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The Excavation and Investigation of Fort Lookout Trading Post II
(39LM57) in the Fort Randall Reservoir, South Dakota

By CARL F. MILLER

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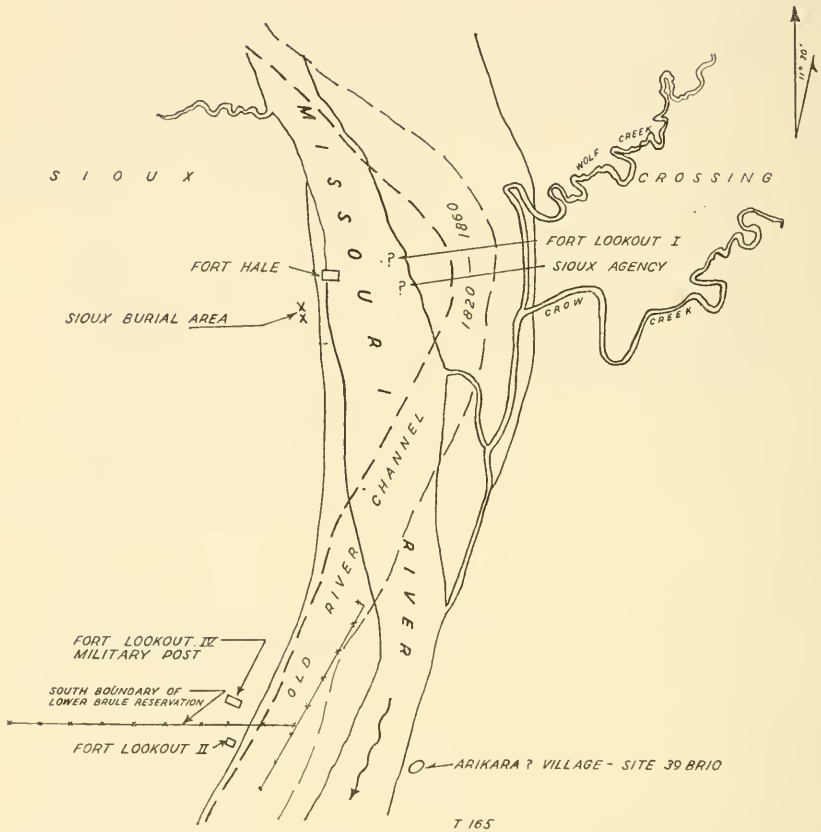
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MAP 2.—Portion of the Missouri River showing the location of Fort Lookout II Trading Post and nearby historical sites.

THE EXCAVATION AND INVESTIGATION OF FORT LOOKOUT TRADING POST II (SITE 39LM57) IN THE FORT RANDALL RESERVOIR, SOUTH DAKOTA¹

BY CARL F. MILLER

INTRODUCTION

The purpose of this paper is to report on the archeology of the multiple components of Site 39LM57 in South Dakota, for which Mr. Mattes has provided the historical background in River Basin Surveys Paper No. 15. Starting in the uppermost level were the remains of Fort Lookout II, probably established in 1831 by the French Fur Trading Co. and subsequently occupied, 1840-51, by the trader La Barge. Below them were traces of two prehistoric aboriginal horizons. The excavations were carried on in accordance with an agreement between the River Basin Surveys of the Smithsonian Institution and the National Park Service whereby sites determined by the Service historians to be of historical significance to the Inter-Agency Salvage Program would be investigated by Smithsonian archeologists.

The writer wishes to acknowledge, first of all, the patience and forbearance of Dr. Frank H. H. Roberts, Jr., director of the River Basin Surveys, while this paper was being written. Appreciation is extended to Merrill J. Mattes and Roy Mattison, historians of the Region Two office of the National Park Service at Omaha, Nebr., for the use of their documentary references and for their suggestions and advice while in the field. Special thanks are given to the Honorable M. Q. Sharp, of Kennebec, S. Dak., former Governor of the State, for his permission to excavate the site which was located upon his property. Acknowledgments are also made to K. Anton Kolthoff of the Fort Thompson Agency who made Indian labor available; to Dr. John L. Champe, of the Department of Anthropology, University of Nebraska, for his interest in the site and his helpful suggestions; to Edward Schumacher for the many fine line drawings used to illustrate this paper; to Ruth W. Miller, my wife, for her help in the field and sufferance while this paper was in preparation; and to many others who at one time or another rendered assistance during the course of the work.

¹ Submitted December 1953.

SITE 39LM57

During September 1950 an attempt was made to establish archeologically the actual locations of Fort Lookout Trading Post (Fort Lookout II) and Fort Kiowa (Fort Lookout I), since the two were thought to be either very close together or possibly to occupy one and the same site. Site 39LM57 was found by an archeological survey party of the Missouri Basin Project of the River Basin Surveys, led by Thomas R. Garth, in approximately the place where it was postulated, from documentary evidence, a post should have been situated. Two areas of occupation were apparent, and as they were several hundred feet apart it is questionable whether both should have been included under the same site number. One was much larger than the other and there is little doubt but that it was the location of the military post, Fort Lookout IV, of 1856. The smaller area is the one with which this report is chiefly concerned. The site, located 10 miles north of Oacoma, S. Dak., and 300 yards south of the Lower Brulé Indian Reservation line, was on the secondary terrace of Fort Hale Bottoms three-quarters of a mile west of the Missouri River in Lyman County. There the flats were covered with typical prairie grasses, and trees were growing in the flood plain and beds of the tributary streams between the flats and the river's edge. Except for the fact that the river had shifted its course some distance eastward, the general appearance of the setting probably was quite similar to that when the post was occupied. To determine whether the smaller area was the real location of the old trading post and/or the old fort, some digging was done by Garth at that time, but the results were not wholly satisfactory (Garth, MS.). It was later decided to carry on additional work the following season and, as Garth was no longer a member of the staff, the writer was placed in charge of the investigations. Digging was started in the latter part of July 1951, and continued until the middle of September when the student help returned to school.

During the first season a rough north-south rectangular area, lying parallel to the edge of the flat, about 70 feet long and 15 feet wide, was excavated. Materials found there led to the conclusion that it was the location of a several-roomed structure that had burned. No data were obtained as to its size and shape, however. At the start of the second season that area was carefully cleaned, ranging in depth from 0.3 to 0.5 foot, and it was found that the coordinate stakes of the year before were still intact. Since the marking had been obliterated it was necessary to redesignate each stake. The method previously used was not known, but it was hoped that it would be possible to tie in our results with those of the year before. Starting on the floor of the earlier excavation, layers 0.1 foot thick were removed. Numerous bits of burned clay bearing the imprints of twigs

and branches were found mixed with the soil, which also contained some charcoal and ash lenses. Pieces of fragmentary chalkstone were scattered over most of the southern limits of the excavated area (fig. 3).

At a depth of 0.3 foot we uncovered a number of charred beams. The clay briquettes increased in quantity and the amount of ash became deeper and more concentrated. The briquettes, ash, and charred beams roughly outlined a rectangular area approximately 70 feet long and 20 feet wide oriented north-northwest and south-southeast. We could not determine the overall dimensions of the structure nor could we tell whether there had been one large or several small rooms. A major portion of the structure apparently had a dirt floor. A number of hearth areas, Features 13, 39, 40, and 41 (fig. 4) would indicate that it was extensively used as a place to build fires. This would exclude the possibility of any plank flooring, at least over most of the area at the time when the building was last occupied. There were some indications, however, of a certain amount of wooden flooring in one part of the area and it is possible that a small room at the south end of the structure was so equipped. Mr. Garth suggested at the end of the first season's work that Indians may have removed the flooring after the building was abandoned and used it for firewood, a not uncommon practice. They also may have camped in the remains of the structure from time to time, building the fires evidenced by the hearth areas, and have been directly responsible for its ultimate burning.

Midway across the southern end of this area was a rectangular block of Niobrara chalkstone, Feature 17, 3 feet long, 1 foot 6 inches wide, and 4 inches thick. The top 1½ inches of the block was a pale salmon-pink color while the rest was a murky white. The discoloration was such as would be caused by prolonged fires. This block of chalkstone probably served as a footing for a fireplace which occupied

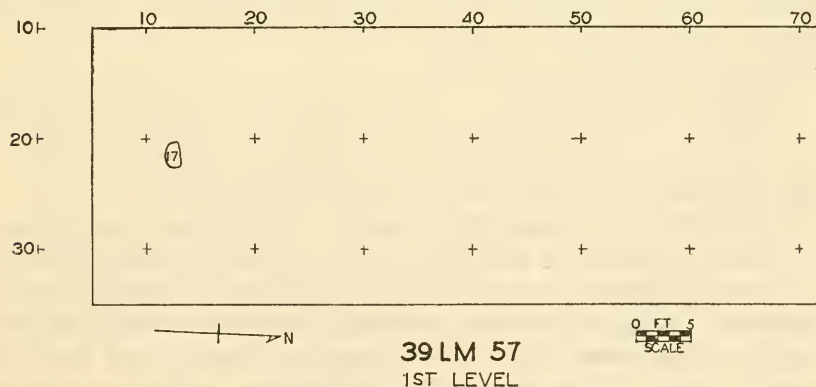


FIGURE 3.—Diagrammatic representation of area uncovered in previous summer's work at the site, with the location of the chalkstone fireplace footer, Feature 17, in position.

