Concept in the hope that it may be adopted as a useful tool as the list of ceramic variation in the Fremont area increases. The new varieties are:
Snake Valley Gray: Provo buff variety
Snake Valley Gray: Provo variety
Sevier Gray: Goshen variety

Interestingly enough, although most of the characteristics of the Provo, and Provo buff varieties coincide with Snake Valley Gray, except in the temper, the most popular design elements are those of Great Salt Lake Gray.

I should also like to suggest that the need for more field work, particularly the seeking of a more substantial series of dates, using other than guess correlations, is very much in order. The amount of literature seems highly disproportionate to the amount of information contained therein, particularly with respect to the development and movement of Fremont culture-patterns, populations, and artifactual inventory. Ambler's work (1966) needs to be expanded on by other archaeologists in the future.
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Fig. 24. Double-strap-handled pot. (42Ut119)
Fig. 25. S-Rim-Incised pot. This pot's decoration may indicate northern Great Plains relationships. (42Ut119).
Fig. 26. Vessel fragment and decorated sherds. (42Ut119).
Fig. 27. Painted sherds.
Fig. 28. Ceramic decorative examples. The drilled, circular sherds may have been spindle whorls, but no textile evidence was recovered from the Wood Site.
Fig. 29. Shaft smoothers. x is a converted mano fragment of the Class I variety.
Fig. 30. Palette and associated manos. Mano a is Class III and mano b is Class II. (42Ut119)
Fig. 31. Mano and maul. Mano is Class III. The maul is only quarter-grooved. (42Ut119)
Fig. 32. Bison bones compared with a deer's rib.
Fig. 33. Fish mandible from 42Ut139
ABSTRACT

The purpose of the research herein reported was to determine whether or not the West Canyon inhabitants in prehistoric times utilized maize agriculture in their economy. Also a part of the problem was to determine house structure type and cultural affiliation. The procedure used in approaching these questions consisted of a general surface survey followed by excavation at the Wood Site (42Ut119). An attempt was also made to approach known local collectors, especially Mr. John Hutchings of Lehi, Utah, who, it is well known, has the largest single collection from West Canyon.

This research confirms the presence of maize agriculture in West Canyon, establishes affiliation with the Fremont culture, and provides sufficient architectural information to postulate a structural reconstruction.