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River Basin Surveys Papers, No. 19  
Archeological Investigations at the Site of Fort Stevenson  
(32ML1), Garrison Reservoir, North Dakota

By G. HUBERT SMITH

Appendix

By CARLYLE S. SMITH

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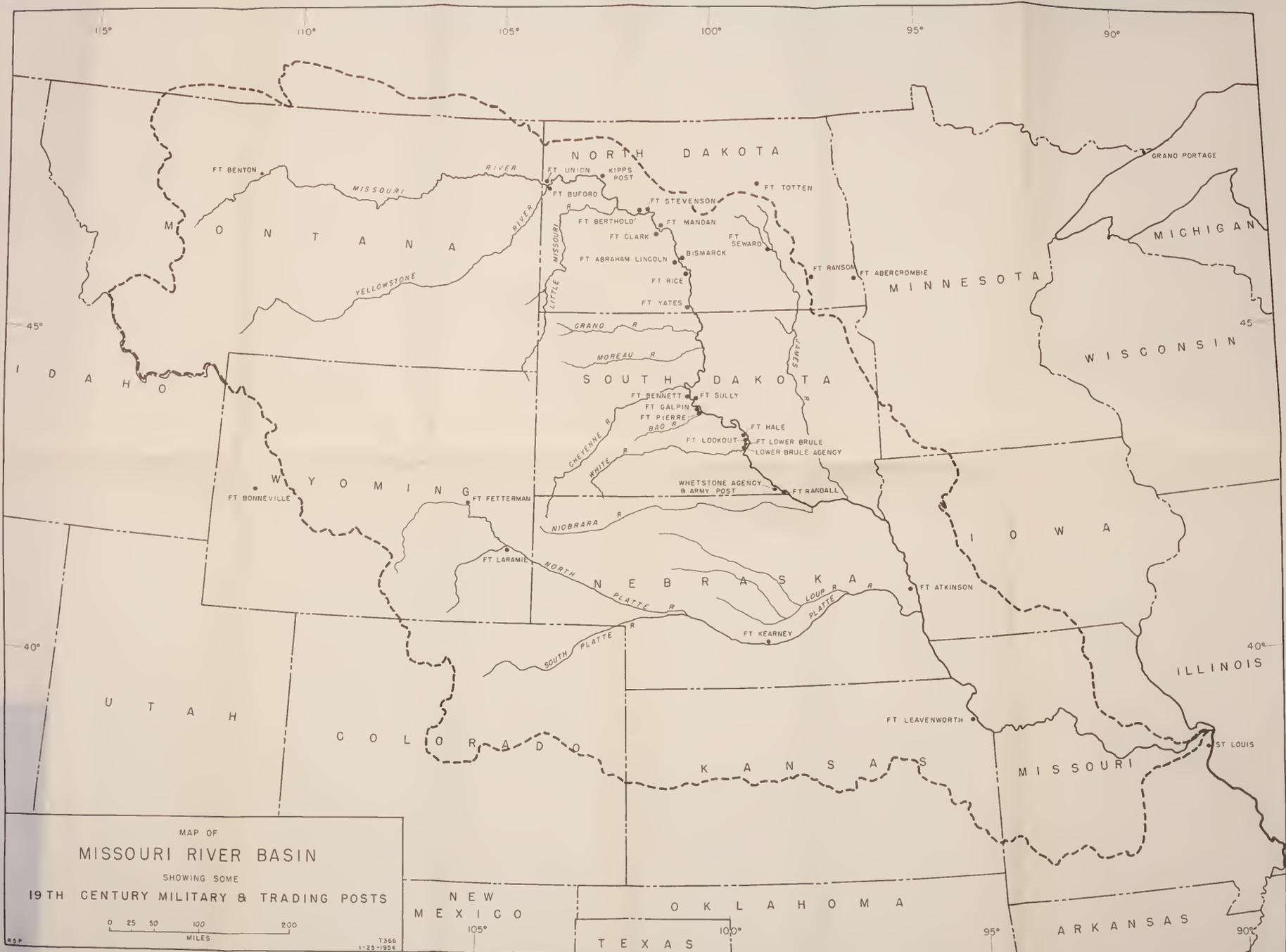
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Map 3 — Map of the Missouri River Basin showing locations of some of the 19th century military and trading posts especially along the Missouri River in North and South Dakota.





# ARCHEOLOGICAL INVESTIGATIONS AT THE SITE OF FORT STEVENSON (32ML1), GAR- RISON RESERVOIR, NORTH DAKOTA

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BY G. HUBERT SMITH

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## FOREWORD

The Garrison Dam and Reservoir, a Corps of Engineers project, on the Missouri River in west-central North Dakota, has inundated the immediate valley of that river from just below the city of Garrison nearly to the Montana State line. Within the now flooded area were formerly located a large part of the Fort Berthold Indian Reservation, as well as the Fort Berthold Agency town of Elbowoods; the town of Sanish; and the communities of Nishu, Independence, and Shell Creek. There also were the remains of several important 19th-century military and trading posts, many Indian village sites of the past several centuries, and some significant geological outcroppings and fossil localities. Because of this the Garrison Reservoir area was one of major concern in the Inter-Agency Archeological and Paleontological Salvage Program.

The Missouri Basin Project of the Smithsonian Institution began an archeological reconnaissance of the area in 1946. This consisted of a brief visit by Paul L. Cooper and J. Joseph Bauxar, staff archeologists. An intensive archeological reconnaissance of a part of the area was undertaken in 1947 by Marvin F. Kivett, archeologist of the Missouri Basin Project staff (now director, Nebraska State Historical Society Museum). Seventy archeological sites were located. Subsequent field reconnaissance in 1950 and 1951, principally by George Metcalf of the Missouri Basin Project staff (now of the U.S. National Museum staff), located 84 additional archeological sites in the portion of the reservoir's area not previously surveyed. The majority of these sites were of Indian origin, but several were of White settlers, or, as they have been called, historic sites. Paleontological parties examined the area for fossil materials with good results in 1950, 1951, and 1952.

As has been pointed out elsewhere (Mattison, 1951, p. 2), one of the most important sites in the Garrison Reservoir area was that of Fort Stevenson, an American military post of 1867-83, which was used as an Indian school from that date until 1894. When the intensive archeological reconnaissance of this reservoir area was begun in 1947, the site of Fort Stevenson, in present McLean County, was an obvious point of departure. The site was designated 32ML1, in accordance with the trinomial system of designation employed by the Missouri Basin Project.

Excavation of some of the archeological sites of major importance in the Garrison Reservoir area was begun in 1950. In that year a Missouri Basin Project party, under the direction of G. Ellis Burcaw, began excavation of the Rock Village site (32ME15). The same year, a party from the State Historical Society of North Dakota, under the direction of Glenn Kleinsasser began excavation of the Like-a-Fishhook Village site (32ML2).

In 1951 excavation activities in the Garrison Reservoir area were expanded. The 1950 excavations, concerned with the two native earth-lodge village sites of the historic period, were continued by the same agencies under the field direction of Donald D. Hartle and James H. Howard, respectively. After completing the work at the Rock Village site, Hartle and his party began excavation of the Star Village site (32ME16). The same year a party from Montana State University under the direction of Carling Malouf excavated at three sites of Indian provenience (32ME43, 32ME54 and 32ME55). It also became possible, in 1951, to give attention to some of the historic sites, especially Fort Stevenson (32ML1). This site, though primarily of White provenience, had a direct bearing upon the native history of the entire region. Excavations were carried out there by a Missouri Basin Project party under the direction of G. Hubert Smith. Other fieldwork of the 1951 season included testing of several sites of Indian origin and one historic site, that of Kipp's 1826-27 trading post (32MN1) by the Missouri Basin Project reconnaissance party.

In 1952 James H. Howard continued excavations at the Like-a-Fishhook Village site (32ML2) for the State Historical Society of North Dakota. G. Hubert Smith and a Missouri Basin Project party, at the same time, began excavation of another portion of the same site (32ML2), the remains of a trading post known as Fort Berthold II (originally called Fort Atkinson). Donald D. Hartle, with another Missouri Basin Project party, excavated a butte-top village site known as Night-Walker's Butte in the Bull Pasture (32ML39), and tested the smaller site of Grandmother's Lodge (32ME59). Carling Malouf and a party from Montana State University excavated at five sites of Indian provenience (32MN5, 32MN7,

32MN8, 32MN9, and 32MZ1). The work of Montana State University and that of the State Historical Society of North Dakota in 1951 and 1952 were carried out under cooperative agreements with the National Park Service.

Owing to sharp curtailment of funds there was only one small project in the Garrison Reservoir area in 1953. That was the continuation of work at the Grandmother's Lodge site (32ME59) by a small party from the State Historical Society of North Dakota under the direction of Alan R. Woolworth.

During the several years of accelerated field activity, brought about by the emergency situation of dam construction, the Garrison Reservoir area provided much important information on American frontier history, American Indian prehistory, and paleontological distribution of fossil animals. Of these, not the least important is the period of American frontier history. The application of archeological field methods to the study of sites of White provenience such as that of Fort Stevenson is not new in American studies. It has long been realized that broader bases of White history in the New World can often be supplied through site excavations. Notable examples are Jamestown, Va., and Grand Portage, Minn. In one sense, though, the work at Fort Stevenson was a pioneer effort in historical studies on the upper Missouri.

It may, at first consideration, seem a waste of time and money to excavate a site about which contemporary records tell so much. Yet verification of those records for a military post of as much importance as Fort Stevenson is significant, especially when the documentary evidence is materially supplemented by the findings in the excavations, as was the case here. Fort Stevenson had its very reason for existence in the native history of the frontier. Throughout its military use, and its later service as an Indian school, Fort Stevenson continued to reflect some of the effects of groups of cultures in contact. The contact here between Indian cultures—Mandan, Arikara, Hidatsa, Sioux, Cheyenne, and others—and White cultures—traders, explorers, settlers, and military personnel—had begun nearly two centuries before. The last third of the 19th century, when Fort Stevenson was in use, was the climax of this contact period. It is worthy of note that at such a time few artifacts of native origin were in use at this post. It is not without interest, furthermore, that the history of Fort Stevenson is directly connected with the history of the region today, more than half a century after the abandonment of the frontier post. For instance, it was because infantry companies of the United States Army were garrisoned at this place that a nearby stream received the name of Garrison Creek. Subsequently a village established near the headwaters of this creek was also named Garrison. From this

community, now a city, the great Garrison Dam and Reservoir take their name.

Mr. Smith's careful analysis of the results of this excavation and his thoroughgoing annotation of the sources and probable developments of specific artifacts and site features make the present paper a worthwhile contribution to the study of frontier history. His use of contemporary accounts to interpret the archeological findings, furthermore, provides additional basic data for the archeologist to employ in interpreting materials from other sites where no contemporary record exists.

January 1954.

ROBERT L. STEPHENSON  
*Chief, Missouri Basin Project,  
Lincoln, Nebr.*

## INTRODUCTION

The report that follows is a description of excavations at, and object materials obtained from, the site of the late 19th-century military post of Fort Stevenson, in the Garrison Reservoir area, N. Dak. It is based primarily upon data collected for the Missouri Basin Project, Smithsonian Institution, during the summer of 1951. Other comparative data were gathered from the literature concerning the period, and from excavations at comparable historic sites. A preliminary account of the results of the Fort Stevenson investigations appeared in 1954 (Smith, G. H.).

The archeological work accomplished at the site of Fort Stevenson was possible only through the cooperation of a number of institutions and individuals. Dr. Frank H. H. Roberts, Jr., director of the Bureau of American Ethnology and director of the River Basin Surveys, always in close touch with the work, provided ever helpful supervision. The River Basin Surveys staff in Lincoln exerted every effort, in preparation for the work beforehand and in the routine cataloging, processing, and preparation of the materials after the excavation was finished, as well as in facilitating the work in the field. Paul L. Cooper, George Metcalf, Dean E. Clark, Evelyn B. Stewart, Nathaniel Dewell, Lee G. Madison, and Clara Rehn were especially helpful. Russell Reid and the staff of the State Historical Society of North Dakota assisted immeasurably in providing access to historical documents and in many other ways. The staff of the Corps of Engineers, Garrison District, particularly Col. R. J. B. Page, was always cooperative and provided real help and encouragement. The staff of the Region Two Office of the National Park Service, especially Merrill J. Mattes, Ray H. Mattison, and Gordon C. Baldwin, aided in field activities and documentary research. Dr. John W. Robinson, formerly State Veterinarian of North Dakota, constantly provided

helpful advice, personal recollections, and unpublished documents. Dr. Carlyle S. Smith of the Museum of Natural History, University of Kansas, furnished welcome expert advice on firearms, and gave permission for republication of his study of materials of this nature from the site, as an appendix to this paper. The excavation party under my direction included Byron Houseknecht, assistant, and George Metcalf, Lee G. Madison, Loniel B. Bagby, Jr., Hugh Sam-path, and students of the Riverdale High School, all of whom worked faithfully through the field season.

To all of these persons and the institutions they represent I am most deeply grateful. My sincere thanks go to them and to others who have helped in less obvious but equally important ways to make this report possible.

#### GENERAL OBSERVATIONS

The general history of Fort Stevenson, occupied as a military post from June 1867 until August 1883 and as an Indian school from that date until 1894 (pl. 33), has been recounted elsewhere (Mattison, 1951). That account, based on official records of the post now preserved in the National Archives, devotes special attention to the history of construction of the post and to its physical structures. In the following record of excavations conducted from June to October 1951 at the site of the former post, frequent reference is made to these specific data from the documentary record, particularly at points at which excavation supplemented or permitted correction of the contemporary record. In general it may be said that the excavations, though confined to selected building-site units, and in no sense exhaustive, confirmed the data preserved in the post records. Few errors were noted in these records, so far as they could be verified on the ground.

The general setting in which Fort Stevenson was established has been treated in the general history referred to, and elsewhere (Kivett, 1948, pp. 4-5, comments on the physiography of the region). Attention may be called to the fact that the geographical location of the post given on the ground plan, traced December 10, 1879, is in error. (Photostats of original in Missouri Basin Project and National Park Service Region Two files. The plan is retraced, for the sake of legibility, but with minor errors, to accompany Mattison, 1951, opp. p. 28.) The true location of the post was approximately 47°34' N., 101°29' W. (U.S. Army Corps of Engineers, sheet No. 143, 1943 a). It may also be noted that although the parade ground and sites of adjacent buildings of the post were in the NE $\frac{1}{4}$  sec. 10, T. 147 N., R. 85 W., as stated (Mattison, 1951, p. 2), other closely related parts of the whole lay in the adjacent NW $\frac{1}{4}$  of section 11 of this town-

ship and range, including the sites of the warehouse area, the steamboat landing, and the temporary camp used during the early summer of 1867 (U.S. Army Corps of Engineers, sheet No. 147, 1943 a).

