

# FREMONT 1

## Prehistoric Village Site in Sarpy County, Nebraska

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### INTRODUCTION

Surface indications of house sites are scattered along the line of bluffs bordering the Elkhorn River for a distance of nearly a mile below the Champe house. Either this place supported a large population or habitation here had extended over a considerable period of time; the loose arrangement of houses and the apparent lack of fortifications point to a peaceful and possibly rather prolonged occupation. The investigation of the Champe house, described in the preceding paper, was followed by thorough excavation of two houses sites at the extreme southern limits of this group. This portion of the site, although not set off in any way from the remainder, was given the designation Fremont 1. The two houses excavated by the Survey stood on a point of the bluffs a short distance south of the Douglas County line.

Despite the possibility that these houses were inhabited contemporaneously with the occupation of the Champe house and the suspicion engendered by a preliminary study that the same complex was represented in all the lodges, considerations of time and convenience dictated separate analyses of the Champe and Fremont 1 data. The results have confirmed the hypothesis that the previously described Champe house and the two Fremont 1 houses represent units of a single component. The houses and the artifacts which were present in all the excavation units are practically identical; the differences consist only in the presence or absence of traits from the various units, a situation easily explained as owing to inadequate sampling. Thus, the combined series of traits from all the houses presents a more complete picture of the complex represented.

#### House 1

Neither of the two pits excavated here was apparent on the surface; both were located by means of test trenches carried just beneath the plow line, at which depth the lines of demarcation between the undisturbed soil and the fill within the pits were clearly visible. After removal of the soil which had been disturbed by cultivation, House 1 appeared as an oval pit filled with black soil, but complete excavation proved that this condition was caused by the slumping of the pit walls. At the floor level, 42 inches beneath the present surface, the house was roughly square, but with unusually rounded corners. The pit measured 20 feet from north to south and 18.5 feet from east to west. Immediately within

its walls thirty-three post moulds were spaced at intervals of from 1 to 3 feet. Seventeen posts, from 6 to 18 inches apart, were placed along each wall of the entrance passage, which was 3 feet wide and extended to the west the exceptional distance of 17 feet. The moulds of four roof support posts occurred from 5 feet 3 inches to 6 feet from the center of the house and toward the four corners, forming a quadrangle slightly less than 8 feet square. In the center of the floor a shallow oval depression, containing a small amount of ash and underlain by burned clay constituted the fireplace, which measured 36 by 40 inches. The floor of the house proper had received no special treatment such as puddling or firing, but the floor of the entrance passage, which sloped rather steeply for the first 5 feet and then more gradually to the surface, had been subjected to fairly intense firing for a distance of about 10 feet from the outer end. That this firing occurred prior to the setting of the entrance posts is indicated by the absence of charcoal and the fact that the walls of the passage also had been burned. The entrance floor was likewise somewhat unusual in that it was concave rather than level in cross-section throughout most of its length.

Three cache-pits had been excavated beneath the floor, all of them near the house walls. In no case was there evidence that the floor or walls had been prepared in any way, and if any lining material was employed, all traces had subsequently disappeared. Cache 1, near the northwest corner, was cistern-shaped with diameters of 35 inches at the top and 50 inches at the bottom and with a depth of 62 inches. The walls of Cache 2, in the east side of the house, expanded slightly from a top 40 inches in diameter to a floor 45 inches across and 35 inches deep, and into them had been excavated two small pocket caches, in which were found a ground celt, three chipped celts, and a flint knife. Cache 3, with vertical walls 33 inches deep, had a diameter of 34 inches. Four small shallow holes found at various points in the floor may have served as small caches or receptacles for the bases of pots, or may have had any of a number of functions.

Refuse-laden soil filled the pits and lay on the house floor to an average depth of about 10 inches. Throughout this soil were scattered fragmentary pottery, stone, bone, and shell, as well as occasional intact artifacts. Above this zone the fill was a dark soil containing very little cultural material, and was probably composed mainly of fallen roof material. Charred wood and other evidences of burning were uniformly absent in this house, and burned clay was lacking, except for a few fragments bearing grass impressions which were mixed with the refuse in one of the cache pits.

