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The Archeology of a Small Trading Post (Kipp's Post, 32MN1)
in the Garrison Reservoir, North Dakota
By ALAN R. WOOLWORTH and W. RAYMOND WOOD

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FOREWORD

During July and August of 1954, the writers were in charge of the excavation of site 32MN1, or Kipp's Post, in Mountrail County, N. Dak. The successful conclusion of the excavation and study of the materials found there was brought about by the interest and assistance of many individuals and institutions.

First and foremost, thanks should be given to the Missouri Basin Project, Smithsonian Institution. Dr. Robert L. Stephenson, then acting chief of the Project, gave advice and loaned equipment; G. Hubert Smith, of the same organization, visited the site with the writers, read this manuscript at intervals, and was helpful in many other ways. A map that Smith, George Metcalf, and Lee Madison, of the Project, made in 1951, delimited the post and was of great use during the excavation. In addition to this, the Missouri Basin Project turned over to the State Historical Society of North Dakota notes, photographs, and artifacts found at the site during a preliminary investigation by a field party under G. Hubert Smith. Artifacts collected by the Smithsonian Institution are prefixed by the letters "S.I." in the text.

George Metcalf, Division of Archeology, U.S. National Museum, aided in the identification of artifacts and was helpful at other times. Malcolm Watkins, then associate curator, Division of Ethnology, U.S. National Museum, identified the glazed earthenware. Dr. Carlyle S. Smith, Museum of Natural History, University of Kansas, identified artifacts associated with firearms, and made the reconstruction of the one-pounder cannon found at the site. The Misses Mary Elizabeth King and Irene Emery of the Textile Museum, Washington, D.C., identified the cloth fragments. Dr. Herbert Friedmann, curator, Division of Birds, U.S. National Museum, identified the interesting series of avian remains. Dr. David H. Dunkle, associate curator, Division of Vertebrate Paleontology, U.S. National Museum, identified the fishbones. Dr. T. E. White, Dinosaur National Monument, National Park Service, identified the mammal bones. Miss Lucile M. Kane, curator of manuscripts, Minnesota Historical Society, aided with historical research. Col. Dana Wright, St. John, N. Dak., and Fred La Rocque, New Town, N. Dak., allowed the writers to examine artifacts they had found at the site.

The National Park Service, Region Two, Omaha, Nebr., provided a portion of the funds for the excavation and the writing of this report.

Archeologist Paul Beaubien, of the National Park Service, maintained a steady interest in this report and helped with the artifact identification, as did Marvin F. Kivett, museum director, Nebraska State Historical Society, Lincoln, Nebr. Charles Stewart, the former owner and lessor of the site in 1954, was helpful in any number of ways. Lemman Stewart provided a bulldozer on short notice. W. R. Wood drew the maps and "objects of native manufacture."

A hard-working and agreeable crew was provided by Harold Dietz, Fred McEvoy, Richard Giddings, Clifford Chapman, and Fred Morsette. Bernard Weinreich, of Bismarck, ably printed the photographs used in this report.

The faunal remains, artifacts, notes, and photographs from site 32MN1 are on file at the State Historical Society of North Dakota, Bismarck, N. Dak.

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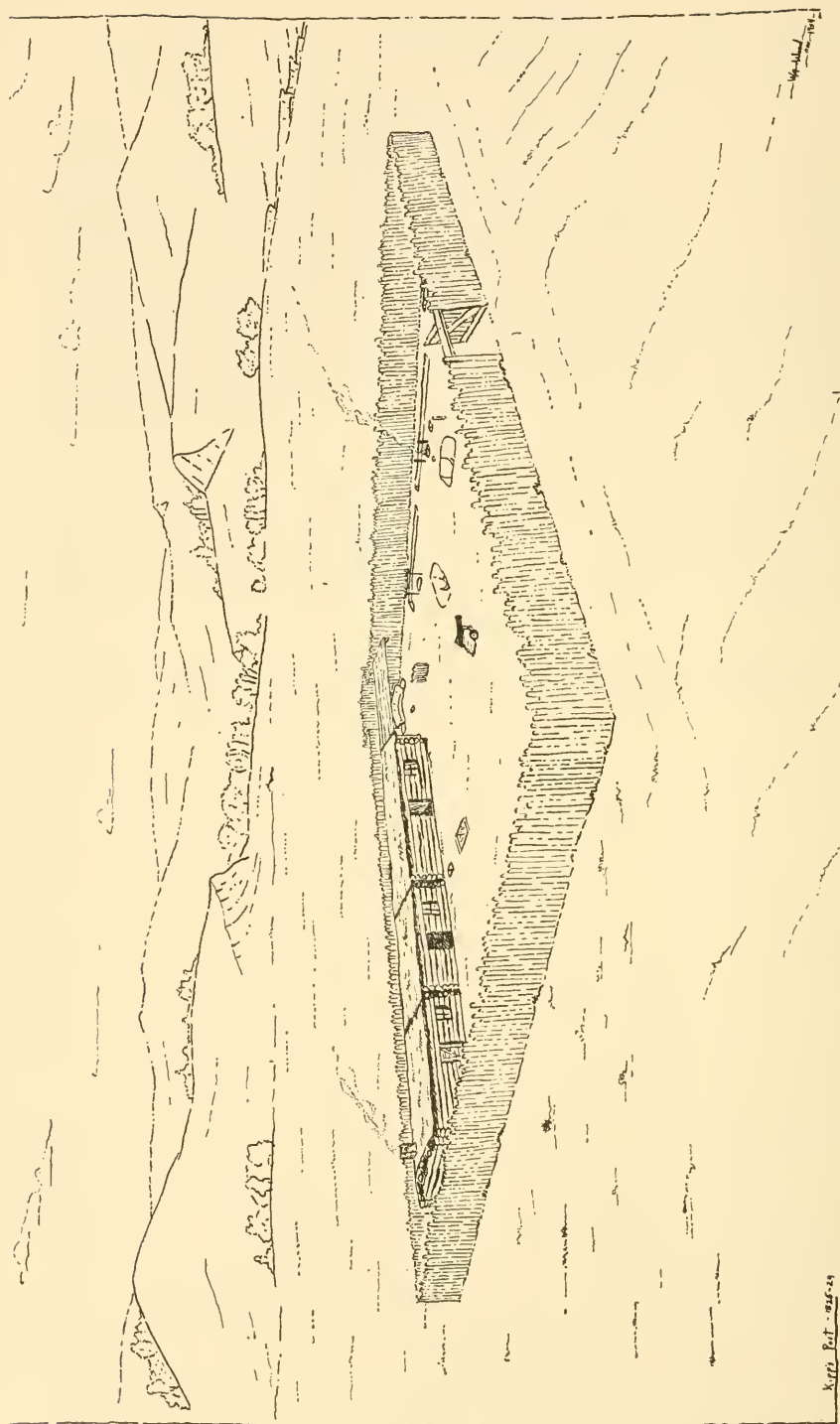


FIGURE 21.—A reconstruction of Kipp's Post, ca. 1826-27

THE ARCHEOLOGY OF A SMALL TRADING POST (KIPP'S POST, 32MN1) IN THE GARRISON RESERVOIR, NORTH DAKOTA ¹

BY ALAN R. WOOLWORTH and W. RAYMOND WOOD

INTRODUCTION

The purpose of this study is to describe the archeological remains recovered from the excavation of 32MN1, the site of a Columbia Fur Company trading post—Kipp's Post—which was apparently built at the mouth of the White Earth River in the fall and winter of 1826-27. Kipp's Post was built before the construction of Fort Clark in 1831, and is the predecessor of the famed Fort Union, built by the American Fur Company near the mouth of the Yellowstone River in 1828. This site was only briefly noted in contemporary literature, and details of its physical appearance and construction were not previously known. The available historical facts are presented in this study, and should provide a background for an understanding of portions of the fur-trading activities of the Upper Missouri River in the late 1820's.

The site is described, archeological fieldwork is summarized, structures are described, and an analysis of the artifacts recovered is presented. The artifacts from the site are especially important, since they relate to an early period of the fur trade in this area and to a time span of only about 5 years. These have therefore been described in considerable detail, and catalog numbers are cited for specific reference. Of special interest are the beads, glazed earthenware, buttons, and clay pipes. A large sample of shale and catlinite pipes was also found.

Also of considerable interest are the two traditions of artifacts found within the trading post. The majority of the artifacts are White object materials as one would expect; nevertheless, about 45 specimens were found that are described as "Objects of native manufacture." The latter are arrowpoints, mauls, whetstones, and a considerable variety of hide-dressing tools.

¹ Original report submitted to the Region Two office of the National Park Service in March 1957 and accepted in May 1957 by the Regional Director as completing the agreement between the National Park Service and the State Historical Society of North Dakota. Some revision was made in text in November 1958.

Difficulty was encountered in classifying the White object materials. Finally, a functional classification was made. This serves the purpose reasonably well, but as there is a certain amount of overlapping of categories, some cross references were used to compensate for this. "Trade goods" in the main consist of beads, shale, and catlinite pipes, though many of the other White object materials obviously could be in this classification as well.

The site is compared with Forts Berthold I and II, located at Like-A-Fishhook Village, McLean County, N. Dak., since they are the only fur trade posts dating from approximately the same period for which comparable data are available.

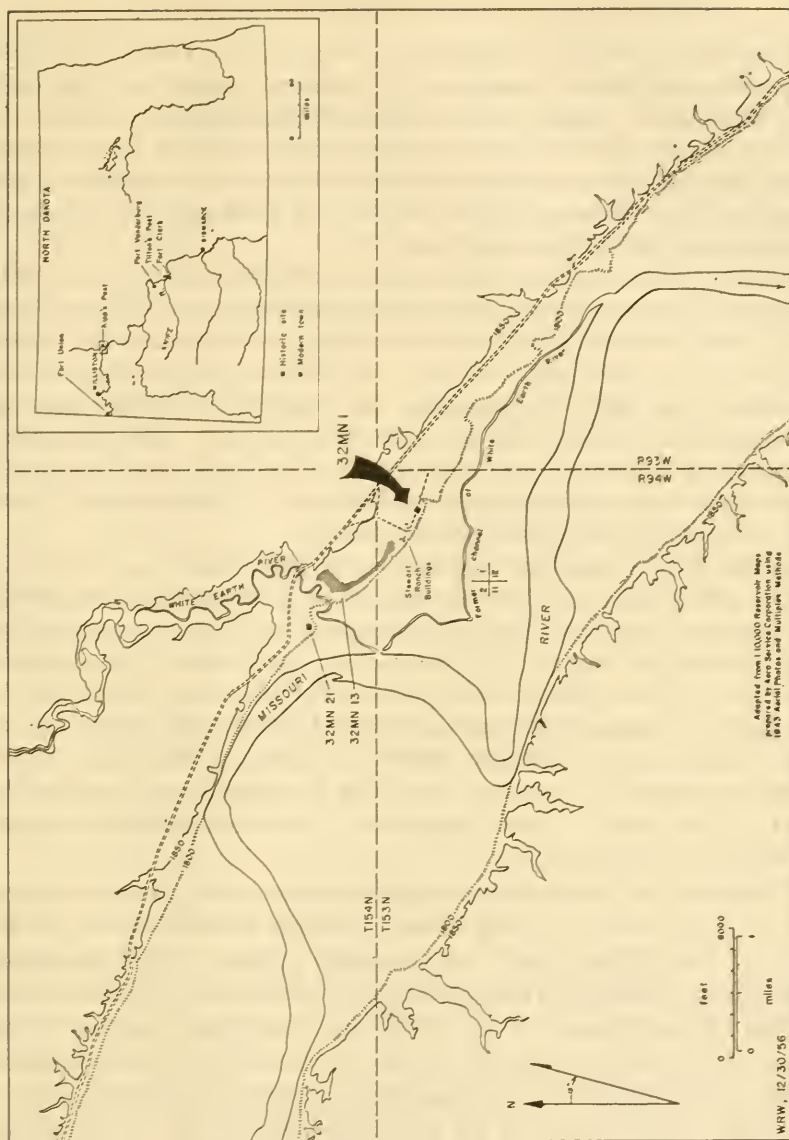
THE SITE DESCRIBED

The site is located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 1, T. 153 N. R. 94 W., Mountrail County, northwestern North Dakota. It is situated on the north, or left, bank of the Missouri River about 2 miles above the former mouth of the White Earth River. Since 1945 the channel of the White Earth has shifted and the stream now flows into the Missouri River about a mile upstream from the site.

The remains of the post were found on the second terrace of the Missouri River, well above flood stage, and about 300 yards north of what was probably the bank of the White Earth River at the time the post was in operation. The terrace slopes slightly to the southeast, but is otherwise relatively level. The post was built on the edge of the terrace, facing south and overlooking the former channel of the White Earth River, with the Missouri River several hundred yards farther south (map 7).

Before the site was excavated, several features were evident from the surface, although the area had been under cultivation for a few years. Low hummocks were evident on the north and east, and numerous shallow circular depressions were also visible. Occupational debris exposed by cultivation consisted primarily of fired-clay chinking, with some bone scrap and a few artifacts. Some material on the surface definitely postdates the occupation of the fur trade post. Among the modern items found were a 1935 copper-cent piece and fragments of soft-drink bottles.

The site was admirably situated with respect to game and water resources. Game was previously abundant in the area and included bison, deer, antelope, elk, bear, beaver, and numbers of game birds. Some of these animals are represented in the bone found in the site. The river bottoms supported a great amount of timber, among which is cottonwood, ash, boxelder, willow, and diamond willow. Wild plums, chokecherries, and other wild fruits grow along the river bottoms today.



Map 7.—Map of the area around Kipp's Post with an insert showing its location within the State of North Dakota.

WRW, 12/30/56

THE HISTORICAL BACKGROUND OF KIPP'S POST

After the purchase of Louisiana in 1803, and the Lewis and Clark Expedition of 1804-6, American fur traders surged into this vast new trade area. Many of the former French-Spanish traders remained in the field to compete with them. Manual Lisa, Pierre Chouteau, and others backed trading ventures that expanded rapidly into the Upper Missouri River region and penetrated well beyond the mouth of the Yellowstone River.

Although little detailed information is available, the evidence indicates that these ventures were largely curtailed by the War of 1812 with Great Britain, and little fur trading was done on the Upper Missouri from about 1812 to 1820. At the time Kipp's Post was in operation (ca. 1826-30), American fur traders were still regaining the ground lost during the hostilities with Britain. The American Government was also trying to undermine the English influence with Indian tribes in northern Louisiana Territory (Chittenden, 1954, vol. 1, pp. 127-128; Wesley, 1935, pp. 155-156).

At this period, the fur trade had not changed much since the days of the 1790's when the French-Spanish of Louisiana sought mainly the smaller choice furs such as beaver and otter that were not bulky and were highly valuable. The late 1820's and early 1830's brought changes to this region as the American Fur Company bought out or swamped its competitors and established permanent posts such as Fort Clark, a short distance below the mouth of the Knife River, which remained in operation until the fur trade was virtually extinct in the 1860's. Great changes also came about for the native populations of this area.

Weakened by diseases and liquor, they became more dependent upon the fur-trade posts. Former luxuries became necessities, and the decline of the village tribes was especially evident. With improved transportation facilities brought about by the advent of the steamboat on the Upper Missouri in the 1830's, and the drastic decline in the value of that staple of the fur trade—the beaver pelt—buffalo hides, tongues, and pemmican, and deer hides supported the declining fur industry. All of this was not yet evident during the heyday of the Columbia Fur Company on the Upper Missouri, but grew more apparent within 10 years after their amalgamation with the American Fur Company in 1827.

THE COLUMBIA FUR COMPANY

The Columbia Fur Company was organized in late 1821 or early 1822, probably as a result of the merger of the Hudson's Bay Company and the Northwest Company of Montreal, which threw many experienced employees out of work. Chittenden (1954, vol. 1, p. 323)

credits Joseph Renville, a former British trader, with forming this new organization. Among the founders were William Laidlaw and Kenneth McKenzie. One writer states that McKenzie was the director of this company, but since he was not yet an American citizen, he remained behind the scenes (Abel, 1932, p. 336). American citizens, such as J. P. Tilton, gave the new enterprise the necessary legal status to comply with American laws. The legal title of the company was Tilton and Company, but it was commonly known as the Columbia Fur Company (Porter, 1931, vol. 2, p. 745). It is not definitely known whether this name was used as an indication of the ambitious plans of the concern; it could also have been an attempt to hide behind a patriotic name.

The principal establishment of the new firm was on Lake Traverse, near the divide of the Red River of the North and the Minnesota or St. Peter's River. Posts were also established at Prairie du Chien on the Mississippi and at Green Bay on the western shore of Lake Michigan although the more important establishments appear to have been on the Missouri River. Most important of this company's posts on the Missouri was Fort Tecumseh, located a little above the mouth of the Teton (Bad) River in present South Dakota. Farther downstream was Fort Lookout and other posts were located south to Council Bluffs (Chittenden, 1954, vol. 1, pp. 324-325; vol. 2, p. 965).

The American Fur Company had competing posts in association with those of the Columbia Fur Company all along the Missouri River, but none were so high as the mouth of the Knife River and the Mandan-Hidatsa trade.

The capital of the Columbia Fur Company, according to Chittenden (1954, vol. 1, p. 324), was not large, "but the partners were all bold, experienced, and enterprising men." By 1826, the Columbia Fur Company was in a good position. They were well entrenched and too able a group of men for competition to easily suppress them. The American Fur Company was well aware that it had to rid itself of this dangerous competition.

Negotiations for a union of the two companies were begun in 1826, and in July of 1827, the merger took place. Under its terms, the Columbia Fur Company withdrew from the Great Lakes region and the upper Mississippi. On the Missouri River, a subdepartment of the American Fur Company was created which comprised all of the region above the mouth of the Big Sioux River. The Columbia Fur Company took charge of this department with little change of their former organization. The former partners in it were made partners or proprietors in this subdepartment. McKenzie, Laidlaw, Lamont, and others, such as James Kipp, remained prominent in what became the Upper Missouri Outfit of the American Fur Company (*ibid.*, pp. 324-326).

The following data concerning the Columbia Fur Company's operations near the mouth of the Knife River are largely abstracted from Wied-Neuwied (1906, vol. 23, pp. 223-228), who apparently collected them from James Kipp at Fort Clark in 1834.

James Kipp, a Canadian of German descent, came to the Mandan and Hidatsa country in 1822 as an agent of the Columbia Fur Company. At that time, Joshua Pilcher of the Missouri Fur Company operated a trading post (Fort Vanderburgh) a little above the Hidatsa villages on the Knife River which was abandoned in the spring of 1823. In May of 1823, Kipp began building a fort in the prairie between the later Fort Clark and the site of a winter village of the Mandan inhabitants of Mih-Tutta-Hang-Kush. By November of that year, he had the post completed. This is the nebulous Tilton's Post, of which little is known.

It was in that year that prolonged hostilities between the Arikara tribe and the Americans began. After the Arikara surprise attack on General Ashley's keel boats, a few miles above the mouth of the Grand River in early June of 1823, Col. Henry Leavenworth retaliated ineffectively with an attack on the Arikara villages. Thereafter, the unawed Arikara killed every white man who came their way and removed themselves to the vicinity of the Mandan villages near the Knife River and the short-lived Tilton's Post.

The personnel of Tilton's Post consisted of Tilton, Kipp, and four other men. They were in constant danger of attack from the neighboring Arikara. Indeed, one of the Columbia Fur Company's employees was killed at the entrance of Tilton's Post by an Arikara chief, Stanapat (The little hawk with the bloody hand). Other white people on the Missouri River were also murdered. Neither Tilton nor Kipp, nor any other employees, dared venture out of the fort during the whole of the autumn of 1823. Tilton moved to a nearby Mandan village and remained there until the fort was completed in November.

Although the Mandan were friendly with the Arikara, they were aroused by the death of the Columbia Fur Company employee at the entrance to the post and wished to make war on the Arikara. Tilton dissuaded the Mandan from this course of action as he feared the Arikara would then cause serious trouble with the transportation of supplies from the Company's post on Lake Traverse to the Mandan post.

In early December of 1823, William Laidlaw, a partner in the company, came from Lake Traverse to the Mandan post with six wagons of trade goods. The Arikara now made a tenuous peace with the personnel of Tilton's Post, as they could not get supplies from any other source. Difficulties with the Arikara continued, however, and Tilton removed to a Mandan village where the chief, Tohp-Ka-Sinka (the

four men) protected him. Afterward, probably in the spring of 1824, Tilton went downstream to St. Louis.

In the spring of 1824, the Arikara returned to their former villages above the mouth of the Grand River stating that they would live in peace thereafter with the white man. Kipp remained alone at the Mandan village and did not see another white man through the entire summer of 1824. About this time, Tilton's Post was abandoned and Kipp built a house near the Mandan village and dwelt there. During the summer of 1824, Kipp had the palisades of Tilton's Post cut down close to the ground and the Mandans floated much of the timber downstream to their village where Kipp added a number of rooms to his quarters and built a palisade around them. Probably in this same year, a company employee named Jeffers came with seven men and wagons of trade goods from the headquarters on Lake Traverse.

The year 1825 seems to have been a busy one at the Mandan post. Kipp was short of trade goods and sent Touissant Charbonneau, now a company employee, to Lake Traverse after supplies. On his return, Charbonneau fell in with a group of Assiniboin and lost the entire outfit. About this time, members of the Crow tribe arrived to trade, but as Kipp was short of trade goods, he took two halfbreeds with him to Lake Traverse where they obtained a supply and returned with a wagon safely. During this same summer, while Kipp was absent on the trip to Lake Traverse, Gen. Henry Atkinson visited the Mandan villages en route on the well-known Yellowstone or Atkinson-O'Fallon Expedition. Accompanying Atkinson were employees of the "French Fur Company" or the P. D. Papin Company. The trader Bissonette was with them.

In the autumn of 1825, Tilton arrived from St. Louis with a keel boat laden with trade goods. Kipp had in the meantime sent invitations to the Assiniboin, Cree, and Ojibwa tribes to come to the Mandan villages and trade with him. A subagent for the Mandan named Peter Wilson was at the Mandan Post with Kipp. Peace was then made between these tribes, the Mandan, and Whites. The object of this maneuver was to break off the northern tribes connection with the English and to draw their trade to the Missouri River.

In April of 1826, Tilton and Wilson went to St. Louis, and Kipp remained at the post with five men. Tilton returned in November with trade goods and, according to Maximilian, Kipp went to the mouth of the White Earth River and erected Kipp's Post.

Maximilian makes the basic reference to this venture as follows (Wied-Neuwied, 1906, vol. 23, p. 228) :

In April of 1825 [1826] Messrs. Wilson and Tilton returned to St. Louis, and Kipp alone remained at the Mandan Post, with five men. In November, Mr. Tilton returned with a supply of goods, and Mr. Kipp went to White Earth

River, carrying with him a fine selection. Here he built a fort, a little on this side of the mouth of the river, and remained there during the winter, trading with the Assiniboin.