The site selected in 1867 for the permanent installation of the post was a level terrace, a segment of the first bench of the valley of the Missouri River, rising above level bottom lands on the north side of the main channel of the stream, which at that point flowed eastward (map 6; pl. 31). The elevation of the parade ground was approximately 1,720 feet above sea level (U.S. Army Corps of Engineers, sheets Nos. 143, 147, 1943 a). Opposite the site of the fort, the elevation of the main channel was 1,690 feet. Of this interval of 30 feet, approximately 20 occurred at the edge of the terrace, which there rose from the bottom land at an angle of approximately  $45^\circ$ . That bank had been somewhat eroded, and the surface of the slope showed gravel exposures of the terrace subsoil. Various cultural materials were found on this bank; some apparently belonging to the period during which the site was in military use. Trash and disposal areas were sought for there, but none of importance was found. Such deposits may have been obscured by bank erosion. Little evidence was seen of the effects of erosion elsewhere at the site of the post. In general, except for areas subsequently brought under cultivation, such as the parade ground, the site appeared to have been well covered with vegetation in recent years.

The terrace upon which Fort Stevenson stood was actually a kind of island lying roughly parallel to the river, and rising very slightly to the west of the parade ground area. It was, in 1951, almost wholly under cultivation. It was bounded on the south by the bottom land of the Missouri and on the north by an alkaline slough which drained into Garrison Creek, and was useful only as hay land. On the east the terrace was cut by Garrison Creek, on the west by Douglas Creek.

On the ground plan of Fort Stevenson of 1879, previously mentioned, a map of the military reservation appears as an insert, the original of which was made in 1870 (Mattison, 1951, p. 4). This map records that in 1870, near the beginning of the military use of this region, Garrison and Douglas Creeks were separate, each flowing directly into the Missouri. This was not the case in 1951, and an enlargement of the bottom land between the first terrace and the main channel—probably the result of building up of bars at the mouth of Douglas Creek, the larger of the two streams, as well as of silting up of the whole valley—had permitted Douglas Creek to capture Garrison Creek (pl. 34, b; map 6). This change in the relationship of the two streams apparently occurred at some period between 1870 and 1891, at which later date the Missouri River Survey maps were prepared, since the latter maps show the terrain at this point much as it was until covered by the waters of the reservoir (U.S. Army, Chief of Engi-







**LEGEND**

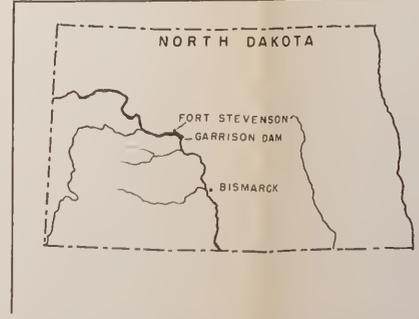
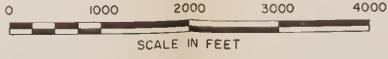
-  INTERMITTENT STREAM
-  WOODED LAND
-  GRASSED LAND
-  MARSH

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RIVER BASIN SURVEYS MISSOURI BASIN PROJECT

**VICINITY MAP OF  
FT. STEVENSON (32MLI)**

ADAPTED FROM  
U.S. CORPS OF ENGINEERS  
MAP OF GARRISON RESERVOIR  
(SHEETS 143 & 147, JULY, 1943)

- LEGEND —
-  DIRT ROAD
  -  TRAIL



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Map b - Map of the vicinity of Fort Stevenson (32MLI) showing relationship of the site to the Missouri River and to Douglas Creek



neers, 1892). Inspection of an aerial photograph of that portion of the river, taken April 4, 1943, suggests that the river, since 1870, had retreated about one-half mile at this point, leaving new land not then in existence (U.S. Army Corps of Engineers, MRD-1-89, 1943 b). This topographic change in the vicinity of Fort Stevenson was of historical importance because of its bearing on the problem of the location of the original warehouse and steamboat landing, not precisely recorded, so far as is known.

The recent bottom land between the first terrace and the main channel of the Missouri was well timbered with cottonwood and ash, and a few small open areas adjacent to the terrace were in use as hay land. That this bottom land, then probably narrower than in 1951, was not well timbered in 1867 is clear from the fact that it was then necessary to obtain suitable saw logs for use at the new post from the opposite (south) side of the river (Mattison, 1951, p. 27). The gathering of fuel in the immediate vicinity of the post must soon have stripped it of timber resources, and it is probable that still earlier search for fuel and building materials, by Indians and by "wood-hawks" who supplied steamboats with fuel, had begun this denuding of the bottom lands. Official records show that cutting of timber on the military and Indian reservations was a source of conflict between the military and the Indians, as well as civilian white persons (*ibid.*, p. 27).

Evidence of the fact that these bottom lands were largely bare of timber in the late 1860's, and that a full view of the river itself could be had from the post at that time, is contained in the journal of General de Trobriand, then commandant, who mentions the passage on the river of war parties of Indians in bullboats, and of miners from Montana in Mackinaw boats (de Trobriand, 1951, pp. 131-133, 150). These parties were seen on the river from the temporary camp area immediately east of the site of the permanent post, whereas no part of the main channel could be seen in 1951 from the site of Fort Stevenson, because of the widening of the bottom land and growth of new timber in recent years.

Only one reference to extreme high water in the Missouri near Fort Stevenson has been encountered, though spring flood waters frequently inundated the bottom lands near the post (*ibid.*, p. 254; account of the breakup of the ice on March 25, 1868). It was recorded that in 1866 flood waters approached within 12 feet of the site of the future post. Such a rise would mean that the level of the main channel rose approximately 18 feet, opposite the post. Except in periods of such extreme flooding or of excessive precipitation, however, the site of the post was probably a very suitable one, affording good surface and subsoil drainage. The post surgeon stated in 1875 that "the natural drainage is perfectly efficient, hence there are no artificial drains, and none [are]

needed" (Matthews, 1875, p. 440). The soils at the site were readily pervious, and it was observed that even after heavy rains, as in June 1951, water remained standing on the surface for only a few hours at most. It was quite a different case with the gumbo soil at a lower elevation nearby, which retained water for days and even weeks, and which must have given trouble for wagons, just as it did in recent years for motor vehicles, even on graded roads.

Several years apparently elapsed, after the fort was built, before drive wells were put down, and in the meantime water for drinking and other purposes was obtained from the Missouri itself (Matthews, 1875, p. 440). A photograph taken at Fort Stevenson, probably about 1870, shows a group of enlisted men and civilian mule drivers on such a water detail (pl. 32). It is not surprising that medical records of the post show a high incidence of dysentery. The use of river water for drinking, and the fact that the transportation of food supplies was often badly interrupted during winter months are sufficient explanation (Mattison, 1951, p. 22). By the time of the inspection report of 1879, drive wells were in operation and that water source must have been an improvement. Yet those wells were located less than a hundred feet from common latrines or "sinks," and the wells are reported to have been no more than 10 feet in depth below the floor of the pump house (*ibid.*, p. 34). A further possible source of water was various springs in the vicinity, but water from such springs was apparently disliked, and was referred to as "unpalatable" (Matthews, 1875, p. 440).

In the immediate vicinity of the post, prairie hay lands doubtless originally supplied all grazing needs. It was, however, noted in 1875 that a wide extent of country had to be searched to obtain sufficient hay for the post, and it was thought that this supply would become even shorter (*ibid.*, p. 438). The map of the reservation of 1870 (traced 1879), previously mentioned, shows a post garden on Douglas Creek, west of the fort. It was a policy of the War Department at this period to furnish part of the subsistence for these posts by means of such gardens, operated by post personnel. This garden was irrigated by hand during the dry season of the summer. It contained between four and five acres of ground, and produced peas, beans, and lettuce well. Potatoes and onions are said to have been produced in quantities sufficient to meet the needs of the post for the greater part of the year, while turnips, beets, cabbages, and the like were raised in smaller quantities (*ibid.*, p. 440).

At some period during the military occupation of Fort Stevenson, tree planting had been attempted about the parade ground. Photographs taken during that period and subsequently show the position and size of several such trees in front of the officers' quarters (photographs in State Historical Society of North Dakota). The remnants

of one of the trees that had stood before the South Officers' Quarters survived in 1951. It was an ash, as presumably were the others appearing in the photographs. The trunk of this tree was dead, but suckers from the base were still growing. Sections of the main trunk were collected. These trees had probably been transplanted as saplings from the adjacent bottom lands. Their size at that time, or the precise date of transplanting, is not known, but it must have occurred soon after the post was completed, probably in the early 1870's, though there is no mention of tree planting in the report of 1875 (Matthews, 1875). One of the photographs referred to above, said to have been taken in 1879, shows these trees in healthy condition, and in this view they appear to have been in place for several years. It is probable that these trees would at least at first have been well cared for and frequently watered after transplanting.

Construction materials locally available for use in building the post, and the presence near the fort of lignite coal, which was used to supplement wood for fuel, are of special interest. The map of the reservation (1870) shows the location of coal north of the post, at the edge of the second bench and a road leading to the mine from the fort. A mine in that location was still worked in recent years, for local use. Traces of the use of lignite, in accumulations of weathered coal and lenses of coal ash, were found in excavation at the fort site. Of this lignite deposit, de Trobriand (1951) in 1867 stated that it was necessary only to scoop up the coal, which was exposed on the surface. It was also extracted in chunks with a pick, and was said to be of excellent quality and very pure, burning easily and completely consuming into cinders (*ibid.*, p. 159). Matthews also mentioned the quality of the fuel, though stating that it burned rapidly and disintegrated upon exposure to the air (cited by Kane, ed., in de Trobriand, 1951, p. 159 n.). Another military visitor of this period, Bvt. Maj. C. W. Howell of the Corps of Engineers, also reported that coal was plentiful in the hills in the neighborhood of the post, but that it was considered by the officers to be of poor quality. It had been used in heating stoves, though it did not give entire satisfaction, and had also been used in the blacksmith shop, though it there failed to afford a good welding heat (Howell, 1908, p. 400).

The source of timbers for construction at Fort Stevenson, as well as of fuel needed, is recorded in part in de Trobriand's journal (de Trobriand, 1951, p. 304). In June 1868, a contract was awarded for timbers and firewood, and it is stated that it was even then necessary to go as far as 35 or 40 miles from the post to obtain logs of suitable dimensions. These logs were to be at least 16 inches in diameter, and 25 feet in length. The contract also called for some twelve hundred cords of firewood. It seems clear that the first lumbering activities on the south side of the Missouri during the preceding year had

rapidly exhausted the timber resources available for building purposes.

Of local materials employed at Fort Stevenson for construction purposes, none is more clearly illustrated in the excavations than the extensive use of field stone for masonry foundations, still largely preserved in place. No quarry rock was available in the vicinity, and most of the stones used were probably found on the surface of the prairies, derived from glacial drift and river deposits. De Trobriand speaks of rock having been brought from the bluffs  $1\frac{1}{2}$  or 2 miles away—presumably the highest bench away from the river (*ibid.*, pp. 42, 346). The boulders used, so far as could be seen during the investigations, were of suitable size for carrying and handling, and many wearisome wagonloads must have been brought in by soldier details. Civilian masons were apparently responsible for the stone masonry, as well as for other construction here. Soldiers also assisted from time to time in actual construction activities (*ibid.*, pp. 43, 158).

A particularly interesting use of local materials for construction purposes was that of clays employed with prairie grasses in the manufacture of adobe bricks. According to local tradition these bricks were made by soldiers working under the direction of an Indian woman known as "Indian Mary" (information from Dr. Robinson; his authority was persons who had lived at the fort). The precise source of clays used in making these bricks is not known, but it was probably in the immediate vicinity of the brickyard which, in turn, lay between the landing and the temporary camp (de Trobriand, 1951, p. 43). The yard was, therefore, near the point at which Garrison Creek entered the recent river bottom land, about one-quarter mile east of the parade ground of the permanent post.

The use of adobe clays for adobe brickmaking elsewhere on the upper Missouri is not unknown, but it would be of interest to know how adobe bricks came to be made and used in military buildings here, in preference to other possible types of construction, at a point far distant from the adobe-brick region proper in the Southwest. It would also be of interest to know how "Indian Mary" became acquainted with the process of adobe-brick manufacture and just what her background had been. The adobe-brick tradition does not seem to have persisted in the architecture of this region of the upper Missouri, but was succeeded by that of the sod house and other styles, in the period of permanent settlement of the region.

Adobe bricks were, it is true, used at numerous other military posts in the West during the 19th century. An example is Fort Laramie, established in 1849, but that post was some four hundred miles south and west of Fort Stevenson. The adobe-brick tradition at Fort Laramie had, furthermore, been introduced during a previous period,

when the region at the mouth of the Laramie River was the site of major fur posts. The direct connection of the adobe-brick architectural tradition at that place with that of the Southwest is revealed by the fact that Southwestern labor is said to have been employed in making and using adobes at least as early as 1841, in building Fort John, which in 1849 became the military Fort Laramie (Hafen and Young, 1938, p. 83, quoting John C. Fremont). In the case of both fur-trade structures and private buildings of the military period at Fort Laramie, such as the sutler's store, adobe bricks were used in true masonry. This was also the case with certain of the lesser military buildings, such as the sets of officers' quarters on the west side of the parade ground. In the case of "Old Bedlam," an officers' quarters at Fort Laramie begun in 1849, adobe brick were also used, but only as packing between the timbers of the frame, probably to serve as insulation.

The general history of architecture of western military posts of the 19th century has apparently not yet been given special study. It is known that the original construction at Fort Buford, a military post established in 1866 near the older Fort Union of the fur trade, was also of adobe-brick masonry, and by 1871 efforts had been made to replace the adobe brick. As late as 1875, however, numerous original buildings of this style were still in use at Fort Buford (Mattison, 1955, p. 61). Though there appears to be a general tradition of the use of adobe brick at these posts in the late 1860's, the details are obscure. The use of such materials in the construction of Fort Stevenson may, however, be related directly to a tradition established on the upper Missouri itself during the preceding period of the fur trade.

Although trading posts on the upper Missouri, as elsewhere outside the Southwest, were primarily timber structures (whether or not palisaded), adobe mud and doubtless occasionally even adobe brick were also employed. It has been stated that the few trading posts built of adobe were the exception, timber construction having been the most typical in the western United States (Chittenden, 1954, vol. 1, p. 45). Some evidence on the matter is available for the portions of the upper Missouri in question.