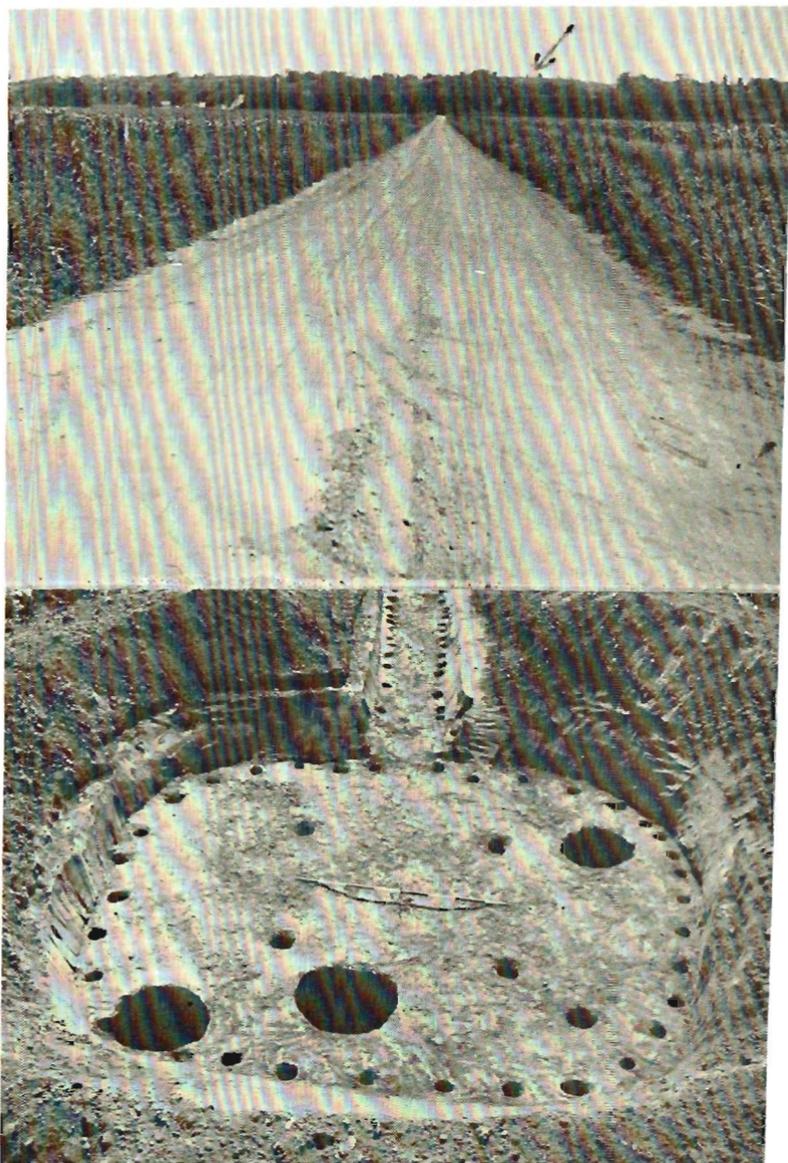


PLATE XIII

1. View of the bluffs on the east side of the Elkhorn River. Fremont 1 on the bluffs in the right center background (arrow).
2. House 1, Fremont site; entrance to the west.

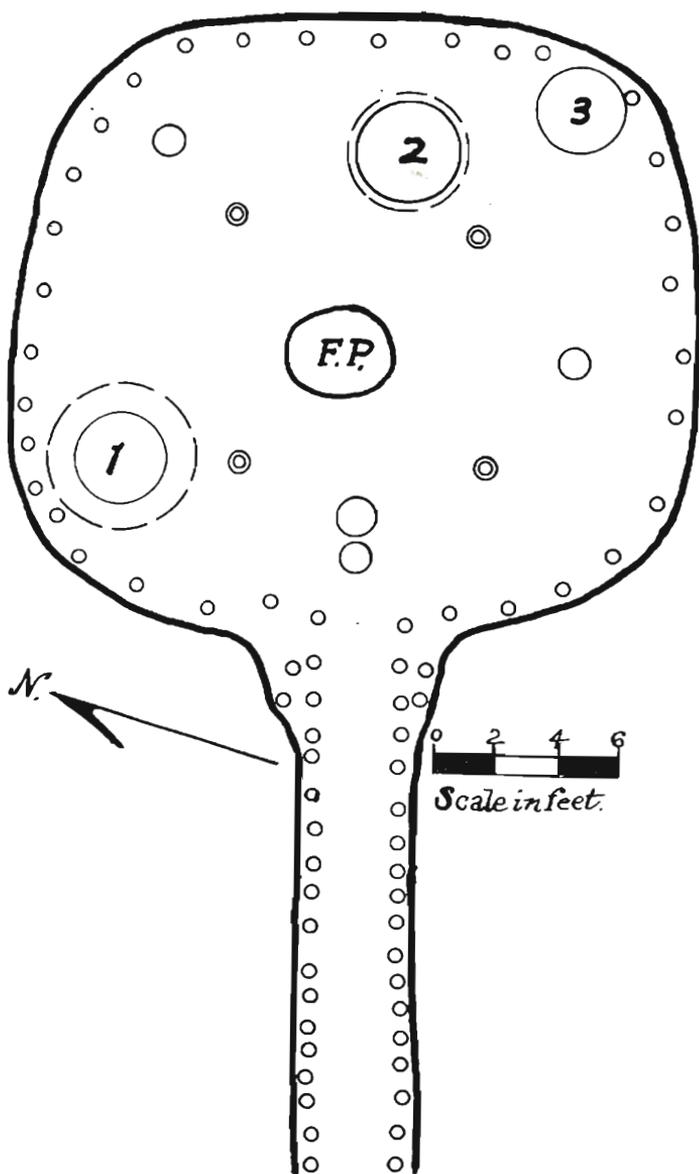


Figure 6. Ground Plan of House 1, Fremont 1 Site. ———, edge of house-pit; o, outer post moulds; double circles, center post moulds; 1-3, cache-pits; F. P., fireplace.

During the excavation of this house pit, a few fragmentary human bones, evidently representing a disturbed burial, were encountered at a depth of approximately 20 inches. Although the outlines of a burial pit were not noted, the bones had been interred subsequent to the filling of the house pit, for they lay partially within it and partially in the otherwise undisturbed soil outside the house walls. The conditions of interment were not ascertainable, and no cultural material was found associated.

### House 2

House 2, 290 feet south of House 1, was constructed in a pit whose floor was 32 inches beneath the present surface. It was quadrangular in form with rounding corners, with the back wall slightly longer than the others. From north to south the pit measured 13.5 feet, while the east to west dimensions were 15 feet for the back wall and 13 feet for the front wall. A number of the post moulds in the walls of the house proper were located with difficulty, while an uncertain number were not discernible, but the positions of the posts in the entrance passage, which was about 30 inches wide and extended 17 feet to the south, were rather readily determined. There were thirteen along the east wall and fourteen along the west wall, spaced at intervals of from 6 to 18 inches. Only sixteen posts could definitely be located in the walls of the house itself, but the original number must have been considerably greater. The four center posts were so placed as to form an asymmetrical quadrangle with sides varying in length from 4.5 to 6.5 feet. The two posts nearest the back of the house stood 3 feet from the center of the house, those at the front were 4.5 feet from the same point. The fireplace, a circular depression 32 inches in diameter and 4 inches deep, lay in the center of the house. It was filled with ashes and the underlying soil was burned hard and red to a depth of 4.5 inches. A bell-shaped cache, 52 inches deep, 30 inches across the top and 42 inches across the bottom, was excavated near the east wall. Its sides and floor showed no evidence of special treatment or lining material. Otherwise the only sub-floor excavations were two small straight-sided pits, one near Cache 1 and the other in the northwest corner, whose purpose is not known. They contained soil of the same sort as that lying above the floor, and may have served as storage places.

That the lodge which stood here was burned is clearly indicated by the evidence. The charred remnants of posts occurred in most of the moulds found, while charred beams, smaller fragments of charcoal, and burned clay were abundant in the fill above the floor. Burned fragments of clay bearing grass and twig impressions were especially numerous. Although this latter material is often found in houses which seemingly have not been burned,

it usually occurs less profusely under those circumstances and probably represents only the plaster which was in close proximity to the smoke hole.