Thwaites states in a footnote that the date of April 1825 should actually be April 1826. To judge from the known date of the Atkinson-O'Fallon Expedition, Maximilian was one year behind in his dates (*ibid.*, p. 228). In passing the mouth of the White Earth River in 1833, Maximilian (*ibid.*, p. 214) made another brief mention of Kipp's Post: "At this spot there was, formerly, a fort, which was abandoned in 1829, when Fort Union was built."

Another interesting though confusing reference to Kipp's Post was made in Larpenteur's Journal (Larpenteur, 1898, vol. 1, p. 108):

. . . About the year 1827 an outfit was made up and started for the mouth of the Yellowstone, Mr. McKenzie in charge. They did not reach that far the first year, but established a wintering post at the mouth of White river, halfway between Forts Union and Berthold—say 150 miles below the Yellowstone. After the post was finished Mr. McKenzie started for the States, and Mr. Honore' Picotte remained in charge. The returns were found encouraging and in the following year he went on to the mouth of the Yellowstone, where the chief of the band of the Rocks [Assiniboin] had desired him to build.

Presumably Larpenteur was given this information by Kenneth McKenzie, but no mention of James Kipp is made at all. These data indicate that the establishment at the White Earth River was intended only as a wintering post and perhaps as a stopover en route to the mouth of the Yellowstone River where a more permanent post was to be established for trade with the Assiniboin and other tribes in that region who had been previously dependent upon British traders for supplies.

The only other contemporary documentation available concerning Kipp's Post is a brief note concerning the "Second Journey Of Prince Paul" (the Duke of Württemberg) up the Missouri River in 1830, as cited by Bauser (1938, vol. 19, p. 472):

"February. To the Council Bluffs. Fort Atkinson. Visits the Mandan Indians. Fort Kipp."

Perhaps this evidence indicates that Kipp's Post was still operating. It could well be that it continued in use until Fort Union was well established and was then burned to prevent a competing company from using it.

The Southern Assiniboin chief, Red Stone, told Edward S. Hall about Kipp's Post in 1882 or 1883. He stated that at the time the post was occupied, boats landed very near the post (Breeling, 1954).

Other references to Kipp's Post are scanty, and apparently most of these either are based on Maximilian or duplicate data given by him. Until its excavation, Kipp's Post was one of the least-known posts of the Columbia Fur Company and the American Fur Company.

It is the present writers' opinion that McKenzie, Kipp, and other employees of the Columbia Fur Company started for the mouth of the Yellowstone River in November of 1826, with a supply of trade goods for the Assiniboin tribe and with intentions to build a trading post at the mouth of the Yellowstone River. Halted by winter, a wintering house was built at the mouth of the White Earth River for trade with the Assiniboin and as an advance base for the construction of a post on the mouth of the Yellowstone River. Why else would McKenzie, the reputed head of the firm, accompany an experienced trader (Kipp) to a mere wintering establishment? It is quite conceivable also that when the Assiniboin and other northern Indians came to the Mandan villages in the fall of 1825, they were promised a trading post in their territory. Certainly Larpenteur's statement quoted above indicates this to be fact. Promises of some sort must have been made to these Indians or they would have continued to trade with the British.

In July of 1827, the Columbia Fur Company merged with the American Fur Company. In October of 1828, Kenneth McKenzie wrote that a fort at the mouth of the Yellowstone was under construction (Chittenden, 1954, vol. 1, p. 958). If the merger with the American Fur Company had not taken place, it is quite possible that the Columbia Fur Company, encouraged by the returns from Kipp's Post, would have erected its own establishment at that location. With Fort Union well established, Kipp's Post became less important and was abandoned in 1829 or 1830.

ARCHEOLOGICAL FIELDWORK

The site was known from traditional information for years prior to 1938 when Thad C. Hecker located and mapped the visible features (Hecker, MS.). A brief note on the site (Will and Hecker, 1944, p. 84) has been published, but not until 1951 were systematic efforts made to obtain further data on the site.

In that year a River Basin Surveys field party under the direction of G. Hubert Smith obtained permission to carry out test excavations at the site. At this time, Smith's party located the palisade trench and recovered some artifacts. A valuable sketch map of the site was made, as were photographs and notes. With this information at hand, the State Historical Society of North Dakota commenced excavation in July 1954.

The excavation of the site proceeded as follows. The location of the post was determined with the use of Smith's notes; then the outline of the palisade trench was exposed by means of test pits. The sod was then stripped from an area extending about 10 feet outside the perimeter of the palisade trench. At this time the site was photographed and a contour map prepared showing the eleva-

tions, depressions, and other surface features. The majority of the disturbed earth in the plow zone was then removed by hand and with the use of a bulldozer. After this, the area within the palisade was excavated to sterile soil. The pits and other features were then mapped, and a plane table map of the site was prepared (fig. 22). Photographs of individual features were taken before and after excavation, and several general views were secured after the site was completely excavated (pls. 55, 56, 57).

Previous workers suggested the possibility of earth-lodge depressions adjacent to the post, and some time was devoted to stripping and testing the areas where these depressions were reported. No evidence of any structures was found in the depressions investigated, nor were structures of any form evident outside the palisade trench.

ARCHEOLOGY OF THE SITE

STRUCTURES

THE STOCKADE TRENCH

The stockade or palisade trench that formed the quadrilateral enclosure of the post averaged 96 feet on a side, and was oriented approximately with respect to magnetic north. A rectangular bastion projected about 5 feet beyond the northeastern corner of the enclosure; within this feature was a large irregular pit (Feature 12). The southwestern corner of the post revealed no similar defensive structure, but fired-clay chinking was found vertically between the post butts for a distance of 8 feet along the western trench and for 18 feet along the southern trench from this corner. This may represent a shed inside the stockade or another defensive feature. This area is designated by the letters "a" and "b" on the plan of the site (fig. 22).

The stockade trench had an overall length, including the bastion, of 395 feet. It contained the remains of approximately 673 cottonwood posts. The majority of these posts were indicated by soft earth, wood ash, and bark, as the wood had usually decayed except on the western portion of the enclosure where some posts were preserved as charred butts by burning (pl. 57, *c*).

Most post butts were badly rotted, but enough of them remained so that an accurate estimate of the number in the stockade wall could be made. Each discernible post was plotted on the site map. In most instances the posts had been placed close together in the stockade trench. In a few cases, slender or crooked posts probably had others placed behind them on the inner side of the trench. It is also possible that posts occasionally rotted out in the stockade line and that the double rows of post butts resulted from replacements, though

the trading post apparently was not inhabited for more than about a 5-year period. In a few instances, the rotted post butts had ovate cross sections, indicating that they had been split before being placed in the trench. No hewn post butts were found and the bark had been left on most of them.

The posts used in forming the stockade ranged in diameter from about 0.3 to 0.8 foot with the average diameter about 0.5 foot. No information exists about the height of these posts though the completed palisade was probably at least 8 feet in height and may have been considerably more. No evidence was found to suggest that the top of the palisade was even or reinforced with a plate.

Four cross sections (Features 56, 57, 58, and 59) were made of the stockade trench. It ranged in width from 1.3 to 2.7 feet and was 1.3 to 1.8 feet in depth. This trench was somewhat irregular and varied in width from point to point (pl. 57, *d*).

THE ENTRANCE

The entrance consisted of a break in the southern stockade trench line, which was 9.5 feet across and faced the White Earth River. Posts 0.5 foot in diameter were found on either side of the entrance, within the stockade trench. These posts may have served to support a swinging 2-piece gate. Two other posts (Features 31 and 33), were found about 5 feet on either side of the entrance and on the inner side of the stockade trench. These probably served to hold the sections of the gate open. The entrance was oriented to the south and apparently faced the river channel at the time the post was built. Fort Berthold I, at Like-A-Fishhook Village (32ML2), was oriented in a similar manner.

THE BASTION

The bastion or blockhouse (Feature 2) was a rectangular extension of the palisade or stockade trench in the northeastern corner of the enclosure. It projected about 5 feet outward from the stockade trench and was a continuation of this trench. This projection had two faces and two flanks, thus affording enfilade fire along the north and east walls of the post. Only one bastion or blockhouse was found at this post, although two blockhouses, placed at opposite corners of the enclosure, occur at most fur trade posts of this area. The available evidence suggests that this defensive structure was merely an extension of the general palisade and thus did not have a superstructure as was common in the elaborate blockhouses at some fur trade posts. A large, irregular pit (F-12) in the center of the bastion contained charred refuse.

THE BUILDINGS

Definite remains of buildings were noted only along the northern side of the enclosure. These remains consisted of fired-clay chinking showing the impressions of round logs, cabin sills with chinking around them, floor joists, charred puncheon flooring, and post molds. Four buildings are apparently represented by these remains.

The most significant evidences of these structures were six cabin sills surrounded by chinking, and nine floor joists which were oriented north-south. They varied in length from 4 to 17 feet and in width from 0.3 to 0.5 foot, and were set into the ground about 0.2 foot. Cultivation had obviously destroyed portions of these sills and joists although the majority of them were about 16 feet long. This area was designated as Feature 3 during excavation (pl. 56, *a*).

The cabin sills were distinguished from the floor joists by being surrounded by fired-clay chinking. They also enclosed three rectangular areas (Features 62, 63, and 64). In each case, these log cabins had similar measurements and were separated from each other by about 2 feet. Charred flooring was found in all three cabins, though the majority of it was found in the western and central structures. Iron nails found associated with the flooring suggest that it was nailed to the floor joists.

Feature 62 was located in the northwestern corner of the enclosure. It measured 18.3 feet east and west and 18.0 feet north and south. Between the charred sills were three joists which once supported the floor of hewn cottonwood puncheons. Portions of this cottonwood flooring were found lying upon the joists. Some of it retained bark on the under side although the majority of the floor was apparently hewn on both sides. The flooring was poorly preserved since plowing had disturbed much of it. It was consequently in various lengths and about 0.4 foot wide and 0.1 foot thick.

This cabin probably served as a kitchen since considerable quantities of animal and bird bone were recovered here. Fragments of glazed earthenwares, melted lead, and lead balls were found here. Feature 20, an extensive trench filled with trash, was partially between this cabin and the palisade trench. It contained large quantities of ash, burned bone, and other refuse and probably was a kitchen refuse area.

This cabin also contained a fireplace (F-24) which was associated with four small post butts. These post butts were placed in a pattern around the basin-shaped fireplace. The basin-shaped fireplace was 3 feet in diameter and 0.5 foot deep. Large quantities of fired-clay chinking were found around the fireplace. This suggests that the original feature was a clay-chinked stick chimney.

Feature 63, the central log cabin, was 18 feet east and west and 16.5 feet north and south. Between the two charred and chinked sills were three floor joists which supported the floor of cottonwood slabs. The flooring consisted of hewn slabs similar to those in the cabin discussed previously.

Features found here include a pit (F-14) and a possible fireplace (F-16). The pit was in the western portion of the cabin and was oriented east and west. It contained an earth septum that divided the bottom of the pit into two parts. One of the floor joists of this cabin passed directly over the septum. This pit was 2.2 feet deep, 4.1 feet wide, and 7.0 feet long. It was apparently open at the time the cabin above it burned, since charred flooring collapsed into it. This feature contained a number of assorted trade beads, a plain finger ring without a setting, clay pipe fragments, two pieces of a leather shoe heel, glass fragments, animal bones, iron nails, a burned human incisor, and plum (?) stones. This pit was probably originally for the storage of trade items and food, and later for refuse.

One possible fireplace (F-16) was in the western portion of this cabin. It was badly disturbed by rodent burrows so that its identification is uncertain. It was about 2.5 feet in diameter and consisted of ash and some burned earth scattered through a series of rodent burrows. If it was originally a fireplace, it predates the period when flooring was laid in this cabin, since it was beneath the board flooring.

It seems probable that this cabin was used as a dwelling although definite evidence is lacking.

Feature 64, the easternmost cabin in this series, measured 19.3 feet east and west and 17.5 feet north and south. It also had three floor joists laid parallel to the sills. No pits, fireplaces, or other significant finds were made in this structure. The absence of a fireplace in this building would tend to suggest that it was not used as living quarters, but for the storage of trade goods and furs, and possibly food in wintertime.

Evidence of a fourth structure (F-65) was east of the last log cabin in this range of buildings. This feature does not appear to have been a log cabin. Chinking was absent in this area, and sills and floor joists were lacking. This building was not well defined, probably because cultivation had gone deeper in this portion of the enclosure. It is thought that this unit might have been a pole shed that occupied the area between Feature 64 and the eastern stockade wall.

At the western end of this structure were three large post butts (Features 46, 47 and 48) in square post molds. The tops of these cottonwood logs were burned; the bases were sawed square. They were placed in a line about 5 feet apart. It seems probable that these posts

were about 8 or 10 feet in height and supported a joist or rafter that in turn supported a pole roof.

No evidence was found of internal support posts near the center of this shed. Nevertheless, it is possible that posts of this nature were set on the ground and not in postholes.

Evidence which supports the existence of a shed at this location were the indications of 14 logs or poles which were found oriented in an east and west direction on the ground at this spot. Only one of the poles consisted of charred wood. The remainder were found as bands of burned earth and fine charcoal in the soil. These poles were probably from the roof.

Feature 50, a pit measuring 2 feet north and south and 1.4 feet east and west, and 1 foot in depth, was in the east central portion of this shed. The pit fill was clay; it contained six lead rifle balls. No suggestion can be made as to its function.

Little can be said about the function of this building although it may have housed horses, tools, and perhaps a boat. It might have also been a convenient latrine in the winter.

The available evidence suggests that this structure was a shed with a flat roof that sloped forward toward the post enclosure. It probably had an open front and abutted against the eastern palisade wall and easternmost log cabin, Feature 64. The rear of this shed presumably was composed of logs, though it could have abutted against the northern palisade wall. This building was about 30 feet east and west and 18 feet north and south.

A few speculations about the buildings are in order. First, it is of interest to point out that the structures at Kipp's Post were placed in a fashion similar to those at Forts Berthold I and II located at Like-A-Fishhook Village. In these two fur trading posts, the living quarters were placed against the northern stockade or palisade walls.

This method of placement had a major advantage in providing protection from the northwesterly winds which accompany the winter in this region. It also afforded sunshine on the cabin fronts during the year and especially during the winter months. Furthermore, it meant that the living quarters faced the entrance to the post.

There is some question as to whether the log cabins were units of a larger building, which was divided by chinked log partitions, or three separate log cabins were located here. It seems almost certain that the chinked sills delimited three separate log cabins, as these sills were separated by about 1.5 feet at the two points where the cabins adjoined each other.

When this area was excavated, a layer of fine, compact, light-colored clay was found beneath the flooring. Around the joists and sills and particularly between the slabs, quantities of glass beads, rifle balls,

lead shot, and other small artifacts were found. The layer of fine clay hints that the cabins were in use for sometime before flooring was put down over the clay. This would account for some of the material found within the clay.

The presence of small amounts of thin window glass suggests that some of these cabins had small windows which probably faced south. Other artifacts, including an iron hasp, an iron pintle or door hanger (?), an iron door hook, iron nails, and quantities of clay chinking, give a few more clues to the construction of these cabins.

The westernmost cabin was apparently a kitchen and probably also served as a living area since clay pipe fragments and a considerable amount of melted lead was recovered here. The central cabin presumably served as living quarters at one time. The storage pit (F-14) and the probable fireplace (F-16) indicate this, although these features were probably used before the cottonwood flooring was laid down. The third and easternmost cabin in this range of buildings may have been used for storage of trade goods and supplies as well as furs, although direct evidence is lacking.

No evidence exists to indicate the type of roof used in these structures, but fur trade posts of a somewhat later date ordinarily had flattened gabled roofs of poles or slabs covered with dirt and sod. It might be well assumed that this type of roof was in use at Kipp's Post. It is also possible that each building had its own roof rather than a continuous one for the series of log cabins.

A number of features have an obvious relationship with the three log cabins and the shed. These are briefly discussed here to show their relationships to the buildings, but will be dealt with in more detail in the appropriate sections of this report.

Feature 22, a trench 10 feet in length, was located at the southwestern corner of the westernmost log cabin (F-62). This trench contained a series of small post butts, and apparently originally consisted of a post screen which could have served as a windbreak near this cabin. Nearby were two small basin-shaped pits (Features 18 and 23) that were probably used for smoke tanning of hides.

Feature 8, a pit 2.8 feet square, was in front of the middle and eastern cabins. It contained a number of small artifacts and had served as a refuse pit.

Feature 51 consisted of a small trench about 4 feet in length. It was located at right angles to the front of the shed (F-65) and probably once supported a few small posts. It could well have served as a hitching rack for horses.

A long trench (F-20) was between the western and middle cabins and the northern stockade wall. This trench was 24 feet in length and averaged about 2 feet in depth. It had obviously served as a

refuse disposal pit, since it contained quantities of kitchen refuse. It could also have been used as a latrine.

Between the shed (F-65) and within the bastion was a large irregular pit (F-12). It contained such refuse as broken animal bones, fragments of chinking and charcoal. This feature obviously served as a refuse disposal area and may have also been a latrine.

FIREPLACES

Five fireplaces (Features 11, 16, 19, 24 and 39) were found; all of them were circular, averaging about 2.5 feet in diameter. They contained white wood ash, charcoal, and artifacts, and were underlain by red burned earth. One of the fireplaces (F-24) is in the presumed kitchen (F-62), and is associated with four small postholes. These posts were placed in a pattern around the fireplace. Large quantities of fired-clay chinking were found in this area before and during excavation, and the fireplace in question may have had a clay-chinked stick chimney.

One possible fireplace (F-16) was in the western portion of F-63, the central cabin. It was badly disturbed by rodent burrows; hence the identification is uncertain. This presumed fireplace consisted of ash and some burned earth scattered through a series of rodent holes. It was located beneath the cabin flooring and probably predates it.

Three outside fireplaces were found. Two of them (F-11 and F-19) were on the eastern side of the post enclosure. Both were associated with small post molds. These post molds are probably the remains of forked pole structures that once supported kettles and other containers over the fireplaces. Feature 19 was apparently associated with rifle-ball casting, as scattered droplets of lead were found near it and in the adjacent Feature 9, a small pit. Another fireplace (F-39) was in the southwestern portion of the enclosure. Most of it was removed while bulldozing the overburden from this area.

CHARCOAL-FILLED PITS AND DEPRESSIONS

Eight small pits and depressions (Features 18, 23, 25, 26, 27, 34, 37, and 45) were found around the walls of the post enclosure. All of them contained charcoal. A few of them had bits of charred bark at their bottoms. Six of these (Features 18, 23, 25, 26, 27, and 37) were circular shallow depressions. They ranged in diameter from 0.7 to 1.3 feet, and from 0.1 to 0.3 foot in depth (pl. 57, *a*).

The other two features in this series (F-34 and F-45) were deeper circular pits. These varied considerably in form and content and will be described individually.

Feature 34 was 1.5 feet in diameter, and 1.0 foot in depth. The

upper portion of this pit was filled with clay, and the lower 0.2 foot consisted of charcoal.

Feature 45 was a basin-shaped pit 1.4 feet in diameter and 0.6 foot in depth. The upper portion was filled with a mixture of burned earth and charcoal. The bottom was filled with ash and charcoal, including a large granite boulder.

These features, though varying somewhat in form, each had charcoal in their bases. Seemingly, they all may have served a similar function. It is thought that they were used for the smoke tanning of hides. Smiliar pits, but filled with charred corncobs, have been found at Like-A-Fishhook Village (32ML2). This technique of hide tanning is reported for the Hidatsa (Hoffman, 1906, p. 456), and was probably present among the Mandan. Archeological evidence (Wood, MS. p. 51) indicates that it was practiced by the Arikara.

LARGE TRENCHES

Five large trenches (Features 12, 17, 20, 21, and 55) were within the post enclosure; these were parallel to the eastern and northern stockade walls. They were generally long, narrow, shallow trenches and contained few artifacts.

A large, irregular pit (F-12) was inside the bastion in the north-east corner of the enclosure. The walls of this pit were steep, and curved sharply to a nearly flat bottom. The pit had a maximum depth of 1.4 feet. A western extension of the pit was trenchlike in appearance, and was narrow and elongated. It sloped gradually to the surface at its westernmost extremity. The pit was filled with burned earth and charred refuse. Though this pit may have originally had some function in connection with the bastion, its final use was that of containing refuse. It was located in an out-of-the-way part of the post enclosure, and if it were not necessary for the defense of the trading post, would have provided an adequate refuse disposal area.

Feature 20, on the northern side of the enclosure, was located between the cabins, Features 62 and 63, and the northern stockade trench. It was 24 feet long and 2 feet wide. Its depth varied from 2 to 2.5 feet. The eastern portion of this trench was undercut considerably and expanded to about 4.5 feet in width; the bottom was also deepened. This feature was filled with what appeared to be kitchen refuse and ash. Many broken and burned animal bones were recovered here, as well as clay pipe fragments, window-glass fragments, and portions of a small cast-iron cannon.

Three approximately rectangular trenches (Features 17, 21, and 55) were on the eastern side of the enclosure and parallel to the stockade trench. They were shallow, averaging 0.8 foot deep, 1.7

feet wide, and ranged in length from 11 to 22.5 feet. The northern end of the northernmost trench, Feature 21, made a short right-angle turn to the west. These three trenches were nearly devoid of artifacts or other remains, although Feature 21 contained clay-pipe fragments and a portion of an inlaid catlinite pipe bowl. A few pieces of animal bone were found in each of the trenches. Few inferences can be made as to their function though it is just possible that these three shallow trenches represent the start of a series of buildings or enclosures that were never completed. They definitely were not latrine trenches, though their forms and locations indicated this. It is possible that they had served as borrow pits, perhaps even provided earth for the cabin roofs.

SMALL TRENCHES

Two small curtain trenches extended into the post enclosure from the palisade line, at right angles. One of these, Feature 53, was in the southeastern corner of the enclosure and contained eight cottonwood posts 0.4 foot in diameter. This feature was 4.7 feet long, 0.7 foot wide, and 1.2 feet deep. It seems possible that a wall of posts was erected here to serve as an enclosure and shelter for a horse corral.

Feature 54 was situated on the western side of the enclosure. It consisted of a trench that was 3.6 feet long, 0.7 to 0.8 foot wide, and 1 foot deep. No evidence of posts was found and the function of this feature is unknown.

Two small trenches (F-22 and F-51), oriented north and south, were south of the buildings on the north side of the enclosure. Feature 22 was 10.2 feet long, 0.7 foot wide, and 1.4 feet deep. It contained three cottonwood posts 0.4 foot in diameter and may have served as a screen for the western cabin, Feature 62. Associated with it were two shallow pits (F-18 and F-23) which had probably been used for the smoke tanning of hides.

Feature 51 was located immediately in front of the middle of the shed, Feature 65. This small trench was 3.8 feet long, 0.5 foot wide, and 1.6 feet deep. Wood dust found in the fill suggested that posts had been in the trench at one time. The location of this feature suggests that it was perhaps once used as a hitching rack for horses that were kept in the adjacent shed (F-65).

LARGE PITS

Eight large pits (Features 4, 6, 7, 13, 14, 15, 60, and 61) were found within the post enclosure; five of them were grouped around the front of the range of buildings in the northern half of the enclosure. Five of these pits (Features 4, 6, 7, 13, and 15) were oriented

north and south. Two of the remaining pits, Features 60 and 61, were oriented in an east and west direction. Feature 14, the only one found within a structure (F-63), was also oriented east and west.