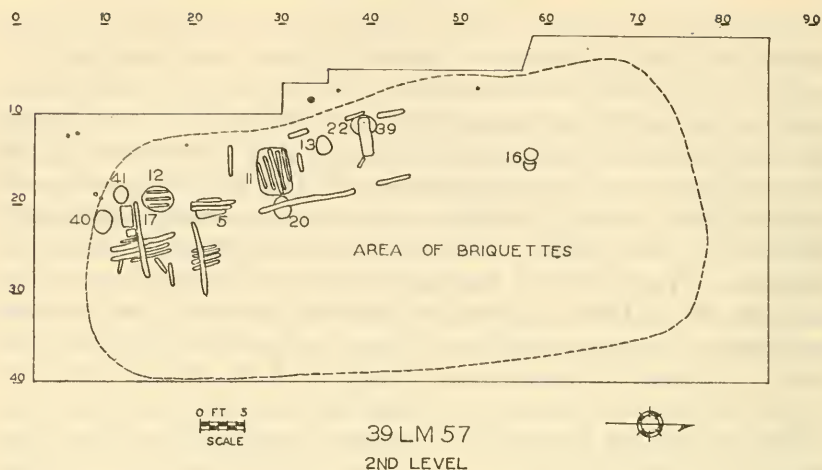


FIGURE 4.—Representation of the tangible remains of La Barge Trading Post with its associated features and position of charred beams on floor of the structure.

that part of the building. The scattered pieces of chalkstone suggest they may have been used in the construction of the fireplace, while the burned clay daubing indicates a stick-mud chimney such as was in vogue at that time in frontier outposts.

In the vicinity of the fireplace footing were sections of charred beams ranging in length from 1 to 4 feet, in width from 5 to 6 inches, and in thickness from $1\frac{1}{4}$ to $2\frac{1}{2}$ inches. Small pieces of flooring planks that were intact measured 6 to 10 inches in width, from $1\frac{1}{4}$ to 2 inches in thickness, and from 1 to 2 feet in length. All were so badly fire checked, however, that it was impossible to determine whether they were sawed or hewn. Charred wood was not found over the entire 70- × 20-foot area and it may be that the building had partially tumbled down prior to the fire, with the result that the northern portions were more readily consumed than the southern. Hence the greater concentration of ash and the paucity of charcoal in the northern end of the area (fig. 4).

Scattered over the floor of the structure were various-sized glass trade beads, a few square-cut nails, metal objects, and pieces of white-clay trade pipes. In the vicinity of the chimney footing percussion caps of the type manufactured after 1820 were found.

Two interesting features, Nos. 5 and 11 (fig. 4), were rectangular pits with vertical walls and flat bottoms suggesting storage bins or perhaps wine cellars such as found in houses at Jamestown Island, Virginia. The latter, however, were lined with brick, while the South Dakota examples were unlined. No remains of bottles were found in them, however. In the ash-filled soil in Feature 5 (pl. 12, *a*) were the charred remains of a wooden stirring paddle associated with a flat disk-shaped stone, fragments of charred boards, a few square-cut nails, and

the ubiquitous glass trade beads. The top and the upper portions of the vertical walls were fire stained, while the lower portions lacked the discoloration. The pit probably was partially filled with debris before the structure burned. It measured 3.8 feet in length, 2.3 feet in width, and was 0.5 foot in depth. For a "wine cellar" it would have been rather shallow, but it is possible some of the upper portions were removed in the earlier excavations before the feature was recognized. Feature 11 was somewhat more regular in outline and deeper. The pit was 5.5 feet long, 4.0 feet wide, and 0.8 foot deep. In the top layer of the fill were pieces of charred beams lying parallel to each other and to the long axis of the pit. Beneath them in the well-mixed ash-laden debris was an abundance of glass trade beads, none of which had suffered from the action of the fire. There were some greenish-colored beads which retained their shape until touched or disturbed, when they immediately crumbled into powder. Apparently there was something in the soil which affected them.

Adjoining firepits, Features 16a and 16b, were found near the northern limits of the structural area. Both had consisted of a shallow, excavated basin with an encircling rim of mud plaster. Feature 16a showed considerable use in that the pit was filled with a whitish ash. A portion of it was subsequently destroyed when the later firepit, 16b, was placed alongside it. The second pit was almost filled with ash and bits of charcoal, showing that it too had functioned for some time. The upper portions of both pits contained the usual deposits: ash-filled soil, bits of charcoal, glass trade beads, and a few square-cut nails. In 16a was a single brass earring of the type used for pierced ears.

The last features found on this level were three circular basin-shaped midden pits, Nos. 12, 20, and 22, ranging from 2.5 to 4.0 feet in diameter. They probably were not cache pits since their depths, 0.3 to 0.5 foot, were so shallow. Rather, they appeared to have been dug primarily for the disposal of refuse. The material in them consisted of ash-filled soil, scraps of buffalo bones, square-cut nails, and a few glass trade beads. There were a few scattered post molds throughout the area, but they formed no definite pattern and could not be correlated with any of the other features. Their purpose is problematical.

After this level was thoroughly investigated, the area was lowered another 0.2 foot and a number of shallow hemispherical trenches filled with ash, small particles of clay briquettes, and darkened soil were encountered. Some of them formed a definite pattern, as shown on the plan for the third level (fig. 5), while others started and ended abruptly without appearing to follow any particular plan. The eastern limits of the trenches were well defined, but the western and northern ends could not be traced since they petered out in both directions. There is little question that they indicate some form of structure.

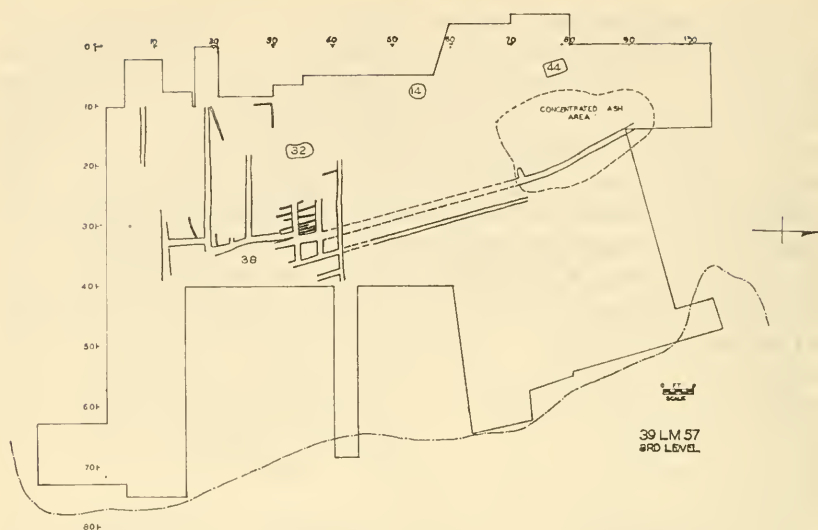


FIGURE 5.—Representation of third level of occupation, which shows the arrangement of the narrow trenches of the earlier Fort Lookout and the various pits and ash concentration.

They possibly were the molds left by stringers, partially embedded in the soil, to support a floor. There was considerable evidence of a fire at this level also, and such timbers, thoroughly consumed, could well account for the ash-filled molds. Because of the suitability of the site a second building was placed there following the destruction of the first. How long an interval may have elapsed between the fire and the new construction is not known, but there was nothing in the deposits to suggest that it was an appreciable one. Removal of debris from the fire and leveling of the site to prepare it for the new building could easily have been responsible for the disturbance of some of the trenches and the obliteration of the ends of others. It also could have destroyed evidence for a period of nonoccupation. Several years' accumulation of wind-blown materials probably would produce only a thin layer of sterile deposit.

Inside the trench-filled area was another of the rectangular pits with vertical walls and flat base, Feature 44, illustrated in plate 14, *b*, and figure 5. This pit was similar to those found earlier in the dig with the exception that it was more carefully built and of greater depth. Throughout the fill of this pit were the ever-present glass trade beads of various sizes and colors and square-cut nails. Again, we do not know the true function of such pits, for they may have served either as cache pits or wine cellars.

Two small shallow pits, Features 14 and 32, were uncovered at this level. They also contained glass beads and in one there was a single square-cut nail. Both were filled with ash-laden soil.

These two levels constituted the remains of the post temporarily occupied by the trader La Barge, and the preceding French Fur Trading Co.'s Fort Lookout II. They were not, as originally thought, the site of Fort Lookout I and the earlier Fort Kiowa.

Although the level of Fort Lookout gave little architectural data, enough remained to indicate that a rectangular log structure had been built upon the spot, allowed to fall partially into ruins, and later was burned. The debris was subsequently leveled to make way for the establishment of another trading post which was built directly upon the same spot. The two log buildings almost coincided in orientation, but the later one was alined slightly more to the north-northwest-south-southeast. The only truly diagnostic artifacts recovered from this portion of the site were the few copper percussion caps of a variety that possibly dates from 1822 to 1850, which correlated with the reported dates of the trading post's existence. Beneath the two historic horizons were two levels pertaining to aboriginal occupation. Since they unquestionably antedated the periods when the whites were in the area, they will not be discussed in the present paper but will be described in a separate report pertaining to the Indian cultures.