The refuse filling the cache-pit and lying on the house floor was, in general, of the usual sort, consisting of fragments of pottery, stone, bone, and shell, and a few complete artifacts, but an additional element was present. On the floor and in the single cache-pit occurred larger numbers of human bones, almost invariably broken and often burned. Bones from all parts of the body and from both sexes and various ages were found throughout the soil, mingled with the animal bone and other refuse. Cranial parts, although occasionally comprising a major portion of the skull cap, were usually broken into small fragments, and long bones were represented by segments or small split pieces. That the burned and broken condition of the bones cannot, at least in totality, be attributed to the burning and falling of the house is demonstrated by the fact that many of them in this condition occurred well down in the ashy soil of the cache-pit, which had obviously been filled prior to that burning. While many of the bones are charred, others appear to have been modified by intense heat but not direct contact with flame, and still others have not been affected in any way by fire.

Instances of the occurrence of human bones in houses assigned to the Nebraska Culture have been noted by other investigators. Strong<sup>1</sup> asserts that Gilder and Sterns found them cracked and scorched in one of six houses explored in Sarpy County, while Gilder<sup>2</sup> reports encountering this phenomenon in two of seven houses in this same locality, one of which is presumably the one mentioned by Strong. The bones are reported to have been split in the same manner as are those of animal bones found in the usual house refuse and to have occurred both on the house floor and in the cache-pits. Save for the presence of human remains and the alleged elliptical shape of at least one of them, these houses evidently resembled others of the Nebraska Culture. Strong<sup>3</sup> encountered a similar situation in his investigation of a house at the Saunders site, which was referred to in the preceding paper, and suggests that a more reasonable explanation than that of cannibalism is that bodies were stored there before their interment. The writers, however, feel that the present evidence favors the hypothesis that human flesh was eaten by inhabitants of this village, for in no other manner can they account for the mixture of extremely fragmentary human bones with the ordinary refuse

<sup>1</sup>1935, p. 265.

<sup>2</sup>1926, p. 24.

<sup>3</sup>1935, pp. 193-174.