Three shallow pits (Features 7, 15, and 61) were subrectangular with rounded corners, convex sides, and flat bases. They varied in length from 8.7 to 11 feet; 4.8 to 8.3 feet in width; and averaged 1.5 feet in depth. All of the pits contained refuse such as ash, charcoal, and broken stone. They also contained clay-pipe fragments, gun flints, nails, broken glass, and considerable quantities of animal bones. Two well-worn human upper incisors were found in F-61.

Five of the pits (Features 4, 6, 13, 14, and 60) had steep, nearly vertical walls, rounded to level bottoms, and a narrow ridge or septum of earth across the short axis of the pit. These ridges were rounded, and about 1 foot high and 1 foot wide. They had been made at the time the pits were originally dug as they were of undisturbed native soil (pl. 56, *b*). These pits were rectangular in outline, with rounded corners.

Feature 14 will be discussed separately, as it was found inside the central log cabin, Feature 63. It was oriented east and west, and one of the floor joists passed directly over the earth septum. This pit was smaller than those found in the post enclosure, measuring 2.2 feet deep, 4.1 feet wide, and 7 feet long. It had apparently been open at the time the post burned, since flooring had collapsed into the pit. Artifacts were scarce, but some animal bone was found here. This pit has been discussed in connection with the central log cabin, Feature 63 (p. 259).

The remaining four pits were outside the buildings, and were larger than Feature 14. They averaged 4.2 feet deep, 6.3 feet wide, and 11.8 feet long. Refuse was present in each pit, but was particularly abundant in Feature 13, which contained much burned earth and other debris. Animal bone, earthenware fragments, clay-pipe fragments, broken window glass, gun flints, buttons, beads, and an elk metapodial flesher were recovered from these pits.

Two of these pits, Features 4 and 60, contained decayed wooden slabs at the bottom of them. These had apparently served as flooring, which was laid over the septum and served to keep stored goods off the ground and would have kept them out of water if moisture had seeped into the pits. It seems likely that the other pits in this grouping also had wooden floors when they were in use (pl. 56, *b*). The function of these pits is a matter of speculation, although it would appear probable that they were originally used for the storage of trade goods. Perhaps these were the white fur trader's caches and

analogous to native cache pits. After these pits were abandoned for the storage of trade goods or other valuables, they were obviously used for the deposit of kitchen refuse and other debris around the post enclosure.

SMALL PITS

Five small square or rectangular pits (Features 8, 10, 28, 49, and 50) were found. Two of these, Features 28 and 49, contained cottonwood posts; both had fills of mixed earth with some charcoal present. They had apparently served only as postholes.

Feature 8 was in front of the central and eastern cabins. It was 2.8 feet square in horizontal outline, and tapered to 2 feet in width at the bottom. It was 2.5 feet in depth, containing fragments of wood, a quantity of fired chinking, animal-bone fragments, nails, a series of leather shoe fragments, clay-pipe fragments, a piece of glazed earthenware, and birchbark.

Feature 10 was in the east-central portion of the enclosure. It was about 2.3 feet square and 1 foot deep. The fill was a hard flaky soil that contained charcoal, pieces of lignite coal, a piece of animal bone, granite fragments, and a piece of wrought iron.

Feature 50, a small pit in the shed (F-65), measured 2 feet north and south, and 1.4 feet east and west. Depth was 1 foot. The pit fill was clay and it contained charred wood and six lead rifle balls.

A small oval pit, Feature 9, was on the eastern side of the enclosure near Feature 19, a fireplace. It measured 1.5 feet north and south and 1.9 feet east and west; its depth was 1.6 feet. The pit fill was a loose gray clay which contained about a pound of melted lead fragments, one gun flint, small beads, and a wrought-iron harpoon. The presence of melted lead in this pit and its closeness to a fireplace indicate that it had some connection with the casting of rifle balls.

BURIAL PIT AND BURIAL

A small rectangular pit (F-52) was in the southeastern corner of the enclosure abutting against the south stockade trench. It was oriented north and south and was parallel to the east stockade trench. The pit was 2.5 feet long, 1.3 feet wide, and 1.2 feet deep. It contained a primary infant burial in a nailed wooden box and several thousand blue glass seed beads. The burial was that of an infant about 6 months of age. It was extended, and lying on its left side. The head was to the south, with the face to the west (pl. 57, *b*).

The sockets for the incisors, canine, first and second molars were present, but the teeth were absent. The second left-lower incisor was in place, largely because of the fact that it had not yet erupted. The lower incisors erupt at between 6 and 9 months of age (Hooton, 1946, p. 732).

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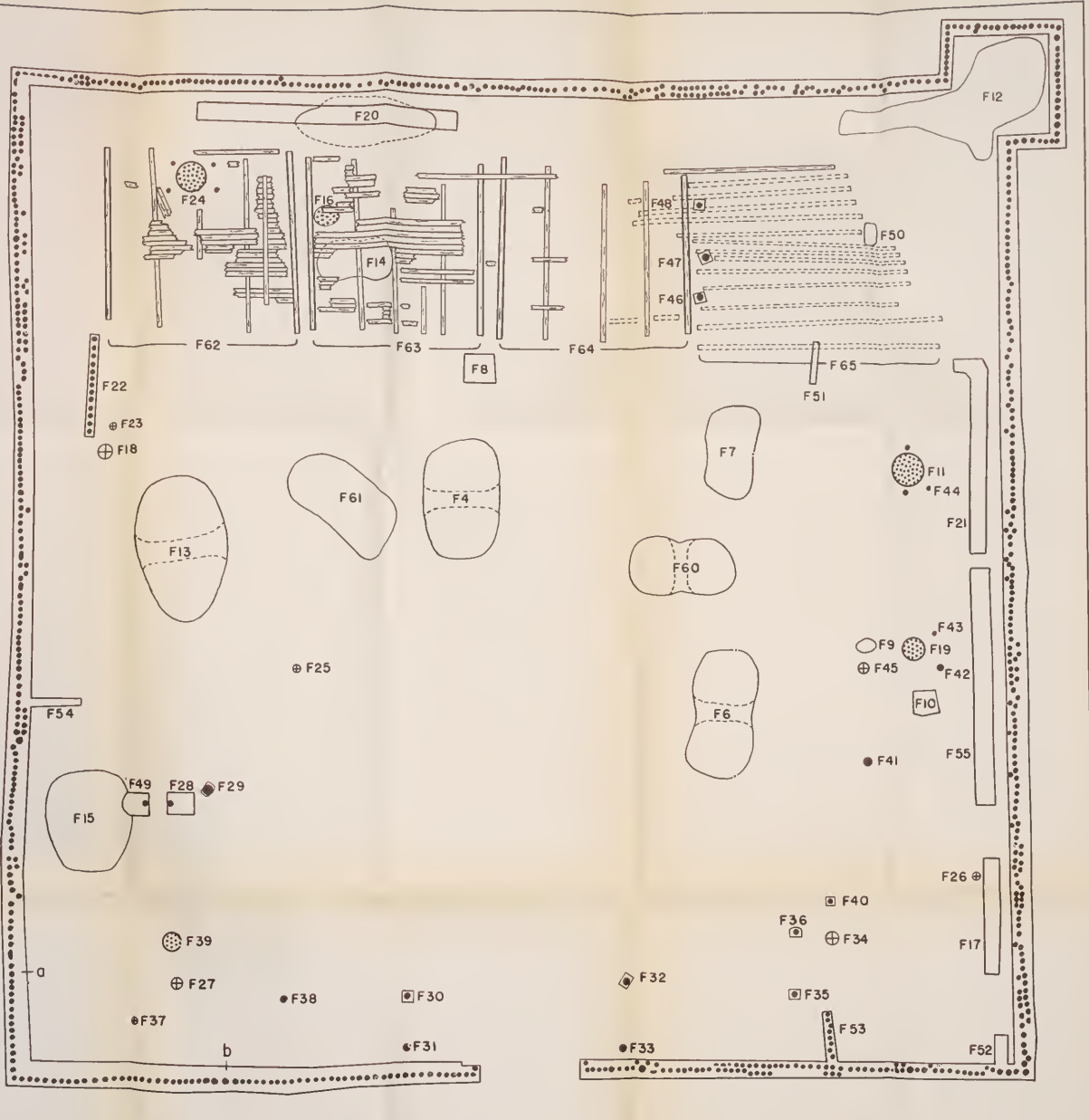
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32MNI
(KIPP'S POST)

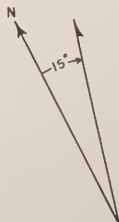
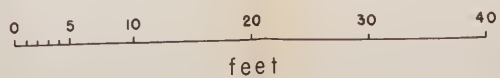
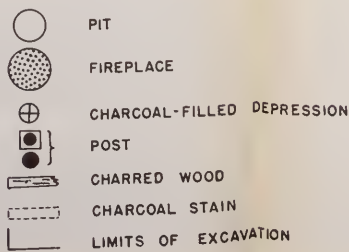


FIGURE 22—Plan of the excavated Kipp's Post



CHART OF POWER
 CHARACTERISTICS
 OF THE
 TRANSFORMER-RECTIFIER
 FILTER



ARTIFACTS

DEFENSE

Cannon (1; 11 fragments) (fig. 23).—Judging from the number and the shrapnellike appearance of the fragments, the cannon had exploded. The 10 portions of the cannon recovered (specimen Nos. 293–302) allowed the reconstruction herewith made by Dr. Carlyle S. Smith of the University of Kansas. Dr. Smith's description of this unusual find follows:

The fragments of a cast-iron one-pounder cannon and one bolt from the carriage are present. As reconstructed in the drawing (fig. 23) the complete barrel must have measured about 29½ inches in length. The bore length is 24½ inches. The caliber is approximately 2⅛ inches, appropriate for a cast-iron ball weighing one pound, or a handful of musket balls. The casting shows excessive porosity and repairs using wrought iron.

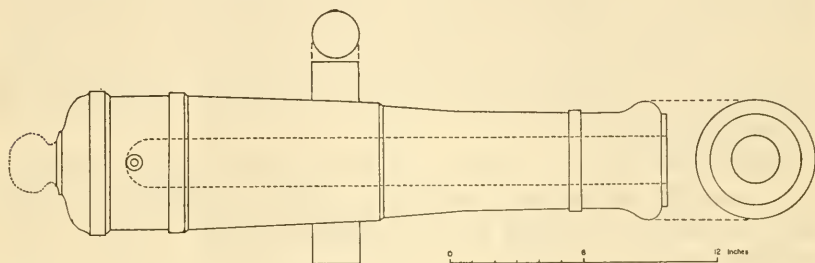


FIGURE 23.—A reconstruction of the one-pounder cannon found within the post. Made by Dr. C. S. Smith of the University of Kansas. Specimen Nos. 293–302.

According to Jac Weller (personal communication to C. S. Smith) such cannon were made in small iron founderies in Pennsylvania and New York between 1778 and 1781 for the use of the continental Army. Harold Peterson (personal communication to C. S. Smith) thinks it likely that the piece was made early in the 19th Century expressly for the fur trading company. Little is known about cannon of this type.

One wrought-iron bolt, without threads, and presumably from the cannon carriage, is 7 inches long, and has a head 2 inches square. The head is ½ inch thick; the shaft is 1¼ inches in diameter (No. 123).

HUNTING AND OTHER SUBSISTENCE ACTIVITIES

Flintlock hammer (1) (pl. 58, a).—Dr. Smith's description:

One hammer from a flintlock rifle of the pattern manufactured at the armory at Harpers Ferry, Va., for the use of the U.S. Army between 1803 and 1807 is present. Its size and conformation eliminate all other possibilities. Such rifles were carried by the Lewis and Clark Expedition.

This is the lowermost portion of a flintlock hammer. The top portion which held the flint against the lower jaw of the vise is missing.

The hammer measures $2\frac{5}{8}$ inches in length and $1\frac{1}{8}$ inches in width (No. 280).

Gun flints (25) (pl. 58, b, c).—Dr. Smith's description:

The 23 gun flints are all of English manufacture, ranging from gray to black in color, and square or rectangular with four sharp corners. Ten are of horse pistol size (25×20 mm. to 26×22 mm.) but could have been used in trade guns with medium-sized locks. Six are for rifles or single barrel fowling pieces with small locks (22×18 mm. to 24×17 mm.). Four are for use in pocket pistols or rifles with small locks (ca. 19×9 mm.). Two are of carbine size but would fit trade guns with large locks (28×20 mm. to 29×21 mm.). It is noteworthy that musket flints are absent.

Most of these gun flints are badly worn from use and were probably discarded. The two specimens illustrated are little used (Nos. 140, 193). Many of those recovered were considerably damaged by having been burned in a fire (Nos. 62-76, 140, 181, 193, 233, 237, 246, 269, and S.I. 8). After Dr. Smith had studied these materials, two additional gun flints from the site were found by Col. Dana Wright of St. John, N. Dak. One measures 24 by 20 mm; it is of the horse-pistol size. The other is 21 by 18 mm. and is presumably for a rifle or fowling piece.

Gun worms (2) (pl. 58, g).—These tapering spring screws are $1\frac{1}{16}$ and $1\frac{5}{8}$ inches long; and are $\frac{9}{16}$ inch in diameter. They were used to remove wadding from muzzle-loading guns (Nos. 28 and S.I. 26).

Ramrod (?).—A section of a brass ramrod (?) has a total length of $15\frac{1}{4}$ inches and a diameter of $\frac{5}{16}$ inch. One end is filed to a blunt tip. This specimen could also be heavy brass wire stock for the manufacture of bracelets (No. 35).

Spherical lead balls (23) (pl. 58, d, e).—Dr. Smith's description:

All are spherical lead balls for use in muzzle loading weapons. One is a mere fragment. One is a crushed spent bullet. Twelve were cast off center in a poorly adjusted mold. The six perfect specimens range in size from .475'' to .566''. One measures .475''; two measure .545''; one measures .555''; two measure .566''. All of the imperfect specimens resemble those in the .545 to .566 group. Two screws, one from a single cavity mold and one from a double cavity mold are present.

The specimen numbers follow: Nos. 12-23; fragment, 218; (6) 264.

An additional lead ball was found by Col. Dana Wright; it measures .54 caliber. Two other lead balls were found by Fred La Rocque, New Town, N. Dak. One measures .566 and the other is .584 caliber.

Sprews (3) (pl. 58, f).—The sprews mentioned by Dr. Smith above are short triangular objects; these are the excess lead left from casting balls in the molds. The 1-cavity mold left one short circular plug extending outward from the apex of the triangular cross section, and

the 2-cavity mold had two circular plugs. Still another sprew was found at this site, but Dr. Smith did not see it. This specimen is a sprew from a 4-cavity mold. It is $3\frac{5}{8}$ inches long and $\frac{3}{4}$ inch wide at its widest point. It has four nipples or teats on it. These are separated from each other by approximately $\frac{5}{8}$ inch. The overall length of this mold appears to have been about $4\frac{1}{2}$ to 5 inches (Fred La Rocque). The 1- and 2-cavity spreus are Nos. 36 and 37.

Shot (190).—Dr. Smith's description:

The lead shot range in size from No. 3 (.140 inch) to BB (.180 inch). There are a few examples of No. 1 (.160 inch) and B (.170 inch).

Specimen numbers are 11 and 184.

Melted lead fragments (ca. 2 pounds).—About 2 pounds of melted lead drops and rivulets were found. Small drops were common, with a few irregular blobs of metal (Nos. 39, 166, 184, 236, 241, and 291).

Harpoon (1) (pl. 58, h).—A barb projects outward and rearward $2\frac{1}{2}$ inches from the point of this wrought-iron specimen. The shaft appears to be broken and was probably much longer originally. The harpoon head is $\frac{3}{4}$ inch at its widest point and $3\frac{5}{8}$ inches in length. The specimen is similar to an object labeled "muskrat spear" in the collections of the State Historical Society of North Dakota (cat. No. 2281). (No. 183.)

Seeds (92).—Seventy-three specimens were identified as wild plum stones, *Prunus americana*; 19 were identified as chokecherry stones, *Prunus virginiana* (Nos. 95, 208, 235).

HOUSING AND CONSTRUCTION MATERIALS

Nails (90).—These cut-iron nails are rectangular or square in cross section. The heads vary considerably in size and form. The length and diameter of these are tabulated below:

Number of specimens:	Length (Inches)	Width of shank (Inches)
2	$6\frac{5}{8}$	$\frac{5}{16}$
4	$5\frac{5}{8}$	$\frac{3}{8}$
4	$4\frac{7}{8}$	$\frac{1}{4}$
8	$4\frac{1}{8}$	$\frac{1}{4}$
4	4	$\frac{1}{4}$
17	$3\frac{1}{4}$	$\frac{3}{16}$
22	$3\frac{1}{8}$	$\frac{1}{8}$
10	$2\frac{3}{4}$	$\frac{3}{16}$
8	$2\frac{1}{4}$	$\frac{3}{16}$
6	$2\frac{1}{8}$	$\frac{1}{8}$
2	$1\frac{5}{8}$	$\frac{1}{8}$
2	$1\frac{1}{4}$	$\frac{1}{8}$

Spikes (2).—These handwrought iron spikes are circular in cross section with hemispherical heads. One is $3\frac{1}{4}$ inches in length and the other is $2\frac{1}{2}$ inches in length. These were apparently hammered out at a blacksmith shop and perhaps even at this post (Nos. 209 and 287).

Staples (2) (pl. 58, k).—These are large, with rectangular loops. They were probably hand forged and are not similar to the later U-shaped fence staples. The specimens measure $1\frac{3}{4}$ to $2\frac{3}{4}$ inches long and 1 to $1\frac{1}{4}$ inches wide (Nos. 274 and 290).

Door hook (1) (?).—This specimen is fragmentary, but probably represents the end of a door hook. It is made of wrought iron and is $\frac{3}{8}$ inch in diameter and $1\frac{1}{4}$ inches long (No. 43).

Door pintle (1) (?).—This is formed of an iron bar which is square in cross section and has tapered ends. It is $\frac{5}{16}$ inch in diameter and $6\frac{1}{8}$ inches long. It is bent at right angles at its midpoint. Pintles of this form were used to hang doors, but the specimen described lacks a rounded section on which a door could rotate (No. 44).

Lock fragment (1) (pl. 58, i).—This is a rectangular plate of wrought iron $2\frac{1}{4}$ inches long, $1\frac{3}{8}$ inches wide, and $\frac{1}{16}$ inch thick. One end of the plate is flat; the other is convex. A circular piece $1\frac{1}{8}$ inches in diameter and $\frac{3}{16}$ inch thick is fastened to the center of the rectangular plate. It bears a rectangular hole $\frac{7}{8}$ inch long and $\frac{7}{16}$ inch wide. A small rectangular projection extends into the hole at one end, and another projection extends out of the hole at the other end. A bolt $1\frac{9}{16}$ inches long is fastened to the convex end of the rectangular plate.

This lock could have been used on a door of one of the cabins though it is rather small. It seems more likely that it was used on a chest or toolbox (No. 147).

Bolt catch (1) (pl. 58, j).—This is a rectangular plate of wrought iron 2 inches long, $1\frac{3}{16}$ inch wide, and $\frac{1}{16}$ inch thick. A screw hole is placed near each end. Between these holes is an arched metal band which is $1\frac{3}{16}$ inch in height; a bolt was probably slid into this.

There is also a possibility that this specimen served as part of a hasp and was fastened to the body of the chest, while a plate with a hole in it passed over the arched metal band. A padlock could then have been fastened over the joined hasp. It is also possible that this item was a part of the lock described above (No. 38).

Window glass (8 fragments).—(6) Thickness of these small pieces is $\frac{1}{32}$ inch. (2) Thickness of these fragments is $\frac{1}{8}$ of an inch. It is impossible to draw any conclusions as to the numbers of windows in use at this site from the scanty remains. It is obvious, however, that windows of some sort must have existed in the cabin used as a kitchen and most probably in the living quarters (Nos. 142, 143, 148–153).

Chinking (ca. 80 pounds).—Large quantities of chinking were found in the area where the log cabins had stood. Much of it had

been fired when the buildings were burned. In general, the chinking was V-shaped, showing that it had been pressed between horizontal logs while still moist. Some of the chinking had grass stems in it. None of the pieces were more than about 6 inches in length (No. 292).

HOUSEHOLD GOODS, PERSONAL POSSESSIONS, TOOLS, AND EQUIPMENT

Cup (4 fragments).—An undecorated white glazed earthenware cup is suggested by these fragments. Size is indeterminate (Nos. 106, 111, 116, and 118).

Cup or saucer (3 fragments) (pl. 59, f).—Blue leaves and flowers with orange-brown centers decorate this glazed earthenware specimen. The designs are apparently underglaze transfer in form (Nos. 103, 108, and 117).

Dishes (39 fragments).—Nine dishes are probably represented by these pieces of glazed earthenware.

- (3) These fragments are from the wavy rim of a white plate. The lip and part of the interior rim are green; it is decorated with a series of vertical wavy lines, underglaze (Nos. 105, 110, and 250) (pl. 59, *h*).
- (16) This partially reconstructed saucer is $5\frac{1}{16}$ inches in diameter and stands $1\frac{1}{4}$ inches high. The lip is plain; the bottom bears a few blue leaves and flowers and the sides bear conventionalized leaves against a blue background. This design is underglaze transfer work (Nos. 134, 135, 136, 137, and one piece from F12) (pl. 59, *b*).
- (8) Two undecorated vessels with wavy rims are represented by these sherds. Form is indeterminate (Nos. 102, 104, 112, 113, 119, 128, 129, and 180).
- (6) A partially restored saucer, 7 inches in diameter; it stands $1\frac{1}{2}$ inches high. Blue leaves and flowers in a hand-painted underglaze decorate it (Nos. 98, 99, 100, and 114) (pl. 59, *a*).
- (2) These fragments are from a small vessel with blue leaves and flowers in an underglaze transfer design on both the exterior and interior of the specimen. Form is undeterminate (Nos. 97 and 101) (pl. 59, *d, e*).
- (1) A dish or saucer with a white lip, blue and white flower design. It is underglaze transfer ware (No. 120) (pl. 59, *c*).
- (2) A saucer with blue and white designs similar to the other dishes described previously (Nos. 107 and 115).
- (1) A dish or saucer fragment with a blue and white design unlike the other specimens discussed previously. Only a little of the design is present (No. 109) (pl. 59, *g*).

Mirror glass (3 fragments).—Plate glass, $\frac{5}{24}$ inch thick, with some traces of silvering (?) on it. Probably from a large mirror. These fragments may postdate the site, since they were found in decayed vegetal matter above the level of the ground in one of the pits (Nos. 149, 151, and 152).

Tumbler fragment (1).—This is from near the rim of a tumbler or glass. Fluting shows on the fragment. A projection of the arc of this fragment indicates a diameter of about 2 inches. It is probably from a waterglass of about 4 to 6 ounces capacity (No. 127).