The earlier trading posts of Fort Berthold (ca. 1845 ff.) and its competitor Fort Atkinson (ca. 1858 ff., subsequently known as Fort Berthold; both a part of 32ML2) were timber structures, as were Fort Clark (1831 ff.), Fort Union (1828 ff.), and the still earlier post of James Kipp (32MN1), at the mouth of the White Earth River (1826 ff.). So also was Fort Mandan, in which Lewis and Clark had wintered in 1804-5 with the Mandan Indians. Test excavations at the site of Kipp's post made in October 1951, by the Missouri Basin Project demonstrated that this post had been enclosed with a stockade,

and that the stockade and interior buildings had been damaged by fire. This fire had preserved clear evidence, in burned lumps of chinking, of the use of adobe mud. Similar evidence is doubtless preserved at the sites of other early fur posts in this region, and at least one post, Fort Benton (1847 ff.), originally of timber, was rebuilt at some period in the 1850's with adobe-brick masonry.

All of the earlier trading posts of the upper Missouri were built, as was Fort John (which became Fort Laramie), by the American Fur Company or one of its various branches or offshoots, or by the numerous opposition companies, and a fur-trade expression, "dobies," preserves a memory of the use of adobe in one form or another in trading-post buildings. The artist, Rudolph Friederich Kurz, recorded in 1851 that Fort William (perhaps identical with the post known as Fort Mortimer), the opposition post near Fort Union at the mouth of the Yellowstone, was built of sun-dried clay, referring to chinking or plastering of the timbers, or to the use of actual adobe brick in masonry. Hence, he says, the men from this post were called "dobies," the word derived from adobe, itself a Spanish-American word (Kurz, 1937, p. 138 n. and pl. 6, top; Mathews, 1951, vol. 1, p. 9). The word was also frequently applied to the brick themselves (Hafen and Young, 1938, p. 101, quoting an emigrant description of Fort Laramie, 1843: "dobies (unburnt bricks)"). Further evidence of the use of local adobe clays in the construction of various trading posts, for chinking and plastering, and occasionally for adobe-brick manufacture and use, is doubtless available.

In connection with the matter of the use of adobe bricks of local manufacture in the construction of Fort Stevenson in 1867, the plan of the whole post is also of special interest. At most western posts of the 19th century, the arrangement of units of the whole, the buildings, and other structures, was rectangular or lozenge shaped, enclosing an area frequently used for drill purposes and known as the parade ground. It is hardly surprising that such a central plaza, or place d'armes, should have characterized military installations of the American West, inasmuch as the tradition is a part of modern military planning itself, irrespective of the nationality of the planners. At Fort Stevenson, however, in addition to the "hollow square" of most forts, there is one element which is distinctly Southwestern, like the adobe brick, and is reminiscent of the patio. The courtyard, enclosed by the wings of the individual buildings, is a close parallel to the patio of the casa in the Southwest. It would be interesting to know the derivation of this plan, utilized at Fort Stevenson and other posts, and, indeed, often followed today. The initiative in planning frontier posts was apparently left to field engineers by the War Department, and de Trobriand stated that on arrival of the garrison at the site, "a complete plan" was made of the buildings to be erected, their location, and their

dimensions (de Trobriand, 1951, p. 42). The definite Southwestern flavor of this post also suggests that it may have been designed by field engineers, or that the post was built according to plans already developed elsewhere about the same period, probably in the Southwest. A comparison of plans of posts constructed in that region in the years just preceding 1867 might shed light on this matter. In this connection, it may be noted that similar courtyard-building plans were not used at Fort Laramie in early military structures, though buildings there were in part of adobe-brick masonry, as has been seen.

Little can be said on the matter of trails and wagon roads that afforded communication and transport for Fort Stevenson, though these have an obvious bearing upon any study of the physical remains of the post. One study of this nature has recently appeared (Wright, 1953). It should, perhaps, be pointed out that communication and transport for Fort Stevenson, from 1867 until about 1873, was largely by river steamboat, and the subject of steam navigation of the upper Missouri for this period is receiving special attention from Ray H. Mattison, historian, National Park Service. Records of freight shipments, passenger traffic, and related matters should afford additional light on the circumstances of life at Fort Stevenson, beyond that now available. Business records, such as those of J. C. Burbank and Company, contractors for supplying materials for Fort Totten (via Fort Stevenson), if available, might also afford further light on Fort Stevenson itself.

It has been mentioned that, upon excavation, few errors were found in the post records for Fort Stevenson, which appear to be remarkably complete and intact. So far as measurements of separate structures and specific facts concerning individual buildings could be verified, the data preserved therein appear to be accurate (fig. 15). One curious minor error was, however, noted on the ground plan of 1879, in the measurements of the parade ground itself, as delimited by the buildings of the post. On this plan, the distance shown—333 feet—between the front wall line of the Guard House and that of the row of Officers' Quarters—the east-west dimension of the parade—is approximately correct (measurement from photostat of original; the photostat is reduced one-half). The dimension of the parade at right angles (north-south) is, however, shown on the plan as approximately 196 feet between buildings, whereas the actual distance between remaining footings of these structures is 220 feet. (The ground plan of 1879, as traced for publication in Mattison, 1951, opp. p. 28, differs slightly from the photostat in these measurements.)

The reason for this error in the plan of 1879 is not known. Inasmuch as the buildings appear to have been correctly measured, it seems probable that the parade ground was not actually measured overall, and that the buildings were placed on the plan, one at a time, the

32 MLI  
 GROUND PLAN OF THE SITE OF  
 FORT STEVENSON  
 SHOWING EXCAVATIONS OF 1951

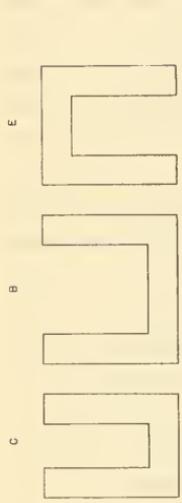
(Based on "Ground Plan of The Post  
 of Fort Stevenson, D.T.", Dec. 10, 1879)

LEGEND

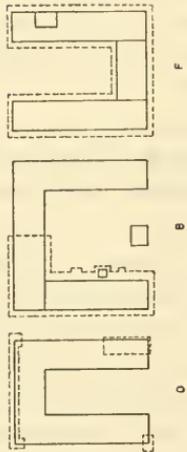
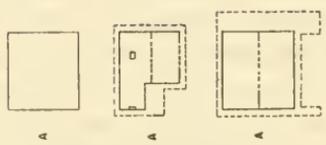
- A Officers' Quarters
- B Barracks
- C Quartermaster-Storehouse
- D Commissary Storehouse
- E Offices
- F Hospital
- G Guard House
- M Magazine
- O Bakery
- S Sinks



Limits of Excavations



PARADE GROUND



1355

FIGURE 15.—Ground plan of the site of Fort Stevenson, showing excavations of 1951.

"offset" between the south building line of the parade and the south building line of the South Officers' Quarters, and that between the north line of the parade and the north line of the North Officers' Quarters, having somehow been overlooked. The narrative inspection report of 1879, submitted separately from the plan of the same year, gives these figures as 195 and 331 feet, respectively, and is therefore also inaccurate (Mattison, 1951, p. 32).

The plan of 1879 was available in photocopy during excavations, and was most useful in studying the site. The plan is, in fact, basic to an understanding of the whole site, and the designation of particular sites, areas, and details as given therein was adhered to in recording excavations, rather than introducing arbitrary, new designations. Only occasionally was the term "feature," familiar in much archeological fieldwork, used; the architectural term "detail," is more appropriate. It seemed preferable to refer to room areas of various buildings (e.g., of the Hospital) according to the identification given in 1879 ("bake house," "kitchen," etc.), rather than to assign arbitrary references without regard to probable or known functions, despite the fact that these buildings are known to have been variously used at different times. To have introduced new field references would have been to confuse the study of the contemporary record as well as of the archeological evidence.

Some record should here be made of the fate of the remains of Fort Stevenson subsequent to the abandonment of the buildings by the Federal Government and their public sale in December 1897 (Mattison, 1951, p. 39). From the evidence of a few surviving photographs and local tradition as well as of excavation, only the Commanding Officer's Quarters remained intact for any length of time. This building was used by several families as a farm home and, later, as a granary, and was finally demolished about 1945. At some time during the use of this building as a private home, a cellar was excavated beneath the structure, and large portions of the footings between the north and south halves of the building, and of the south footing, were completely removed. This is said to have so weakened the structure that it became uninhabitable; subsequently it was used for storage of grain and this further misuse doubtless hastened its destruction.

A large barn, standing in 1951 but subsequently demolished, immediately west of the parade ground, was built at some time between 1883 and 1894, during the period of the use of the former post as an Indian school (pl. 34, *a*). This barn was, in 1951, smaller than when originally built, and parts of the footings of the larger original could still be seen. Local informants stated that the barn had merely been cut down in size from the original, after extensive wind damage at some time in the past, and was not reconstructed. It is probable that many of the large cottonwood timbers used in the original barn had

been taken from military buildings demolished after 1883. Many of the timbers in the barn showed dowels, dowel holes, spiking, and joining, which served no useful purpose in the barn, but indicated previous use of the timbers. The barn was demolished in 1952.

Several buildings in the city of Garrison and elsewhere in the vicinity are said locally to have come from Fort Stevenson, but it is not probable that any of these were moved intact. Such buildings, like the barn, probably merely contain timbers and millwork previously used at the fort.

From documentary sources, as well as archeological evidence, certain buildings are known to have been destroyed by fire at the site of Fort Stevenson, either during or subsequent to the military occupation. Examples of these are the Hospital, the South and North Barracks, and the Commissary Storehouse. From local information and the testimony of the excavation of the site units, other buildings were purposely demolished at one time or another, probably for salvage of timbers, stone, and other materials. Examples of these are the South Officers' Quarters and the Commanding Officer's Quarters. At each of these, whether the buildings were destroyed by fire or intentionally demolished, certain other manmade changes probably also occurred. Thus, in the case of the Hospital and the South Barracks, both of which had adobe-masonry walls, evidence was found of apparently intentional leveling of the ruins subsequent to the fires. Large sections of walls, for example, were found collapsed flat, as though they had been pushed over from a standing position, or had fallen of their own weight, after having been weakened by weathering.

Several of the original cellars, such as those of the Hospital and the South Barracks, had received great quantities of trash after the destruction of the buildings. This was especially noticeable at the site of the large cellar of the Commissary Storehouse, which had served as a dump over a considerable period of time for the adjacent farm home in the former Commanding Officer's Quarters. Here there was also evidence of attempts to fill the depression, probably to remove the farm hazard of an open pit, with additional disposal materials such as plaster, ash, gravel, and the like, but complete filling had not been achieved, because of the large size of the original cellar.

One new structure was actually imposed directly upon the site of the military post and Indian school. This was an earth potato cellar, made about 1915 between the sites of the Hospital and South Barracks; the excavation is said to have been made with a horse and scraper. This cellar was actually semisubterranean, and earth had been piled on either side of the excavation—on parts of the sites of the Hospital and South Barracks—the earth being obtained in the immediate vicinity, from the sites of ruined buildings (pl. 35, *b*).

Little damage had been done to the stone footings of the adjacent buildings, probably because of their compact and massive character, but large amounts of adobe-brick rubble were moved at this time from both the Hospital and South Barracks sites. This was particularly noticeable in the excavation of the latter. Here the front portion, or "main body," had been denuded of practically all building debris aside from the very footings themselves.

No other manmade changes were observed at the site of Fort Stevenson except for those arising from agricultural use (pl. 31). Some attempts had been made to remove the stone footings of buildings, probably in the hope of increasing the cultivable area about the site of the fort; this was particularly noticeable near the front (north) footing of the East Wing of the Hospital. But these attempts seem to have been abandoned. The months of soldier labor expended here in the late 1860's were not to be obliterated by the occasional efforts of later farmers.

The original parade ground of the fort was under cultivation in 1951, and had apparently been plowed for many years, and the site of the Guard House had been almost completely obliterated. Whether this structure was originally provided with a stone footing comparable to that of the larger building is not known. The inspection report of 1879 merely described the Guard House as "made of the same materials as the other buildings of the post" (Mattison, 1951, p. 36). The inference from this statement is that this building was also an adobe-brick masonry structure, set upon a stone footing. A photograph of the former post, probably taken about 1895 and showing the Guard House in ruinous condition, suggests, however, that it was actually a frame building, rather than one of adobe masonry, and such foundation as it once had may have been much slighter than those of the larger buildings (photograph in Missouri Basin Project and National Park Service Region Two files; original in State Historical Society of North Dakota; also in Reid, 1947-48, opp. p. 206).

It remains to mention other uses to which the site of Fort Stevenson had been put, aside from that of cultivation. Because of the character of the building remains, which in most instances could not be cleared or leveled for cultivation, parts of the whole site were fenced and used for stock pasture. Such a fence line still crossed the south side of the original parade ground, crossing the site of the South Officers' Quarters, and the area between this fence and the edge of the terrace (on the south) had probably been used for many years, as it was in 1951, for stock pasture. Though this may have caused minor changes in this area, no major change was seen that could be attributed

to stock. Much of the grass cover here appeared to be of native prairie grasses.

The construction of Fort Stevenson appears to have been accomplished by contract with civilians, assisted by soldiers detailed for the purpose from time to time. In August, 1867, de Trobriand noted that civilian employees numbered 40 persons, of the 260 persons at the post. The masons were for the most part civilians (de Trobriand, 1951, p. 43). There are, however, a few suggestions of poor building practices, such as the placement of chimneys upon joists in certain instances, rather than upon separate footings. The practical lessons learned in the process of manufacture of the adobe bricks here are also of interest in this connection. General de Trobriand recorded that there was some experimentation with these bricks before their manufacture and use were mastered (de Trobriand, 1951, p. 335). This fact suggests that, even if made under the direction of an experienced person, the experience had not extended to this immediate region, and may have been obtained elsewhere. In connection with the poor building practices mentioned, there is the related matter of the suitability of the plans for the buildings, and the adequacy of planning prior to actual construction. There is evidence that adobe brick were not entirely suitable for masonry here. This masonry seems at first to have been left exposed to the weather, and the walls were said to have tended to crack (Mattison, 1951, p. 30). This was undoubtedly a result of the inferior quality of the bricks manufactured, as well as of the unsuitability of adobe brick for use in exposed walls in the climate of this region.

Despite the more obvious shortcomings of planning and actual construction of Fort Stevenson, and the obvious haste that was required in 1867 to complete the work, had the buildings been properly cared for during use, had there been no disastrous fires, and had surviving buildings not been actually misused, they should have been sound enough to stand for many years longer than they did. The buildings had, by 1897, served a useful purpose during a frontier period. This frontier period was already over by 1897 and the needs of permanent settlers of the region found little place for undertakings such as the preservation of historic sites and buildings.