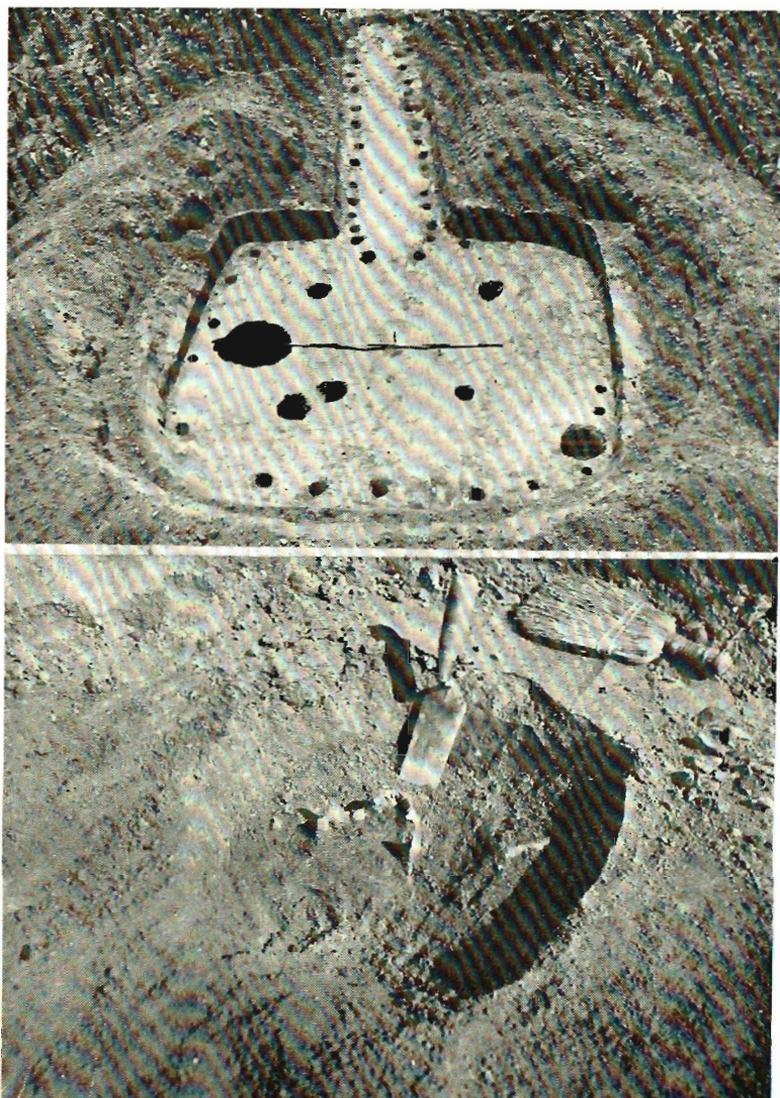


PLATE XIV

1. House 2, Fremont 1 site; entrance to the south.
2. Human mandible in situ on the floor of House 2, Fremont 1 site.

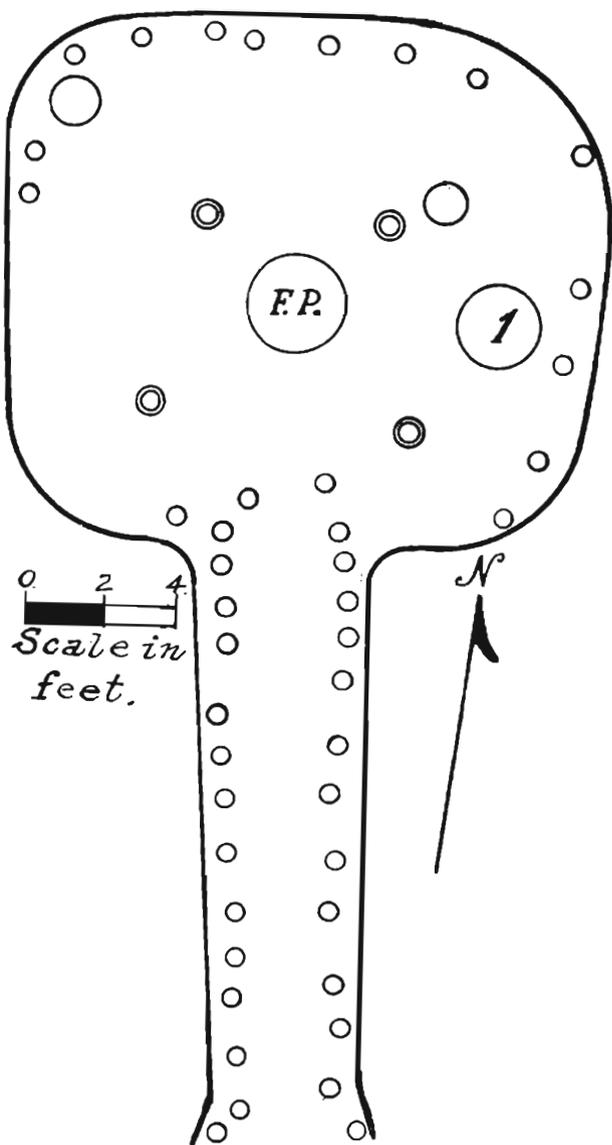


Figure 7. Ground Plan of House 2, Fremont 1 Site. ———, edge of house-pit; o, outer post moulds; double circles, center post moulds; 1, cache-pit; F. P., fireplace.

of habitation in the ashy fill of the cache-pit. Such breakage as that executed on the long bones could not have been other than intentional, and it seems hardly reasonable that, if the intention were later to gather them up for burial, so much effort should have been expended in crushing them into minute fragments. Furthermore, occasional fragments seem too large to have been overlooked during a process of transporting the remains to the hilltops for final disposal. The view that cremation is indicated is hardly tenable in view of the various conditions, including the fact that in no instance was the bone greatly reduced by fire. That human flesh was not an item of the every-day diet is evidenced by the absence of human bones from some and probably the majority of houses of this culture. It would seem that only in certain lodges were carried on the activities which produced this peculiar type of debris; yet that certain houses were exclusively devoted to this type of activity is refuted by the apparently consistent presence also of ordinary occupational refuse. Still further excavation in this area is desirable to determine whether House 2 is representative of the sites in which human remains occur, and the proportion of houses in which these conditions exist. Information on these points will give a firmer basis for interpretation.

#### Pottery

The pottery recovered from these two houses, consisting of two restored vessels, 104 rim sherds, and 1472 body sherds, is identical with that described for the Champe site house with only such exceptions as would be expected in two parts of a single occupation site. The typical form, judging from those sherds sufficiently large to be indicative, is represented by one of the restored vessels, which is globular with a constricted neck and a rim which flares moderately to a relatively wide mouth. This pot is 200 mm. (7 $\frac{7}{8}$  inches) high, its greatest diameter is 210 mm. (8 $\frac{1}{4}$  inches) and its rather irregular mouth averages about 125 mm. (4 $\frac{7}{8}$  inches) across; the average size of the vessels used here probably differed little from these dimensions, and large specimens appear to have been lacking. In all qualities of the paste this ware is indistinguishable from that of the Champe house. The texture is in general fine, compact, and somewhat flaky, although in sherds with an usually large amount of tempering material it tends to be granular. Sand or gravel is almost invariably present, and varies in size from very minute grains to pebbles with diameters as great as the thickness of the sherd. A medium size, used rather abundantly, is most common, however. Crushed shell occurs in slightly less than 3% of the sherds, crushed granite is fairly common, crushed limestone fragments are present in thirty-one sherds, and small potsherd fragments have been noted in two



PLATE XV

1. Restored pot from House 2, Fremont 1 site; height, about 172 mm. ( $6\frac{3}{4}$  inches); greatest diameter, 172 mm. ( $6\frac{3}{4}$  inches).
2. Restored pot from House 2, Fremont 1 site; height, 200 mm. ( $7\frac{7}{8}$  inches); greatest diameter, 210 mm. ( $8\frac{1}{4}$  inches).

specimens, but in almost every instance gravel was also employed. The surface hardness is uniformly slightly softer than 3 (calcite). The surface and interior colors exhibit the same range as do those of the Champe site ceramics. Similarly, the range in thickness of sherds is identical and the interior surfaces of vessels frequently are thickly coated with layers of carbonized material of some sort, apparently as the result of repeated use in cooking. Evidence of the use of a cord-wrapped paddle remains on the exterior surface of 46% of the sherds, and indicates considerable variation in the size of cords employed, the manner of application, and the extent of subsequent smoothing.

An unthickened flaring rim is the characteristic type here, comprising 88% of all the rim sherds in the collection, but collared rims are not totally lacking, although they are present on only ten specimens. All sherds of the latter type are decorated only by scalloping of the lower margin of the collar either by notching with the finger nail or impressing with a cylindrical object, but the unthickened rims are usually entirely undecorated. Only six are notched at the exterior margin of the lip or incised across the lip, and two additional specimens, one of them a rim sherd with a loop handle, bear incised rectilinear body decoration. The latter two are the only representatives of a black, flaky, shell-tempered ware which is occasionally found in small quantities in sites of Nebraska aspect affiliation<sup>4</sup> and whose provenience is mainly farther east in the Mississippi Valley. Loop handles and lugs, although not numerous, occur on seven fragments which, with one exception, have unthickened flaring rims. The single exception is the unusual combination of a strap handle with a collared rim. While the others are attached to the lip and to the shoulder area below the neck, the attachments of this handle are at the lower margin of the collar and at the neck. Of the four lugs, one is a simple tongue-like projection of the flaring rim, another, of uncertain form because of its fragmentary nature, is vertically perforated, while the others occur on one of the restored vessels from House 2. These latter, which are oppositely placed below the lip of the slightly flaring rim, resemble loop handles, horizontally placed (Plate XV, 1). This vessel is remarkable in that the neck is more than usually constricted, and the mouth is as a consequence relatively narrow. With a body measuring 172 mm. (6¾ inches) in diameter and a height estimated at the same figure, the mouth measures only 80 mm. (3⅓ inches) across. Other unusual forms are indicated by only a few fragments. Two sherds, one from each of the houses, have apparently belonged to straight-sided bowls, but other than in form they are similar to the dominant

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<sup>4</sup>Strong, 1935, pp. 255-256.

pottery here. Two brick-red fragments, one of which is illustrated in Plate XVI, a, are from a relatively large pot with an unusually high (50 mm., 2 inches) contracting rim and a rather narrow mouth.