Bottles (15 fragments):

- (2) The base of a large circular clear-glass bottle about 6 inches across the base is indicated. One portion of the fragment is chipped and may have been used as a cutting edge (No. 148).
- (1) A green glass bottle, probably a wine bottle, the neck and lip of one fragment (No. 277).
- (1) A single fragment of curved green glass; it is probably a portion of the wall of a green wine bottle, and may be part of the specimen discussed above (No. 153).
- (1) A fragment of clear glass, from a bottle about 2½ inches in diameter at the base (No. 150).
- (10) Curved fragments of lead and clear glass, ½ to ⅜ inch thick. These may be from small medicine bottles (Nos. 142, 143, 216, 217, 243, 248, 275, 276, 285, and 288).

Thimble (1) (pl. 60, c).—This specimen is of brass and resembles modern thimbles. It has round pits on the end and a portion of the sides. The shape is that of a truncated, rounded cone. It was presumably used by a woman, as it is too small to fit a man's finger. Diameter at base is ⅞ inch (No. 24).

Straight pins (3).—These are straight brass household pins with round heads, 1 inch in length. They are, in general, similar in size and form to modern examples made of steel (No. 41).

Finger rings (2).—Both of these are made of brass. One specimen is made from a band ⅝ inch wide and ⅜ inch thick. Diameter of the ring is ⅝ inch. It is made from a continuous strip of metal and may have been gilded or plated (No. 206).

The other ring is nearly the same size, but bears a clear molded and faceted glass set. The set is held to the band by a small circlet which completely encircles it. Width of the band is ⅜ inch; thickness, ⅜ inch; band diameter, 1½ inch (No. 31) (pl. 60, *d, e*).

Bangles (2).—These bangles, or "tinklers," are made from sheet brass rolled into cones varying in length between 1⅓ and 2½ inches. They are similar to examples found on Indian costumes fastened to the bottom of skirts and leggings which rattled when the costume moved (Nos. 32 and 33).

Ear ornaments (5) (pl. 60, f).—These are factory-made specimens, conical in form, with the small end bearing an attaching loop; the large ends enclosed with a soldered circular plate. The three complete specimens are 1⅜ inch in length. All of these specimens are covered with a black tarnish which suggests that they are made of silver or silver alloys. Ornaments of this style were ordinarily worn in small clusters of 5 to 12 in each ear, hanging from the lobes. However, occasionally the rim of the ear would be pierced at intervals and the ornaments hung in clusters of two or three (Beaubien, MS., p. 30) (Nos. 25 and 41).

Clay pipes (165 fragments) (pl. 61).—Fragments of short-stemmed clay pipes, with bowls set at an obtuse angle to the stem, are well

represented. The majority of the stems are plain, but several have molded designs near the bowl. These designs consist of ridges on the upper part of the stem transverse to the length of the stem, between which are small nodes. One partially restored bowl with this type of design on the stem has a little of this line and dot design. That portion of the bowl remaining has a series of flutes running up it for $\frac{1}{2}$ inch. Bowl height is $1\frac{3}{4}$ inches and bowl diameter is $\frac{7}{8}$ inch (No. 177) (pl. 61, *i-n*).

Two partially restored bowls, with spurs, and three stems with spurs, are of the familiar "TD" design. This form of clay pipe commonly had a stem about 6 inches long. The bowl projected from the stem at an angle of about 100 degrees and was about $1\frac{1}{2}$ inches in height, and $\frac{3}{4}$ inch in diameter. On the rear of the bowl a wreath encircles the letters "TD." The letters "G" and "W," are frequently found on the two sides of the spur. They are probably manufacturer's marks (Nos. 48, 225; 48, 48, 139) (pl. 61, *a-f*).

There appear to be two varieties of the TD pipes in this sample. Four of the five spurs have the letter W on the left-hand side. The stems are plain. The fifth spur has the letter G on its left-hand side; it also has five small diagonal lines above this letter. This difference may be just a mold peculiarity and not a significant distinction.

Another make of pipe is represented by one sample which consists of the base of a bowl, spur, and portion of stem. It is different from the TD styling and from those decorated with fluting on the bowls and lines and dots on the stems (pl. 61, *h*).

This specimen has a spur much smaller than any of the others from this site; the stem appears to have been plain. The most striking thing about it is the bowl base which is covered with fine fluting. The bowl of this specimen appears to have been set at an angle of about 100 degrees from the stem (No. 48) (pl. 61, *g*).

One specimen represented only by a bowl fragment, seems to be from still another type of pipe. The bowl fragment is about twice as thick as any others and came from a heavier type of pipe (No. 196).

The slender pipe stems were apparently broken more frequently than the bowls. If enough of the stem was left to make it still usable, the pipe was retained. Two stems decorated with the line-and-dot design and 2 to 4 inches long, have teeth marks at their ends (Nos. 227 and 256) (pl. 61, *k-l*). One hundred and thirty-eight stem fragments were recovered.

A study of the 27 bowl and 138 stem fragments indicates that there were approximately 12 pipes with fluted bowls and the decorated stems. There were approximately 9 of the TD pipes and 2 miscellaneous pipes. Portions of 23 pipes were recovered.

A considerable quantity of shale and catlinite pipes made with metal tools were found in the log-cabin area of the post. In all likelihood some of them were probably used by the white employees here, while others were apparently made solely for the fur trade at the post. These will be discussed under the heading "Trade Materials."

Turned bone letter seal handle (1) (pl. 60, a).—This unusual specimen is thought to be the handle of a letter seal (lacking steel die) that was used in conjunction with sealing wax to seal letters prior to the general use of the gummed envelope.

The lath-turned bone handle is $2\frac{1}{2}$ inches long, and has a mahogany color. The distal end is flat; the other bears a hole $\frac{1}{8}$ inch in diameter and $\frac{3}{8}$ inch deep which was used to hold the steel die (No. 204).

Sealing wax (?) (pl. 60, b).—This item is $2\frac{3}{16}$ inches long, with a diameter of $\frac{7}{16}$ inch. One end is pointed, the other is blunt. It has the appearance of burned bone, but is not. Pending laboratory analysis, it is thought to be a stick of sealing wax (No. 247).

Doll legs (1 pair) (pl. 60, g).—The doll is represented as walking, since the one-piece legs are partially flexed at the knee. Black high-heel shoes are represented on the feet. A groove encircles the thighs, probably for attaching the legs to a cloth or leather body; beneath the groove is a hole through both legs. The legs are molded hollow (No. 121).

Double-pointed awl (1) (pl. 60, k).—This steel awl is double pointed, and is offset in the center, to facilitate hafting when reversing the ends. The cross section is rectangular, and it is $3\frac{3}{8}$ inches long (No. 278).

File (1) (pl. 62, a).—A triangular steel file $5\frac{3}{4}$ inches long; maximum thickness is $\frac{3}{8}$ inch. The file is pointed at both ends, and was probably used for delicate metalwork, such as the filing of saw teeth (No. 45).

Whetstones (2; in 3 pieces).—One straight-sided, rectangular commercial whetstone, made from a fine-grained sandstone. It was found in two pieces. Length $6\frac{3}{4}$ inches; width, $1\frac{5}{16}$ inches; thickness, $\frac{9}{16}$ inch (Nos. 57 and 186) (pl. 62, c).

A commercial whetstone. It has one straight side and one curved one. Length is 7 inches; width is 2 inches, and thickness 1 inch. It is made from a fine-grained sandstone (?). All sides show some usage. This stone was probably used for forming a fine edge on blades (No. 187) (pl. 62, b).

Dressed piece of limestone (1) (pl. 62, d).—A limestone fragment is $2\frac{3}{8}$ inches thick. One side is flat and polished; the other side bears shallow troughs, the crests of which are about $\frac{1}{4}$ inch apart. These were made by a saw. No suggestion can be made as to the usage of

this specimen and it is possible that it postdates the fur trade post, as it was not found in situ (No. 1).

Brass wire (3 pieces).—Two specimens of brass wire or rods are $\frac{5}{16}$ inch in diameter, and seemingly identical with the "brass ramrod" discussed previously. Both portions are curved as if forming a chain link or a small bracelet (Nos. 46 and 282).

Another specimen is $2\frac{1}{2}$ inches long and $\frac{3}{16}$ inch in diameter. Brass wire such as this was probably sold to the Indians for ornamental purposes. It could also have been used around a blacksmith shop (No. 286).

Steel wire (1 fragment).—This is a twisted fragment of iron or steel wire $\frac{1}{16}$ inch in diameter and approximately 4 inches in length. One end of the wire is looped through an eyed and threaded bolt which is described under "Eyed bolts" (No. 27).

Sheet brass strips (3).—One strip is 3 inches long, $\frac{5}{8}$ inch wide, and about $\frac{1}{64}$ inch thick. This specimen is incomplete; a rivet hole $\frac{1}{8}$ inch in diameter is located about $\frac{5}{8}$ inch from the completed end. At the opposite end, a hole $\frac{1}{8}$ inch in diameter is present; the specimen is broken through this hole. The complete specimen was apparently $3\frac{1}{2}$ inches in length. It is quite possible that this brass strip was a part of a jackknife handle (No. 47).

Two irregular sheets of brass about $\frac{1}{64}$ inch thick were found. They had apparently been cut from stock sheet brass or brass kettles with chisels. It is possible that they were rejects in the manufacture of brass bracelets, ear ornaments, or clothing ornaments (bangles) (Nos. 159 and 160).

Eyed bolts (2) (*pl. 60, l*).—These bolts are almost identical in size though somewhat rusted. Length, $1\frac{5}{8}$ inches; diameter, $\frac{3}{16}$ inch; diameter of eye, $\frac{1}{2}$ inch. Both have square nuts which are $\frac{3}{8}$ inch wide. It is possible that these were once used to fasten small chest or drawer handles (No. 27).

Chain link (1) (*pl. 60, j*).—This specimen is $1\frac{3}{8}$ inches long, and formed of wrought iron $\frac{1}{8}$ inch in diameter. The link is in the form of a "figure eight" and is $\frac{1}{2}$ inch in diameter (No. 27).

Horse bit (?) (1) (*pl. 62, e*).—This consists of a wrought-iron ring $3\frac{1}{2}$ inches in diameter and $\frac{5}{16}$ inch thick. A portion of the part that went into the horse's mouth is attached to this ring (No. 146).

Tube (1) (*pl. 62, g*).—This specimen is $1\frac{3}{8}$ inches long; $\frac{5}{8}$ inch in diameter; and the walls are $\frac{1}{16}$ inch thick. One end of the tube is flared slightly and bears crude threading. No possible use has been suggested for this specimen (No. 30).

Staple (1) (*pl. 62, f*).—This is not a conventional staple. It consists of a flat bar 2 inches long and $1\frac{1}{16}$ inch wide. This portion forms the back or base of the staple. Two prongs 2 inches in length

project from this base. These are tapered and sharpened at the ends. This specimen was apparently used to hold two pieces of wood together or to fasten an object to wood. It is possible that it was once used to fasten the felloes of a wagon wheel together. This specimen was recovered by fieldwork at the site in 1938, and quite possibly was not associated with the fur trade post (No. 303).

Lead bale seal (1) (pl. 60, h-i).—This circular bale seal is $1\frac{3}{16}$ inches in diameter and $\frac{1}{24}$ inch thick. The front side is flat and bears two sets of numerals associated with 3 incised lines. Between the upper and central lines are the numerals "1513," and between the central and bottom lines are the numerals "21."

The back side of this specimen has a raised ovate central boss of lead. On the boss are a series of letters which appear to read the following: "AREN R-." Beneath the indecipherable letter is an "R."

Bale seals had a function much like that of the modern boxcar seal; they were used to prevent the pilfering of goods in storage or transit. Bales of blankets and cloth were often safeguarded with them. Many had a strap with a hole in it on one edge of the disk which was bent over the boss, and the boss was hammered flat to seal the loop made by the strap (No. 26).

Circular wooden object (1) (pl. 62, h).—A portion of this specimen is absent, but the size can be reconstructed from projected chords. It is circular, and $2\frac{3}{4}$ inches in diameter and approximately 1 inch thick. A circular hole, 1 inch in diameter, is located in its center. It is possible that this specimen once served as a washer around a large bolt. It might be associated with the bolt from the cannon carriage which was described under the heading "Defense" (No. 239).

Rope (1 piece).—This charred rope, probably composed of hemp, is made from two strands of fibers. The chords in the two strands have an S twist; the rope is made with a Z twist. The rope is crushed rather flat, but the strands are $\frac{1}{4}$ inch in diameter (No. 252).

Birchbark (2 pieces).—Both specimens are rolled. One of them is $1\frac{1}{4}$ inches wide; the other is $3\frac{1}{4}$ inches wide (Nos. 94 and 176).

CLOTHING AND FOOTWEAR

Buttons (24) (pl. 63).—Of this number, 4 buttons are steel, 11 brass, and 9 bone. Two of the steel buttons are $\frac{3}{4}$ inch in diameter; these have four holes for attachment to the cloth (Nos. 42 N and O) (pl. 63, k). The other two steel buttons are also $\frac{3}{4}$ inch in diameter; these have loop attachments. One of them is of a bright highly polished steel (Nos. 42 M and 200) (pl. 63, i, j).

The brass buttons are in several sizes (the number in each size shown in parentheses), though all except one of them have eyelet or loop fasteners on their backs.

- (1) Diameter, $1\frac{1}{16}$ inches; thickness, $\frac{1}{32}$ inch; body is flat. "PLATED" is stamped on the rear (No. 42 a) (pl. 63, a).
- (2) Diameter, $\frac{3}{4}$ inch; thickness, $\frac{3}{64}$ inch; body is flat. "BEST QUALITY" is stamped on the rear (No. 42 b) (pl. 63, b).
- (2) Diameter, $1\frac{1}{16}$ inch; thickness, $\frac{1}{24}$ inch; body is flat. "BEST QUALITY" is stamped in a circular fashion on the rear above a wreath. A sunburst is in the center around the loop (Nos. 34 and 42 c) (pl. 63, c).
- (1) Diameter, $\frac{2}{3}$ inch; thickness, $\frac{1}{24}$ inch; body is flat. "BEST QUALITY" is stamped on the rear. Design is much similar to those buttons described in paragraph No. 2 above (No. 42 d) (pl. 63, d).
- (1) Diameter, $1\frac{1}{16}$ inch; thickness, $\frac{1}{16}$ inch; front is flat, rear is concave (No. 42 e) (pl. 63, e).
- (1) Diameter, $\frac{5}{8}$ inch; thickness, $\frac{3}{64}$ inch; body is flat (No. 42 f) (pl. 63, f).
- (1) Diameter, $\frac{9}{16}$ inch; thickness, $\frac{1}{24}$ inch; body is flat. "WARRANTED SUPERIOR" is stamped on the rear (No. 42 g) (pl. 63, h).
- (1) Diameter, $1\frac{1}{16}$ inch; thickness, $\frac{1}{16}$ inch; body is concave. This specimen has four holes for attachment to the cloth (No. 42 h) (pl. 63, g).
- (1) Diameter, $\frac{9}{16}$ inch; thickness, $\frac{7}{16}$ inch. This specimen is composed of two thin brass shells which, when fitted together, formed a spheroid. A loop is on the rear of one shell, and an iron stud on the front of the other. It is quite probable that the anterior portion of this button was covered with cloth (No. 40).

Four of the bone buttons are $1\frac{1}{16}$ inch in diameter. Their thicknesses vary, but the basic design is much the same. These have four holes in the form of a square grouped around a central hole. Average thickness is about $\frac{3}{32}$ inch (Nos. 42 i, and 195) (pl. 63, l). Another button of this same general pattern is $\frac{5}{8}$ inch in diameter and $\frac{1}{12}$ inch thick (No. 42 j) (pl. 63, n). Two other bone buttons have this same general pattern, though they are much smaller than the others. These specimens are $\frac{3}{8}$ inch in diameter and $\frac{1}{16}$ inch thick (No. 42 k) (pl. 63, o).

The last two bone buttons in this series are merely flat, round disks with a single hole in their centers. One specimen is $\frac{5}{8}$ inch in diameter and $\frac{1}{16}$ inch thick (No. 42 l) (pl. 63, m). The other is $\frac{3}{8}$ inch in diameter and $\frac{1}{16}$ inch thick (No. 42 p) (pl. 63, p).

Cloth (2 fragments).—One specimen is of hair or wool fibers, very loosely woven. It is of a Z-spun yarn; both warps and wefts are paired. It is a plain weave as far as can be determined with such small areas of intact weave. This item is undoubtedly handwoven and possibly made of buffalo hair (No. 125).

The other piece is of linen or wool. It has a plain weave with one element predominating over the other. With no selvages it is impossible to tell whether it is a predominant warp or weft. The weave is very close and even, but the thread size varies. There are 34–38 threads to the inch in one direction, and 44–48 to the inch in the

other. This specimen is probably handwoven, but there is no way of definitely establishing this.

Shoes (3):

- (1) Outside length, $10\frac{1}{4}$ inches; width, $3\frac{1}{4}$ inches. Inside length, 8 inches; width $2\frac{1}{2}$ inches. A laminated leather heel and the sole are fastened with small wooden (oak?) pegs (No. 169).
- (1) Outside length, $10\frac{1}{4}$ inches; width, $3\frac{1}{2}$ inches. Inside length, 10 inches; width, $3\frac{1}{4}$ inches. The laminated leather heel and the sole are fastened with small (oak?) pegs. The toe is plain, and the shoe laced through a single pair of eyelets (No. 170) (pl. 63, *q*).
- (1) A leather heel, composed of laminated leather; it has wooden (oak?) pegs holding it together (No. 210).

The two complete shoes found did not match each other and are of considerably different styles. It is probable that they represent men's and women's shoes.

TRADE GOODS

Beads (ca. 6,700).—Beads were present in a considerable variety of sizes, forms, and colors at this site. Most of them were found within Feature 3, the log-cabin area of the post, though a few were recovered from the pits.

The measurements used were obtained with vernier calipers and are generalized when dealing with a series of beads. Colors are given as they appear to the writers, not through a comparison with a standard color chart. Gradations in color are often imperceptible, and many of the beads described herein are discolored because of changes caused by chemical actions of the soil and by firing. Many suggestions from studying these specimens were obtained by consulting G. Hubert Smith's paper, entitled "Indian Trade Beads from Fort Berthold, North Dakota" (1953, pp. 41-56).

A variety of classifications were available for dealing with the beads, but the writers have grouped them into large beads and seed beads. The large beads are those specimens that were used principally in necklaces. These are present in translucent and opaque materials. Forms are globular, spherical, cylindrical or canons, subcylindrical, and faceted. Colors are blue, white, colorless (clear glass), amber, green, and black.

The seed beads are oblate spheroids or subcylindrical in form. These are present in white, blue, black, and green colors. The blue and white beads are by far the most common and have gradations in size.

All of the beads discussed with the exception of the faceted and canon beads are of the wire-wound variety, as they were made by twisting molten glass or glass frit around a spindle. Examples of all types of beads are illustrated.

Large beads, translucent:

- (1) The largest specimen in this series is 16 mm. in diameter and 16 mm. in length. It is an oblate spheroid in form, and is made of a somewhat milky white glass (No. 201, F-13) (pl. 64, *e*).
- (1) This bead is globular and made of an amber-colored glass. It is 14 mm. in diameter and 10 mm. in length (S.I. No. 40, F-66) (pl. 64, *f*).
- (1) This globular bead is made of a colorless clear glass. It is 11 mm. in diameter and 8 mm. in length (No. 304, F-3) (pl. 64, *g*).
- (1) A globular bead made of a blue glass; it has an opaque white center and is 9 mm. in diameter and 7 mm. in length. This specimen has been heavily fired and retains only a little of its original gloss (No. 305, F-3) (pl. 64, *h*).
- (6) These subcylindrical beads are made of a dark-green glass. They range in diameter from 5 to 7 mm. and from 5 to 6 mm. in length (No. 306, F-3) (pl. 64, *i*).
- (5) These globular specimens are a bright blue in color; they range in diameter from 6 to 7 mm. and from 3 to 6 mm. in length (No. 307, F-3) (pl. 64, *j*).
- (1) A subcylindrical bead made of an amber-colored glass. It is 7 mm. in diameter and 5 mm. in length (No. 308, F-3) (pl. 64, *k*).
- (16) These subcylindrical beads are a bright blue in color; they average 5 mm. in diameter and 4 mm. in length. They are very similar to the blue beads described above and differ only in having a more cylindrical form and a smaller size (No. 309, F-3) (pl. 64, *l*).
- (2) These subcylindrical beads have an amber color and are 4 mm. in diameter and 2 to 3 mm. in length (No. 310, F-3) (pl. 64, *m*).

The sixty-five translucent faceted beads are white (colorless clear glass), blue-green, bright blue, and black. There are 23 white faceted beads. Nineteen of them are of a translucent glass throughout. Three of them have milk-white paste centers. This series ranges from 5 to 6 mm. in diameter and 4 to 6 mm. in length. Twenty-two white faceted beads are from F-3; one is from F-14 (No. 311) (pl. 65, *a*).

There are 23 blue-green faceted beads. All are of a translucent glass and none of them have paste centers. These were from 5 to 7 mm. in diameter and averaged 5 mm. in length. Twenty-two were found in F-3 and one in F-4 (No. 311) (pl. 65, *a*).

Eighteen bright-blue faceted beads were found. These were in two sizes, and 15 of them have white paste centers. There were 10 large beads of this color. These ranged from 5 to 7 mm. in diameter and 5 to 6 mm. in length. Seven of these had white paste centers. There were eight small beads of this color, averaging 4 mm. in diameter and 4 mm. in length. All of them had white paste centers. Sixteen of the blue faceted beads were found in F-3 and two in F-15 (No. 311) (pl. 65, *a*).

One black faceted bead was found. It was 6 mm. in diameter and not translucent. It had been heavily fired, probably when the

log cabins burned, and perhaps thus lost its translucence. This specimen was found in F-3 (No. 311).

Large beads, opaque.—A series of spherical wire-wound opaque blue beads are similar in color and form and vary only in size.

- (5) These were from 11 to 13 mm. in diameter and were found in features 3, 13, and 15 (Nos. 202, 203, 234, and 312) (pl. 65, c).
- (21) These specimens were from 6 to 7 mm. in diameter. Nineteen of them were found in F-3, one in F-14, and one in F-20 (Nos. 60, 205, and 313) (pl. 65, c).
- (9) These specimens average 5 mm. in diameter. All were found in F-3 (No. 314) (pl. 65, c).

A series of white globular beads was found in three sizes.

- (6) These were from 5 to 7 mm. in diameter. All were from F-3 (No. 315) (pl. 65, d).
- (10) These beads averaged 5 mm. in diameter and 6 mm. in length. All of them were found in F-3 (No. 316) (pl. 65, d).
- (1) This specimen was 4 mm. in diameter. It was found in F-19 (No. 240) (pl. 65, d).

Two oblate spheroidal beads of opaque materials were found.

- (1) This specimen is made of a white glass that has a dull finish, but on a broken portion it is glossy. It is 7 mm. in diameter and resembles the barrel beads described below. It was found in F-3 (No. 318) (pl. 64, r).
- (1) This specimen is green; it is 6 mm. in diameter and was found in F-3 (No. 317) (pl. 64, s).