## EXCAVATIONS OF INDIVIDUAL SITE UNITS

### HOSPITAL

The post hospital of Fort Stevenson was located at the southeast corner of the parade ground, separated from the nearest building by an "alley" of 20 feet, which seems to have been a standard distance between all the major structures. This building faced on the parade, and matched the Offices (or Headquarters Building), of identical (reversed) plan, on the opposite (north) side. Like all the larger



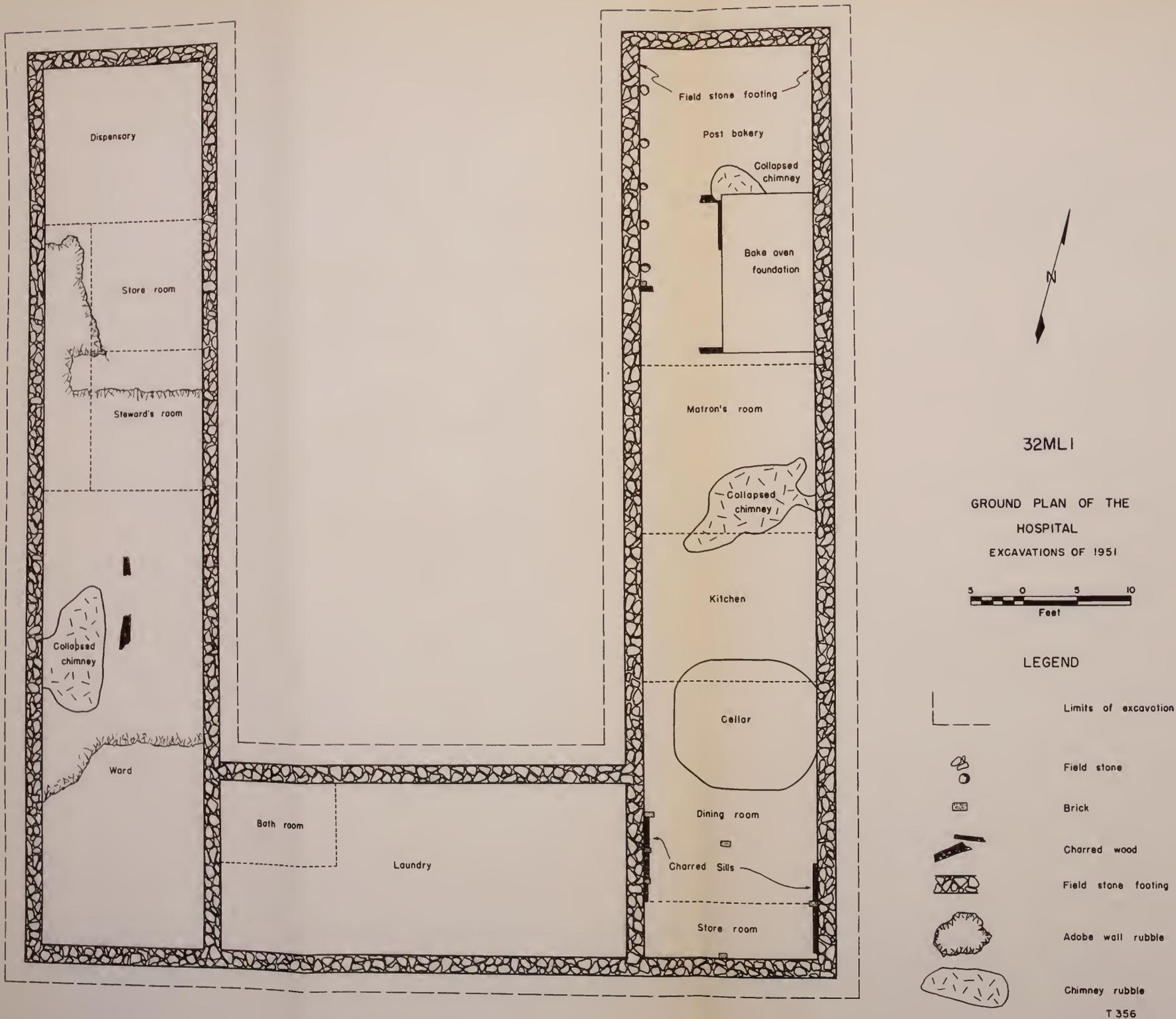
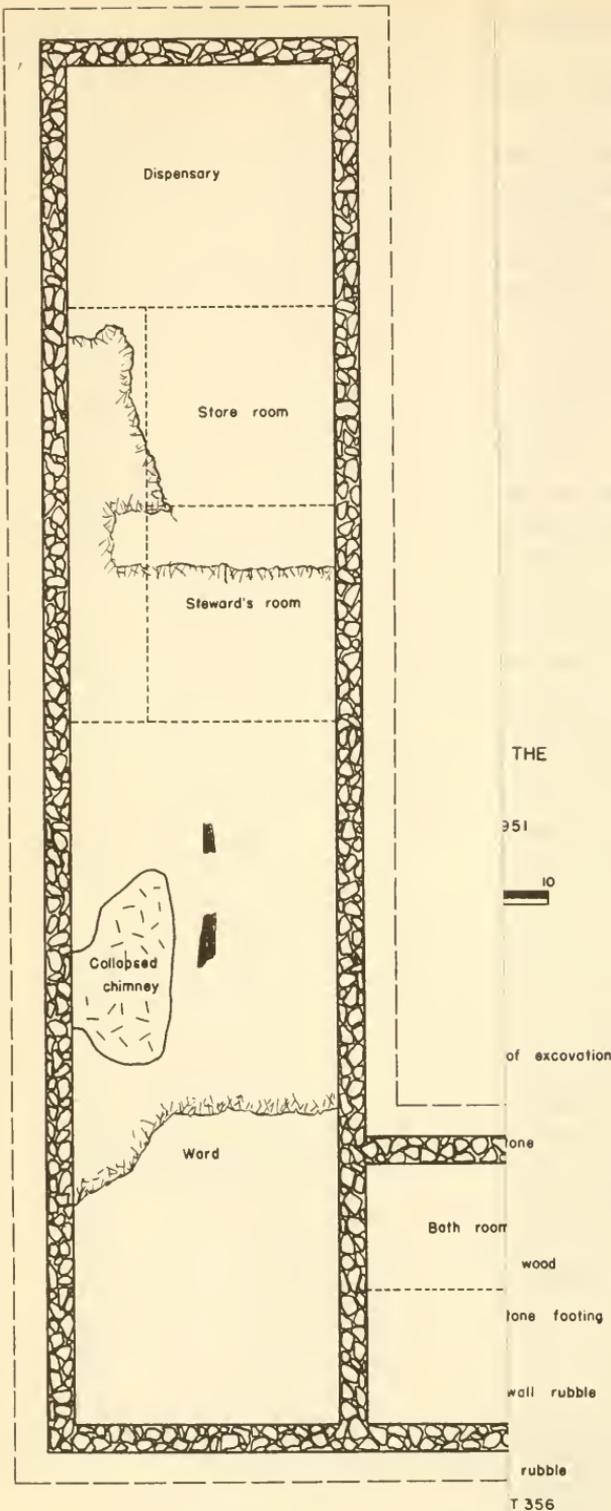


FIGURE 16.—Ground plan of the site of the Hospital, Fort Stevenson, showing excavations of 1951.





FIG

buildings of the post, the Hospital was built to enclose three sides of a yard, in this case opening toward the parade (figs. 15, 16).

The Hospital was probably among the first of the larger buildings undertaken in the construction of the permanent post, begun late in June 1867, but there is record of the fact that in October of that year this building had not yet been roofed or floored (de Trobriand, 1951, p. 129). Troops had been at work on the post since June, and from one record it seems likely that work on the Hospital had not been neglected. On August 7, a teamster was fatally injured by Indians "near the foundations of the new fort," and he died shortly afterward "in the hospital" (Mattison, 1951, p. 8). Thus it seems probable that the permanent hospital, though incomplete, was in usable condition by the date of this event. The building was probably roofed before the severe winter of that year set in. No evidence was found, on excavation, of any subsequent major changes in the structure, during the period of its use, and it was probably destroyed in the fires of the summer of 1894, at which time the two former Barracks (one adjacent to the Hospital) were also destroyed. Excavation provided unmistakable evidence of the complete destruction of the Hospital by fire.

The site of the Hospital, like that of most of the other buildings at the post, was well covered with vegetation prior to excavation—largely tough grass sod and weeds (pl. 35, *a, b*). This site had never been cultivated or put to other use than that of pasture, largely because of the obstacle of the massive footings, but it had in part been intentionally leveled. Despite this leveling and the mantle of vegetation, the building lines of the original structure were visible throughout most of their courses, and the plan and details concerning the building preserved in the documentary record were also of assistance in defining the site. Partially exposed rows of boulders, sometimes enclosing crumbling lime mortar, were the visible remains of original elements of the structure. Actual masonry was not visible throughout the whole course of these lines, but where otherwise obscure, building lines could be traced in the slightly different appearance of the sod and weed growth. Where vegetation rested upon masonry it was sparser and less luxuriant. Adjacent to the masonry, on either side, it was denser and greener. The cellar area, within the site of the East Wing of the Hospital, was clearly marked by a depression, and supported a rank growth of sod and weeds.

Excavation of the site of the Hospital was begun by stripping off the vegetation, and exposing the actual contours of the surface (pl. 35, *a, b*). The masonry footings were then exposed, by narrow trenches (approximately 2 feet in width) on either side, and the removal of loose earth from their upper surfaces, with frequent reference to the documentary records available. These footings were the foundations of the original structure, and constituted its lowest member. Only the

cellar, mentioned above, reached a greater depth below the original ground surface. The whole site was then cleared of building debris and accumulated earth, by excavating to the level of the original ground surface within the foundations, in the interior of the original building (pls. 36, *a, b*; 37, *a*). This old surface was clearly evident in a level dark loam, undisturbed except where penetrated by building foundations and the trenches originally made for their construction. At points at which the footings were not preserved to their full height, the masonry rose but 4 to 6 inches, at most, above the old ground level. At other points, depending upon slight variations in the contours of the original surface, the masonry was actually flush with it. Within the interior of the building area the average accumulation of debris, resting on the old surface, was no more than 3 to 6 inches, though at some points there were actual slight elevations, the sites of collapsed portions of walls or of chimneys (pls. 36, *b*, 37, *a*; fig. 16).

Like most of the larger buildings at Fort Stevenson, the Hospital was built of timber, adobe brick, common fired brick, stone, and related materials. The inspection report of 1879 described the construction of these buildings as having been "of adobe set up in frames on rock foundations," the roofs being high and shingled, and the buildings one story in height (Mattison, 1951, p. 33). Excavation afforded evidence that there had been some difference in the design of wall members in the different buildings of the post (even among those in which adobe brick were used), and comments on this matter appear elsewhere in the present report. The precise design of the walls of the Hospital, however, was not evident because of the fire and the extensive changes that had taken place at the site subsequent to the destruction of the building by fire.

The walls of the Hospital, comprising adobe-brick masonry and, presumably, timber, had rested on massive stone footings that, in part at least, were set with lime mortar. The footings here averaged 18 inches in thickness (pl. 38, *a, b*; fig. 16). The inspection report cited recorded that the walls of certain buildings of the post were "about 14 inches" in thickness (Mattison, 1951, p. 33). This was the thickness of wall remnants found at the site of the South Barracks, to be described, and there is no reason to doubt that this was also the case at the Hospital, though no portions of the adobe-brick walls proper were preserved in place on the footings here.

At some points, this stone masonry footing was preserved to its full original height, and in some parts of its course, at least, the upper surface had been made quite level, by the use of lime mortar, to receive the walls (pls. 37, *b*; 38, *b*). It seems probable that the original intention had been that these footings should all be laid in lime mortar, but the practice had, apparently, soon been abandoned, perhaps be-

cause of a shortage of lime or the lateness of the season at which the masonry was constructed, or both. Although the masonry footings were massive, as has been stated, they were also rather shallow, and extended little more than a foot or two below the original ground surface, as was seen at two test excavations, carried below the base of the footings (pls. 37, *b*; 38, *a*). These footings had been constructed in narrow trenches, evidence of which, in disturbed soils, was frequently encountered in the course of excavation.

The masonry footings of the Hospital had been made of field stone of random size, such as could have been picked up on the prairie in the vicinity, brought to the site by wagon, and worked and placed by individual workmen (pls. 37, 38). Many of the stones had been used in the masonry without trimming or other preparation, but some had been roughly split, probably with a heavy sledge. These broken or roughly "faced" stones had usually been placed with a face toward an exposed or upper surface, the smoother and flatter surfaces vertical or horizontal. After these larger, and sometimes shaped, pieces had been set, smaller stones and spalls had been used to fill the joints of the masonry (pl. 38, *b*). Although the stones of the footing were ordinarily placed horizontally the masonry was not actually coursed throughout or consistently. Little attempt had, apparently, been made to select material for the footings, other than according to convenient size for carrying and handling, or to provide more than a sound foundation for the walls and building proper. Cornerstones had not been specially trimmed, so far as could be seen, though it should be noted that some stone had been removed from the footings, and trimmed pieces may thus have been lost, as at exterior corners. (pl. 37, *b*).

There are at least two explanations of the loss of materials such as the stones of these footings, and of the building debris that once covered the site. Other buildings in the vicinity of Fort Stevenson today are said to have been made of materials from the abandoned buildings, including both stone and timbers, and some intentional leveling doubtless occurred during the period of the use of the site of the post as a farm. Secondly, a root cellar, made of earth about 1915 by using a horse and scraper, lying between the sites of the Hospital and the South Barracks and actually superimposed on parts of both, was in part of earth and debris scraped from these sites (pl. 35, *b*).

The deposit covering the remains of the Hospital was composed of various materials derived from the building itself. These included adobe brick with adobe mortar, common fired brick with lime mortar, charred bits of wood and metal hardware from the building, ash layers, derived from the destruction of the building, and large quantities

of earth, in part probably wind deposited, but largely the remnant materials from the disintegration of the adobe bricks and adobe mortar. Much of the adobe brick and mortar had been altered by fire at the time of the destruction of the building. As a result, it was possible, on excavation, to isolate and remove individual bricks, accidentally fired; this was not possible with the unfired bricks occasionally seen. This debris within the site of the building, as has been stated, was relatively shallow except in areas such as that of the West Wing, over which the earth cellar had been built. Few intelligible details of original construction were found, with the exception of an occasional stone or fired-brick footing for floor joists, of collapsed portions of adobe-brick masonry and fired-brick chimneys, the stone foundation of a bake oven, and a small cellar at the rear of the East Wing. It was known that the exterior of the Hospital, like many if not all of the buildings of the post, had been whitewashed, probably during the period of military use, and traces of this whitewash were found on some of the adobe brick. No evidence of weatherboarding or siding was found.