SPECIMENS

Among the artifacts recovered are objects both of European and Indian manufacture. A number of the European objects were found upon the surface. They could have been dropped or deposited there by soldiers from the subsequent, nearby, Fort Lookout Military Post, by settlers of a much later date, or by the Indian occupants of the Lower Brulé Indian Reservation. This, coupled with the fact that large herds of cattle grazed over the site, speeded the mixing of the later deposits. The artifacts found within the site display varying degrees of preservation and are certainly of 19th-century origin. During the excavations all artifacts, whether complete or fragmentary, were saved, also all samples of wood and the larger pieces of charcoal which might be useful in either establishing a tree-ring chronology for that section of South Dakota and the Missouri River drainage or in making carbon-14 tests.

The European objects throw some light upon the life of the period, but since the site was subjected to scavenging by the Indians and the soldiers, many of the more noticeable objects may have been carried away, leaving only those which lay beneath the sod. Trading posts were not primarily intended as "centers of culture," but they did serve somewhat in that capacity for the whites in the area. The houses were good indicators of the age. They were mostly crude log

cabins with earthen floors. Windows were either few and very small or totally absent. Doors were crude plank affairs hung on heavy hinges. The roofs were low and flat and were covered with earth and sod. All in all, they probably were dark and dingy but served exceedingly well the purpose for which they were built. Under such conditions luxury items were no doubt scarce and evidence for them is largely wanting. Most of the articles obtained represent commonplace objects which were used about the post or were for trade purposes. By 1830 trade items had become more or less stabilized in character and are not as sensitive indicators of the source of origin or period involved as formerly. However, they still have some significance.

Evidences of food which remained in the fill of the fire basins and numerous pits were the charred fragments of rabbit, bird, and an occasional fishbone, also charred beans, corn, and pits of wild plum and chokecherries. Noted for their absence were the remains of buffalo bones. Whether the occupants traded for Indian-made pemmican or just carried large pieces of buffalo meat back to the post for immediate consumption is a question archeology cannot answer.

HISTORIC ARTIFACTS

At the beginning of operations in 1950, Mr. Garth went over the entire surface of the site, carefully picking up all artifacts which were present. They included objects of iron, particles of glassware, fragments of chinaware, stone artifacts, slivers of bone, a few Indian potsherds, and the remains of an old leather shoe sole. Whether this assemblage of artifacts can be assigned to periods of occupation represented by buried material is questionable. In the series, such objects as axheads, iron-kettle fragments, butter-churn particles, etc., are not of sufficiently distinctive character to be differentiated from similar objects in use at the present time. A few of the items may be old, but most of these artifacts probably were never in the possession of the occupants of the two levels uncovered. Only the artifacts that were found in actual association with the two levels will be considered from the standpoint of historical significance.

TRADE BEADS

Various types of glass trade beads were scattered on the floor, inside various pits beneath the floor, or in the fill above the floor of the upper historic levels. Some workers contend that beads are variable enough in form and style to be identifiable according to period and also reflect their place of manufacture, but those found here do not help in that respect. None was ornate, such as the multicolored "Hudson Bay bead," sometimes called the "star bead," and most complex forms consist only of faceted or simple bicolored types.

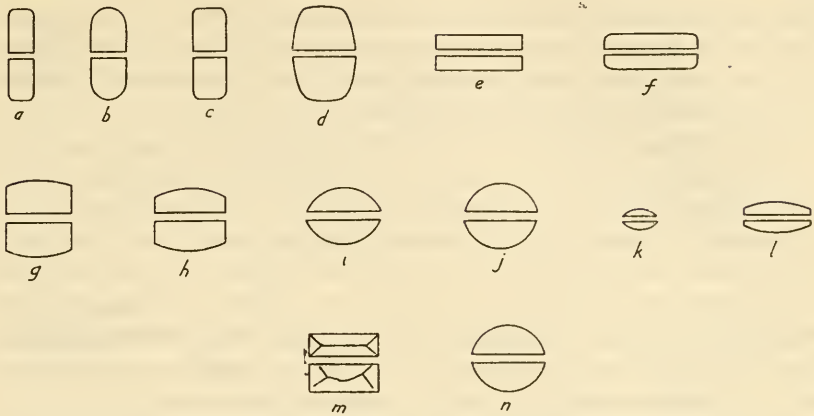


FIGURE 6.—Bead types according to shapes, showing cross sections of each.

Six hundred and fifty-nine beads of the various types make up the collection. For study purposes they were first separated into groups depending upon color alone. It was found that there were 49 green, 422 white, 128 blue, 11 red, 19 pink, 22 black, and 8 with a white core and a red outer coat. Next, they were separated according to shape within each color group and it was found that 14 different shapes were present (fig. 6). Sizing came next, and out of the total there were 225 of the "seed" form, those that did not exceed 2 mm. in diameter. Most of the colors present in the larger types were displayed by the seed beads with the exception of the black.

All seed beads were either type *a* or *b* (fig. 6) with the exception of a single specimen that was made from a square glass cane, the corners of which were slightly ground off, leaving rounded rectangular surfaces on the sides (fig. 7).

One interesting group, represented by 14 specimens, were the faceted beads. They ranged in height from 2.5 mm. to 10.0 mm. with corresponding diameters. Most of them were cut from a hexagonal cane and the facets appear to have been made by rubbing each small section against some abrasive object, thus creating a number of irregular facets over either the entire surface or a part of the surface. Two spheroid faceted beads are in the lot. They are crude and show the same irregularities in shaping that are displayed by the cylindrical specimens.

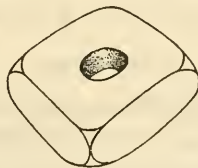


FIGURE 7.—Unusual square-cut glass trade bead.

The central perforations vary from 2 mm. to 3.5 mm. A number of these beads display some iridescence, especially the blue and black varieties, which may have resulted from lying in contact with potash derived from the wood ashes in the site.

In the white variety there is a wide range both in shape and size, while the color itself was not standardized and shows a range from a dead white through a mild greenish hue that shades off into a very light gray. According to the accompanying chart (fig. 6) all the white beads conform to types *a* to *i* and *l* with the greatest stress being placed on those from *a* through *e*. Types *a* through *f* were originally parts of slender glass tubes or canes which were segmented into individual beads and then fire treated to round and smooth off the rough edges resulting from the cutting of the tubes.

Glass beads were assigned definite trade values by the trader or fur company dealing with a particular group or tribe. This "value" fluctuated from locality to locality and from trader to trader. The Hudson's Bay Company, for instance, established a standard value which was "one made beaver" or the equivalent of 50 cents. The term "made beaver" was applied to a skin that had been processed ready for shipment to a tannery through the trader. When an Indian wanted to purchase a certain article in the trader's store he was told how many made beaver skins it would cost him. Two beads known to manufacturers as "Cornaline d'Aleppo" and to the traders of the North as "Hudson's Bay beads" had an exchange value of six beads for one made beaver. A transparent green bead and one of opaque yellow glass were of the same value. A light-blue bead had a value of three for a skin, and three other varieties two for a skin. A large bead of pale-blue opaque glass was the most expensive in the group, as a trader exacted two skins for it. The smaller beads known as seed beads were sold in "bunches" of five or six strings, each 4 to 6 inches long, according to the size and kind of beads, and having a weight of four or five bunches to the pound. The value of one bunch of seed beads at Fort McPherson was said to be one beaver. The value of beads outside of the fur trade of the North was not so definitely established (Orchard, 1929, pp. 88-89).

One thing certain is that all these types were in use during the period between 1820 and 1850, and that some of them are still being sold either on Indian reservations or in nearby towns where Indians make and sell beadwork to tourists and various shops.

TRADE PIPES

A fair collection of clay-pipe fragments was recovered from the floor of the upper historic level and in the fill above the floor. Forty-eight stem fragments and nine fragmentary bowls, some with portions of the

stems still intact, constitute the study series. Not a single whole pipe was found.

All pipes conform to a uniform pattern in style in that beneath the base of the bowl there appeared a short blunt spur too sharp for the pipe to rest upright upon (pl. 15). In most cases the spur was impressed with the initials "W" on one side and "D" on the other (pl. 15, *b, c, f,*). If the pipe was held normally in the mouth the "W" always appeared on the left side with the "D" on the right side. The letters lie along the same parallel plane and axis as the stem, with the tops pointing forward.

A double concentric circle was impressed on a single specimen in about the same position as the "W" and "D" on other pipes. The spur on this pipe forms a sharper angle with the juncture of the stem and bowl than the first variety (fig. 8). The bowl was impressed with a decoration of leaves and stems in half round that completely covered the exterior (pl. 15, *e*).

A third variety has an unmarked spur on the same configuration as the concentric circle variety but the bowls are plain with the exception of the initials "T-D," roman-type letters 5 mm. in height, which were impressed on the side of the bowl facing the smoker (pl. 15, *d*; fig. 8). No one has been able thus far to identify the manufacturer of this variety. All bowls are of a size and shape characteristic of the late 18th or early 19th century.