A specimen which is particularly interesting because of its distinctly incongruous appearance in the series from this site is a fragment of a straight-sided vessel with a straight rim and a flattened lip which was found on the floor of House 1 (Plate XVI, 1). The paste, heavily tempered with crushed stone, is coarse and granular, while the exterior surface appears to have been cord roughened prior to the final smoothing. A single row of round punctations made with the end of a cylindrical object encircles the body 20 mm. ( $\frac{3}{4}$  inch) below the lip, the intervals between the marks measuring about 20 mm. This sherd is completely out of place here and is characteristic of no complex thus far defined in Nebraska, but is rather suggestive of certain Woodland manifestations to the east. Whether it represents an importation, an accidental inclusion from an earlier occupation of the region, or an artifact of these people themselves it is impossible to say, but the clay used appears to be similar to that from which the rest of the pottery was made. Pottery of Woodland type has been previously noted at a few points in the state, the best known of which is the Walker Gilmore site in Cass County, where a buried habitation site has been exposed by the recent cutting of Sterns Creek.<sup>5</sup> The Historical Society Survey recovered a pot somewhat similar to those occurring there from a house in an Upper Republican site,<sup>6</sup> and three large conoidal vessels from southeastern Nebraska are in the Museum. At the present time the Survey has on record the location of a number of sites at which pottery of apparent Woodland affiliations occurs. That these manifestations have a wide distribution will be apparent from the following list of counties in which they have been observed: Boyd, Butler, Cass, Chase, Franklin, Harlan, Hooker, Johnson, Lincoln, Platte, Red Willow, Richardson, Sarpy, and Saunders. In some instances a few sherds have been found on the surface, but in others, pottery of this sort occurs in deep exposures of recently cut banks. No general statement can be made concerning the temporal relationships of these manifestations to those of other cultures of the region, for, while it is apparent that at certain sites (as Walker Gilmore) the Woodland is earlier than an overlying occupation, they need not all have been contemporaneous, especially in view of the fact that in some cases there are rather wide differences. The specimen from Fremont 1 is practically identical with pottery from a deep site in Platte County, but is quite different from that of the Sterns

<sup>5</sup>Strong, 1935, pp. 184 ff.

<sup>6</sup>Wedel, 1935, pp. 188-189.

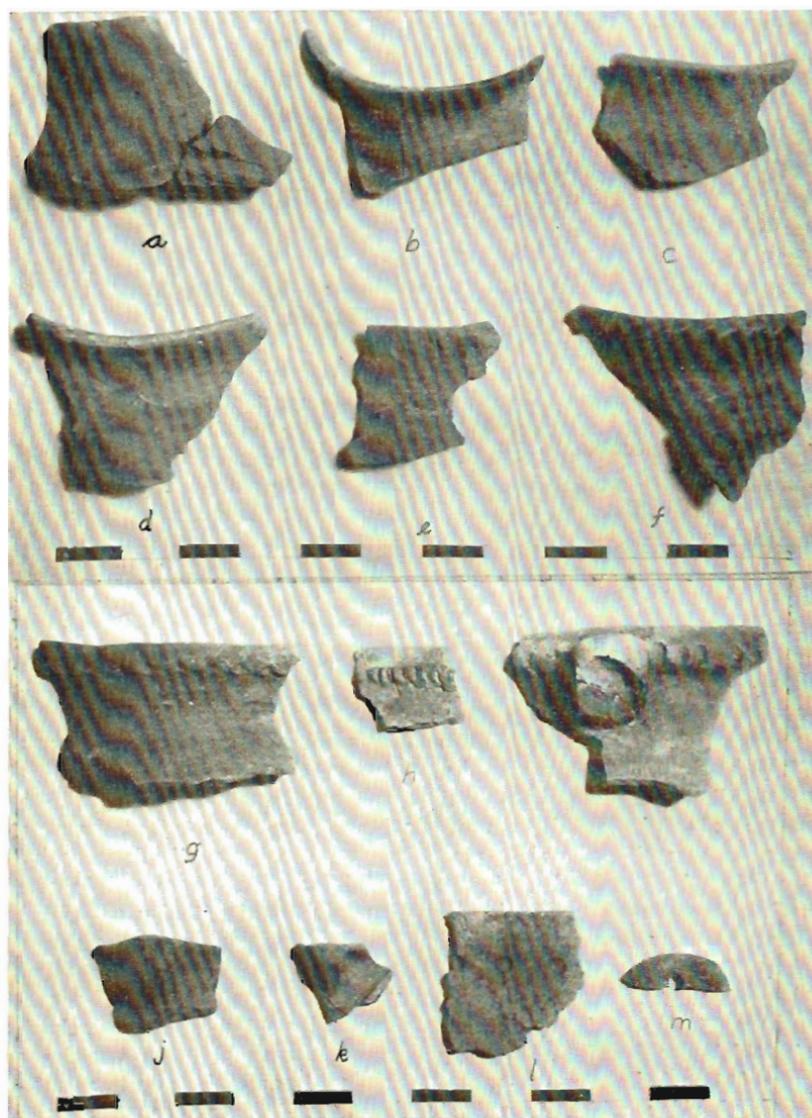


PLATE XVI  
Rimsherds and handles, Fremont 1 site.

Creek Culture. Investigation of such sites is highly desirable in order to elucidate their relationships to the already defined cultures of the region, and may throw some light on certain apparent Woodland elements in the pottery of the latter.

#### Work in Stone

Objects of stone, while not profuse, are more numerous than in the Champe site house. Ground stone is most abundantly represented by abraders of Dakota sandstone, and of these, grooved shaft smoothers are most numerous. The latter are represented by one complete specimen and seven fragments, all of them apparently from boat-shaped implements. All of these have on one surface a single uniform longitudinal groove, but three of them have in addition irregular grooves on the remaining surfaces, which are evidently the results of grinding pointed objects. Three irregular fragments have only the latter type of grooves and exhibit no evidence of ever having served in smoothing arrowshafts, while simple ungrooved abraders are represented by two fragments, one of which has one slightly concave face. A small fragment of hematite bearing on one surface a broad smoothly-worn groove was presumably also used for some sort of grinding or smoothing.