The common fired brick encountered at this site were the familiar coarse red bricks manufactured in many places, and here employed for chimney construction. A few of these bricks were marked, and they appeared to be exclusively of St. Louis manufacture. There is no reason to believe that any of these fired bricks were made here, as were the adobe bricks. There is, on the other hand, documentation concerning the shipment of brick with other building materials furnished on contract. These bricks had been laid in lime mortar, the lime also doubtless received under contract, and had been placed in the masonry of chimneys in ordinary bond, so far as could be seen in the few instances in which the masonry of the collapsed chimneys was sufficiently intact to observe the probable arrangement of the bricks. These chimneys were, of course, for use with stoves, and the base of one large circular heating stove (apparently of a style suitable for use with either wood or lignite) was found on the site of the West Wing, though badly damaged by the intense heat to which it had been subjected on the destruction of the building by fire.

No information was obtained from excavation concerning the placement, dimension, or type of flooring used in the building, but it was known that the building had had necessary flooring, from charred bits of wood of this kind found, as well as from the documentary record. According to the inspection report of 1879, the flooring of the barracks was of dressed pine laid upon rough flooring of cottonwood plank, and the same was doubtless true at the Hospital (Mattison, 1951, pp. 34, 35).

The root cellar, built about 1915 of earth and rubble obtained in the immediate vicinity, had been so placed that it covered the whole

of the site of the West Wing of the Hospital, obscuring all but the line of the footing on the east side, toward the yard. This recent earthwork had protected from further disintegration large portions of collapsed adobe-brick-wall materials. In collapsing, on or after the destruction of the building by fire, the portions frequently retained much of their original position and arrangement, except that they lay on their sides, individual bricks thus resting on edge rather than superimposed, as originally. The arrangement of bricks in these portions was in regular courses, but without regular bond or courses of headers. Since the individual bricks were of somewhat irregular dimensions, and the mortar joints not perfect in alinement or width, the vertical joints were also irregular, and occurred at random, according to the size and placement of the adobe bricks.

No parts of the timber members originally used in framing the walls were found. From the large size of collapsed areas of adobe-brick masonry, found without associated timber remains of framing dimension, it seems probable that this framing had been widely spaced, in this structure, and had been totally destroyed in the fire. Evidence of a slightly different type of construction, involving timber framing and adobe-brick packing, found at the site of the Commanding Officer's Quarters, is described elsewhere.

The inspection report of 1879, and the ground plan of the post, of the same year, provide some data on the varied use of the different parts of the Hospital at that time, but this information was verified in excavation in only occasional instances (fig. 16). For one reason or another, evidence that might have supplemented the documentary record was lacking, except as mentioned hereafter. It is hardly surprising that physical remains were lacking, which might have indicated the position or character of interior partitions and minor architectural details. The partitions probably had no separate footings, merely resting on joists, or even directly upon the wooden flooring, and all these wood members had been destroyed. No footings were found that might have indicated the precise original location of chimneys, and in this instance the chimneys are known to have been set directly upon the floor joists (report of 1879, cited by Mattison, 1951, p. 33). Here and elsewhere poor building practices reveal a lack of careful advance planning for the buildings.

Of rooms 1 to 6 of the ground plan of 1879—dispensary, storeroom, steward's room, ward, bathroom, and laundry, respectively—almost no distinct evidence was found (fig. 16). Occasional objects were encountered, which appear to be related to the original use of the building, such as scissors (apparently of surgical type), parts of glass syringes, and numerous frames of metal cots, but all, or many, of these may have been introduced on the site during the period of the use of the building as an Indian school, rather than during the earlier period

of its use as an Army hospital. Cast-iron frames of school desks, probably those in use in the Indian school at the time the building was destroyed, were also found in excavations at the Hospital.

Scarcely more information of architectural significance was found for other room areas of the Hospital—those indicated in 1879 as rooms 7 to 11—closet, dining room, kitchen, matron's room, and bake house, respectively (this bake house was actually a room within the Hospital, and should not be confused with another Bake House, probably built some time after 1879, and located east of the Hospital, between it and the Magazine) (fig. 15). A cellar area was found beneath the dining-room area indicated on the plan of 1879; this cellar had, however, merely been excavated into the subsurface clay and gravel and was not provided with cribbing or masonry. The dimensions of the cellar as shown on the accompanying plan are consequently only approximate (fig. 16; pl. 36, *b*). No evidence was available to indicate the exact period of construction of this cellar, which is not mentioned in the report of 1879. Here as elsewhere smaller objects found appeared to be related rather to the use of the building as a school than as a hospital.

In areas 5 and 6, the bathroom and laundry rooms shown on the plan of 1879, almost no building debris or objects were found, and these areas had probably been much reduced in height at the time the adjacent earth cellar was made, leaving little deposit in these areas above the original ground surface upon which the Hospital had stood.

At the site of the bakery, or bake oven, of the Hospital, the only architectural detail of note was the stone foundation or platform, probably the base for the oven proper (pl. 36, *b*). Although the masonry of this footing was not preserved to its full original height, it was, however, higher than the top of the adjacent wall footing by as much as 6 inches, and had probably originally been even slightly higher. This foundation had been made of large boulders (some as great as 2 feet in greatest dimension), spalls, and even a few fired brick. The upper surface of the platform was not smooth or level, and some of the original stones had probably been removed after the destruction of the building, with any parts that may have rested on the foundation. The rock in this masonry had not been laid in regular courses or layers, but at random; some of the flatter stones had been laid flat, but others were set on edge or at an angle, as convenient in the masonry. The upper surface of the surviving foundation had probably been subjected to intense heat from time to time, from the stoves or ovens, individual stones having thus been cracked and spalled. Adjacent to the masonry foundation was a rubble heap of fired brick, but it was not possible to determine the precise original location of this chimney, lacking any separate footing.

Although no remnants of doors, windows, or casings were found at this site, even in charred form, window-glass fragments were encountered in almost all parts of the site. Some of this glass appeared to be undamaged by fire, but most of it occurred in melted or fire-damaged condition. No complete panes of glass had survived, but it seems probable that the windows were simple 4- or 6-pane sash, the panes hence rather small. The fragments all appear to be of the modern type in thickness, approaching that today described as No. 6 (approximately  $\frac{3}{16}$  inch). Little of the metal hardware in use in the building at the time of the fire had survived, and much of this had been so damaged by heat that it revealed little of the appearance of original items. Such hardware as had been in use here was, perhaps, of the simplest sort, and the bits found revealed nothing of architectural significance concerning the plan of the building.

The surviving evidence concerning the original construction of the post Hospital may be summarized as follows: evidence derived from the documentary record (including photographic and other pictorial evidence) and from archeological investigation. The building had been set upon stone-masonry foundations. The walls consisted of adobe-brick masonry (with, probably, some timber framing, the exact design of which is obscure). Roofs, floors, and millwork at windows and doors were of wood. Only adobe brick and the heavier building timbers, of cottonwood, were of local origin and manufacture. All else—building hardware, windows, doors, and casings, even shingles, common fired bricks, and lime—had been brought to the post by steamboat, from a distance (probably largely from St. Louis, Mo.). The window sashes were provided with glass. Several common fired-brick chimneys, for use with stoves, were a part of the original building. Their exact location cannot be demonstrated, though their approximate position is known from documentary records, and at least one photograph, which shows the east elevation of the East Wing of the Hospital (copies in Missouri Basin Project and National Park Service Region Two files, showing the placement of windows on the east elevation but nothing of their detail). No major architectural changes are known to have been made on the structure after its completion, and any alterations that may have been made were probably minor in nature.

#### SOUTH BARRACKS

Fort Stevenson was provided with two barracks or sets of "Company Quarters," for housing the two companies of infantry intended for it. Like other major buildings about the parade ground, these barracks were built to enclose a yard. In the case of the barracks, however, the central portion or "body" of the buildings faced immediately on the parade, the yards thus opening away from it, perhaps

to afford privacy for the enlisted men occupying the barracks (fig. 15).

Centrally located with respect to the whole post, the barracks were doubtless among the earlier of the large buildings undertaken, but there is record of the fact that not until January 1868 were the troops completely housed (Mattison, 1951, p. 28). These barracks could have provided little more than minimum housing needs, in dormitory and mess space, and it is difficult to see how these two buildings could have served all the needs of 238 men, for whom they were planned. The average strength of the post during most of its history was, however, only about 110 (Mattison, 1951, p. 24).

Like the majority of buildings at the fort, the barracks were built of field stone, adobe brick, timber, and related materials, in the same style as that previously described for the Hospital, and were provided with chimneys of common fired brick (fig. 17; pls. 39-41). Excavations were made at the site of the barracks on the south side of the parade ground, and this site was, for convenience, designated as the South Barracks. As was the case at the site of the Hospital, this site was well covered with grass sod and weeds. It had been disturbed in only one area since the final collapse of the remains of the structure after the fire of 1894. This collapse had left a somewhat uneven surface, with occasional low mounds of adobe-brick rubble near building lines, and a depression marking the site of a small cellar (fig. 17). At the front of the building site, portions of the stone masonry of footings were visible throughout parts of their course (pl. 39, *b*). No known photograph or sketch shows the barracks buildings.

Only a part of the site of the South Barracks was excavated (fig. 17). This part was the west half of the "body"—the company room or dormitory of the original—and the entire West Wing, extending to the rear (southward). The other half of the whole site, the east half of the "body" and the East Wing, was left unexcavated; this half of the remains of the original structure had been covered by parts of the root cellar mentioned, made in 1915, and superimposed on parts of the sites of the Hospital and South Barracks. Removal of the part of this same large earthwork lying over the West Wing of the Hospital had been completed prior to excavation at the site of the South Barracks, and experience gained there suggested that removal of this part would not be warranted.

The irregular mounds of rubble of accidentally fired adobe brick and common fired brick were visible particularly at the site of the West Wing (pls. 39, *b*; 41, *b*). In the front area, the west half of the company room, little or no deposit had been preserved lying on the original surface of the ground, except at the southwest corner adjacent to the West Wing, and this front area had been considerably altered, prob-

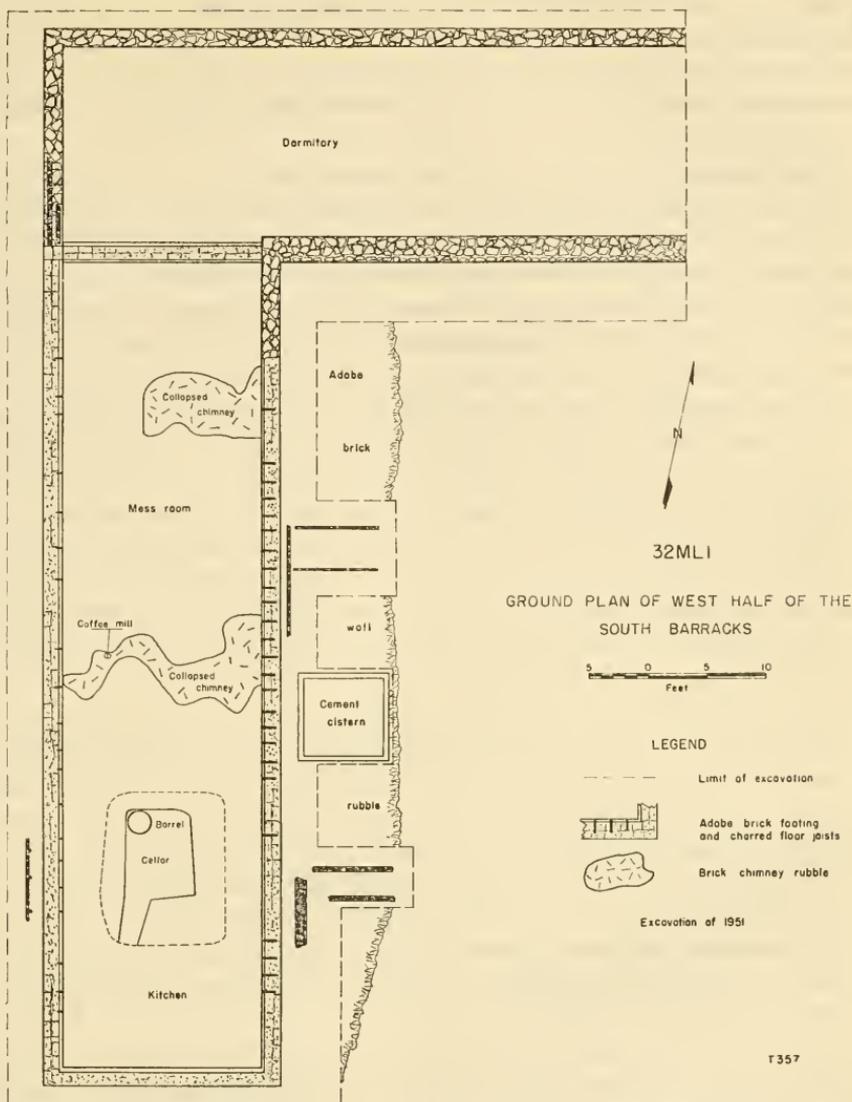


FIGURE 17.—Ground plan of the site of the west half of the South Barracks, Fort Stevenson, showing excavations of 1951.

ably in the process of obtaining earth by horse scraper for the root cellar of 1915. In this area, except at the one corner mentioned, no adobe-brick wall remains were found on excavation, and little else than the lower parts of the stone masonry footing remained (pl. 39, a). Even this footing had been partially removed, either in the earth moving, or to obtain stone for masonry elsewhere, after the destruction of the buildings. The surface of the whole site was covered with rather sparse weed growth at places in which the rubble heaps had furnished a poor location for grass (as in the area of the West Wing), and with

grass in areas of lower elevation approaching that of the original ground surface (as in the case of the area of the "body"). The vegetation was first removed from the part of the site to be excavated, and excavation was begun by narrow trenching adjacent to masonry footings.