On two specimens it was noted that one had the spur worn down considerably on the left side, while on the other it was worn down on the right side. It was thought that this wear might indicate something of the smoking habits of the individual smoker showing that he was either right- or left-handed. When various pipe smokers were asked as to their habits in putting down their pipes after smoking, it appeared that this was not a valid deduction since some right-handed

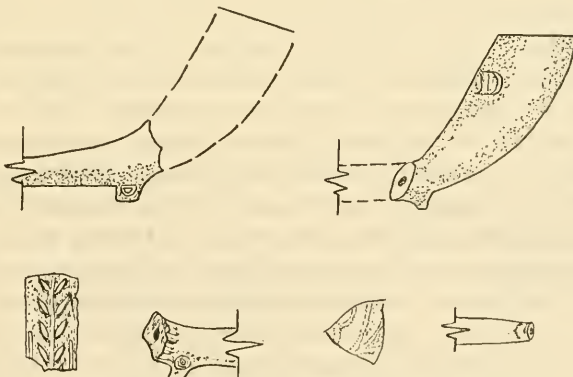


FIGURE 8.—Certain details of construction of various pipes.

individuals turned them one way and some another. Plate 15, *f*, shows the partial erosion of the spur on the "D" side of the pipe, or right side.

Plate 15, *h*, illustrates a small-bowl fragment of a reddish clay pipe that had the exterior bowl surface treated with an orange glaze. The bowl was fluted and all indications point to white manufacture, but whether it was a local product or an imported one is not known. No other fragments of this or other similar pipes were recovered.

CHINA AND EARTHENWARES

Only an occasional piece of earthenware was found on the floor level of the upper historic level. Material of this nature was not recovered from the lower historic level. Most of the pieces were sherds that did not have any identifying marks. Fortunately, a few had enough diagnostic decorative motifs to make possible identification of the ware.

Two kinds of 19th-century Staffordshire wares, the "molded shell" rim of the variety manufactured during 1815 to 1820 and a molded "woods" design manufactured during the 1815 to 1840 period, were found. Two interesting sherds of the "shell" rim type were found in the fill above the floor of the uppermost historic level. They had been shaped into rough disks and rubbed down by historic Indians who probably intended to use them as gaming pieces.

The fragmentary lid of a Chinese porcelain ginger jar came from this same level. Basically, its color is of a milk-white hue with slightly darker blue bands of color forming the decoration on the sides and top. Presumably this was not the usual type of ware traded with the Indians of this period but formed part of the possessions of the trader or persons living there. No age can be assigned to this fragment.

A single fragment of tortoise-shell ware was picked up from the surface of the site. It has been identified by C. Malcolm Watkins, curator of the Division of Cultural History of the United States National Museum, as Rockingham ware of the variety manufactured in Bennington, Vt., in 1849. According to the records, this ware was first manufactured in England and later spread to America, where it was made principally in New England. This sherd probably represents a later deposit upon the site after the trading post was abandoned. It could have reached the La Barge post at about the end of its occupancy, but it is not likely a dish less than 2 years old had reached South Dakota at that time. It seems more reasonable to conclude that it came from the adjacent military post of 1856.

Sherds of stoneware vessels were more common than the better class of chinaware or porcelain. Parts of jam jars, crocks, and bottles are represented in the collection. Fragments of vessels which were glazed with a salt glaze on a stoneware base were also found.

GLASS

Of the 50 fragments of glass recovered either from the surface or from the fill above the uppermost historic level, only a few could be attributed to the actual occupants of this level. All fragments came either from shattered bottles or windowpanes. Two types of window glass are represented. One is an early 19th-century variety which measures 1 mm. in thickness and is colorless. It occurred only in very small pieces within the contact zone. Three fragments of it came from the floor of the uppermost historic level. The other type is a much thicker glass—3 mm.—of a greenish hue, which was found on the surface. The latter fragments are much larger and there are many more of them. This type was first used during the latter part of the 19th century and is still being manufactured.

The early chroniclers indicated that windows and doors were rather costly items which whenever an outpost was abandoned were removed and taken to the next station or post. This may account for the paucity of thin window glass within the site itself. If any windows were abandoned, it is certain that many more fragments of this type of window glass would have turned up within the deposits from the two historic levels at the time of excavation.

Shoulder fragments from two small vials were found on the floor of the first historic level, but it has been impossible to determine the actual size or shape of the vials from these fragments. The glass is very thin, 0.5 mm., and colorless, and the surfaces are covered with a thin film of oxidized material which shines with a kind of iridescence.

Wine bottles, of an olive-green color, are represented in a very fragmentary state. Some pieces show deterioration while others exhibit no change in composition and appear as fresh as when new. A single small, thin fragment of a cobalt-blue bottle was found on the floor of the first historic level. It had undergone a limited amount of oxidization. Whether these changes in composition are attributable to soil acids in conjunction with wood ashes is not known, but a certain chemical action has taken place that has altered the original surfaces. No glass fragments showed secondary fusing which could have been caused by heat from the burning of the buildings.

Two ornate light-green glass fragments came from the surface of the site. One bears a series of curvilinear interlocking scrolls adjacent to the base of the container, while the other has a number of undulating parallel ridges running at right angle to the base, (fig. 9). Both pieces were molded and the color and composition are identical to that of the thicker window glass.

A complete two-sectional molded bottle, 131 mm. high and 49 mm. in body diameter, was picked up from the surface of the site (pl. 16).

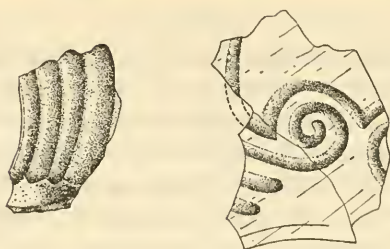


FIGURE 9.—Surface contour of molded glass vessels.

A marked amount of oxidation is present on both inside and outside surfaces. In certain types of glass such a condition can be brought about rather quickly by the action of direct sunlight and rain when an object lies in direct contact with soil acids. The presence of this change does not necessarily denote an age equal to that of either of the historic levels, and it is probable that the specimen is relatively recent.

BUTTONS

Various types of buttons were found. They occurred mainly on the floor area of the uppermost historic level, although an occasional one was in the fill above the floor. Materials used in their manufacture ranged from brass, bone, china, iron, and shell to some kind of base metal, probably pewter. Most of the buttons are of such a nature that very little information has been published about them. A number of "china" buttons of the type that were formerly used on men's and boys' shirts and girls' and women's shirtwaists and underwear are in the collection. They were molded in a biconvex shape with a slight depression in one face. They have four holes for the thread used for attaching them to garments. These buttons measure 11 mm. in diameter and from 2.5 to 4.0 mm. in thickness, (fig. 10, *a*). All are of a milk-white porcelain or glass, are very glossy, and are plain on both surfaces. Such buttons are not datable since similar ones can be purchased in local stores at the present time.

Two types of "mother-of-pearl" buttons were found. The earlier form consists of a perforated disk through which a centrally placed shank was attached. The lower end of the shank was pierced by a single hole through which the thread was passed to attach the button

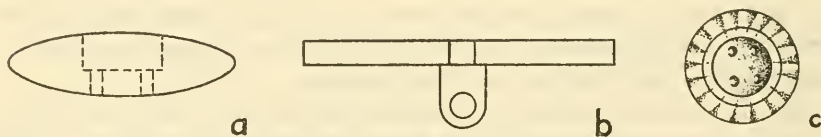


FIGURE 10.—*a*, Cross section of milk-white glass button showing well and holes for attachment. *b*, Pearl-and-brass button showing cross section. *c*, Details of surface treatment.

to the garment. On the upper surface of the button the top of the shank, 2 mm. in diameter, is centrally placed in the shell disk. Below the shell disk the shank was enlarged to 4 mm. in diameter. It extends beyond the base of the button for an equal length. By this method the pearl shell disk was firmly affixed to the brass shank so that there is very little chance of the two coming apart except through breakage or the application of force. A button of this type is illustrated in figure 10, *b*.

The later type of "pearl" buttons are small disks, 9 mm. in diameter and 0.5 mm. in thickness, ornamented with a number of slight serrations on the outer edge of the disk on the upper surface. These serrations enclose two plain concentric furrows which in turn surround the slight central well in which occur the four small perforations for the thread. Buttons of this type were more costly and were used almost wholly on ladies' dresses and shirtwaists, never on undergarments where they did not show. Mrs. Ford (1943, p. 151) tells us that: "They were expensive buttons when new, and if you inquire the price of fine pearly buttons in any store today, you will find that even plain ones are not cheap now." These buttons are very white with a pleasing iridescence.

Bone buttons are represented by four specimens. Buttons of this material have always been cheap and were usually made from waste or scrap bone. All specimens measure 17 mm. in diameter and are pierced with either 4 or 5 holes. Two of these buttons are perfectly plain and unadorned, while the other two have a slight raised circle surrounding the perforations and the edges have been somewhat rounded.

Iron buttons were rare. Only a single specimen, which resembles the china buttons in a general sort of way in shape and size, was found. Instead of the central well containing four perforations there are only two. This specimen is badly rusted and nothing can be said about the surface finish or what design may have appeared on its upper side. As a rule such buttons have a design molded or stamped on the upper faces.

Several sizes of brass buttons are in the collection. They range in diameter from 12 to 18 to 24 mm. The 12-mm. size was pressed into shape from a sheet of brass 0.5 mm. in thickness, the central well being formed at the same time. Later four holes were drilled to provide the means of attachment. The face of each is plain, but on the back are two concentric circles of slight depressions stamped into the metal itself. Since they do not show on the upper surface and can not be considered as a type of decoration, these circles must either have had some function in the fashioning of the button or have had a part in holding on a covering material.