Barrel beads are present in white, blue green, dark green, pale green, and bright blue colors. All of the 20 barrel beads from the site were found in F-3. Examples of these are shown in plate 64, t.

- (14) White barrel beads were the most numerous. These measured 5 to 6 mm. in diameter and 8 mm. in length (No. 319) (pl. 64, t).
- (2) Blue green specimens are 4 mm. in diameter and 8 mm. in length (No. 319) (pl. 64, t).
- (2) These dark-green specimens are heavily fired, and this may not represent their actual colors. These measured 4 mm. in diameter and 7 mm. in length (No. 319) (pl. 64, t).
- (1) This pale-green specimen is 5 mm. in diameter and 8 mm. in length (No. 319).
- (1) This bright-blue specimen is 5 mm. in diameter and 8 mm. in length (No. 319).

Seven cylindrical or canon beads were found. A dull white, a pearl white, and green are the colors represented. All of these specimens were recovered from F-3. These beads were made by breaking off fragments of hollow-glass or glass-frit tubes. In most cases, the ends were then polished smooth.

- (1) One-half of a white tubular or canon bead; it is 13 mm. long and 8 mm. in diameter. The specimen is formed of an opaque white glass frit. It was recovered by Fred La Rocque in the general area (F-66) of the post (pl. 64, n).

- (1) This dull white canon bead is 5 mm. in diameter and 14 mm. in length ; it has a dull porcelain appearance (No. 320) (pl. 64, o).
- (2) These pearl-white beads are 3 mm. in diameter and 4 mm. in length. They have a glossy pearllike lustre about them (No. 320) (pl. 64, q).
- (3) These green specimens appear to have been made from the same "stick" of glass. They are from 3 to 4 mm. in diameter and 8 to 10 mm. in length (No. 320) (pl. 64, p).

Seed beads.—These are generally oblate spheroidal or subcylindrical in form. Gradations in size are present, but these beads seem to be grouped around three modes. Colors present were blue, white, black, and green.

Blue seed beads are by far the most common. These range in diameter from 2 to 3 mm. Many are discolored, but a dull light blue predominates. When dry, they are opaque, but when moistened, all of them turn a pale blue green and become translucent. Approximately 880 of them were found in F-3, the log-cabin area of the post (No. 321) (pl. 65, b). About 5,000 of them were found with F-52, an infant burial.

White seed beads were the next most common. All of them have a dull pearllike luster. These graded in size from 2 to 4 mm. in diameter. Approximately 60 of the smallest size were present (No. 322) (pl. 64, b). The middle-size beads, which were 3 mm. in diameter, numbered approximately 480 (No. 323) (pl. 65, b). The largest size were 4 mm. in diameter; about 150 of them were present (No. 324) (pl. 65, b).

Miscellaneous colors were represented by two black seed beads, one dark-green, and one light-green specimens. All of these were 3 mm. in diameter. They were found in F-3 (No. 325).

Metal beads.—Two cast copper beads with attached wire hooks have a hole through them at right angles to the wire hook. They are 6 mm. in diameter. One was found in F-3 (No. 326) (pl. 64, u). The other was recovered by Fred La Rocque in F-66. Color frequencies are shown in the following tabulation :

Color of bead	Large and medium	Seed	Total
Blue.....	101	800	901
White.....	82	694	776
Green.....	13	2	15
Amber.....	2	2	4
Black.....	1	2	3
Total.....			1,699

About 5,000 blue seed beads were found with Feature 52, an infant burial. Since they were placed with the burial for a particular reason they are not included in the sample from other features in the post. The beads from other features within the post represent a random sample, and were probably lost by employees at the post.

Adding the blue seed beads from the burial to the other blue beads gives this color a total of 5,901, making a grand total of 6,699 beads of all sizes and colors.

Bell (1) (pl. 60, n).—One small brass bell formed of two hemispheres of thin sheet brass joined together by rolling of the joint and possibly solder. On the rear of the bell is a small brass loop $\frac{1}{8}$ inch in diameter that was used for attachment to clothing. The bell has two holes $\frac{3}{32}$ inch in diameter that are $\frac{5}{16}$ inch apart. They are joined by a thin slit in the brass. The bell is $1\frac{9}{32}$ inch in diameter and $\frac{3}{8}$ inch in height. A small round piece of iron (?) is in place within the bell. It served as a clapper (Fred La Rocque).

Brass arrowpoint (1) (pl. 60, m).—This is a triangular point with straight sides and a small rectangular stem projecting from a straight base. Length is 3.5 cm.; width, 2.0 cm.; thickness, 0.5 mm. The specimen is made from stock sheet brass or a brass kettle; the chisel marks that formed it show clearly near the stem. The blade was sharpened with a file or whetstone (No. 29).

Gold braid (?).—A small number of matted brass strips were recovered. These are probably the so-called "gold braid" and hence a trade item (No. 41).

Shale and catlinite pipes (26 fragments).—Only one moderately complete specimen is made of catlinite. It has a circular form and tapers toward the base. It is elaborately grooved, probably for the inclusion of lead inlays, and has a tapering orifice (pl. 64, *b*) (Nos. 253 and S. I. 22).

The base of a tapered and grooved catlinite pipe is also present. It may belong to the specimen discussed immediately above, though its styling is different (No. 91). Still another catlinite pipe fragment was found; it has a circular outline, but has one flat side. It is apparently from the stem portion of a pipe, as the hole through it is not tapered (No. 254).

Two other portions of catlinite were recovered. One specimen is square (No. 93), and the other is wedge shaped (No. 224). They bear marks of sawing and are probably materials left over from the manufacture of pipes.

Nine shale pipes are roughly square, though often they have rounded corners. Only one of these fragments shows any signs of incising or other decoration; this consists of a file mark across the top of the bowl. All of the shale specimens are apparently from the common elbow-type pipe.

One specimen is short and obviously incomplete. It is probably from a short, squat pipe on the order of the rectangular bowled clay pipes (No. 85). The shale pipe fragments with roughly square bows range in width from $\frac{3}{4}$ to 1 inch and $1\frac{1}{4}$ to $3\frac{1}{4}$ inches in length (Nos. 84, 88, S.I. 38, 156, 198, 221, 222, 223, and 244) (pl. 64, *a*).

Portions of five shale pipes with round bowls are present. Only one of these is large enough to give much of an idea of their forms. It has a tapering bowl, and could have had a prow. It is $1\frac{1}{4}$ inches in diameter and $2\frac{1}{2}$ inches in height (pl. 64, *c*) (No. 87). (Nos. S.I. 39, 90, 157, 268).

Another pipe has a bowl shaped like that of the TD clay pipes (No. 194). A different fragment bears a small spur; it possibly was associated with the TD bowl (S.I. 25).

A single octagonal bowl of gray shale tapers near the base. Diameter is $1\frac{1}{4}$ inches; height, $3\frac{3}{8}$ inches. Two grooves encircle the bowl below the orifice (S.I. 22).

A tapered prow with a rounded end was recovered but cannot be definitely associated with any of the bowls (No. 145).

A few general statements can be made about the manufacture of these pipes. The work was obviously done with metal tools such as drills and files. The pipe blanks were apparently blocked out with saws and files. Holes were then drilled in them with cylindrical metal drills. If all went well up to this point, these holes were enlarged with a tapered drill. Only one definite stem portion was found; the hole in it was not tapered.

Thirteen of the bowl fragments bore cylindrical holes. These pipes apparently were discarded before they had been formed to the point that tapered reamers were used on them. Three drill sizes were found to have been used on them. These were one of $\frac{1}{2}$ inch, six of $\frac{1}{4}$ inch, and six of $\frac{5}{16}$ inch.

In most of these specimens, the tapered drill was used to enlarge the original holes in the bowls to a depth of $\frac{1}{2}$ to $1\frac{1}{4}$ inches.

Only two of the pipe bowls showed any signs of usage; all of the others were apparently broken while being made.

Approximately 20 pipes are represented by these fragments. Local materials were largely used in the manufacture of these pipes. Out of a total of 26 fragments, only 5 were of catlinite, which most probably were brought in by personnel at the post. The remaining fragments were of local red and gray shales.

OBJECTS OF NATIVE MANUFACTURE

Arrowpoints (2).—Neither of these points is complete enough so that its form may be determined. A midsection of one point is of Knife River flint (No. 81). A gray chert specimen with the base

missing is triangular, with straight sides and two side notches. Maximum length is 2.5 cm.; width, 1.6 cm.; thickness, 4.0 mm. (No. 82).

End scrapers (3).—These specimens are snub-nosed scrapers. A steep working edge is on the end opposite to the bulb of percussion. The form is plano-convex, with retouch along the sides. Material is Knife River flint (chalcedony). They average 3 cm. in length and 2.2 cm. at their widest points (Nos. 77-79).

Modified flakes (2).—Two flakes of Knife River flint have some secondary retouch along one or more edges, with some evidence of use retouch (Nos. 80, 83).

Choppers (2).—One of these is complete; length, 23.5 cm.; width, 13.0 cm.; thickness, 1.5 cm. It is rectangular in outline, with parallel sides and rounded corners. A side notch is on both sides of the blade, and one end is chipped and battered. Material is granite (No. 192) (fig. 24, *d*). The other specimen is broken, but resembles the preceding item. Three sides are chipped and battered; the fourth is broken. Material is gray schist (S.I. 31).

Grooved mauls (4).—Three specimens are three-quarter grooved, and one large fragment bears a groove, but is not complete enough to show the extent of the groove (No. 8). Two specimens are grooved at the midpoint, and vary in length from 9.0 to 10.4 cm., and between 7.0 and 8.0 cm. in width (Nos. 53-54) (fig. 24, *b*). A larger specimen is 10.7 cm. long and 8.5 cm. wide, and bears a groove two-thirds of the distance from one end. Material is granite (No. 219).

Hammerstones (3).—These are rounded river cobbles. Two of them are circular; the other is ovoid. All are battered on one or more sides. They are of granite and quartzite (Nos. 50, 59, and 185).

Whetstones and abrading stones (17).—Two rounded scoria fragments have worn surfaces and are similar to scoria abraders found in native village sites along the Missouri River (Nos. 9, 242). Seven pieces of sandstone and shale in flat, but irregular form, have abraded surfaces (Nos. 2, 5, 6, 7, 10, 189, and 190). A piece of petrified wood (No. 58), a piece of granite (No. 52), and six pieces of rounded, concretionary sandstone were apparently also used for whetstones (Nos. 4, 49, 51, 55, 56, and 245) (pl. 64, *d*).

Pottery sherds (2).—These are body sherds 5 mm. thick, tempered with grit. Both specimens show the impressions of a grooved paddle. The stamps are partially obliterated by smoothing. Color is dark gray and black (No. 122).

Miscellaneous baked clay items (3).—An elongated specimen of baked clay preserves the impressions of grass stems; this is probably a piece of chinking from a stick chimney or one of the log cabins (No. 191). A circular ball of baked clay is $\frac{1}{2}$ inch in diameter (No. 208). A thin oval object of baked clay has a surface that has impressions

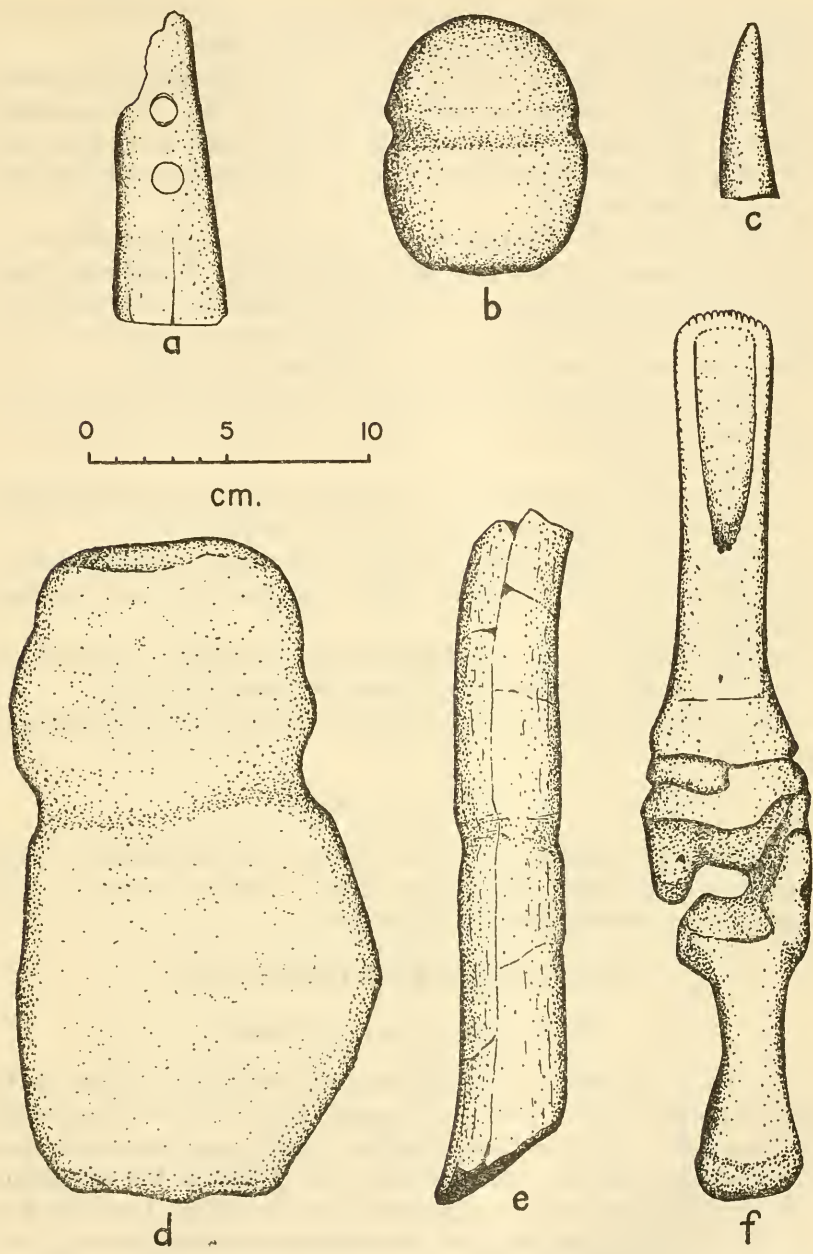


FIGURE 24.—Objects of native manufacture, *a*, Arrow-shaft wrench, No. 96. *b*, Full grooved maul, No. 54. *c*, Antler tip, No. 232. *d*, Chopper, No. 192. *e*, Fleshing tool (?), No. 220. *f*, Elk metapodial flesher, Nos. 154-155.

similar to simple stamps. This last specimen is about the size and shape of the popular native "gamestones" (No. 235).

Elk metapodial flesher (1) (fig. 24, f).—It is formed of the articulated metapodial, calcaneus, and astragalus of elk. The proximal end of the metapodial was reduced in diameter, and a chisel-shaped end bears 13 serrations or small notches. The specimen is 32.0 cm. in length (Nos. 154–155).

Fleshing tool (? (1) (fig. 24, e).—This is a straight section of charred elk antler 24.5 cm. long and 3.8 cm. thick. A shallow groove is cut around the midsection. Though not complete, this specimen is suggestive of the elk antler "beamers" or hide scrapers used by Plains tribes, among which are the Mandan and Hidatsa (No. 220).

Arrow shaft wrench (1) (fig. 24, c).—This is made of the rib of a large animal, probably bison, and has two perforations 1.0 cm. in diameter (No. 96).

Bone bead (1).—The long bone of a small mammal, 2.1 cm. long and 4.0 mm. in diameter; it has square ends (S.I. 32).

Antler tips (2) (fig. 24, e).—These are cut square from the antler, presumably with a metal blade. Both tips are worn and polished (Nos. 214 and 232).

Antler fragment (1).—This small cylinder was taken from near the point of an antler. One end has a small hole in it (No. 231).

The distribution of the artifacts found in Kipp's Post is shown in figure 25.

FAUNAL REMAINS

A considerable amount of animal remains was recovered. These remains included bison, deer, fish, and bird. Information about them is presented in tabular form in Appendix 3.

CONCLUSIONS AND DISCUSSION

THE SITE AND STRUCTURES

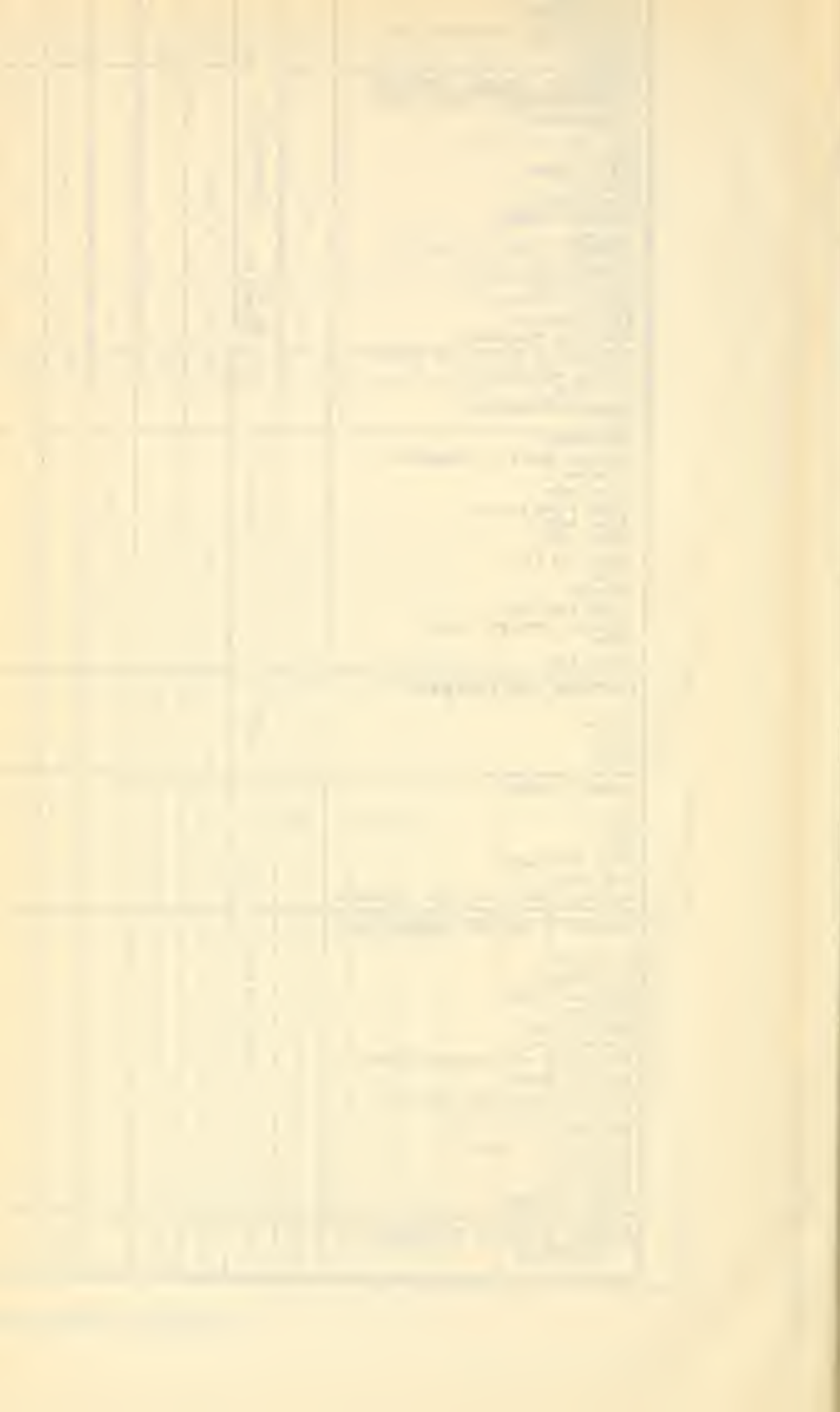
The site was situated on the left or north bank of the White Earth River a short distance from the Missouri River. It was apparently built apart from any permanent Indian villages, as evidences of earth lodges or of earth-lodge villages were not found in the immediate vicinity. The post was less elaborate than either Fort Berthold I or Fort Berthold II, and contained fewer structures and accessory features. It was probably built for a short-range fur-trade program.

The first terrace of the Missouri and White Earth Rivers is about 300 yards to the south, and at the time the post was in operation the banks of the White Earth River must have been near the terrace. Tradition states that boats landed near the post when it was occupied.

Year	Month	Day	Time	Location	Remarks
1952	Jan	1	08:00	...	...
1952	Jan	2	08:00	...	...
1952	Jan	3	08:00	...	...
1952	Jan	4	08:00	...	...
1952	Jan	5	08:00	...	...
1952	Jan	6	08:00	...	...
1952	Jan	7	08:00	...	...
1952	Jan	8	08:00	...	...
1952	Jan	9	08:00	...	...
1952	Jan	10	08:00	...	...
1952	Jan	11	08:00	...	...
1952	Jan	12	08:00	...	...
1952	Jan	13	08:00	...	...
1952	Jan	14	08:00	...	...
1952	Jan	15	08:00	...	...
1952	Jan	16	08:00	...	...
1952	Jan	17	08:00	...	...
1952	Jan	18	08:00	...	...
1952	Jan	19	08:00	...	...
1952	Jan	20	08:00	...	...
1952	Jan	21	08:00	...	...
1952	Jan	22	08:00	...	...
1952	Jan	23	08:00	...	...
1952	Jan	24	08:00	...	...
1952	Jan	25	08:00	...	...
1952	Jan	26	08:00	...	...
1952	Jan	27	08:00	...	...
1952	Jan	28	08:00	...	...
1952	Jan	29	08:00	...	...
1952	Jan	30	08:00	...	...
1952	Jan	31	08:00	...	...
1952	Feb	1	08:00	...	...
1952	Feb	2	08:00	...	...
1952	Feb	3	08:00	...	...
1952	Feb	4	08:00	...	...
1952	Feb	5	08:00	...	...
1952	Feb	6	08:00	...	...
1952	Feb	7	08:00	...	...
1952	Feb	8	08:00	...	...
1952	Feb	9	08:00	...	...
1952	Feb	10	08:00	...	...
1952	Feb	11	08:00	...	...
1952	Feb	12	08:00	...	...
1952	Feb	13	08:00	...	...
1952	Feb	14	08:00	...	...
1952	Feb	15	08:00	...	...
1952	Feb	16	08:00	...	...
1952	Feb	17	08:00	...	...
1952	Feb	18	08:00	...	...
1952	Feb	19	08:00	...	...
1952	Feb	20	08:00	...	...
1952	Feb	21	08:00	...	...
1952	Feb	22	08:00	...	...
1952	Feb	23	08:00	...	...
1952	Feb	24	08:00	...	...
1952	Feb	25	08:00	...	...
1952	Feb	26	08:00	...	...
1952	Feb	27	08:00	...	...
1952	Feb	28	08:00	...	...
1952	Feb	29	08:00	...	...
1952	Feb	30	08:00	...	...
1952	Mar	1	08:00	...	...
1952	Mar	2	08:00	...	...
1952	Mar	3	08:00	...	...
1952	Mar	4	08:00	...	...
1952	Mar	5	08:00	...	...
1952	Mar	6	08:00	...	...
1952	Mar	7	08:00	...	...
1952	Mar	8	08:00	...	...
1952	Mar	9	08:00	...	...
1952	Mar	10	08:00	...	...
1952	Mar	11	08:00	...	...
1952	Mar	12	08:00	...	...
1952	Mar	13	08:00	...	...
1952	Mar	14	08:00	...	...
1952	Mar	15	08:00	...	...
1952	Mar	16	08:00	...	...
1952	Mar	17	08:00	...	...
1952	Mar	18	08:00	...	...
1952	Mar	19	08:00	...	...
1952	Mar	20	08:00	...	...
1952	Mar	21	08:00	...	...
1952	Mar	22	08:00	...	...
1952	Mar	23	08:00	...	...
1952	Mar	24	08:00	...	...
1952	Mar	25	08:00	...	...
1952	Mar	26	08:00	...	...
1952	Mar	27	08:00	...	...
1952	Mar	28	08:00	...	...
1952	Mar	29	08:00	...	...
1952	Mar	30	08:00	...	...
1952	Mar	31	08:00	...	...