The masonry footings encountered at the site of the South Barracks did not differ significantly from those previously seen at the site of the Hospital. They had also been built of random-sized field stone, frequently roughly faced or placed with a natural flat surface exposed, in part in lime mortar, the spaces toward the center line of the masonry having been filled with smaller rock and spalls (pl. 41, *a*). Little care had been given, in building, to the appearance of the finished masonry, probably because the footings were largely covered in use, and at one point along the rear wall of the "body" of the building, measurements apparently had gone awry (fig. 17; pl. 39 *a*). The footing of the rear (south) wall of the "body" had not at first been properly alined with its continuation to the west, the portion separating this front room area from the rear wing, and the former part had been altered before the walls were erected by widening the footing approximately 6 inches on the exterior (south), to make it conform with the latter part (pl. 39, *a*).

As was found to be the case at the site of the Hospital, the frame and adobe-brick walls of the South Barracks had rested upon the stone masonry footings, the walls being somewhat narrower than the width of the footings. The walls of these barracks are said in the report of 1879 to have measured "about 14 inches" in thickness, and this was the approximate size of portions measurable in place during excavation. The walls had been so placed that their exterior surfaces were flush with exterior surfaces of the footing, thus leaving approximately 6 inches of exposed masonry on the interior, upon which the floor joists rested (pl. 40, *a, b*).

In the South Barracks, particularly in the West Wing, portions of the adobe-brick walls had been preserved in place throughout most of their setting, but to a height of only one or two courses (pl. 41, *a*). These parts of the adobe-brick walls of the building still in place were ordinarily less affected by the fire that destroyed the building, and were somewhat more difficult to see and trace than the collapsed portions of walls. They had in some way been protected from the fire, by falling debris or because they had been beneath the hottest part of the flames. The upper parts of walls, found collapsed, would have been subjected to greater heat and had probably been fired prior to the time of collapse, rather than subsequently.

At several points in the excavation here, fragments of charred wood members were found beneath collapsed portions of wall. These were, however, usually beyond measurement and afforded no information

concerning timber design of the original building (fig. 17). Little could be learned from these fragments concerning the original dimensions or use of these wood members, because of the extensive fire damage and the contorted state of the rubble, ash, and charred fragments. One or two fragments appeared to have originally measured 3 inches by  $\frac{1}{2}$  inch, and were probably bits of flooring. At some points along the interior of walls, resting upon the masonry footings, were other fragments of wood, the remains of the ends of floor joists, spaced 14 inches apart, on center, and probably 2 inches by 4 inches dimension. No information was available on the original length of these timbers, but they would, of course, have spanned the width of the wing. Along the exterior of the wall lines, and at or above the level of the footings, were a few charred or decayed remnants of the original siding of the building; though none of these could be accurately measured, fragments of siding found had apparently been 1 inch by 6 inches dimension, the length unknown. At one point, traces were seen of what were probably the vertical timbers to which the siding had been fastened. These were apparently spaced 2 feet 6 inches apart, but no measurement of their size could be obtained.

The site of the West Wing excavated is that of the wing originally used as a mess hall and kitchen. Even without the available documentary evidence, the earlier use of this area would have been quite clear, from the evidence of large quantities of common white earthenware ("Ironstone"), metal mess plates, and other mess gear, although the actual provenience of these materials is, at least in part, that of the Indian school period rather than of the earlier military period. No divisions or partitions of the wing could be distinguished, however, aside from that of a cellar area near the rear. This cellar area, like other interior and exterior areas about this wing, contained large quantities of adobe-brick and fired-brick rubble, charred wood, ash, and the like, derived from the destruction of the building. In addition to much obviously modern farm refuse, it also produced some older household debris, which had been in use in the building at the time of the fire. Here also were traces of two barrels and of wooden staves with metal hoops, which had stood on the dirt floor of the cellar at the time of the fire (fig. 17). No evidence was available to indicate whether this cellar had been constructed during the military period at the post. A cellar here is not mentioned in the report of 1879, but it seems probable that it existed at that time.

At the site of this West Wing of the South Barracks were two distinct areas of fallen fired brick and lime mortar, the remains of chimneys that had collapsed (pl. 41, *b*). No bond or masonry pattern was discernible in this debris, the chimneys having fallen in heaps. No footings were found for these chimneys, and they are known from the inspection reports to have merely rested on floor joists, rather

than upon separate footings. The joists had, of course, been destroyed by the fire. A metal object that appears to be part of a coffee mill was found lying on top of the chimney heap nearest to the cellar (fig. 17) (thus, probably, near the actual kitchen area), in such a position as to suggest that the mill had originally been fastened to the chimney. Clear evidence of the action of the fire that had destroyed the building was the abundant melted window and bottle glass found, and the heat-damaged metals and earthenware, in addition to the evidence of the burning of the structure itself.

Of smaller object materials about the building at the time of the fire, and obtained in excavation, many appear to pertain to the military period of the use of this building, while a few objects are definitely attributable to this period, having survived the period of the use of the building as a dormitory for the Indian school. Such objects as the mess gear of military style may not, however, have been directly military. It seems probable that much of what was in use here in 1894 had actually been inherited from the military command on the abandonment of the post in 1883, or was subsequently obtained through the War Department for the school, from property previously used here or elsewhere at military installations.

One architectural detail of interest, situated along the exterior of the east wall of the West Wing (toward the yard), and united with the original masonry footing at this point, is a cistern (fig. 17). This had been constructed of common fired brick and had been plastered on the interior with what appeared to be Portland cement, rather than with lime mortar or other material. Inasmuch as Portland cement was not commercially available, or widely used, in the West until the 1880's, this addition to the original building was probably introduced during the period of the use of the building as a school. It is the only major late architectural alteration or modification of the military buildings, for which evidence was found on excavation at the site of the fort. The cistern, in all probability, had not been used for any length of time, and prior to the fire had been partly filled with lignite, gravel, sand, and other material. Above this fill was adobe-brick rubble derived from the walls of the building after the fire. The adobe brick, of earlier manufacture, was thus superimposed upon construction of a later period, in which Portland cement had been used.

Excavation of the site of the West Wing of the South Barracks also turned up great quantities of obviously recent farm debris. Among these was a butchering sink made from a large galvanized-iron tub, the skeleton of a pig, stove parts that appeared to have been used in the later farm rather than at the earlier school or military post, and other objects. Few of these were of permanent interest, or were saved, and frequently the only distinction that could be made between

the various object materials found was whether they were burnt or damaged by fire, and hence pertained to a period preceding the fire of 1894.

On the evidence from excavation of the South Barracks, and from the documentary record, the Barracks of Fort Stevenson thus differed in construction in no important respect from that of the Hospital, previously described. Adobe-brick masonry walls resting upon stonemasonry footings, timberwork (the exact design of which is not known), and fired brick chimneys, were the major architectural elements. Only one major alteration had been accomplished at the site of the South Barracks subsequent to the military period, that of the addition of a cistern of brick masonry and Portland cement.

#### COMMISSARY STOREHOUSE

The Commissary Storehouse, in which were housed the subsistence stores of the post, was a balloon-frame structure, built in 1873 (Mattison, 1951, p. 34). It is said to have been the only building of the post built in this architectural style, which was first employed about 1850, and soon became the most common style for most wooden buildings, large and small, public and private. The exact date at which this building was destroyed by fire is not known, but this occurred at some time after 1885, in which year the former storehouse was in use as a girls' dormitory of the Indian school, as is known from a ground plan of the former post made at that time (Mattison, 1951, p. 37, tracing of photostat or original plan in National Archives; the date of the original is 1885, rather than 1863, as shown). Though not specifically mentioned in connection with the fires of the summer of 1894, the building may have burned at that time. Subsequently, much of the salvageable building material had been removed.

The record of the sale of the public property, in 1897, shows the sale of a commissary building, but this building can hardly have been the original Commissary Storehouse of the period 1873-85, in view of the archeological evidence of the destruction of this building by fire (Mattison, 1951, p. 40). After the destruction of the original Commissary Storehouse, perhaps in 1894, another building may have been used for the purpose by the Indian school, until the removal of the school, soon afterward, to the Indian agency location at Elbowoods. The original Quartermaster Storehouse, which faced the Commissary Storehouse on the opposite side of the parade, survived somewhat longer, and this may be the building referred to in the sale record of 1897. A photograph said to have been taken "about 1895" shows this quartermaster building in good repair (Mattison, 1951, opp. p. 2).

The site of the original Commissary Storehouse, on the south side of the parade ground and near the southwest corner (fig. 15), was

almost entirely obscured, prior to excavation, by a dense growth of vegetation—largely lush grass with relatively few weeds—and no part of the original construction, such as exposed stones of the footing, was visible (pl. 42, *a*). Only a prominent depression at the rear of the site of the East Wing of the building served to mark the actual location of any part of the whole (fig. 15). This depression, clearly the remains of a cellar, was, as a matter of fact, one of the most prominent surface features of the whole site of Fort Stevenson.

Without any surface indication of the original building lines at this site, excavation was begun by trenching at the supposed location of the front line of the original structure, following the plan of 1879, and at the outer rear corners (i.e., southeast and southwest) of the East and West Wings shown on the plan. Clear evidence of the original location of the building on this site was obtained only when a depth of more than a foot had been reached. Portions of the remains of the original footings were then encountered along the line of the front wall footing and at the rear outer corners mentioned (pl. 42, *a*). These portions of the footings consisted of but single large rocks in rough alinement, but seldom in contact with each other—the remnants of the masonry of the footings after most of the stones had been removed for use elsewhere, at some time after the destruction of the building. So much of the masonry had been removed that in portions of its course the only evidence that there had once been a footing in this position was the disturbed soil in the refilled trench originally made to accommodate the masonry. Little could be learned of the original appearance of the masonry here, but the almost complete lack of lime-mortar fragments suggested that the masonry in this case, as elsewhere about the post, had in part been laid dry, without mortar. Though little evidence had been preserved concerning the footing for this building, there is no reason to suppose that it differed in any way from those of other buildings, even though the building proper was in this instance of a different style.

At the site of the masonry footings at the southwest corner of the West Wing, much the same condition was found (fig. 15). Only traces of the original stone masonry, in scattered stones and the disturbed, refilled trench, provided information to verify the dimensions of the building as given in the report and plan. At the site of the cellar at the rear of the East Wing, no stone or other masonry of any kind was found until the excavation had reached nearly the floor level of the original cellar. At this point, the remaining masonry, of the cellar walls, was of common red fired brick. The brick used were of the same type as that previously found used elsewhere only for chimneys. Only the east half of the cellar area was excavated, because of the size of the unit (fig. 18; pls. 42, 43).

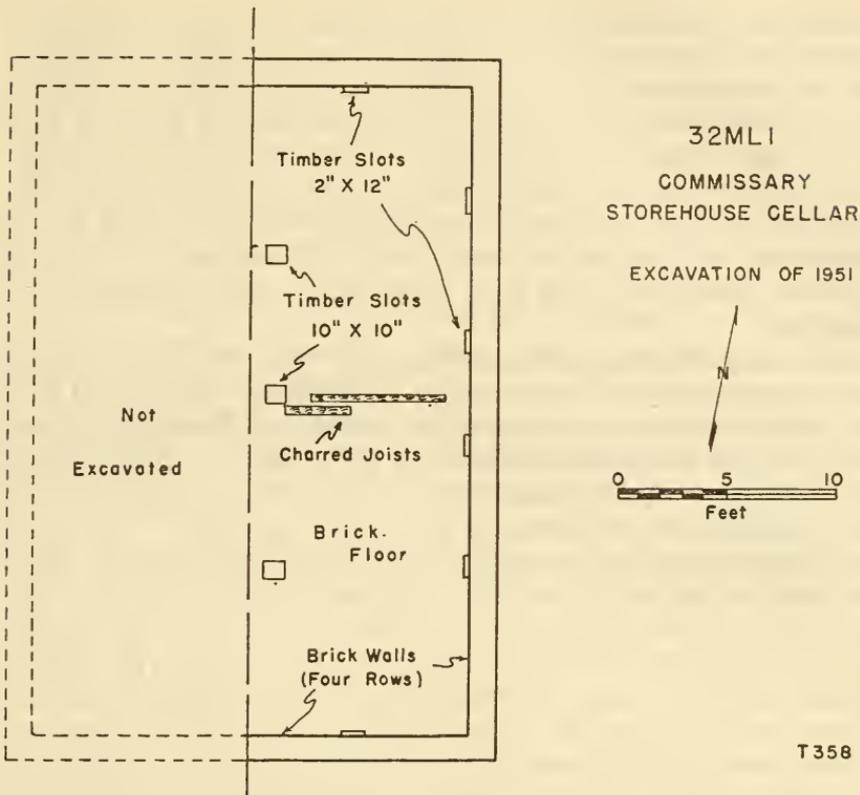


FIGURE 18.—Ground plan of the cellar of the Commissary Storehouse, Fort Stevenson, showing excavations of 1951.

The brick-lined cellar of the Commissary Storehouse was, apparently, the only cellar at the post so built, and was of more careful design than the earth cellars of other buildings. This cellar must have been built at the time of original construction of the building (1873), and had been done with care and some skill in bricklaying. The bricks were common red brick that had been shipped to the post for construction purposes, and were indistinguishable from those used elsewhere in chimneys. The brick masonry of the walls of this cellar had been laid four bricks wide, the stretchers, lengthwise with the course of the wall, provided with additional courses of headers at intervals. Throughout the remnants of the walls seen in excavation, only the lowest courses had been preserved, the upper portions having collapsed (or having been pushed) into the cellar, probably after the fire that destroyed the building, and having been covered with other fill (pls. 42, 43). Portions of the east and south walls had been preserved to a height of eight courses above the level of the cellar floor, and at these points it was observed that the fifth course, counting from the floor level, was a course of headers laid at right angles to the course of the wall (pl. 43, *b*). The bricks in these walls had been laid in lime mortar.

The floor of this cellar had also been made of common fired brick (pls. 42, 43). In this instance, the bricks were laid flat, and lengthwise with the long axis of the cellar (i.e., north-south). So far as could be determined, the masonry of the floor was not laid with lime mortar, and it was probable that, as in other similar uses of common brick, they were here simply laid level on a smooth sand base. Although the brick had been laid lengthwise with the cellar, at one point near the south wall one row of brick ran east and west, for no apparent reason, and this may have been merely accidental or capricious.

Near the north-south midline of the cellar floor were three recesses, each approximately 10 inches square, which showed the original location of supports for the ceiling of the cellar (and flooring at ground level), as well as their dimensions (fig. 18; pl. 42, *b*). It is probable that these posts were originally used in pairs, and that another row was present in the unexcavated portion of the cellar. Similar to these floor recesses near the midline were others near the walls, which probably served likewise for floor supports (fig. 18; pl. 43, *b*). The dimensions of these wall recesses (and hence of the timbers placed in them) were approximately 2 inches by 12 inches. In both the midline recesses and those along the walls, charred wood fragments and decayed wood were present. Between the recesses along the east wall of the cellar (the only portion of wall sufficiently well preserved to show this detail), a lime whitewash had been applied to the brickwork. Near the floor recesses in the middle of the cellar, one badly charred timber, which was probably not larger than 2 inches by 4 inches in original dimensions (fig. 18; pl. 42, *b*), lay on the floor. Nothing could be learned of its original length, but it doubtless had originally spanned the distance from wall to midline post—i.e., more than 8 feet.