In the 18-mm.-diameter buttons there are two very different shapes, a disk and a spheroid. The disk variety consists of two different grades. Both are of the same diameter and thickness, 1.0 mm., and on both a wire loop was brazed on the base for attachment. The better grade was made of a finer quality of brass and the disk, after being punched from the stock plate, had its edges slightly rounded and smoothed. Whether the disk was cupped ever so slightly at the time of punching or later on when the words "Warranted" and "H. Orange" were stamped on the reverse side cannot be determined (fig. 11, *a*). A very shallow circle separates the words from the outer

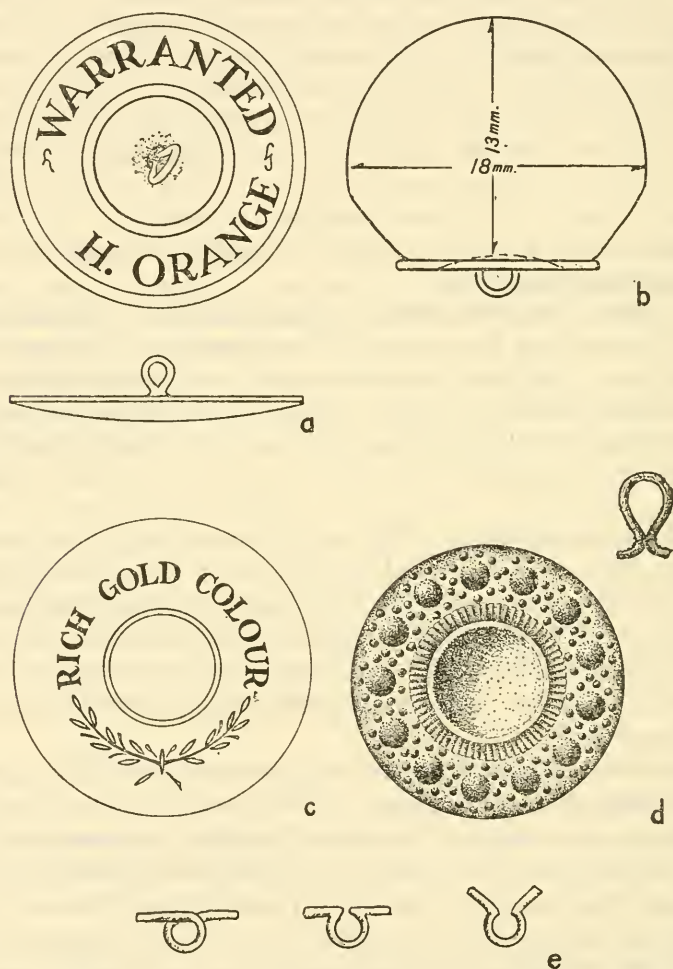


FIGURE 11.—*a*, Back and profile view of brass button bearing inscription, "Warranted H. Orange." *b*, Spheroid button of brass showing measurements and indentation of brass plate. *c*, Showing fine quality of brass button with the inscription on base. *d*, An unusually fine specimen of "French" brass button with its highly ornamented top. *e*, Types of wire shanks used with brass-button construction.

rim of the button, while two other shallow circles are between the words and the wire shank.

The poorer grade, in contrast to the better, is perfectly flat. The edges were smoothed but the face was not as carefully polished. On the reverse face there are no stamped words, but there are two rather shallow concentric circles immediately around the wire loop shank.

The spheroid type of this diameter was made in two pieces, a spheroid and a base plate. The spheroid's greatest diameter is 18 mm. while its height is 13 mm. At the base there was an opening 11 mm. in diameter which was closed by the base plate, the latter slightly beyond the exterior limits of the spheroid. The base plate measures 13 mm. in diameter and is slightly saucer shaped. A wire loop for attachment was brazed in the central concavity. One complete specimen and another lacking its base plate were found (fig. 11, *b*). Buttons of this type were either highly polished so that the brass shone or were covered with cloth which matched or were in contrast to the garment on which they were placed.

The 24-mm. button is a flat disk 2 mm. in thickness which resembles the smaller "Warranted" type but instead the words "RICH GOLD COLOUR" (fig. 11, *c*) appear on the reverse in conjunction with crossed branches of laurel. Two concentric circles surround the brazed-wire loop shank. The top surface was carefully smoothed and probably at one time had a gilt surfacing or wash because slight traces of such a treatment can be seen under a hand lens. In that connection it is said that:

Most of the early brass buttons were gold plated. The process of dipping brass buttons in a solution of gold and mercury, a discovery of about 1700, made this much easier, and other improvements were also made until it was said that in 1818 the Birmingham manufacturers had succeeded in gilding a gross of buttons with three pennies worth of gold "and" the account adds, "experiments of gilding buttons without any gold have been tried."

The popularity of the gilt button lasted from 1760 to 1840 when electrogilding, discovered in 1840, so cheapened the quality that all demand for them ceased. Electroplating was not so durable as the older methods of plating and tarnished more easily, and there is no wonder these buttons lost their appeal—they were an altogether inferior product. [Ford, 1943.]

A small button with a top of brass and a base plate of iron measures 13 mm. in diameter and 2 mm. in thickness. The top is embossed with a series of small knobs surrounded by a number of smaller nodes. These combinations appear adjacent to the outer rim of the button while the central portion is formed by a slight ridge surrounding a central saucer-shaped depression. The repousse design was stamped onto a thin brass plate which in turn was crimped over and around a circular iron base plate which was perforated. A false loop of brass wire was inserted in the perforation. This button is illustrated in figure 11, *d*.

Mrs. Ford (*ibid.*) states that brass buttons were manufactured well before 1700 and were considered old by that time. The first type of brass button was cast in one piece having a conical or wedge-shaped protuberance on the back which was drilled to provide a means of attachment. At a later date a wire loop was brazed to the back of a flat disk or blank. This joint was rather insecure and the loop frequently broke away from the disk. To overcome this defect the wire was bent into either a true loop or a false loop and then brazed into position on the button (fig. 11, *e*).

The shanking of a button was one of the most important operations in button-making, and separate companies were established simply for the making of shanks. The button manufacturers bought them ready to apply. This continued to be so until about 1860.

Of the wire loop shanks the earliest were hand-drawn wire, which was not perfectly round and was finer than that used at a later date. This shank was apt also to be oval rather than circular. The applying of shanks individually with a blow pipe and "flux" continued until about 1850, and was considered to be one of the most important and specialized operations in the entire making of the button.

The rolling of brass brought a great advance in button-making. This process was first tried in the United States in Waterbury in 1790—somewhat earlier abroad. Now buttons could be stamped from sheets, or strips of metal, and quantity production was easier. [Ford, *ibid.*]

"Red metal" and "Prince's metal" are two varieties, the former being used in the button trade. Birmingham, England, originally famous for its iron work, acquired a reputation for brass buttons. Gold lace had long been conspicuous for ornamenting riding-dresses, and, as it grew old-fashioned, its place was taken by brass buttons. The eighteenth and the first part of the nineteenth centuries may be called "the brass button era." [Moore, 1933.]

Two pewter buttons were found in the fill above the floor of the uppermost historic level. These are rather interesting in that one of them shows a certain degree of deterioration while the other is as bright and lustrous as new. They are 17 mm. in diameter and 2 mm. in thickness. There are four perforations in each which are not truly round but slightly elliptical in outline. The buttons were made in a mold to which a shank was attached. Mold marks do not show on the face of the button but are readily seen around the rim and on the back. Before the button could be put into use the shank had to be clipped off close to the back. Since the back was not smoothed over afterward a scar is to be seen in the place of the shank.

Pewter buttons have been used a long time. Generally buttons of this type were used by the lower classes or were sent to frontier posts as articles of trade. There are various types of pewter, depending upon the kinds and amount of metals used. In England the proportions of metals were rigidly regulated and enforced and this same

control was put into force among pewter button manufacturers in this country. Some of the early pewter buttons were marked "Hard White" or "Imitation Steel" to indicate quality, but this did not necessarily denote their hardness, for even the hardest pewter was a soft metal which was cheap and easy to melt and cast. Buttons of this material have been cast at home from discarded pewter vessels which were no longer serviceable as such. A number of homes had their own button molds in which they made their buttons. These molds were lent around to other families so that professional button manufacturers did not wholly control the markets.

At one time during the late 16th and early 17th centuries, buttons were willed to members of the deceased's family. Such items were fully described as to use and material from which they were made.

PINS

Two brass straight or ordinary domestic pins were found. One was on the floor of the uppermost historic level while the other was in the earth fill of a pit beneath the floor of that level. Both are covered with verdigris along with tiny particles of soil adhering to the surface. One is complete and its overall length is 31 mm.; 1.5 mm. of this is taken up by the head which tapers away from the shaft and is topped with a slightly curved cap. Pins of this type were molded all in one piece. The other pin has lost its head and the remaining shaft measures 29.5 mm. in length. Both pins measure 1 mm. in diameter.