ARTIFACTS	FEATURES														TOTALS								
	1	3	4	6	7	8	9	13	14	15	16	19	20	21		49	50	52	55	60	61	66	
DEFENCE																							
Cannon fragments		2	1							1			6								1	11	
HUNTING AND OTHER SUBSISTENCE ACTIVITIES																							
Flintlock hammer		15	1					1	1		1	1	1								1	1	
Gun flints		1																			1	25	
Gun worms		1																			3	2	
Ramrod (?)		1																			1	1	
Spherical lead balls		12								1	1						6				3	23	
Spraws		2																			3	3	
Shot		189						1													1	3	
Melted lead fragments		X			X			X				X	X									190	
Harpoon								1													X	1	
Seeds		X								X		X									X	X	
HOUSING AND CONSTRUCTION MATERIALS																							
Nails	X	X	X		X	X	X	X	X	X	X		X						X	X	X	90	
Spikes										1							X				1	2	
Door hook (?)		1																				1	
Door pintle (?)		1																				1	
Lack fragment		1	1																			1	
Gall catch		1																				1	
Window glass	X	X		X																	X	1	
Chinking						X			X		X			X					X	X	X	X	
HOUSEHOLD GOODS, PERSONAL POSSESSIONS, TOOLS AND EQUIPMENT																							
Cup		X																				X	
Cup or saucer		X																				X	
Dishes	X	X	X				X						X									X	
Mirror glass																						X	
Tumbler fragment	X																					X	
Bottles			X							X			X									X	
Thimble		1																			X	1	
Straight pins		3																				3	
Finger rings		1								1												2	
Bangles		2																				2	
Ear ornaments		5																				5	
Clay pipe fragments	2	100	12	1	5	4		7	9	4		1	6	8						5	2	165	
Turned bone letter seal handle									1													1	
Sealing wax stick (?)																						1	
Doll legs		1																				1	
Double-pointed owl																						1	
File		1																				1	
Whetstones		1							2													3	
Dressed piece of limestone																					1	3	
Brass wire		1																			2	3	
Steel wire		1																				1	
Sheet brass efrlps		1																				3	
Eyed bolts		2				2																2	
Chain link		1																				1	
Horse bit (?)		1	1																			1	
Tube		1																				1	
Staple		1																			1	1	
Lead bole seal																						1	
Circular wooden object																						1	
Rope																						1	
Birch bark		1						1														2	
CLOTHING AND FOOTWEAR																							
Buttons		22								2												24	
Cloth		2																				2	
Shoes							2			1												3	
TRADE GOODS																							
Beads	20	967	3					7	16	13	3		1	21							X	6700	
Bell																					1	1	
Brass arrowpoint		1																				X	
Gold braid (?)		X																				X	
Coffinite and shale pipe fragments		7	1	2						2	4		1	2							1	6	26
OBJECTS OF NATIVE MANUFACTURE																							
Arrowpoints		2																				2	
End scrapers		3																				3	
Modified flakes		2								1											1	2	
Choppers											1											4	
Grooved mauls		3																				3	
Hammerstones		2								2					2		1				7	17	
Whetstones and abrading stones		5																			2	2	
Pottery sherds										1	1											3	
Miscellaneous baked clay items																						1	
Elk metapodial flesher					1																	1	
Fleshing tool (?)											1											1	
Arrow shaft wrench		1																			1	2	
Bone bead										1	1											1	
Antler tips																						1	
Antler fragment																						1	
FAUNAL REMAINS DISCARDED IN THE FIELD																							
	X	X	X	X			X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	

FIGURE 25.—Distribution of the artifacts found in Kipp's Post.



The post was well located with respect to fur-trading opportunities, as it was situated at the mouth of the White Earth valley, which was formerly rich in game and fur animals. This river drains into the Missouri from the north, and provided an easy travel route for Indian groups as far north as present-day Canada. The Assiniboin were at that time ranging north of the site, and it is recorded that the site was built expressly for their trade. The scanty records available (Breeling, 1954; Wied-Neuwied, 1906, vol. 23, p. 228) indicate that they did trade at the site. At the time of its construction, the nearest trading post was apparently at the Mandan villages near the Knife River, a distance of about 80 miles. Thus located in an area relatively free of competition, it would be reasonable to suspect that it was a profitable business venture.

MAJOR ARCHITECTURAL DETAILS

The palisade appears to have been oriented with respect to topography and not expressly with compass direction. The south wall of the palisade faces slightly west of south, and is approximately parallel to the edge of the terrace upon which it was constructed.

The post enclosure was a simple quadrilateral structure, approximately square, and 96 feet on a side. The palisade walls were formed by cottonwood posts or logs set upright in a narrow trench. The remains of 673 posts, some of which had been split in half, were found by excavation. A range of four buildings faced the entrance on the north side of the enclosure. The placement of these buildings, which were near and just under the log palisade, afforded a windbreak from the prevailing northwest winds and also afforded winter warmth from the low angle, unobstructed sunlight.

A quadrilateral bastion or blockhouse projected about 5 feet from the northeast corner of the palisade, and was an extension of the palisade trench. The walls of the bastion consisted of vertical posts, as in the palisade walls. One might speculate that some structure was mounted above the vertical wall timbers, but no evidence of any such structure was found. The southwest corner of the palisade revealed no bastion, but fired-clay chinking found here suggests some elaboration of the palisade. Enfilade fire along the north and east walls would have been afforded by the bastion, and it is possible that some defensive structure also existed in the southeast corner, although no evidence was found to indicate that such was the case.

The entrance to the stockade was in the middle of the southern palisade line, facing the Missouri and White Earth Rivers. It was indicated by a 9½-foot gap in the palisade trench line. Two rather heavy posts were found in the palisade trench on either side of the entrance and gates were presumably attached to these posts. The

gates may have been secured in an open position by two posts found inside the enclosure a short distance from each side of the entrance.

Substantial structures included a range of three buildings, presumably log cabins. The fired-clay chinking at the site showed that round peeled logs had been used in the construction, and the quantity of the chinking suggested extensive use of that material. The outlines of the three log cabins were suggested by six north-south sills that were surrounded by fired-clay chinking. Those six timbers outlined three rectangular areas approximately 16 feet north and south, and 18 feet east and west. Floor joists were found between these sills, and hewn-plank flooring covered the joists. Further structural evidence was absent, but a few details may be inferred from some of the artifacts.

Some of the buildings had windows, as several fragments of thin window glass were found. Numerous nails were found in the fill associated with the structures, some of which were driven into the charred flooring. A door bolt catch and a portion of a lock were possibly fitted on the doors of a kitchen, residence, or storehouse.

Feature 62, the westernmost log-cabin area, was probably the kitchen. It contained many fragmented animal bones, broken dishes, plates and cups, and bits of melted lead. A chinked stick chimney may be represented by a fireplace with four associated posts. A trench filled with ash, burned earth and other refuse was located directly north of this cabin. It was a kitchen refuse depository.

Three buildings, often close together in fur-trade posts, were the kitchen, a storehouse, and the residence of the trader or bourgeois. The kitchen is tentatively identified as Feature 62. The central log cabin, Feature 63, is tentatively identified as a residence. The eastern log cabin, Feature 64, was probably a storehouse. The fourth structure in this series, Feature 65, appears to have been a shed for the storage of equipment and perhaps furs. There is mention of Kipp's having wintered at the site, but contemporary sources mention no further personnel by name.

Maximilian stated that the site was abandoned in 1829, but there is no record known of the post's destruction by fire, as shown by the excavations. The site may have been burned after its abandonment by the occupants to prevent competitors or local Indians from using its facilities. It could also have been burned by the Indians themselves.

WHITE OBJECT MATERIALS

The various white object materials found within the palisade, and principally within the log-cabin area and the various pits, give clues to life at this post.

The cannon was probably intended for defense or at least to impress the local Indians with its destructive force. Many examples of the use of cannon elsewhere to overawe Indians could be cited. This particular cannon was small and may have been mounted on a heavy block of wood with a swivel, or possibly on a small 2-wheeled carriage as the "cannon carriage bolt" would indicate.

The remains of firearms are scanty; indeed, the only definite gun part is the hammer from a flintlock rifle of a pattern manufactured from 1803 to 1807 for the use of the U.S. Army. Rifles of this type were carried by the Lewis and Clark Expedition. At least one rifle of this form was in use at Kipp's Post.

A study of the gun flints shows four sizes intended for different weapons. Horse pistols or trade guns with small locks; rifles or fowling pieces with small locks; pocket pistols or rifles with small locks; and carbines or trade guns with small locks. Musket flints are absent from this sample. Perhaps none were in use here or they were traded only to Indians. At least four different lock sizes, indicating as many guns, were used here.

An analysis of the perfect spherical rifle balls reveals that five sizes of bullet molds were employed, ranging from .475 inch to .584 inch. Here is evidence that at least five individual weapons were probably in use, since it was customary for each gun to have its own individual mold. The presence of lead shot indicates that fowling pieces or smooth bore guns were used, as does the one size of gun flint suitable for this weapon. This in turn indicates that waterfowl and local birds such as the prairie chicken were probably hunted, a supposition that is confirmed by the avian remains found within Feature 20, the kitchen refuse area.

Three different bullet molds are represented by sprews from the one-, two-, and four-cavity molds, although the comparison of the individual lead balls shows that at least five different-sized molds were used. The lead fragments found throughout the log-cabin area and within Feature 9 prove that balls for individual weapons were made at the post.

The harpoon raises the possibility that muskrats, beaver, and perhaps large fish were speared, though it is possible that this was an item for the fur trade.

A considerable variety of dishes, cups, and saucers, are represented by fragments; a portion of a water glass or tumbler and possibly medicine bottles are also present. Mirror glass adds to the impression that a certain amount of luxury was available at the post.

Sewing materials such as the thimble and awl indicate that the making of clothing or its repair went on here, though these items

again were also probably traded. The straight pins were possibly used in the making of clothing. The cloth and numerous buttons found were probably from commercial clothing brought from manufacturing centers, though the buttons could also have been used on leather clothing made by Indian women.

Finger rings, bangles, ear ornaments, and beads were probably worn by the native women who lived with the traders. However, such items were also traded. The doll legs could also have been from the doll of one of the children of a post employee or an Indian child.

Clay pipes were found in large numbers within the post in a broken condition and though they were traded to the Indians, most of them were probably used by the personnel of the post. The turned-bone letter-seal handle reveals something of the operations of the post; perhaps Kipp himself used it for sealing correspondence.

The files and whetstones are evidence that metal was sharpened here, as one would assume, and the sawed butts of the posts in Features 46, 47, and 48 reveal that saws were present, although none were recovered. Axes and knives surely must have been used also, though none were found. Lead bale seals were probably used on bales of such trade goods as blankets brought up to the post, perhaps also on bundles of furs being sent downstream.

The large numbers of catlinite and shale pipe fragments indicate that pipes were probably manufactured here with metal tools such as files, saws, braces, and drills. Undoubtedly they were for the fur trade as they are of styles little used by white men. Clay pipes were light, cheap, convenient, and more practical for personal use.

The presumed horse bit is the only transportation item present. It would indeed be unusual if no horses were used here, but there is no positive proof that they were.

TRADE GOODS

Kipp is said to have taken a fine selection of trade goods to this site in the late fall of 1826. At least a portion of it was brought from St. Louis by Tilton in November of 1826. Other goods may have been transported from the Columbia Fur Company's base on Lake Traverse at the headwaters of the Red River of the North (Wied-Neuwied, 1906, vol. 23, pp. 226-228). The following items represent some of the trade material recovered:

Glass beads in a considerable variety of colors, sizes, and forms; sheet brass from which arrowpoints, bracelets, and bangles may have been made; straight brass pins; a brass thimble; a brass bell; clay; catlinite; and shale pipes; gun flints; gun worms; finger rings; ear ornaments; an awl; brass wire; gold braid (?); and cloth.

Objects of trade known from the literature, but absent in the excavations include knives, kettles, firearms, gunpowder, bar lead, and bullet molds.

ARTIFACT FITS BY FEATURES

A study was made of the various broken white object materials which fitted together and of their sources in the different features. This demonstrated contemporaneity between some features. These are listed below:

Cannon fragments: Features 3, 4, 15, 20, and 66. Clay-pipe fragments: Features 3 and 8; 3 and 21; 7 and 15. Whetstone fragments: Features 3 and 13. Dish fragments: Features 4 and 12.

Feature 3, the log cabin area, is associated with Features 4, 8, 13, 15, 20, 21, and 66, on the basis of these demonstrated fits of broken artifacts. Associated with each other are Features 4 and 12, and 7 and 15.

OBJECTS OF NATIVE MANUFACTURE

Permanent earth-lodge villages were absent in the immediate vicinity, and the native artifacts found may represent objects which were lost at temporary campsites, before, during, or after the site was occupied by whites. Strictly native artifacts are:

Two chipped-flint arrowpoints; three chipped-flint end scrapers; two modified flakes; a serrated metapodial fleshing tool; a perforated arrow-shaft wrench; four grooved mauls; rectangular chopping tools of stone; hammerstones; pottery; whetstones and abrading stones; antler tines; and a fleshing tool.

Aside from the perforated arrow-shaft wrench and the arrow points, each of these specimens was used in the preparation of hides and food, and possibly are attributable to visits of Indians to the site for trade. Contemporaneity of most of these artifacts and the post is certain, since many of them were found in the storage pits within the palisade enclosure.

A study of the distribution of 45 "native" artifacts such as mauls, cylindrical sandstone whetstones, and chipped-flint artifacts was made. Eighteen items were found in F-3, the log-cabin area; 7 in F-13, a large pit; 9 in F-66, the general area of the post; 4 in F-15; 4 in F-20; and one each in Features 6, 14, and 49.

INFANT BURIAL

The infant buried in Feature 52 may have been the child of one of the employees at the site, since it is unlikely that one of the visiting Indian groups would bury a child inside a white trading post. Most probably it was the child of a post employee and his Indian wife. At this period, no white women were located nearer than the Red River

Settlements. Not until the 1830's, or even later, were white women at Fort Union, the successor to Kipp's Post. An Indian wife, or wives, living at the site would readily account for some of the articles of native manufacture found in the pits inside the enclosure.

A more plausible explanation, however, for the presence of these native artifacts is that Kipp or other employees had Indian women at the post. The material traits of a culture are often surprisingly tenacious, and as the post was located a long distance from the commercial sources of supply, native artifacts would not likely suffer much competition.

COMPARISON WITH OTHER FUR TRADE POSTS

This site was smaller than other comparable fur trade post locations for which data are available, and the structures were less numerous. The presence of a single bastion, rather than paired blockhouses, is also at variance. Two features at Kipp's were not found at Fort Berthold I or Fort Berthold II. These were:

(1) Long shallow trenches parallel to the north and east palisade walls, for which no function can be demonstrated.

(2) Deep, subrectangular pits with steep walls and rounded or flat bottoms and a low ridge of earth across their short axes. These were floored with boards, and probably functioned as storage pits.

Several features were absent that were present in the posts of Fort Berthold I and Fort Berthold II, both of which were later in time and occupied for a longer period. They include deep rectangular cellars and latrine pits (Smith and Woolworth, 1954). Latrines would have been convenient, particularly in winter, but if such features were used they must have been located outside the palisade walls, since no evidence for them was found within the enclosure.

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APPENDIX 1

LIST OF FEATURES AT SITE 32MN1

- F-1. The palisade or stockade trench, containing the butts of 673 cottonwood posts.
- F-2. The bastion in the northeastern corner of the post.
- F-3. The general area in the northern portion of the post enclosure where the log cabins were situated.
- F-4. A large pit with an earth septum in the northern half of the enclosure. 11 feet long, 6 feet wide, and 4.2 feet deep.
- F-5. A portion of a cannon base found in F-4.
- F-6. A large pit with an earth septum in the eastern portion of the enclosure. 12.5 feet long, 5-7 feet wide, and 3-4.3 feet deep.
- F-7. A large shallow pit without septum in the northern portion of the enclosure. 8.7 feet long, 4.8 feet wide, and 0.7-1.5 feet deep.
- F-8. A small pit with a square outline adjacent to Features 63 and 64. 2.8 feet on a side, and 2.5 feet deep.
- F-9. A small pit with an oval outline adjacent to Feature 19. 1.5 feet by 1.9 feet surface dimensions, and 1.6 feet deep.
- F-10. A small pit with a pentagonal outline adjacent to Feature 19. 2.2 feet wide, 2.4 feet long, and 1.0 foot deep.
- F-11. A fireplace adjacent to Feature 21. 3.0 feet in diameter.
- F-12. A large irregular pit within the bastion (F-2). 19.0 feet long, 7.0 feet wide, and 1.6 feet deep at deepest point.
- F-13. A large pit with a septum in the western portion of the enclosure. 13.9 feet long, 7.9 feet wide, and 4.2 feet deep.
- F-14. A large pit with a septum beneath the flooring of F-63, a log cabin. 7.1 feet long, 4.1 feet wide, and 2.2 feet deep.
- F-15. A large pit without a septum near the western palisade trench line. 9.5 feet long, 8.3 feet wide, and 1.4 feet deep.
- F-16. A probable fireplace under the flooring of F-63, a log cabin. Ca. 2.5 feet in diameter.
- F-17. A long rectangular shallow trench in the southeastern corner of the post enclosure and parallel to the palisade trench. 11 feet long, 1.3-1.7 feet wide, and 0.8 foot deep.
- F-18. A small shallow pit adjacent to F-22. 1.3 feet in diameter and 0.3 foot deep. Probably used for the smoke tanning of hides.
- F-19. A fireplace adjacent to the eastern portion of the palisade trench. 2.5 feet in diameter, and 0.4 foot deep.
- F-20. A long rectangular trench between the log cabin area (F-3) and the northern palisade trench line. This trench had served as a refuse dump for the kitchen. A portion of it was undercut. 24 feet long, 2 feet wide, and 2-2.5 feet deep.
- F-21. A shallow rectangular trench in the eastern portion of the enclosure and parallel to the palisade trench line. 19 feet long, 1.6 feet wide, and 0.5-1.0 foot deep.

- F-22. A short trench which contained the butts of a series of cottonwood posts. It was at the southwestern corner of F-62, a log cabin. It had apparently served as a screen for this cabin. 10.2 feet long, 0.7 foot wide, and 1.4 feet deep.
- F-23. A shallow pit which contained charred wood and bark. It was adjacent to F-22. Apparently used for the smoke tanning of hides. 0.9 foot diameter, 0.2 foot deep.
- F-24. A fireplace in the presumed kitchen, F-62. It was surrounded by four posts in the form of a square; these presumably represent the remains of a wattle-and-daub stick chimney. 3 feet in diameter, 0.5 foot deep.
- F-25. A shallow pit which contained charcoal. It was located in the west-central portion of the post enclosure, and probably served as a place for the smoke tanning of hides. 0.7 foot in diameter and 0.1 foot deep.
- F-26. A shallow pit which contained charcoal. It was located in the southeastern portion of the post enclosure adjacent to F-17. It probably was used in the smoke tanning of hides. 0.8 foot in diameter and 0.1 foot deep.
- F-27. A shallow pit which contained charcoal. It was located in the southwestern portion of the post enclosure and probably was used in the smoke tanning of hides. 1.0 foot diameter, and 0.2 foot deep.
- F-28. A rectangular pit which held a small cottonwood post. It is adjacent to F-29, in the southwestern portion of the post enclosure. Surface dimensions: 1.7 feet x 2.3 feet, and 2.4 feet deep.
- F-29. A rectangular post mold filled with two stones and charcoal. It was adjacent to F-28. 1.1 feet in diameter and 0.8 foot deep.
- F-30. A square pit which held a small charred post. It was located immediately inside the entrance to the post. 0.8 foot on a side and 1 foot deep. The post was 0.5 foot in diameter.
- F-31. A round post hole adjacent to the entrance. 0.7 foot in diameter and 0.5 foot deep.
- F-32. A square pit which contained a round post mold. It was adjacent to the entrance. 0.8 foot diameter, 1.4 feet deep; the post was 0.7 foot in diameter.
- F-33. A round post hole adjacent to the entrance. 0.5 foot diameter, 1 foot deep.
- F-34. A circular pit with its base lined with charcoal. It was probably used for the smoke tanning of hides. It was located in the southeastern corner of the post enclosure. 1.5 feet diameter, 1 foot deep.
- F-35. A square pit containing a round post mold. It was located in the southeastern corner of the enclosure adjacent to F-53. 1 foot square, 1.4 feet deep; the post was 0.45 foot in diameter.
- F-36. A square pit containing a rotted post butt. It was located in the southeastern corner of the enclosure. 1.1 feet square, 1.3 feet deep; the post was 0.6 foot in diameter.
- F-37. A circular pit filled with charcoal. It was located in the southwestern corner of the enclosure and was probably used for the smoke tanning of hides. 0.5 foot diameter and 0.1 foot deep.
- F-38. A circular posthole which contained a rotted post. It was located in the southwestern portion of the post. 0.5 foot diameter and 0.6 foot deep.
- F-39. A circular fireplace about 1.5 feet in diameter. It was in the southwestern portion of the enclosure.
- F-40. A square pit which contained a round, rotted cottonwood post butt. It was in the southeastern portion of the enclosure. 0.9 foot on a side, 1 foot deep; the post was 0.7 foot in diameter.