Ground celts of diorite number only two, both of them from House 1. The sides of the complete specimen, which is 100 mm. (4 inches) long and 54 mm. (2½ inches) in greatest width, taper from the bit to a narrow butt, but those of the fragmentary specimen, which is 54 mm. (2½ inches) wide, are parallel, while the form of the butt is not determinable. The latter celt has been intensively ground only in the region of the bit.

All of the five hammerstones found have been modified to some extent by grinding, possibly in some cases to adapt them to use as smoothing implements. An oval specimen of diorite with rounded battered edges has one slightly pitted face, while the other face is more deeply pitted and is longitudinally traversed by a narrow groove (Plate XVIII, g). Two water-worn pebbles have flattened surfaces, and this surface of one is somewhat pitted by percussion. A quartzite object with a circular outline and measuring 85 mm. (3⅜ inches) in diameter by 40 mm. (1½ inches) in thickness, has been smoothly ground into shape. The two faces are flat and the edges have been beveled from each face to a well-defined ridge which constitutes the entire circumference of the artifact. A quartzite pebble has had an edge similarly ground but to a lesser degree, and no other shaping appears to have been done. Material for paint appears to have been removed from a few fragments of hematite.

Of the seven arrowpoints from the two houses all are tri-

angular and five are notched. Four of the latter have two side notches and a concave base, while the fifth has four side notches and a basal notch. These points range in length from 21 to 38 mm. ( $\frac{7}{8}$  to  $1\frac{1}{2}$  inches) in length and in greatest width from 12 to 15 mm. ( $\frac{1}{2}$  to  $\frac{5}{8}$  inch). The single complete unnotched point is 41 mm. ( $1\frac{5}{8}$  inches) long and 20 mm. ( $\frac{25}{32}$  inch) wide at the base. In all cases all surfaces and edges are relatively well chipped.

House 1 produced six drills or gravers, an unusual number for sites of this culture. With the exception of one T-shaped specimen, they are of irregular form with expanding bases, and one has an additional short point worked on one side (Plate XVII, o). In but three cases both faces have been worked; in the others one face consists of the unretouched original flake surface.

The most common chipped flint artifact is the end scraper, of which twenty specimens were recovered. While the majority tend to be thick, with the medial ridge formed by flaking from each edge, a few specimens have a thin cross-section as the result of the removal of large longitudinal flakes. There is little uniformity in form and size, and the range is from a short wide specimen with a length of 33 mm. ( $1\frac{1}{8}$  inches) and a width of 25 mm. (1 inch) to a long narrow scraper 72 mm. ( $2\frac{7}{8}$  inches) long and 21 mm. ( $1\frac{1}{8}$  inch) wide. The majority, however are triangular and of medium length and width.

The knives and scrapers are in general rather crudely made, and are most commonly roughly leaf-shaped. Diamond-shaped or beveled knives are lacking. The largest of the knives, a rather carefully worked but broken blade, is 120 mm. ( $4\frac{3}{4}$  inches) long, 48 mm. ( $1\frac{7}{8}$  inches) wide, and about 3 mm. ( $\frac{1}{8}$  inch) thick (Plate XVII, p); none of the other specimens approaches it in size or care in manufacture. The remaining seven knives of this type, which are either pointed at both ends or have one straight end, vary in length from 55 to 95 mm. ( $2\frac{1}{8}$  to  $3\frac{3}{4}$  inches). Another relatively well-chipped knife has a flat base, but the remainder of the knives and scrapers are of irregular forms which have been dictated by the shapes of the flakes from which they were fashioned. Many of them have been retouched only on one or more edges.

Three small chipped celts, each narrowing from a rounded blade to a pointed butt, were found in a pocket dug in the wall of Cache 2 in House 1. The smallest measures 82 mm. ( $3\frac{1}{4}$  inches) in length and 44 mm. ( $1\frac{3}{4}$  inches) in greatest width, while the largest is 94 mm. ( $3\frac{3}{4}$  inches) long and 47 mm. ( $1\frac{7}{8}$  inches) wide.

#### Work in Bone

Implements of bone were not found in large quantities in the

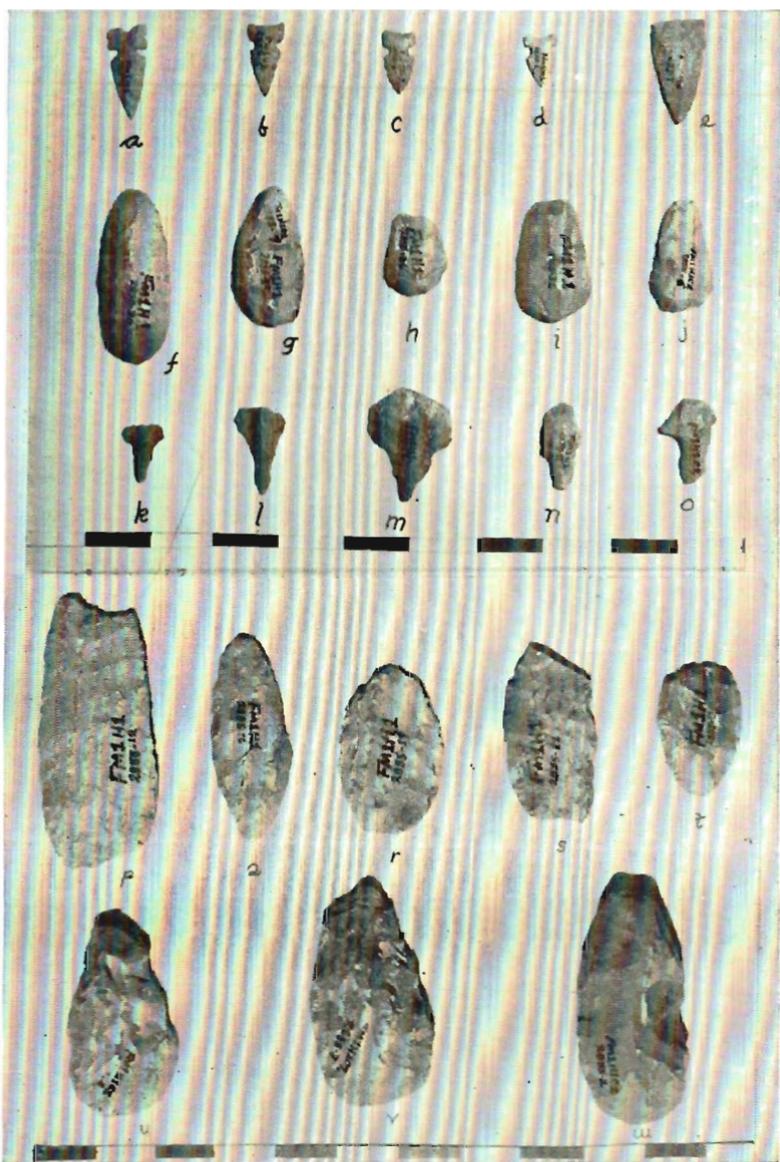


PLATE XVII

Chipped stone artifacts, Fremont 1 site. a-e, arrowpoints; f-j, end scrapers; k-o, drills; p-t, knives and scrapers; u-w, celts.