The ceiling of this cellar (the flooring at ground level) was earth filled, to serve as insulation for perishable foods kept in the cellar. In the much-disturbed fill that had accumulated in the former cellar, traces were frequently seen of such earth levels, associated with charred wood, but such was their contorted state that no detail could be learned of this earth-packed ceiling. It was also known that in 1879 this building had a furnace, and among objects excavated, found lying on or near the original brick floor, were parts of a sheet-steel furnace, probably that which had been in this position at that time (pl. 49, *a*). With this were such furnace tools as a scoop shovel and a furnace shaker, much damaged by the fire. Lying on or near the floor in various places beneath the fire debris were many large fire-broken sherds of heavy earthenware ("stoneware") which had been in the cellar at the time the building was destroyed and had been used for food storage.

After the destruction of the building by fire, the cellar of the Storehouse had been filled, in part intentionally, probably to keep out stock and children, with gravel, sand, earth, and large boulders, and the area had been used for a dump. Much of the refuse accumulation found on excavation of the cellar was of recent origin, and clearly from the period following 1897, during which the site of the military post was in use as a farm. The only demarcation of the fill in the cellar area was an irregular line between the building debris and the later intentional fill. In some places this separation was marked by the irregular line of debris derived from the original earth-filled ceiling mentioned. This irregular line helped in separating older materials, beneath, from more recent materials, at a higher level. Of the objects encountered, only those that appeared to be older were saved intact; some of the more recent materials were also collected, and were marked as "surface" collections. In the fill was a large accumulation of farm rubbish of all kinds, particularly metal, glass, and earthenware, and among this rubbish was a large mess-kitchen range of Army style, that had survived probably at least since the time of the use of the buildings of the fort by the Indian school (pl. 49, *b*). The size of this range is such that it would scarcely have been used in a farm kitchen.

On the evidence of excavation, and from documentary record, it is known that the Commissary Storehouse differed materially in construction from other major buildings of the post in being balloon framed rather than of the more typical adobe-brick and timber design. Though no data are available concerning chimneys or their placement, they must have been present, and doubtless resembled those of other buildings. Concerning the timbers there is little evidence aside from the inference that, as elsewhere, the heavier timbers and flooring were of local cottonwood, the other lumber and millwork having been obtained, as were the fired brick, by importing, probably from St. Louis, Mo.

The architectural design known as balloon framing is of special interest, this one major building at Fort Stevenson having been made in that style. This design, first employed, apparently, in American architecture about 1850, and particularly in the West, has now so long been employed that the technical term itself has been nearly forgotten, while the older style, known as braced framing, is now probably extinct in American architecture (Gidieon, 1949, pp. 281-289; Mathews, 1951, vol. 1, p. 67). The major difference between the two styles is in the dimensions of the timbers, and the way in which they were used. The braced frame, represented elsewhere at Fort Stevenson, employs heavier timbers (frequently 4 by 4 inches or 4 by 6 inches) fastened by mortising and pins; the balloon frame employs lighter timbers (usually 2 inches by 4 inches) held together solely by

spikes and nails. The balloon-frame design is correlated with the rapid settlement of the Western United States, the availability of dimension lumber even in areas remote from timber production through the development of the railway transportation system, and the adaptability of this lumber to the needs of the settler on the vanishing frontier. It is entirely possible, in this instance, that the lumber used in the Commissary Storehouse had been received by rail at Bismarck (reached by the Northern Pacific Railroad in 1873), and from that point hauled by wagon to Fort Stevenson. By 1873, shipment of lumber long distances by water had probably become impractical.

#### SOUTH OFFICERS' QUARTERS

Three sets of Officers' Quarters are shown on the Ground Plan of Fort Stevenson, of 1879, arranged in a row along the west side of the parade ground and facing the Guard House, to the east (fig. 15). The plan does not identify these quarters separately, but it does show the middle building of the group as a single unit, the other two as double units—i. e., for two families each. The description of these quarters provided in the inspection report of the same year gives a good account of the construction of these private dwellings, and clearly indicates that the middle unit (the single dwelling) was that provided for the commanding officer of the post (Mattison, 1951, pp. 32-33). For convenience, therefore, the three sites are here designated as North Officers' Quarters, Commanding Officer's Quarters, and South Officers' Quarters. Excavations were conducted at the sites of the South Officers' Quarters and of the Commanding Officer's Quarters.

In addition to these permanent buildings for officers' homes, temporary quarters of logs were erected in the immediate vicinity of the more permanent buildings, and were used until the latter were finished. These cabins are shown on a sketch made by de Trobriand in May 1868 (de Trobriand, 1951, opp. p. 196). The location of these temporary log buildings with respect to the permanent buildings is somewhat more clearly revealed on a plan of the post published in 1870 (U. S. Army, Surg. Gen. Off., 1870, p. 394). They were placed in the same part of the whole post as the permanent quarters, but to the north and south of them, and on the site of the Commissary Storehouse, subsequently built. One of these log structures is visible on a photograph made after the abandonment of the military post (pl. 33). There is, however, no mention of them in either the inspection report or plan of 1879.

The permanent officers' quarters were built during the summer of 1868, and at least the Commanding Officer's Quarters were occupied in October of that year (de Trobriand, 1951, p. 340). It seems prob-

able that the other Officers' Quarters were completed about the same time. From the mention of the sale of three separate officers' quarters in December 1897, it is probable that the South Officers' Quarters, one of the three, survived until that date. It was probably demolished soon thereafter, leaving little evidence of its original construction above the footings themselves.

The site of the South Officers' Quarters (fig. 19; pl. 44, *a*) was completely obscured on the surface of the ground when first approached, and was covered by a continuous heavy sod with few weeds. Excavation was begun by trenching at the assumed location of the southeast corner of the building, according to the plan of 1879. It soon became apparent that an error had been made in preparing that plan, since the corner sought was found approximately 14 feet north of the point at which it had been shown. (The photostat of the ground plan of 1879, in National Park Service Region Two and Missouri Basin Project files, is reduced one-half from the original. The original seems to have been somewhat unskillfully drawn, and may be somewhat distorted as a result of shrinkage of the cloth; but this does not account for the error in measurement of the parade ground.)

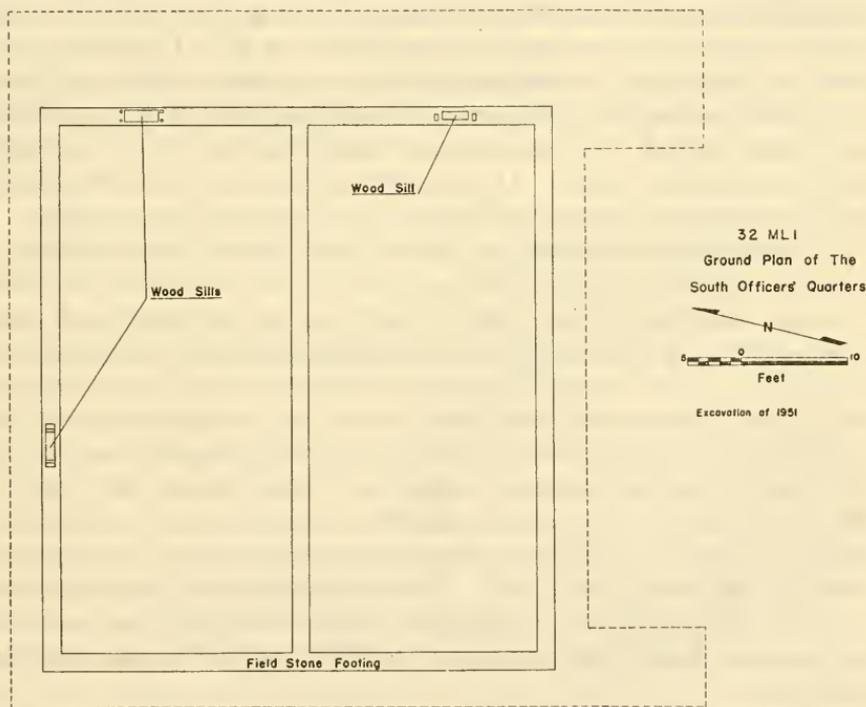


FIGURE 19.—Ground plan of the site of the South Officers' Quarters, Fort Stevenson showing excavations of 1951.

Excavation showed that the remains of this structure had been obscured by a heavy mantle of mixed earth, containing bits of building debris such as broken fired brick and fragments of lime mortar. There was also a great deal of fine gravel; this was probably introduced on the site of the South Officers' Quarters at the time of the excavation of the cellar beneath the Commanding Officer's Quarters immediately to the north. (A break in the masonry footing of the south wall of the Commanding Officer's Quarters, on the side toward the present building, and an apparent cellar entrance depression, suggests that the excavated material was moved directly out over the site of the South Officers' Quarters.) Two small trash pits had also been dug at the site, at some time after the destruction of the building, and these contained recent refuse. A fence running across the site of the building was not removed during excavations.

The excavated remnants of this building did not differ materially from those previously found at other building sites, except that this site had been more extensively altered, through the removal of almost every part of the original building except for the lowermost parts of the stone masonry footings (fig. 19; pl. 44, *a*). At no point was the footing preserved to its full original height, and the midline footing had been completely removed throughout a great part of its course. The stone masonry here, as elsewhere about the site of the fort, consisted of field stone, sometimes cracked to provide a face, and this face placed toward the inside or outside surface of the footing. These larger stones had then occasionally been chinked and fitted with spalls and smaller rocks. At no point had this footing been placed in lime mortar, so far as could be seen in the remaining portions.

It became clear on excavating that the building had been completely removed, probably soon after its purchase in 1897 and at a time when it was in sound condition, since the only timber remains found were those of three decayed sills, of heavy plank, probably native cottonwood (fig. 19). These sills were probably parts of the frames of wooden ventilators that had given access to the space beneath the original floors of the building. They had been placed at too low an elevation to have served as the base for door sills, and the plan of 1879 shows the two front doors (leading to the separate parts of the building) near the midline of the whole, rather than in the position in which the wood was found. No other timber remains suggested anything of the original architectural detail of the building, nor was any common fired brick found that could be related to the original chimneys.

Adobe earth was encountered in excavation at this site, but no adobe brick (fired or unfired), nor any other evidence of fire damage to the building. Smaller objects found were of little assistance in tracing

the history of the structure and were, in large part, clearly of recent origin.

Architectural evidence concerning the South Officers' Quarters, from excavation and contemporary record, while scanty, suggests that this structure was similar in every way to the Commanding Officer's Quarters, the site of which was subsequently excavated, and for which more data are available. Like it, this building had been set upon a stone masonry foundation, it was also a frame structure in which adobe brick were used (probably in somewhat different fashion from that seen in larger buildings such as the Hospital and Barracks), and the building had been provided with fireplaces and chimneys, constructed of common fired brick. As in other buildings of the whole post, the common brick, as well as the lighter lumber and mill-work used here, had doubtless been imported, only the heavier timber being of local production, like the stone of the masonry and the adobe brick.

#### COMMANDING OFFICER'S QUARTERS

The Commanding Officer's Quarters, the middle building of the row of officers' homes, was located on the west side of the parade ground, directly opposite the Guard House, and was a single dwelling (fig. 15). This building, during the winter of 1868-69, was the home of General de Trobriand, at that time commanding a military district which, with Fort Stevenson, included Forts Totten and Buford. It was during de Trobriand's regime that much of Fort Stevenson was built, and much of his entertaining and historically valuable journal was probably written in this building.

Although the construction of the Commanding Officer's Quarters had been begun late in 1867, it was not possible to complete it until the following summer, and it was first occupied in October 1868 (de Trobriand, 1951, p. 340). After serving as the home of various post commandants, the building also served as the superintendent's residence during the period of the use of the former post as an Indian school. About the year 1897 it became the home for the farm established on the site. Information concerning private ownership of the site of the post, preserved in records of the Register of Deeds, McLean County, at Washburn, might afford some further knowledge of the later history of the building. A photograph of this building, probably taken about 1910, during the period of the use of the former quarters as a farm home, is owned by Mrs. Falstad, of Garrison. This preserves some details of the exterior, as it then looked, which are not visible on earlier photographs or sketches. After having served various farm families, it was used as a granary, and was finally torn down about 1945, the last of the original buildings of Fort Stevenson. At some time during its use as a private home, a cellar was dug beneath it, and portions of the masonry footings

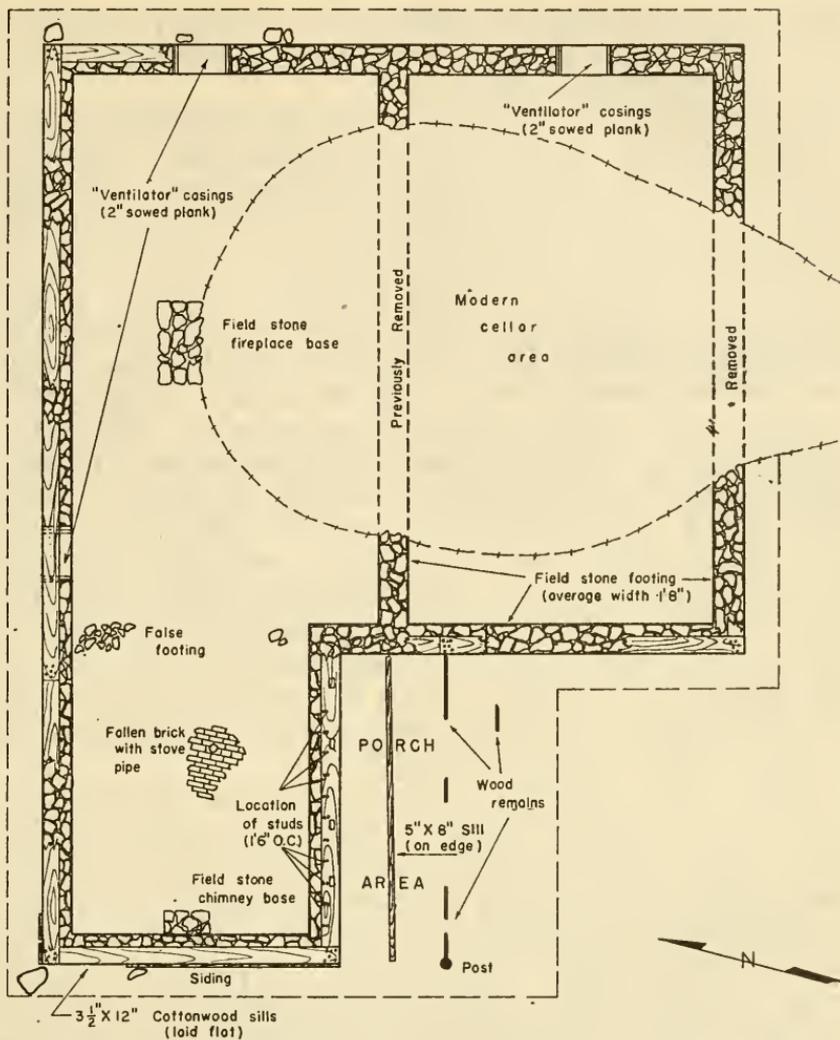
removed. It is hardly surprising that when it was demolished, it was said that nothing could be done to save the building.