- F-41. A round hole 0.8 foot in diameter and 0.5 foot in depth. It contained fragmented chinking and pieces of wood. It was probably not a post; located near the eastern palisade wall.
- F-42. A round hole 0.7 foot in diameter and 0.7 foot deep. It contained soft earth fill. Adjacent to F-19.
- F-43. A round hole 0.4 foot in diameter and 0.5 foot deep. It contained soft earth fill. Adjacent to F-19.
- F-44. A post mold 0.25 foot in diameter and 0.6 deep. It contained rotted cottonwood. Adjacent to F-11.
- F-45. A basin-shaped circular pit containing charcoal; it was probably used for the smoke tanning of hides. Located in the eastern portion of the enclosure and adjacent to Features 9 and 19. 1.4 feet diameter and 0.6 foot deep.
- F-46. A square pit containing a cottonwood post 0.5 foot in diameter and 1.2 feet deep. This is one of the supports for a shed, F-65; it is associated with Features 47 and 48. The pit is 1 foot square and 1.2 feet deep.
- F-47. A square pit containing a cottonwood post 0.6 foot in diameter and 2.0 feet deep. This is one of the supports for a shed, F-65, in the northeastern corner of the enclosure. Associated with Features 46 and 48. The pit is 1.3 feet square and 2.0 feet deep.
- F-48. A square pit containing a cottonwood post 0.6 foot in diameter and 1.1 feet deep. This is one of the supports for a shed, F-65, in the northeastern corner of the enclosure. Associated with Features 46 and 47. The pit is 0.8 foot square and 1.1 feet deep.
- F-49. A rectangular pit intrusive on Feature 15. It contained a post butt 0.6 foot in diameter and 2.5 feet deep. The pit also contained mixed earth and broken animal-bone fragments; it measured 2.7 x 2 feet and 2.5 feet deep.
- F-50. A rectangular pit containing charred wood and 6 lead rifle balls. This pit was associated with Feature 65, a shed. The pit measures 1.4 feet x 2.0 feet and is 1.0 foot deep.
- F-51. A rectangular trench 3.8 feet long; 1.6 feet deep and 0.5 foot wide. Apparently a series of small posts were once in this trench as bits of rotted wood were found here. This feature is associated with Feature 65, a shed in the northeastern corner of the post enclosure.
- F-52. A rectangular trench abutting on the interior of the southeastern corner of the palisade. The trench is 2.5 feet long, 1.3 feet wide and 1.2 feet deep. This feature contained the burial of an infant in what had apparently been a rectangular wooden box.
- F-53. A rectangular trench abutting on the interior of the southeastern portion of the palisade. The trench is 4.7 feet long, 0.7 foot wide and 1.2 feet deep. It contained a series of 9 small cottonwood posts 0.4 foot in diameter. It is possible that this feature was a hitching post or stall for horses.
- F-54. A rectangular trench abutting on the interior of the palisade trench in the western portion of the enclosure. The trench was 3.6 feet long, .75 foot wide, and 1 foot deep. No post butts were observed in it.
- F-55. A rectangular trench 22.5 feet long, 1.7 feet wide and 0.8 foot deep. It was situated parallel to the eastern palisade trench and contained a few miscellaneous artifacts.
- F-56. A palisade trench cross section; it was 1.8 feet wide, and 1.8 feet deep. This cross section was made in the center of the western palisade trench line.

- F-57. A palisade trench cross section; it was 1.5 feet wide and 1.7 feet deep. This cross section was made in the center of the western half of the southern palisade line.
- F-58. A palisade trench cross section; it was 1.4 feet wide and 1.8 feet deep. This cross section was made in the center of the eastern palisade trench line.
- F-59. A palisade trench cross section; it was 1.3 feet wide and 1.4 feet deep. This cross section was made in the eastern portion of the bastion.
- F-60. An oval pit 10 feet long, 6 feet wide and 4.3 feet deep at its deepest point. This pit had a raised septum of hard earth in its base. It was located in the eastern half of the post enclosure and was adjacent to Features 6 and 7.
- F-61. An oval pit 11 feet long, 8 feet wide at its widest point and 1.5 feet deep at its deepest point. This pit is adjacent to Features 4 and 13.
- F-62. Western log cabin; located in the northwest corner of the post enclosure. Adjacent to F-63.
- F-63. Center log cabin; located between Features 62 and 64.
- F-64. Eastern log cabin; adjacent to Features 63 and 65.
- F-65. A probable shed; located south of F-64 and in the northeastern corner of the enclosure.
- F-66. General area of the interior of the post.

APPENDIX 2

GLAZED EARTHENWARE AND GLASS FROM KIPP'S POST

BY C. MALCOLM WATKINS¹

Specimen and Feature Nos.

- 105, 110, both F-3. English green shell-edge earthenware. One of the most popular and enduring of English ceramic products, the shell-edge pattern was introduced by Josiah Wedgwood in the 1770's. By 1790, it was copied widely and had become a principal trade product. It remained so until far into the 19th century. The earlier examples are distinguished by light density of the creamware paste, and by relative thinness (depending upon the particular form of vessel), and by sharp definitions of the pattern. These fragments seem to correspond more with examples found in early 19th-century sites, perhaps around 1815 (pl. 59, *h*).
- 250, F-20.
- 109, F-3..... Chip of English Staffordshire blue transfer-printed white earthenware of about 1820-30. Spode, Wood, Ridgway, and many others engaged in making this extensively exported ware (pl. 59, *g*).
- 97, 101, both F-3..... Fragments of blue transfer-printed Staffordshire tea slop bowl, 1820-30 (pl. 59, *d, e*).
- 153, F-4..... Olive-green blown-glass bottle fragment. Probably before 1830. Many American bottle glass factories established after the Revolution were producing thin-walled medicine and camphor bottles. This piece is too small to be conclusive, however.
- 149, 151, 152, F-4..... Plate glass. Quite possibly mirror glass. No dating possible.
- 120, F-3..... Blue transfer-printed Staffordshire earthenware, 1820-1830 (pl. 59, *c*).
- 127, F-1..... From blown, cut-glass tumbler. This style of fine flat-panel cutting on clear glass is found all through the 19th century, at least from about 1825 on.
- 142, 143, F-4. 216, 217, F-14. 243, 248, F-20. 275, 276, 285, 288, F-66. Miscellaneous pieces of bottle and window or mirror glass, all distorted from partial fusing in fire. Not diagnostic, except color and thinness may indicate early 19th century or before.
- 229, 230, both F-15.... Probably mirror glass. Thinness suggests early 19th century or earlier.
- 107, 115, both F-3..... Blue transfer-printed Staffordshire earthenware. 1820-30.
- 113, F-3. 128, 129, F-1. English creamware. Late 18th or early 19th century (up to 1820).
- 180, F-8.

¹ Associate curator of Cultural History, Division of Ethnology, U.S. National Museum.

Specimen and Feature Nos.

- 107, 112, both F-3----- Chips of English white earthenware. Blue cast indicates these are probably from undecorated portions of blue transfer-printed, or blue-painted ware, ca. 1825.
- 98, 99, 100, 114, all F-3----- Blue transfer-printed Staffordshire ware, 1820-30 (pl. 59, a).
- 108, 117, both F-3----- Blue and orange hand-painted white earthenware, Staffordshire, 1810-25 (pl. 59, f).
- F-3, 134-137, F-4. F-12. Hand-painted blue-decorated, white earthenware, Staffordshire, 1810-25. Enoch Wood was a principal manufacturer of this much-exported ware (pl. 59, b).
- 277, F-66----- Rim of late-style blown wine bottle. Probably first quarter of 19th century, although hand-blown wine bottles with this rim treatment continued to be imported all through the century.
- 148, 150, both F-4----- Glass of modern manufacture; probably from milk-bottle base.
- 106, 111, 116, 118, all F-3. White earthenware, "crookery" cup fragments. Any time from the period of the Civil War on to the present.
- 104, 119, both F-3----- Pieces of white earthenware, probably Civil War period to end of the century.

APPENDIX 3
 FAUNAL REMAINS FROM KIPP'S POST
 BIRD BONE*

Species	Feature No.	Individuals represented
Canada goose (<i>Branta canadensis</i>)	1, 8, 13, 15, 20	5
Ross's goose (<i>Chen rossi</i>)	8	1
Snow goose (<i>Chen hyperboreus</i>)	20	2
Mallard (<i>Anas platyrhynchos</i>)	4, 8, 13, 15, 20	3
Green-winged teal (<i>Anas carolinensis</i>)	13	1
Hooded merganser (<i>Lophodytes cucullatus</i>)	13	1
Gadwall (<i>Anas streperus</i>)	20	1
Sandhill crane (<i>Grus canadensis</i>)	13	1
Franklin's gull (<i>Larus pipixcan</i>)	20	1
Ring-billed gull (<i>Larus delawarensis</i>)	20	1
Wood ibis (<i>Mycteria americana</i>)	8, 20	1
Sharp-tailed grouse (<i>Pedioecetes phasianellus</i>)	1, 4, 8, 20	2

*Identified by Dr. Herbert Friedmann, curator, Division of Birds, U.S. National Museum.

Twelve species of birds are represented in this series. Eleven of these are waterfowl. The sole exception is the sharp-tailed grouse or prairie chicken; only two individuals are represented for this species. Eight species of birds were found in F20; five in F8; five in F13; two in F1; two in F4, and two in F15. A minimal total of 20 birds is represented by these remains.

ANIMAL BONE*

Species	Features	Individuals represented
Antelope (<i>Antilocapra</i>)	4, 13	1
Antelope or deer	4, 8, 12, 13, 15, 17, 55	2
Badger (<i>Taxidea</i>)	4, 15	1
Beaver (<i>Castor canadensis</i>)	4, 7, 8, 17, 20, 21, 60, 61	2
Bison (<i>Bison bison</i>)	1, 4, 6, 7, 12, 13, 15, 17, 20, 21, 55, 60, 61.	7
Bobcat (<i>Lynx</i>)	15	1
Deer (<i>Odocoileus</i>)	4, 20	2
Dog (<i>Canis familiaris</i>)	1, 12	2
Elk (<i>Cervus canadensis</i>)	1, 4, 6, 12, 14, 17, 20, 60	3
Muskrat (<i>Ondatra</i>)	4, 13, 15, 20, 21	3
Porcupine (<i>Erethizon</i>)	60	1
Prairie dog (<i>Cynomys</i>)	6	1
Skunk (<i>Mephitis</i>)	4, 20	1

*Identified by Dr. T. E. White, Dinosaur National Monument, National Park Service.

Twelve species of mammals are represented in this series. Although large animals such as bison, elk, deer, antelope, and perhaps beaver were to be expected, as they are frequently mentioned in contemporary accounts, it was of special interest to discover that many smaller animals, not commonly eaten by our own generation, were represented in the faunal remains from the site.

The presence of skunk, muskrat, badger, bobcat, porcupine, dog, and prairie dog bones, mixed in with other kitchen refuse, suggests that the occupants of this trading post were acculturated by their contacts with the Indians. It further suggests the presence of Indian women at the site. In times of game scarcity, of course, smaller animals were probably hunted more than casually. It is also quite possible that some of these small animals were eaten as byproducts of trapping around the trading post.

Bison, antelope, deer, and elk were the largest quantities of animal bone found at the site. The bulk of the animal bones were found in Features 4, 13, and 20. These features obviously were used more extensively than others for kitchen refuse. Eight species of mammals were found in F4; six in F20; five in F15; four in F12, F13, F17, and F60; three in F1, F6, and F21; two in F7, F8, F55, and F61.

FISH BONE*

(All specimens are catfish; most probably of the genus *Ictalurus*.)

Feature No.

1.....	8 skull, visceral, and pectoral girdle bones of catfishes.
8.....	An operculum and articulated hyomandibular and metapterygoid elements of catfishes.
13.....	7 skull, visceral, and pectoral girdle bones, and 10 vertebrae of catfishes.
15.....	19 skull, visceral, and pectoral girdle bones of catfishes.
20.....	11 skull, visceral, and pectoral girdle bones, and 2 vertebrae of catfishes.

It is difficult to arrive at an estimate of the number of catfish represented by these remains. Catfish bones were found in five different features. Hence, an assumption can be made that at least five individual catfish are represented. The actual number of catfish is probably much larger.

*Identified by Dr. David H. Dunkle, associate curator, Division of Vertebrate Paleontology, U.S. National Museum.

EXPLANATION OF PLATES

PLATE 55

Two views of the excavated Kipp's Post. *a*, Toward the Missouri River bluffs. View is northeast. *b*, Toward a former channel of the White Earth River; the channel is marked by the line of trees in the background. The Missouri River is visible as a white line in the background. View is southwest.

PLATE 56

Two views of features in Kipp's Post. *a*, Series of log cabin sills and floor joists in Feature 3. View is west. *b*, Feature 4, a large storage pit with an earth septum. Note the remains of the pit flooring. View is east.

PLATE 57

Four photographs of portions of the excavated post. *a*, Feature 23, a shallow charcoal-filled pit that was probably used for the smoke tanning of hides. *b*, Feature 52, an infant burial. *c*, Western palisade trench line; a few rotted post butts are visible. View is north. *d*, Feature 57, a cross section of the palisade trench.

PLATE 58

Defense, hunting, housing, and construction items. *a*, Flintlock hammer, No. 280. *b*, Gun flint, No. 193. *c*, Gun flint, No. 140. *d*, Lead ball with sprew, No. 22. *e*, Lead ball with sprew removed, No. 21. *f*, Sprew with four nipples from a four-unit bullet mold (owned by Fred La Rocque). *g*, Spiral gun worm, No. 28. *h*, Harpoon head, No. 183. *i*, Lock fragment, No. 147. *j*, Bolt catch, No. 38. *k*, Staple, No. 274.

PLATE 59

Household goods (glazed earthenware). *a*, Blue and white saucer, Nos. 98-100, 114. *b*, Blue and white saucer, Nos. 134-137. *c*, Blue and white saucer fragment, No. 120. *d*, Exterior view of saucer fragment, No. 97. *e*, Interior view of saucer fragment, No. 97. *f*, Earthenware sherd with underglazed design, Nos. 108 and 117. *g*, Decorated earthenware fragment, No. 108. *h*, Featherstoneware fragment, No. 105.

PLATE 60

Household goods, personal possessions, tools, and equipment. *a*, Turned-bone letter seal handle, No. 204. *b*, Sealing-wax stick (?), No. 247. *c*, Brass thimble, No. 24. *d*, Finger ring with glass set, No. 31. *e*, Front view of ring with glass set, No. 31. *f*, Ear ornaments of white metal, No. 25. *g*, Doll legs, No. 121. *h*, Lead bale seal, front view, No. 26. *i*, Lead bale seal, rear view, No. 26. *j*, Chain link, No. 27. *k*, Double pointed awl, No. 278. *l*, Eyed bolt with nut, No. 27. *m*, Sheet brass arrowpoint, No. 29. *n*, Two views of a brass bell (owned by Fred La Rocque).

PLATE 61

Personal possessions (trade clay pipe fragments). *a*, TD pipe bowl, No. 48. *b*, rear of bowl, same specimen, No. 48, note the TD design surrounded by a wreath. *c*, TD pipe bowl, right-hand view of bowl. The letter G is on the spur, No. 225. *d*, Rear of bowl, same specimen, No. 225. Note the poorly

molded TD design. *e*, Front of bowl of a typical TD clay pipe, No. 138. *f*, Broken stem with spur of a TD pipe. Spur has the letter W on it, No. 139. *g*, Spur and portion of a bowl base of an unidentified type of clay pipe. Note the fluting on the bowl base, No. 48. *h*, Portion of a bowl front from the type of pipe shown in *i* and *j*. Note the fine diagonal fluting on this specimen, No. 48. *i*, Fluted pipe bowl of an unidentified type of clay pipe, No. 177. *j*, Rear of bowl, same specimen, No. 177. *k*, Side view of clay pipe stem decorated with a line and dot design. Note the teethmarks on the rear of the stem, Nos. 256 and 260. *l*, Side view of stem decorated with line and dot design. As positioned in the plate, the stem would fit onto the fluted pipe bowls, *i* and *j*, No. 267. *m*, Top view of a stem decorated with the line and dot design, Nos. 162 and 227. *n*, Side view of stem decorated with the line and dot design. Note the fluting at the front of the stem. Specimen is from F-13.

PLATE 62

Tools and equipment. *a*, Triangular steel file, No. 45. *b*, Commercial whetstone, No. 187. *c*, Commercial whetstone, Nos. 57 and 186. *d*, Dressed limestone fragment, No. 1. *e*, Horse bit (?), No. 146. *f*, Iron staple, No. 303. *g*, Iron tube, No. 30. *h*, Charred wooden disk, No. 239.

PLATE 63

Clothing and footwear (buttons and a shoe). *a*, Large brass button with "PLATED" stamped on it, No. 42a. *b*, Brass button with "BEST QUALITY" stamped on it, No. 42b. *c*, Brass button with "BEST QUALITY" stamped around the upper rim; a wreath is on the lower rim. In the center is a sunburst, No. 42c. *d*, Brass button with "BEST QUALITY" stamped on it, No. 42d. *e*, Brass button with a concave rear, No. 42e. *f*, Brass button with a flat body, No. 42f. *g*, Brass button with four holes in the form of a square, No. 42h. *h*, Brass button with "WARRANTED SUPERIOR" stamped on it, No. 42g. *i*, Polished steel button with attached loop broken off, No. 200. *j*, Iron button with a loop, No. 42m. *k*, Iron button with four holes in the form of a square, No. 42n. *l*, Turned bone button with five holes, No. 42i. *m*, Bone disk button with a single central hole, No. 42l. *n*, Turned bone button with five holes, No. 42j. *o*, Turned bone button with five holes, No. 42k. *p*, Bone disk button, No. 42p. *q*, A leather shoe with a single pair of eyelets and a plain toe, Nos. 170, 172, 173.

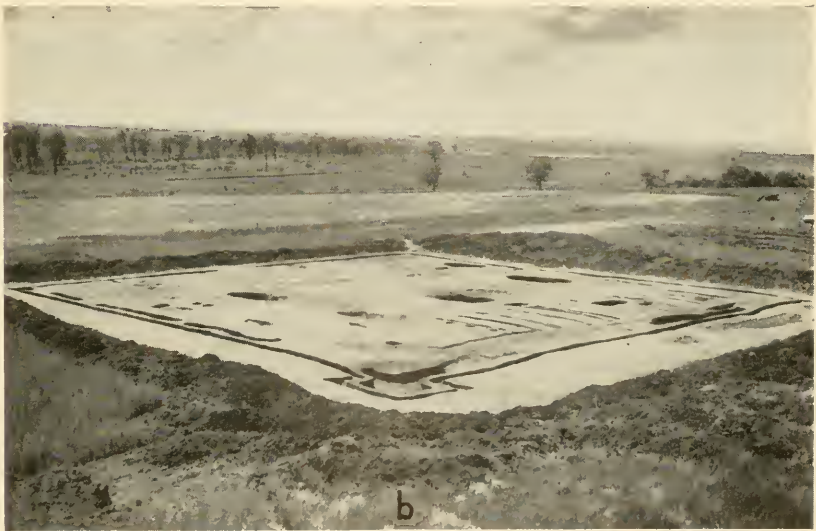
PLATE 64

Trade goods (shale and catlinite pipes, beads). *a*, Shale (blackstone) pipe, rear of bowl, No. 88. *b*, Catlinite pipe with inletting for lead or pewter inlays, No. 253. *c*, Shale pipe, No. 87. *d*, Native cylindrical sandstone whetstone, Nos. 49 and 55. *e*, Translucent white oblate spheroidal bead, No. 201. *f*, Translucent amber globular bead, S. I. No. 40. *g*, Translucent clear glass globular bead, No. 304. *h*, Translucent blue glass bead with a white paste center, No. 305. *i*, Subcylindrical beads of a dark green translucent glass, No. 306. *j*, Globular beads of a bright blue translucent glass, No. 307. *k*, Translucent subcylindrical bead of an amber glass, No. 308. *l*, Subcylindrical beads of a bright blue translucent glass, No. 309. *m*, Subcylindrical beads of a translucent amber glass, No. 310. *n*, A tubular or canon bead of white glass frit (owned by Fred La Rocque). *o*, A tubular or canon bead of an opaque white glass frit, No. 320. *p*, Tubular or canon beads of an opaque green material, No. 320. *q*, Tubular or canon beads of an opaque pearllike white material, No. 320. *r*, An oblate spheroidal bead of a white glass frit, No. 318. *s*, An oblate spheroidal bead of a white glass frit, No. 318. *s*, An oblate spheroidal bead of a white glass frit, No. 318.

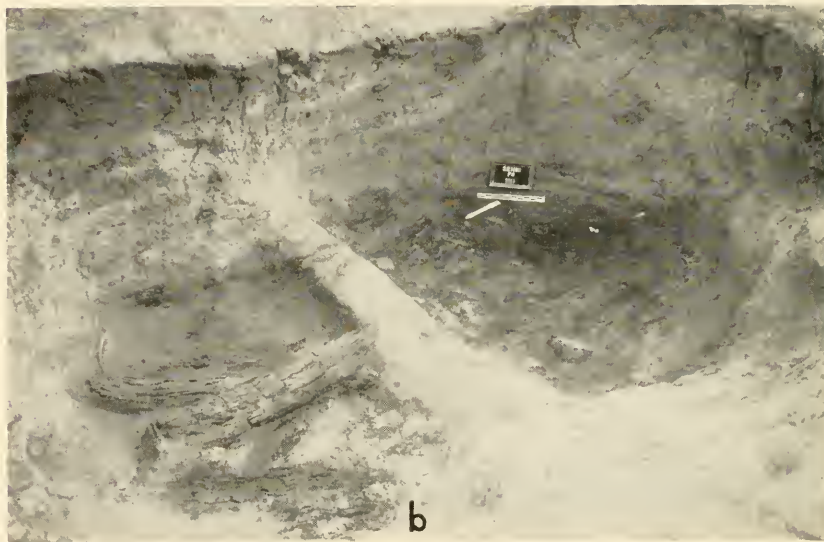
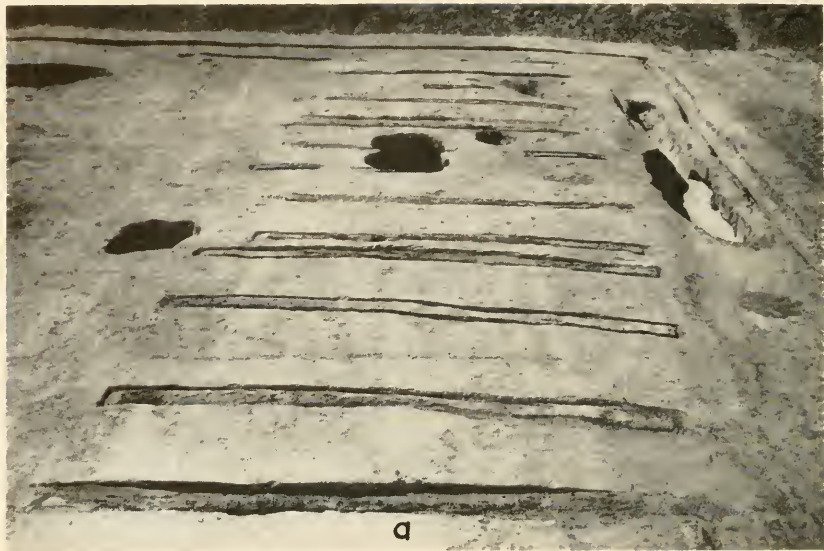
roidal bead with a light green color, No. 317. *t*, White, pale green, blue, dark green, and blue green opaque barrel beads, No. 319. *u*, A cast copper bead with an attached wire hook, No. 326.