Fremont 1 houses, but, aside from the fact that many of them were broken, they were in a good state of preservation. Although no complete hoes were found, fragments of worked bison scapula which had without question originally belonged to tools of this type are fairly numerous. They indicate that the scapular spine was broken and ground off and the vertebral border trimmed down and sharpened. Probably as evidence of hafting, worn notches are present on the edges of the tool near the blade and the glenoid border is smoothly beveled. A broken cleaver-shaped knife or scraper has been fashioned from a scapula which had previously been used as a hoe (Plate XVIII, k).

Two bone awls, one of which is broken, are made from splinters of long bone. The complete specimen is 125 mm. ( $4\frac{7}{8}$  inches) long and 8 mm. ( $\frac{5}{16}$  inch) wide at the butt. A segment of bison rib about 363 mm. ( $14\frac{1}{4}$  inches) long has a sharp point worked on one end, and the polished tip of a deer antler 85 mm. ( $3\frac{3}{8}$  inches) long probably served also as a perforator. A small object 45 mm. ( $1\frac{3}{4}$  inches) in length is round in cross-section with a diameter of about 4 mm. ( $\frac{7}{16}$  inch) and tapers to what was probably a point before its fracture (Plate XIX, b). The other end is flattened on two sides to create a chisel-like appearance, and on one of the resultant narrow sides two small notches have been cut. This object probably served as a needle.

A single shaft straightener made from a bison rib, one end of which has been cut, has a well worn perforation. Another cut segment of rib was evidently in the process of being split when lost or discarded, for a deep groove has been cut along each edge.

Other objects of uncertain use are a basal segment of deer antler, cut off but otherwise unmodified, and part of the left half of a deer mandible which shows a fairly high polish. The only other bones indicating any work are a few fragments of deer and bird bone bearing the marks of cutting.

#### Work in Shell

Despite the considerable numbers of shell which were present in the refuse filling these houses, only two artifacts of this material were recovered. Although one appears to have been broken in manufacture, both were evidently intended as pendants probably representing fish. The complete specimen (Plate XIX, h) is biconically perforated near the upper margin and the head is worked on both faces by incising and drilling for the eyes; two shallow notches are cut in the upper edge. The other objects, in which the eye is represented by a perforation, is broken along one of the incised lines behind the head, and a notch has been cut into the end opposite the perforation. This type of ornament is of frequent occurrence in Nebraska Culture sites,<sup>7</sup> and has been found in sites of the St. Helena focus.

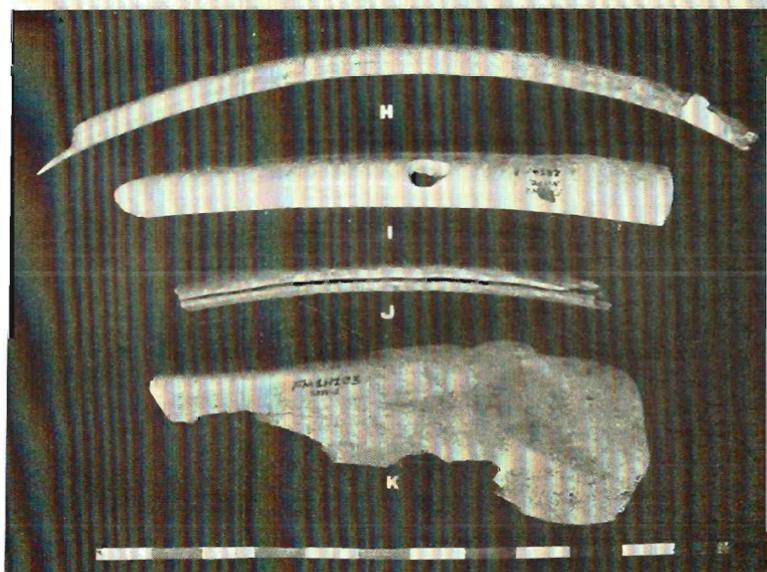
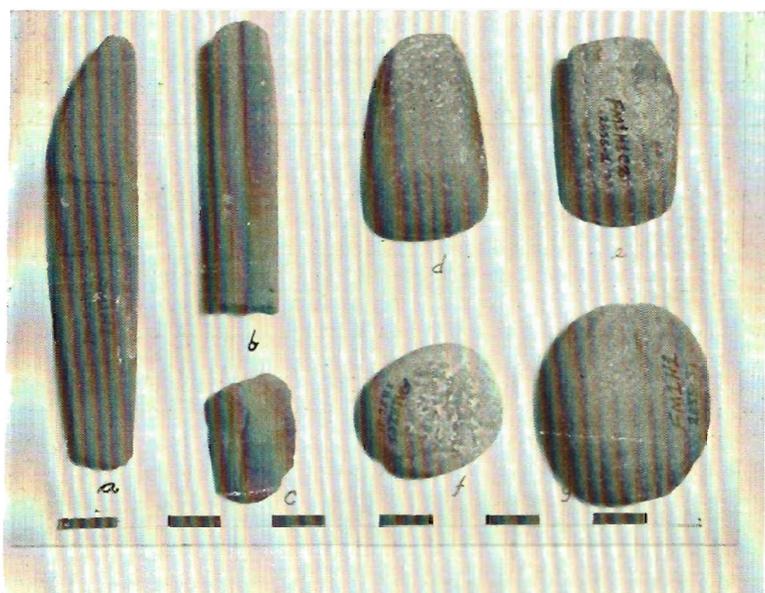


PLATE XVIII

Ground stone and bone artifacts, Fremont 1 site. a, b, arrow-shaft smoothers; c, sandstone abrader; d, e, celts; f, g, hammerstones; h, bison rib perforator; i, shaft straightener; j, partially split rib; k, bison scapula knife.