During the Middle Ages the ordinary domestic pin, which has long been an article of feminine economy, was made of brass. In the fifteenth century it had become of so much importance as an article of commerce in England that in 1483 the importation of pins was forbidden by statute. Only the best pins were made of brass, for there were inferior ones made of iron wire blanché, and it was against these that the enactment was directed. By 1636 the Pin-makers of London formed a corporation, and the manufacture was subsequently removed to Bristol and Birmingham, the latter town becoming the principal centre for the industry. Brass works or foundries had been started in Bristol in 1702, and by a man named Turner, in Birmingham, about 1740.

The earliest settlers in America were dependent on London for their pins and needles, and there are few lists sent over by them which did not include an order for one or the other of these articles. They were not sold as now, by the paper, but by the hundred.

So necessary were pins that it was not long before the colonists appreciated the benefit to accrue to them by their manufacture, and the people of the Carolinas were stimulated by the offers of prizes for the first-made pins and needles. This was by 1775. At a later day than this several pin-making machines were invented in the United States, and during the war of 1812 the price of pins rose to such an extent that the manufacture was actually started, but it was not particularly successful until 1836. By 1824, however, Mr. Lemuel Wright, of Massachusetts, had patented a pin-making machine in England, which established the industry on its present basis. [Moore, 1933, pp. 121-123.]

Pins at one time were rather expensive and were handmade. Shafts were made separate from the heads. Heads were attached by winding loops of very thin wire around the butt end of the pin shaft and slightly tapping them to tighten and to shape them into a knob. Pins were passed down in wills during early Colonial times and listed as articles in dowries. The examples found at Fort Lookout II do not belong in that category, however, as they appear to be relatively recent.

ARTICLES OF BRASS, COPPER, AND LEAD

A number of brass cartridge cases, together with numerous lead rifle balls and shot, were recovered both from the surface of the site and from the fill above the floor of the uppermost historic level. Mendel L. Peterson, head curator of the Department of Armed Forces History, U.S. National Museum, identified the various cartridge cases.

One is a Henry Flat, of 44 caliber, manufactured by F. Tyler Henry during the mid-19th century. The base of the case is marked

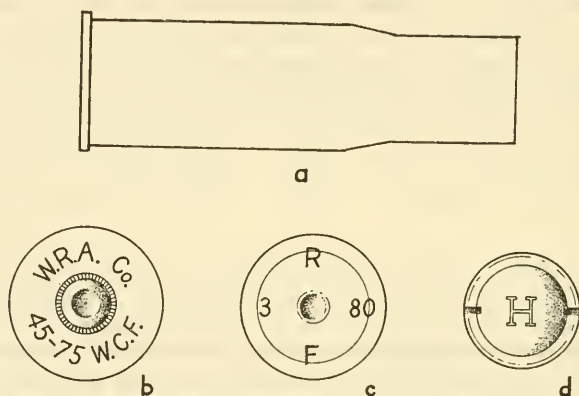


FIGURE 12.—*a*, Cartridge case of Winchester-type shell from upper historic level. *b*, *c*, *d*, Basal configurations of three cartridge cases.

with the capital "H" and bears two bars, one on either side of a beveled rim that represents the points of pressure that were brought about to detonate the cartridge (fig. 12, *d*). The case measures 11.5 mm. in barrel diameter, 13 mm. in diameter at the base, and is 24 mm. high. At the time the cartridge was found it had been inserted into the cylinder of a larger cartridge case which bears the following marks upon its base: "W.R.A. Co." and "45-75 W.C.F." (pl. 17, *b*).

This cartridge has been identified as belonging to a 45-75 Winchester rifle, Model 1886, single shot firing a shell of 350 grains. This case measures 48 mm. in its overall length and for 29 mm. of that length has a diameter of 14 mm. The case then gradually

tapers inward for 5 mm. until it again forms a true cylinder for 14 mm. and measures 12 mm. in diameter. The base itself measures 16 mm. in diameter (fig. 12, *a*). These two cartridge cases formed some sort of a carrying compartment either for needles or pins. Whether it served as part of some trapper's outfit or belonged to some of the local Indians is not known.

The third cartridge case bears the following marks on the base: at 12:00 noon there is the letter "R"; at 3:00 o'clock there is the figure "3." This indicates that the cartridge was issued in March 1880 from the Frankford Arsenal. It is a central primer, a type known as the Benet Primer—.50 caliber. The cartridge case is 54 mm. long, 13.5 mm. in diameter, and the base measures 16 mm. in diameter. This cartridge case is illustrated in plate 17, *a*, and in figure 12, *c*.

Most of the cartridges (surface finds) were of the types used by the United States Army during the late 1860's and early 1870's and may have been used with an Allen alteration rifle (.50-.70 Winchester). Such objects as these could have been discarded by the occupants of the nearby military post, which postdates the trading post.

The copper percussion caps are of a type used with pistol and musket and manufactured after 1820.

Associated with the armament were a number of musket balls (pl. 17, *e*, *f*), a single lead slug (pl. 17, *g*), as well as a number of leaden shot. The musket balls ranged in caliber from 50 to 63-64. The slug was part of a 45-caliber cartridge, while the shot was of the "dropped" type. One musket ball still retained the attached shank which was formed in the mold (pl. 17, *b*), indicating that it had been either lost or discarded for some reason before being completed.

A number of small lead strips were in the upper fill. Apparently they were just nondescript pieces and had been discarded as useless because of their thinness and small size.

Objects of brass and copper were at a premium. A small section of twisted brass wire, a number of brass rings for pierced ears, as well as the brass buttons previously described, were found on the floor of the uppermost historic level.

The brass earrings consisted of a fine brass-wire ring to be inserted through a pierced ear lobe. On the shank of the wire ring was a small brass ball, 3 mm. in diameter, from which was suspended a cone-shaped spangle 8 mm. long. The open-based cone with slightly flaring lower edge was suspended by its apex from the solid brass ball. Objects of this nature were rather highly prized by both the Indians and whites.

IRON

Hardware makes up most of the iron remains: nails, staples, ax-heads, hinges, and other objects, some of which are recognizable while others are so fragmentary as to make identification virtually impossible.

Nails and spike shafts, usually square in cross section, range in length from 2.5 cm. to 15.0 cm. Apparently there was no standardization as to length since there is variation within groups. Heads of both handmade and machine-cut nails are not constant in shape. Roughly the machine-cut nails are more nearly rectangular in outline with either square or slightly rounded corners. The handmade variety tend to have more of a roundish head with the tops either pyramidal or truncated-pyramidal in outline.

A number of short nails, 4.8 cm. long, whose shafts are roughly circular, bordering on square, in cross section, have a large mushroom-shaped head. They are definitely of the handmade variety. They were used in places where there was danger of the common variety pulling through the wood. Such large heads preclude this possibility. One has the shaft brought down to a very nice tip, but the majority are of the blunt-tipped variety.

In addition to the nails are a number of U-shaped staples which were fairly large and were used with various hasps (pl. 18, *c*, *d*). One of the larger examples measures 94 mm. in length and shows that it definitely was hammered into shape, while a shorter specimen, 70 mm. in length, is more regular in outline. There are no hammer marks on the shafts and the tips have been drawn to even points. This suggests a machine-made article. The latter was found rather high in the fill above the trading post, while the handmade staple came from the level belonging to Fort Lookout II.

Assigning dates to either nails or staples is not a practice to be commended, but in this case it is known that most of these objects were in use between 1800 and 1850. Nails and staples have been made and used over a long period of time and some nails are still being handmade in the vicinity of Chamberlain, S. Dak. Square machine-cut nails are sold in various hardware stores under the term "case-hardened" nails.

A single, small brass-headed tack, commonly used in upholstery work, was found within the fill above the floor of the trading post. Unfortunately, such tacks are not diagnostic enough to indicate any particular time period. Similar tacks were used in the 17th century at Jamestown Island, Va., to trace out various decorative patterns on boxes and furniture, yet are procurable at most hardware stores at the present time.

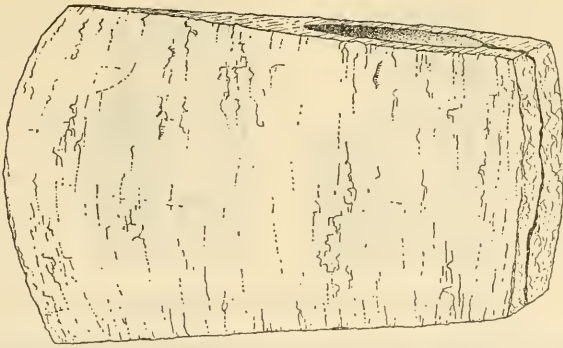


FIGURE 13.—Hand-forged axhead, showing split butt end.

Two axheads that have all the earmarks of being hand-forged were recovered from the surface of the site. One is so badly battered that the butt end has been completely obliterated, leaving only a small portion of the cutting edge intact. This undoubtedly was brought about by using the axhead as a wedge. The pounding on the butt end had mushroomed the metal until less than half of the entire head remains. The other specimen is in much better condition. The butt has been split as though the metal was initially two pieces and was welded to form the haft opening by bringing the two pieces around to form the butt. In doing this the two parts were not successfully welded and a weakness was present which became apparent through usage. This seems to have been a common fault of axes of this type (fig. 13).

A number of hinge fragments were also found on the surface of the site. They can be classified as either butt or strap variety. The strap hinge is definitely of local manufacture. Some blacksmith, possibly with limited experience, formed the loop through which the suspending staple was inserted. The welding was crude and the adjoining surfaces rough. The butt hinge is a machine-made object of a type procurable at the present-day hardware stores (fig. 14) and is much later in time than either the trading post or the fort and must have been deposited after both of those establishments were abandoned.