PLATE 65

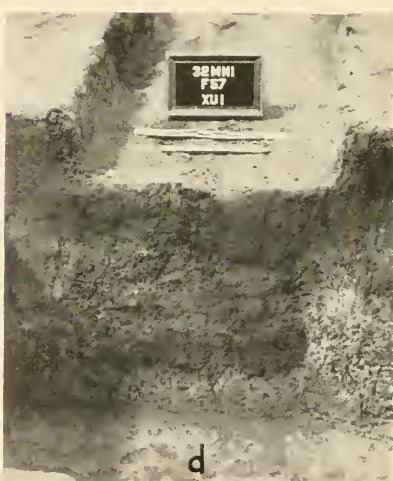
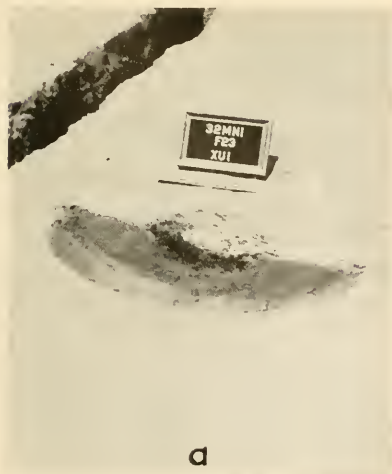
Trade goods (beads). *a*, Top row, white translucent faceted beads—in the center are two translucent beads with white paste centers, No. 311; center row, blue green translucent faceted beads, No. 311; bottom row, blue translucent faceted beads, No. 311. Many of these beads have white paste centers. *b*, Top three rows, three sizes of white seed beads, Nos. 322, 323, and 324; Bottom three rows, three sizes of blue seed beads, No. 321. *c*, Three sizes of opaque blue beads: top, No. 314; center, Nos. 60, 313, 205, and 251; bottom, Nos. 202, 203, 234, and 312. *d*, Three sizes of opaque white globular beads; top, No. 240; center, No. 315; bottom, No. 316.



Two views of the excavated Kipp's Post.
(For explanation, see p. 303)

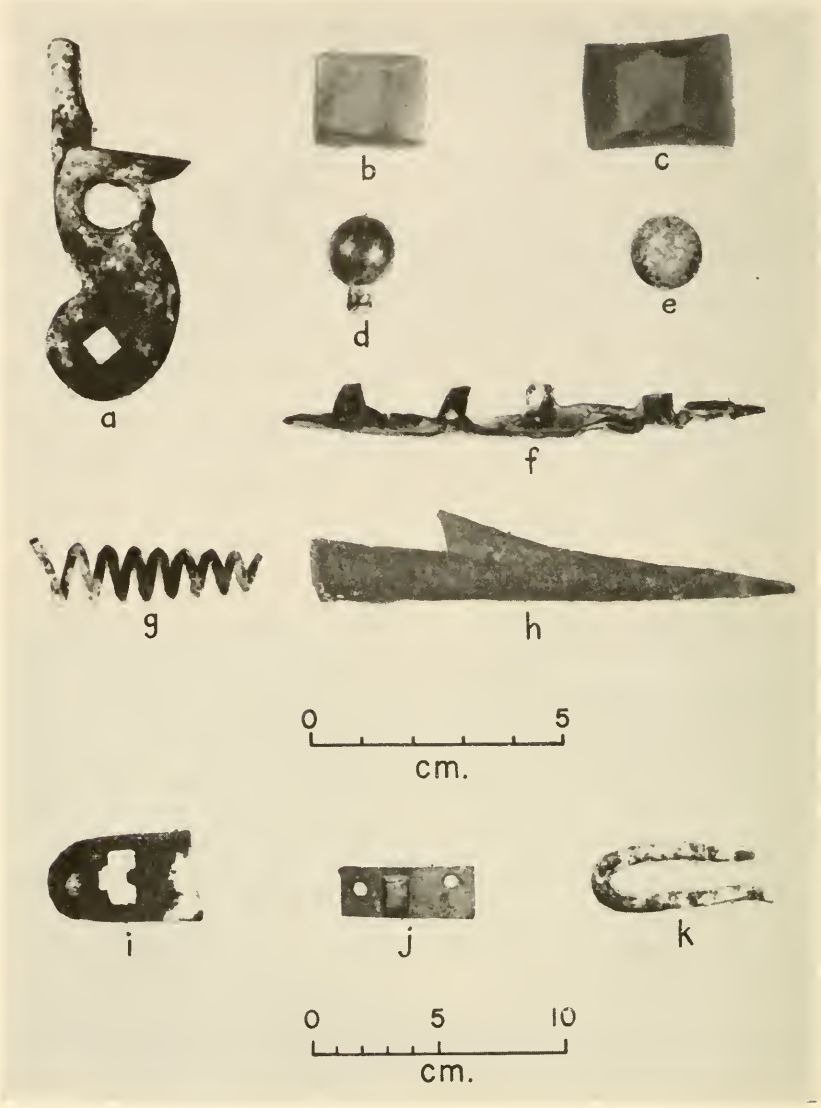


Two views of Features in Kipp's Post.
(For explanation, see p. 303)

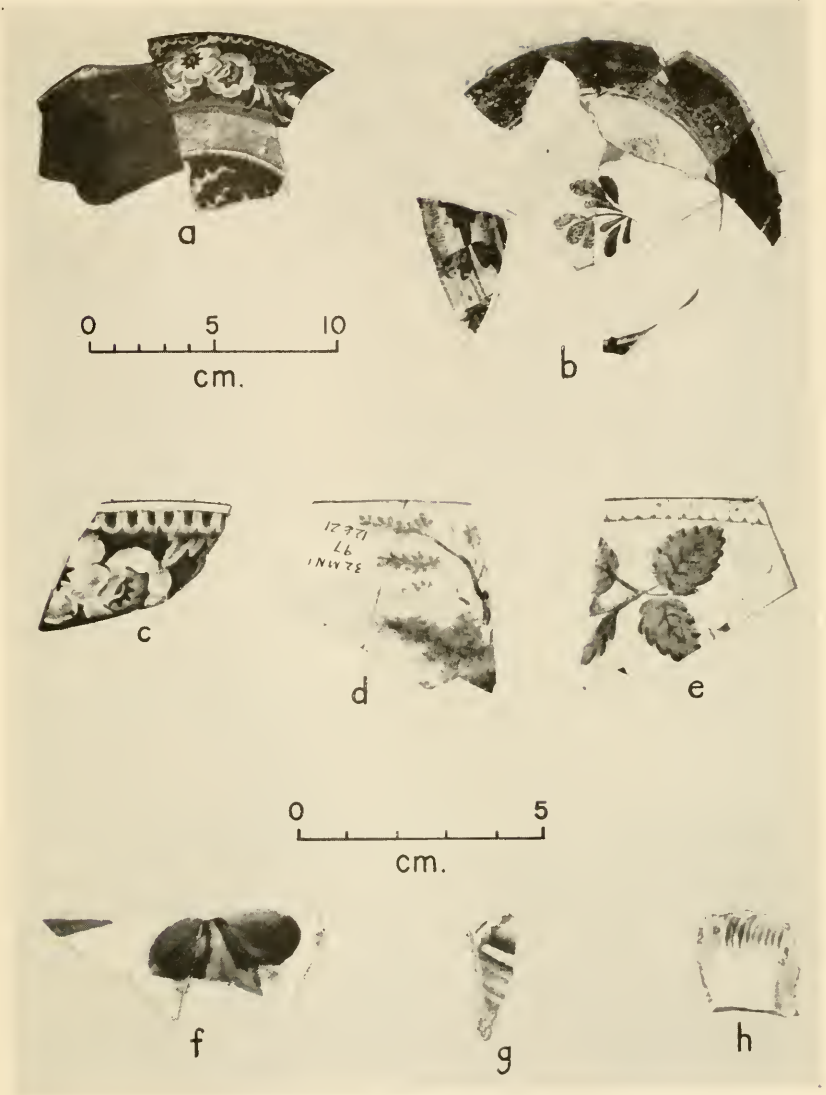


Four views of portions of the excavated post.

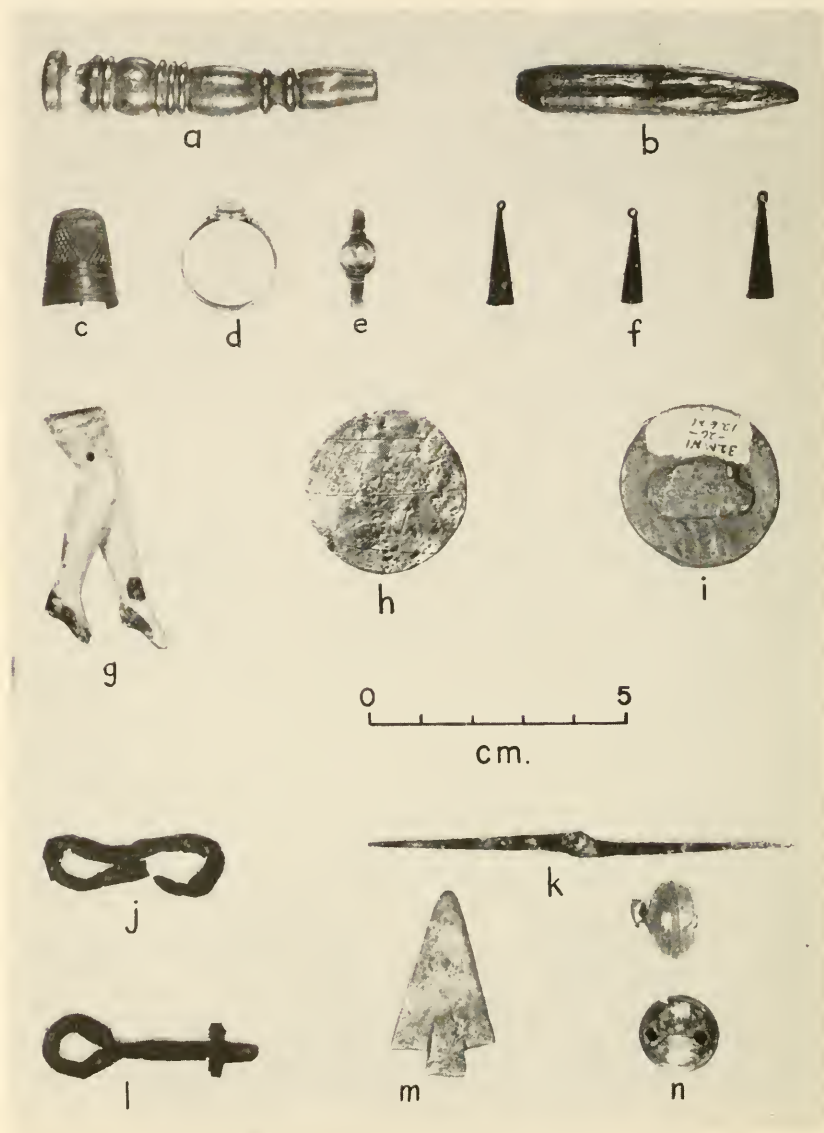
(For explanation, see p. 303)



Defense, hunting, housing, and construction artifacts.
(For explanation, see p. 303)

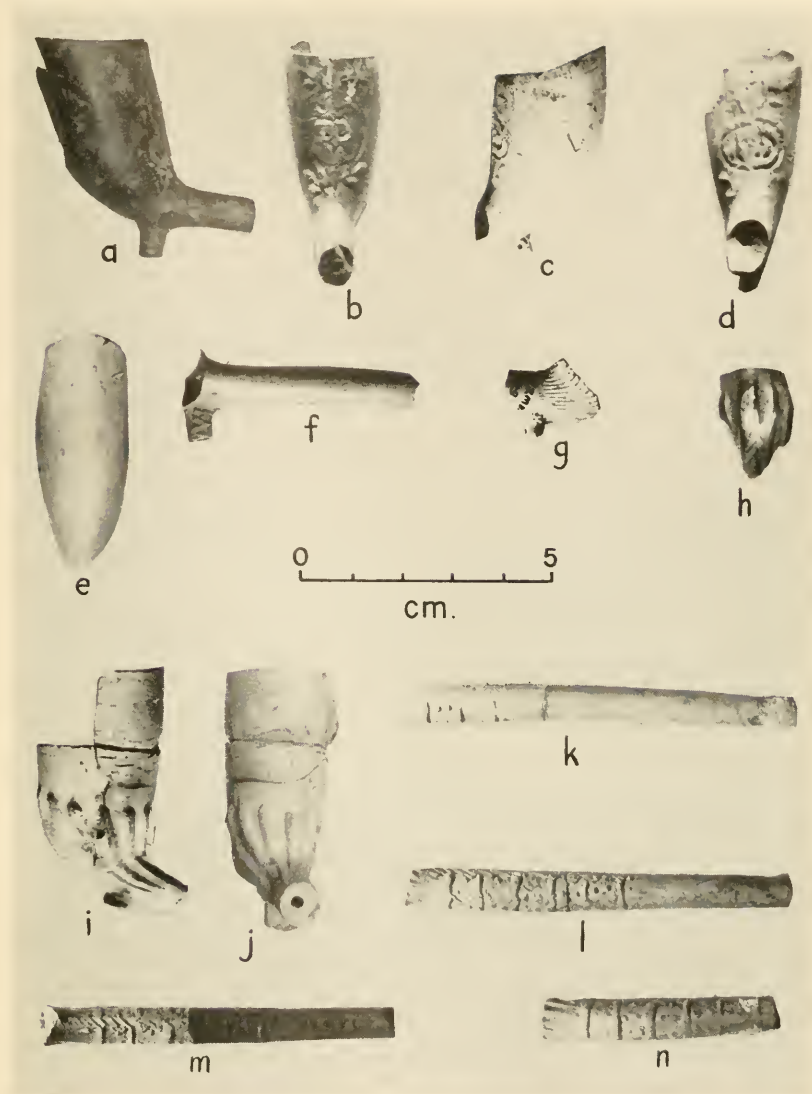


Household goods (glazed earthenware).
(For explanation, see p. 303)



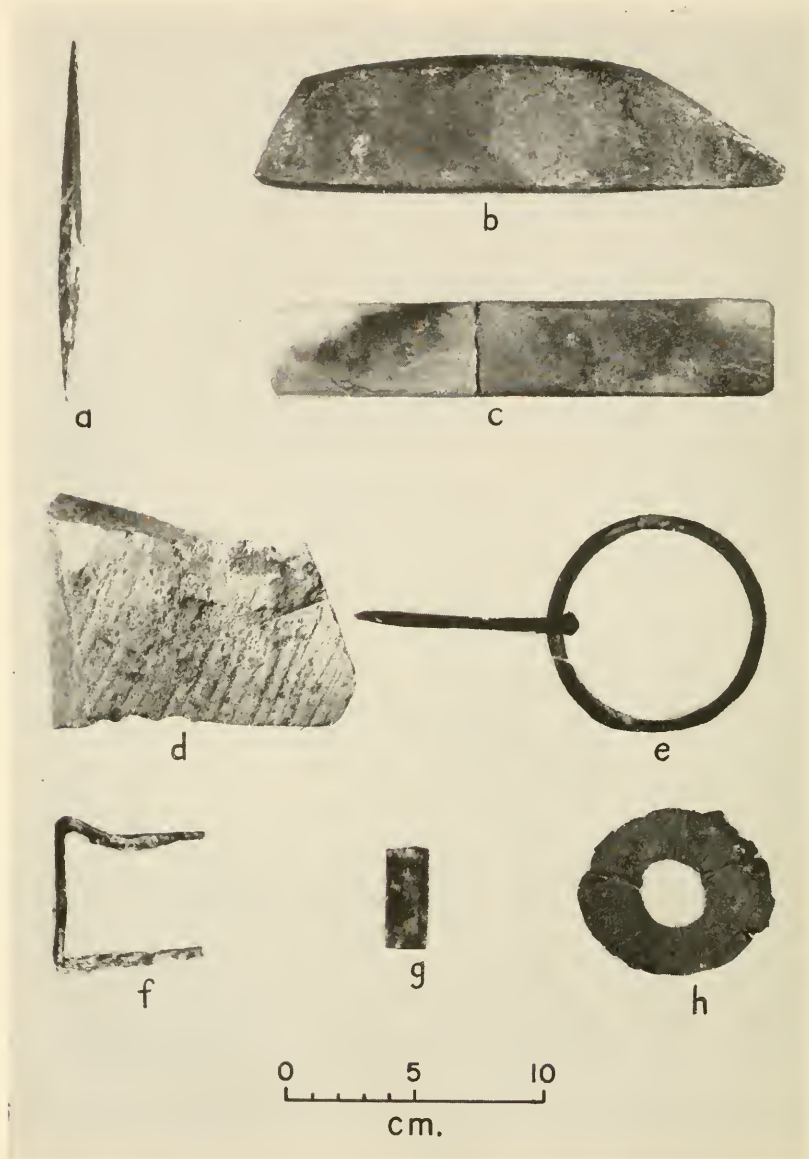
Household goods, personal possessions, tools, and equipment.

(For explanation, see p. 303)



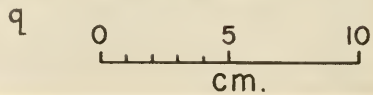
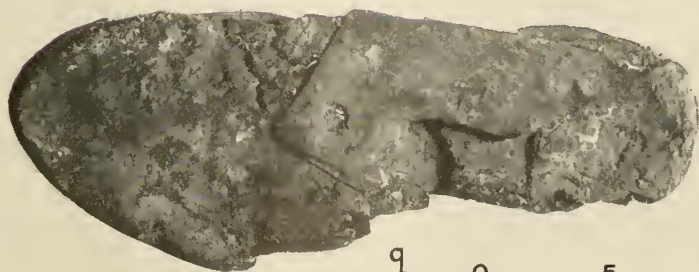
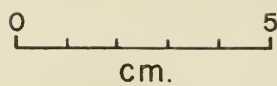
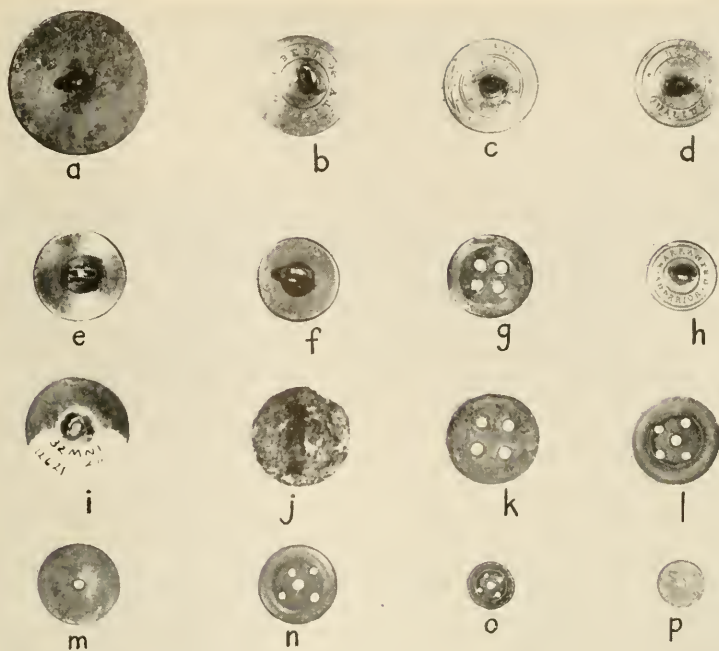
Personal possessions (trade clay pipe fragments).

(For explanation, see p. 303-304)



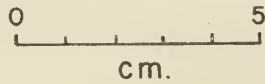
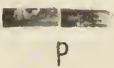
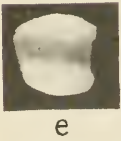
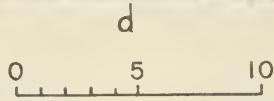
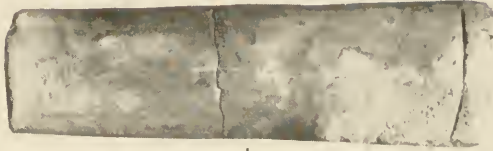
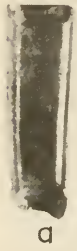
Tools and equipment (whetstones, dressed limestone fragment, etc.)

(For explanation, see p. 304)

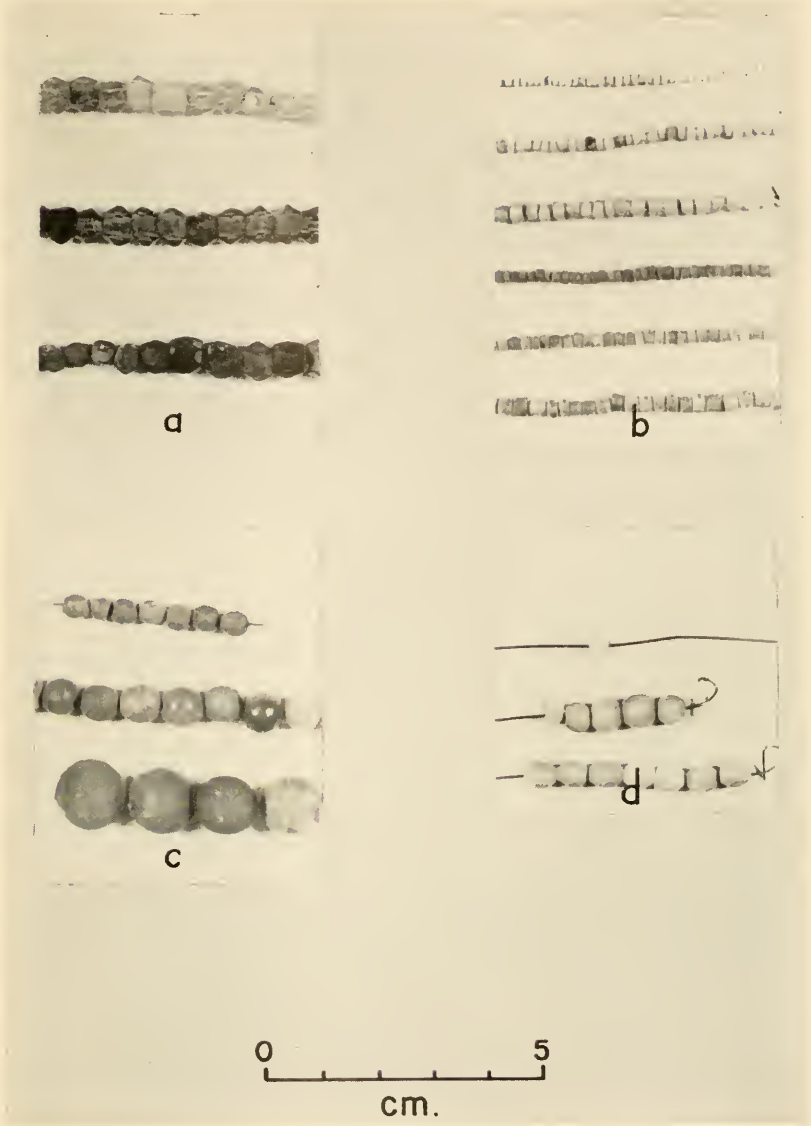


Clothing and footwear (buttons and a shoe).

(For explanation, see p. 304)



Trade goods (shale and catlinite pipes, beads).
(For explanation, see p. 304)



Trade goods (beads).
(For explanation, see p. 305)