PLATE XIX

Stone, bone, shell and pottery artifacts, Fremont 1 site. a, polished deer mandible; b, needle (?); c, e, bone awls; d, antler awl; f, antler section; g, cut deer metapodial; h, shell pendant; i, pottery pipe; j, limestone pipe.

#### Pipes

Two pipes, both of elbow type but of different materials, were recovered from House 2. One, made of pottery, is obtuse-angled and equal-armed, both the stem and bowl measuring 65 mm. ( $2\frac{5}{8}$  inches) in length. The bowl has a relatively uniform diameter of about 30 mm., ( $1\frac{1}{8}$  inches), but the stem narrows nearly to a point. The bowl opening has a diameter of 15 mm. ( $\frac{9}{16}$  inch), while the small stem perforation is 4 mm. ( $\frac{1}{4}$  inch) in diameter. The other pipe, from which a portion of the stem is broken, is made of a rather hard, fine-grained limestone. The bowl, which is 23 mm. ( $\frac{13}{16}$  inch) in diameter, is set at an obtuse angle to the stem, which is 18 mm. ( $\frac{11}{16}$  inch) across. The bowl perforation is 15 mm. ( $\frac{5}{8}$  inch) across, that of the stem 9 mm. ( $\frac{3}{8}$  inch) at the point of fracture. An incised line encircles the bowl just below the lip and another extends around the sides and base of the stem at its juncture with the bowl.

<sup>7</sup>Gilder, 1926, pp. 20-21, 23; Strong, 1935, p. 262 and Plate II.

### CONCLUSION

It is obvious that the data from the Champe site and Fremont 1 represent the traits of an identical culture complex, and that the minor differences are such as are inevitable in two excavation units of a single village. The ceramics of the two units are indistinguishable, and significant differences in the other remains are lacking. Animal remains were rather rare in all the excavations, but the presence of numerous mussel shells and fish bones indicates a dependence on the river for an important part of the food supply.

The presence of human bones in one of the houses is especially interesting because of their reported occurrence at other sites in the region. Thus it appears that whatever activities were responsible for these conditions were probably not sporadic phenomena but well-established elements of the culture pattern. If this is true, the desirability of further work to determine the nature of the customs involved, their distribution, and their correlation with the remainder of the complex is apparent.

The broader outlines of the Nebraska aspect are fairly clear as a result of the various investigations to date, but many problems remain to be solved. Variations within the aspect are as yet poorly defined, and the problems of its relationships to other cultures of the region and its authorship are still unsolved. The area along the Missouri River on the eastern border of the state may prove to be the key to many now puzzling problems. Systematic excavations there should elucidate questions of cultural movements and developments within the state.

### LIST OF TRAITS

#### Pottery

1. Grit or gravel tempering alone—97%; gravel predominates.
2. Wide variation in size of temper, but generally medium.
3. Tempering material usually abundant.
4. Shell occurs in about 3%, usually with gravel also present.
5. Potsherd fragments occur very rarely.
6. Hardness between 2 and 3. A large proportion falls slightly under 3. No difference correlated with tempering material.
7. Paste usually rather fine and compact with a tendency to flakiness; a small proportion with coarse abundant temper tend toward a crumbly structure.
8. Exterior surface color gray, buff, or orange-red, but gray or brownish-buff most common.
9. Interior surface usually gray.
10. Color of material between surfaces varies widely.
11. Surface of 46% of sherds roughened with cord wrapped paddle, remainder smooth.

12. Paddle marks usually more or less obliterated by subsequent smoothing.
13. Both interior and exterior surfaces commonly roughly finished, either with tool or hand.
14. Mouth and horizontal section of body invariably round.
15. Constricted neck.
16. Shoulder rounded.
17. Base rounded.
18. Simple straight or flaring rim (Form A)—88%.
19. Form A: Rims usually recurving and of variable height; very high rims almost lacking.
20. Form A: Lip usually rounded; occasionally narrowed or thickened.
21. Form A: 9% decorated.
22. Form A: Scalloping of juncture of lip and exterior rim or incised lip.
23. Collared rim (Form B)—10%.
24. Form B rims undecorated except for scalloping at lower margin of collar, which is always present.
25. Bowls with straight rims—2%.
26. Loop handles, probably 2 on a vessel. Almost invariably on Form A rims.
27. Handles most commonly strap-like and attached to lip and shoulder area below the neck.
28. Lugs, perforated or unperforated, rare. On Form A rims only.
29. Incised body decoration extremely rare.
30. Slip(?) rare.
31. Thickness of walls varies from very thin to very thick but 4-8 mm. ( $5/32$ - $5/16$  inch) most common.
32. Pot exteriors frequently smoke blackened and interiors covered with carbonized material.
33. Obtuse-angle elbow pipe.

#### Work in Stone

1. Arrowpoints small triangular, notched and unnotched.
2. Drills, expanding base and T-shaped.
3. End scrapers, keeled, usually triangular, medium size.
4. Leaf-shaped knives, pointed at both ends.
5. Leaf-shaped knives, straight base.
6. Knives and scrapers of irregular flakes.
7. Chipped celts.
8. Ground celts, oval cross section.
9. Sandstone arrowshaft smoothers and awl (?) sharpeners.
10. Ungrooved sandstone abraders.
11. Hammerstones, occasionally pitted or slightly shaped by grinding.

12. Hematite used for paint.
13. Acute-angle elbow pipe.

#### **Work in Bone**

1. Awls of split long bone and bison rib.
2. Bison rib shaft straightener.
3. Needle (?).
4. Scapula hoes.
5. Scapula hoes—inferior articulation present, and glenoid border beveled.
6. Scapula hoes—notched edges.
7. Scapula hoes—spines removed.
8. Scapula knife of cleaver shape.

#### **Work in Shell**

1. Worked shell rare.
2. Fish (?) effigy pendants.

#### **Houses**

1. Semi-subterranean.
2. Outer posts set immediately within the walls of pit.
3. Approximately square with rounded corners.
4. Four central roof supports.
5. Central fireplace.
6. Interior caches.
7. Long entrance passage.

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