Pieces of wagon furniture were found on the surface. Included are the reinforcing band of a whippetree and a rectangular band, round in cross section, which was used in the construction of a wagon (pl. 18, *e, f*).

Knife fragments were recovered from the floor of the trading post. Only one had an incised bone handle of the table variety (pl. 18, *o*). Another had the fragmentary tag of the blade with the handle shaft intact. All material covering the shaft of the latter had either burned

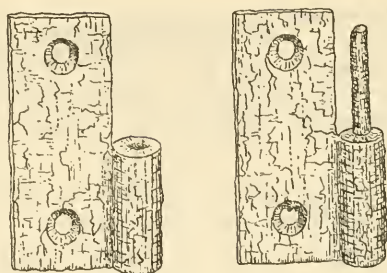


FIGURE 14.—Machine-made hinge fragments.

or rotted away. This type of knife is typical of the time period of the trading post.

Iron scrap and blacksmith discards were among the miscellaneous iron objects. Short blunt pieces showing chisel marks where they had been cut from larger stock, sectioned bolts, sections of strap bands with or without holes, cast-iron kettle fragments, and an occasional small section of rods make up the collection. One section of a cast-iron object, having the incomplete word “. . . POCASSET . . .” imprinted on the slightly excurvate surface, either came from an old stove or was the lid of an old Dutch oven. None of the iron is very diagnostic of any particular time period.

TRAIT LIST OF THE HISTORIC ASPECT

Community plan activity:

- Settlement on plateau accessible to river and plain alike
- Basin-shaped firepits
- Fire-hearth areas
- Midden pits, frequent
- Cache pits, absent
- Traces of log molds designating structural areas, rectangular in outline
- Niobrara chalkstone fireplace footer

Technological and artistic activity:

China and earthenware:

- Staffordshire ware of the period 1815-40
- Rockingham ware of period 1849
- Brown-glaze earthenware bottles
- Green-glaze earthenware crocks
- Brown-glaze earthenware crocks
- Porcelain ginger jar lid decorated with bands of light blue
- Porcelain buttons

Glass:

- Trade beads of various sizes, shapes, and colors
- Window glass:
 - Colorless—thin
 - Pale green—thick
- Vials, thin, colorless glass
- Bottles, olive-green color, assorted with rum or wine bottles
- Bottles, pale green, mold cast, with decorative raised designs

*Technological and artistic activity—Continued**Metal:**Iron:*

Nails and tacks
 Handmade
 Machine-cut
 Wagon furniture
 Cast-iron kettles
 Axes
 Hinges
 Bolts
 Perforated strap iron
 Knife blades
 Blacksmith-shop discards
 Pot handles
 Iron rods
 Hooks
 Staples
 Fireplace tong fragments (?)

Lead:

Musket balls
 "Dropped" shot
 Slugs
 Thin sheet fragments

Copper:

Percussion caps

Brass:

Buttons
 Tack heads
 Earrings
 Cartridge cases
 Wire
 Pins

Peewee:

Buttons

Shell:

Buttons

Bone:

Buttons
 Knife handles

INDIAN ARTIFACTS

A catlinite pipe-bowl fragment was found in the fill above the floor of the trading post. It does not indicate that it was ever smoked. The surface of the bore is perfectly clean and shows the "rifling" left by the drill. Whether this fragment was brought up by gopher action, which was noted in parts of the site, from a deeper deposit, or was dropped there later could not be determined, since it was collected during the earlier excavation. It is the only piece of catlinite found in the historic horizon. Whether it formed a part of a tubular, a platform, or an elbow pipe could not be determined. It definitely is of Indian origin and may represent a discarded fragment from a pipe which broke during manufacture.

A number of other Indian stone artifacts, mostly surface finds, came from the historic levels. They include small, thin, triangular projectile points of the late Mississippia type, a number of crudely chipped knives of Bijou quartzite, two amorphous standstone hones, an arrow-shaft straightener, and a number of snub-nosed scrapers. This whole assemblage of artifacts could be attributed to various elements of late Siouan groups who controlled that section of South Dakota.

SUMMARY AND CONCLUSIONS

During 1947 Merrill J. Mattes, of the National Park Service, History Division, made a historical survey of the Fort Randall Reservoir area. Part of this program was an effort to determine the site occu-

pied by Fort Lookout Trading Post and the preceding Fort Kiowa. From the various records he was able to amass data describing, in general, the appearance of the trading post and some definite dimensional information about Fort Kiowa. The trading post was reported to have consisted of a number of buildings surrounded by a stockade. In the course of the survey, Site 39LM57 was tentatively identified as the location of Fort Lookout I and Fort Kiowa and excavations were recommended.

The excavation and study of the site during the summers of 1950 and 1951, as far as the historic aspect is concerned, may be summed up under the following categories: (1) The uncovering of tangible remains of white man's occupancy, with evidence for two trading-post installations; (2) the obtaining of fragmentary details of the structures present; (3) the recovery of the various artifacts of white man's origin; and (4) the results and conclusions derived from this data.

The archeological evidence showed that there had been a rectangular structure, roughly 70 feet long by 20 feet wide, which had been partially destroyed by fire after the building had fallen into ruin. Scattered over the area were numerous rusty nails, either handmade or machine cut, fragmentary and whole trade beads, buttons and other artifacts such as one would expect to find in and around an abandoned structure of this kind. Beneath this level, separated by a thin, sterile layer of coarse sand and loess, was evidence of an earlier white man's structure of approximately the same size and orientation as the later building. It also had suffered from fire, and the area appeared to have been leveled so that another structure could be erected upon the same spot. From the appearance of the overall accumulation of debris, the earlier structure was not occupied any great length of time. The data are insufficient to reconstruct either of the two. There was no evidence that a stockade had surrounded the buildings of either occupation. It appears that the structures were built of logs, possibly cottonwood or willow since these grow profusely in the bottoms, with no brick or stone employed, with the exception of the chalkstone fire-place footer. In each case the roof probably was flat, covered with turf and a coarse gravel, and the gaps between the logs in the walls were chinked with clay. The chimney was a mud-stick affair. In other words, these structures were typically pioneer or frontier in form. If windows were used, they, together with the doors, must have been removed at the time of abandonment because practically no window glass was found and little of the hardware used on doors was present. Whether the few iron staples found had been attached to the doors or to the door jambs could not be determined.

Artifacts belonging to the two trading-post horizons were not numerous. Indians, who may have occupied the abandoned building or buildings for a short time, might have picked up scattered artifacts,

and that would account for their scarcity. In actual numbers, glass trade beads were the most plentiful. A number of them resemble some of the Hudson's Bay Company's types. A deep-blue, smoothed round bead, which occurred fairly frequently throughout the site, has been assigned a date of about 1825 in sites in the Northwest. It could have reached South Dakota somewhat later; its presence there fits reasonably well within the known span of occupancy at Site 39LM57. The white beads with their pleasing iridescent sheen resemble "pearls," which may account for their popularity. Iron nails, at this period, were undergoing a technological change with the introduction of the square machine-cut variety. Formerly most nails were handmade and were usually produced at a local forge. Both varieties were found in the trading-post levels. Machine-cut nails came into vogue sometime during the late 1830's and early 1840's and their presence here helps to date the deposits. The remaining types of artifacts are of such a general nature that it is not possible to use them as time indicators.

The excavations at Site 39LM57 have contributed to historical knowledge of this area in South Dakota in that they definitely established the location of an Upper Missouri trading post, namely Fort Lookout II, 1831-40, of the French Fur Trading Co., and the La Barge post of 1840-51. This becomes one of the few early trading post sites so identified. The main artifacts group well within the 1800-1850 period.

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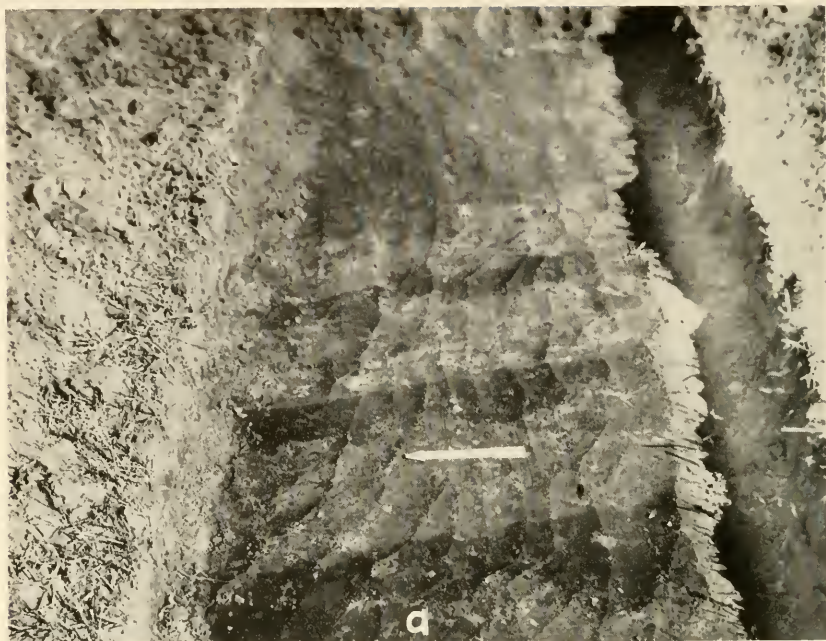
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a, At the start of the excavations. Looking northeast across the bottoms adjacent to the west bank of the river. *b*, Erosional ditch which delimited the site along its southern edge and the tree covering of the bottom lands.



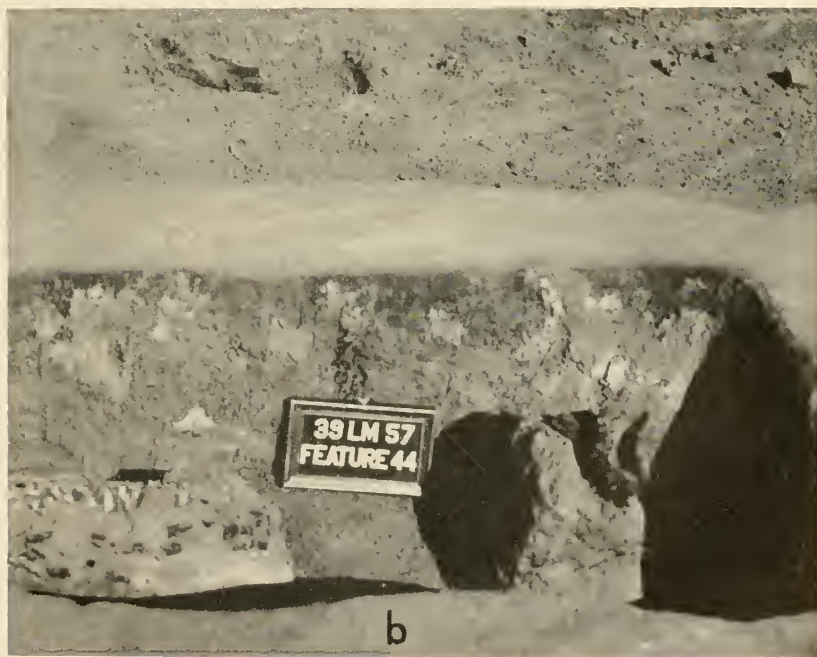
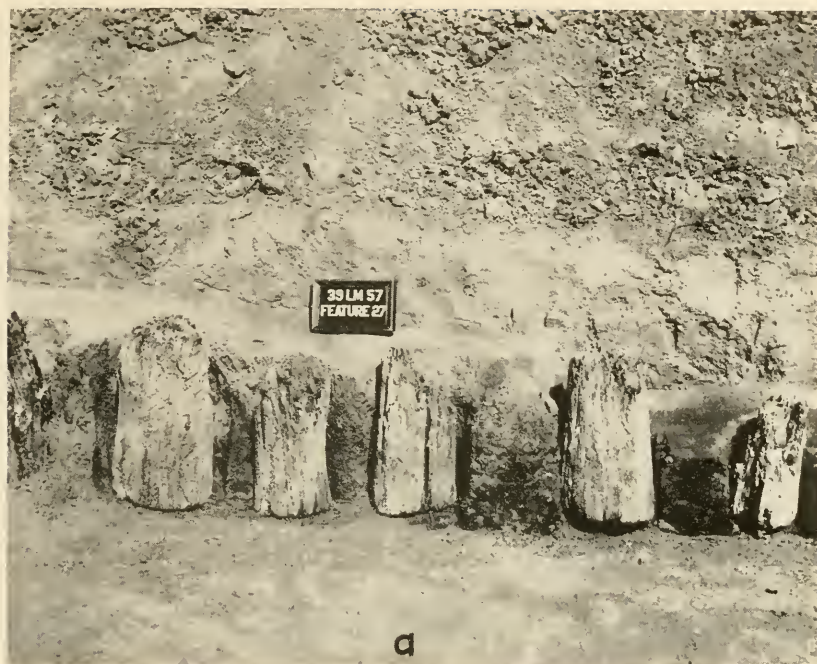
a, The arrangement of the parallel darkened earth-filled shallow trenches which gave the first inkling of the remains of Fort Lookout. *b*, Remains of charred timbers in association with the chalkstone fireplace footer resting upon the floor of Fort Lookout Trading Post.



a, View showing depth and outline of rectangular "wine cellar." *b*, A cache of fire-broken stones, Feature 43, resting upon sterile loess. Such caches were not common but were frequent enough to warrant notice.



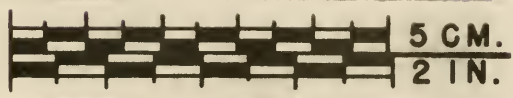
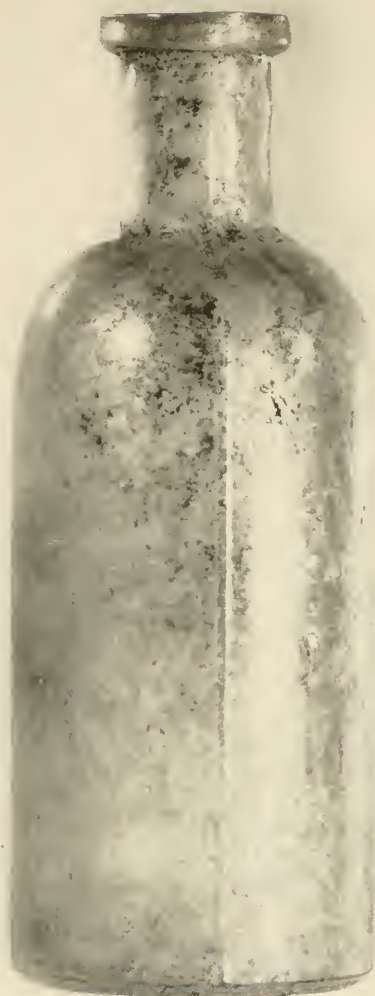
a, Men cleaning off floor of Feature 27, a large rectangular upright post structure belonging to preceding Indian period. *b*, Sectioning post molds to determine original depths.



a, Butt ends of original posts in situ in north wall of Feature 27. *b*, Outline and contents of charred wood of Feature 44 with a slight suggestion of plaster used on west wall of pit.



Fragmentary white clay trade pipes from the Fort Lookout Trading Post horizon.



A two-mold glass bottle from the surface of the site.



a



b



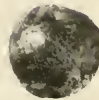
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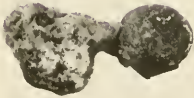
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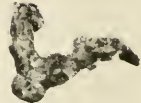
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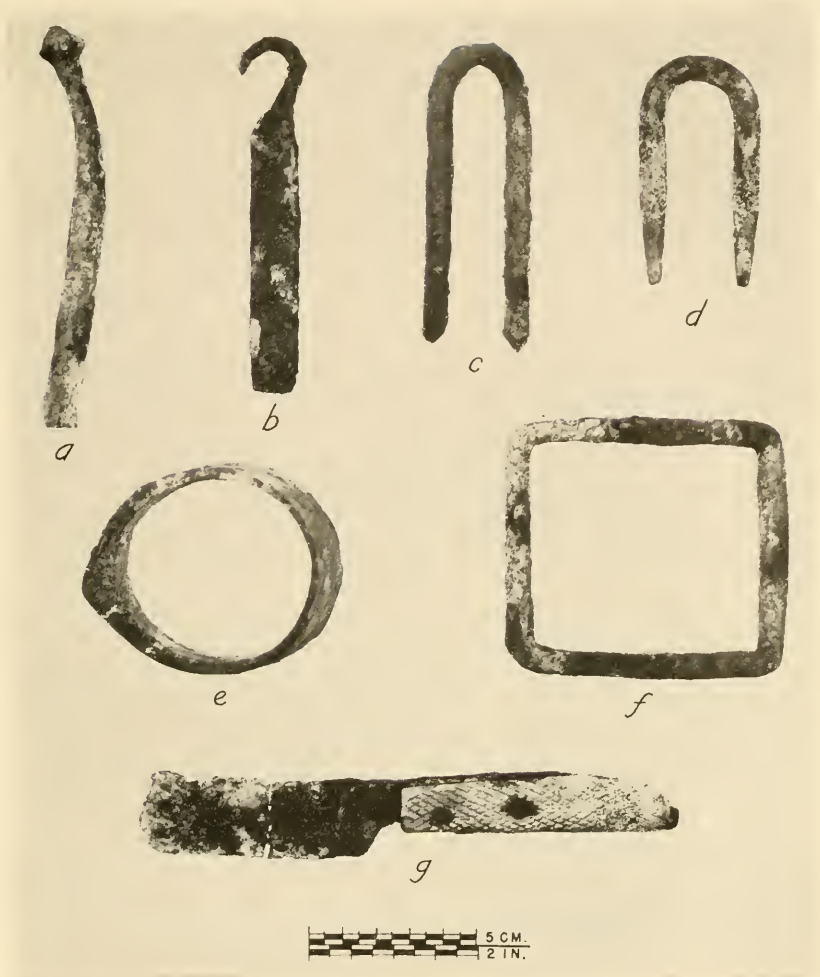
i



j



Brass cartridge cases, musket balls, and slug, as well as an individual gun flint.



Various iron objects from the floor or fill above the Fort Lookout Trading Post level.