The former Commanding Officer's Quarters (fig. 20; pl. 44, *b*), like most of the more important buildings of the post, had been built of stone, adobe brick and adobe mortar, and timbers, including millwork of various kinds, and had had plastered walls and ceilings. Traces of most of these elements were found on excavation, which was made at the site after it had been a ruin for only 6 years. When first approached, the site was covered with a mass of dense, tall weeds surrounding a cellar hole filled with great quantities of building debris, particularly, large quantities of broken plaster. Various remnants and bits of timber and millwork were also lying about, which had been overlooked or discarded when the house was torn down.

The weeds and rank grass that covered most of the site, except for the cellar area, were first removed, revealing the contours of the surface. Narrow trenches were then dug along the exterior of the exposed stone masonry of footings and other elements surviving in place from the original structure. The cellar is said to have been made after the building had been in use for many years, and it was for that reason left unexcavated (pls. 44, *b*; 45, *a*). No other major architectural changes in the original were noted, in excavation, since all parts of the structure above the footings, except for portions of the main building sills, had been removed from their places at the time of final demolition. Within the interior of the structure, excavation was carried down to the original ground level upon which the building had been placed, as far as the margin of the recent cellar mentioned.

As had been the case with previous sites excavated, the deposit covering the site of the Commanding Officer's Quarters was derived primarily from the materials originally comprised in the building itself, with little visible additions such as wind-deposited soil. These materials included adobe brick, adobe mortar, common fired brick, lime mortar and lime plaster, and occasional wood fragments or larger timbers, plank, or moldings, ordinarily much decayed and rarely in their original positions. Various samples of wood members were obtained. Among these were two cottonwood door sills, much worn with use, a window casing, a portion of a second window casing bearing the manufacturer's stencil and the shipping address of the Acting Assistant Quartermaster of the post. There were parts of a door frame, and a complete door, which appears to be of an older style of millwork, and had probably been at the post from the period of the military occupation.

No evidence was seen in the excavation of this site of any fire-damage to the original structure. Though outlines of adobe bricks



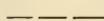
LEGEND



Lap joint (spiked)



Field stone



Limits of excavation



Limits of modern cellar

32MLI

COMMANDING OFFICER'S  
 QUARTERS



Excavation of 1951

T 360

FIGURE 20.—Ground plan of the site of the Commanding Officer's Quarters, Fort Stevenson, showing excavations of 1951.

in adobe mortar and traces of their use were frequently observed, it was impossible to measure or collect specimens of these unfired bricks because of their disintegrated state.

The stone masonry of the footings here was apparently identical with that previously described for other building sites. Somewhat greater care had, however, been given to the appearance of this masonry than in the case of the other buildings, some of the work having been carefully fitted and mortared (pl. 44, *b*). The remains of a "false footing" of stone were found at the site of the rear wing of the building, on a projection northward from the west footing of the main part of the building (fig. 20; pl. 45, *a*). The building, as completed, had been provided with a wing, extending to the rear (west) from the north half of the whole, which had served as a kitchen (figs. 15, 20; pl. 44, *b*). At the position of the false footing, a complete footing had once been constructed, or partially completed. It seems probable that it had originally been intended that the whole building be symmetrical, and that after a part of the footing in this position had been finished the plans had been changed, perhaps by de Trobriand himself, by extending the building lines to provide a kitchen wing. Work on the footing may have been stopped, and the remnants of the masonry here consisted of but a few smaller rocks and spalls. This was the only trace found of a footing for any partition within the building, aside from that at the midline.

At three points along the course of the exterior footing of the building were openings through the masonry, two along the east (front) line, one along the north; none was found elsewhere (fig. 20). These openings were furnished with wooden frames of 2-inch plank, and the openings were apparently ventilators, to allow circulation beneath the original floors. The frame in the opening of the north footing was much decayed. Those along the front were in a somewhat better state of preservation, and may have been better protected by the porch that had originally extended across the front of the quarters. The ventilators were not uniform in dimensions, but varied with the elevation of the original ground surface adjacent. The frame in the north footing still carried the original building sill above it, though both were much decayed.

Within the south half of the site of the Commanding Officer's Quarters, all evidence of details of original construction had been removed during the construction of the recent cellar. Somewhat more was found in the north half of the site, and details found there had doubtless been repeated in the south half. Midway between the front wall footing and the false footing mentioned were the remnants of a fireplace and chimney base (fig. 20; pl. 45, *a*). This was a stone masonry footing, similar in construction to the footings of the building proper, but partly damaged or reduced in size during the con-

struction of the cellar. The original east, north, and west faces of this fireplace footing had been preserved intact. This footing was not preserved to its full original height, but this level would have been approximately the same as the height of the floor, presumably immediately above the top of the main-wall footings. From the description of this building in the inspection report of 1879, this interior fireplace footing must have served the parlor room, which lay just to the east and on the front of the building, as well as the dining room, just to the rear (west) of the parlor. Near the fireplace footing lay a quantity of broken fired brick, probably remnants of the original chimney from the fireplace. Most of the brick originally in use here must have been removed at the time the building was demolished.

At the site of the "kitchen" wing, at the rear of the north half of the Quarters, was a second small chimney base. This lay along the footing of the west wall of the wing, and was of the same type of rough stone masonry (fig. 20; pl. 45, *a*). Though not preserved to full original height, this base rose above the elevation of the exterior wall footing against which it abutted. Clearly related to this chimney base was a section of fallen fire-brick masonry, found in the interior of the wing. This section had presumably fallen at the time the building was demolished, and lay with the interior plastered surface downward. The section had been kept intact because of the fact that it was a part surrounding a chimney hole and metal sleeve.

Along a large part of the footings of the exterior walls of this building the original building sills of cottonwood were still in place. The portions best preserved, upon which any detail could be seen, were those along the north footing and along the footings at the rear wing (pl. 46, *a*, *b*). These sills measured  $3\frac{1}{2}$  inches in thickness, 12 inches in width, and had been laid flat. They were, however, much decayed, and had probably been somewhat compressed during use by the weight of the building resting upon them, from an original thickness of 4 inches. It was impossible to measure the complete length of any of these sills except for one that lay on the west footing of the rear wing; this timber was approximately 16 feet long (pls. 44, *b*; 45, *a*).

These sills had been joined by overlapping joints, and at four of the six corners of the footing and at one point along the north footing, these joints could be observed. The joint along the north footing was the best preserved, and in this instance the overlap of one timber upon the other was approximately 10 inches deep (pl. 46, *b*). At the corners of the masonry, the sills had been overlapped their full width (12 inches), at right angles (pl. 46, *a*). This amount of overlapping had doubtless varied according to convenience from place to place in construction. These lap joints had been spiked with six to eight

nails. At some points along the exterior of the sills, fragments of the original siding of the building were seen, but these were not uniform in either materials or dimension, and probably represent casual repairs made on the building at various times.

The sill found in place on the south footing of the rear wing provided some detail concerning the original timber construction of the building. This sill showed four excavated areas or mortises, two each approximately 4 by 4 inches and 4 by 6 inches, and extending through the sill vertically. These holes, made to receive vertical timbers, the braced frames of the walls proper, were not regularly placed, as might have been expected. These mortises were the only ones seen on any of the sills still in place, and while vertical timbers similarly placed doubtless continued about the whole building, no concrete evidence of their original position elsewhere was found, in either mortises or spiking.

In addition to the mortise holes in the sills mentioned, some further knowledge of the construction of this building was available from groups of spikes along the inner edge of this sill, approximately 1 foot 6 inches on center, which showed the original location of vertical studding of the inner face of the wall. These studs, to which the lath and plaster had been fastened, had probably been 2- by 4-inch dimension, or larger. Many fragments of lath, as well as great quantities of broken plaster, were found in the building debris on the site. The plaster was white or painted in various colors, and some larger fragments were collected. The colors include red or pink, green or blue, and a shade of brown. The fragments were so scattered, however, that it was impossible to be certain of color or colors that had been used in any particular room from the fragments found within any part of the whole site.

Adjoining the kitchen wing and on its south side were the remnants of a much-decayed wooden porch floor (pl. 47, *a*, *b*). No attempt had apparently been made to remove this when the building was demolished. The porch floor had been built with two sills, but that at the outer edge of the floor was so badly rotted that only traces of the original wood had been preserved. The second or inner sill was found in place, midway between the outer and inner edge of the floor (fig. 20; pl. 48, *a*). This second sill was 5 by 8 inches, set on edge, and was actually two separate timbers laid end to end, the longer originally measuring slightly more than 6½ feet in length. On these sills, at right angles, floor boards had been laid, nailed in place, in two layers. The lower floor boards were 1- by 2-inch dimension, the length averaging 3 feet, but of miscellaneous materials, some being plain, some tongue-and-groove lumber (pl. 47, *b*). After this floor had been in use for some time, a second floor had been put down over it, also at right angles to the sills, the boards used having been 1- by

3-inch tongue-and-groove lumber, and from 5 feet 6 inches to 5 feet 8 inches in length (pl. 47, *a*). It seems unlikely that either of these floors was the original, and the floor remains found were probably replacements. It is known, however, from the report of 1879, that the Commanding Officer's Quarters had been furnished at that time with an "enclosed porch" at the kitchen wing, and the dimensions of the original as given, 6 by 18 feet, are approximately the same as those of which remains were found.

In addition to the construction materials collected, such as wood and plaster fragments, numerous objects were found in excavation of this building site. The greater part of these pertained to the period of the occupation of the former dwelling as a farm home rather than to any earlier period. In the area beneath the rear porch were numerous items of some interest, particularly various children's playthings. Elsewhere within the footings of the building clear evidence was found of the late use of the building as a granary, in small grain and straw among the building debris. On the site of the kitchen wing were the skeletal remains of small animals (rats, mice, cats, and domestic fowl), some of which were doubtless also introduced in the site during the use of the building as a granary.

The Commanding Officer's Quarters, like the other major buildings of the post, was thus set upon stone masonry foundations, the walls having been of braced framing, packed with adobe brick, rather than of massive adobe-brick masonry as in the case of the Barracks and Hospital and, probably, other larger buildings of the post. Some specimen material of millwork from the building is now available. Details of front, side, and rear elevations of this building are available in sketches by de Trobriand and in various photographs (de Trobriand, 1951, opp. p. 356). Only one major architectural change is known to have been made in this structure after its completion, that of the introduction of a cellar, and the removal of portions of the original footings at the same time.

The description of the buildings of Fort Stevenson, given in 1879, which records that they were "of adobe brick set up in frames on rock foundations," is particularly well illustrated in this instance, in which evidence had been preserved of the "braced framing" of the original. The mortises mentioned revealed the design of the timber construction, and between this framing adobe brick had been used as packing or lining. It will be recalled that at the site of the large public buildings previously excavated, the Hospital and the South Barracks, no clear evidence of the original framing had been preserved, whereas it was seen, by reason of the accidental firing of masonry, that solid masonry walls of adobe brick had been employed there. Thus, despite the phrasing of the inspection report, there is evidence that there were some variations in the design of the build-

ings of the fort, particularly with respect to buildings in which both timber and adobe were employed. It seems probable that no detailed plans for these buildings were prepared elsewhere, as at departmental headquarters, and that actual design and construction were left largely to the discretion of field officers.

#### OTHER SITE UNITS

The ground plan of Fort Stevenson, of 1879, shows the location of several sinks or latrines, but no other details of these necessary buildings have been preserved. The position of those originally located at the rear of the buildings on the north side of the parade ground had been completely obscured by many years of cultivation in that part of the site of the post, but several smaller depressions were still visible at the rear of the buildings on the south side, near the edge of the bank (fig. 15). These depressions were apparently undisturbed since the pits were abandoned, and were clearly marked by a luxuriant growth of long grass as well as by the actual contour of the ground at those points.

Two of these pits were excavated, at the rear of the site of the Hospital and in the approximate location of two shown in 1879. For convenience, these two sites were designated as Latrine No. 1 and Latrine No. 2. Excavation provided groups of informative objects, the provenience of which is clearer than for some objects excavated at other sites about the post. The two pits appear to have been used during successive time periods—during the military period (No. 2) and during the subsequent Indian school period (No. 1). Little was preserved that indicated anything of original construction, aside from the pits themselves.

Among the buildings mentioned as having been sold at auction in 1897 are various "closets," and the privy buildings originally standing in this location were doubtless moved at that time or subsequently. There had been some slump inward from the upper edges of the pits, and the dimensions of length and width shown on the accompanying plan were taken at the midpoint of the earth walls of the pits. These walls had originally been very nearly vertical, but the pits were somewhat smaller at the bottom than at the surface.

Latrine No. 1 was an unlined pit, which had been dug to a depth of approximately 3 feet 6 inches below the present ground surface, and measured approximately 8 feet long (east-west) by 4 feet 6 inches wide (north-south). The original pit had penetrated fine-grained surface soil into subsurface gravel. There had been no reinforcement of the earth walls, and no construction materials were found that might have been derived from the building that had stood over the pit. The various objects found there clearly demonstrated that the pit had been in use primarily (perhaps exclusively) during the years

when the former Hospital had served as an Indian school. Among them were a slate pencil, boys' shoes, and fragments of knitted stocking fabric, small black felt hats, and the like.

Latrine No. 2 was a somewhat larger pit than the other excavated, and had been dug to a depth of approximately 6 feet below the surrounding surface. This pit measured 14 feet 5 inches in length (east-west) and 5 feet in width (north-south). The pit had also penetrated to subsurface gravels, and in this case the earth walls had been shored with planks set on end (pl. 48, *b*). This cribwork, though almost completely decomposed, appeared to have been of 1-inch stock, of random width as great as 9 inches, and had doubtless originally been secured to the privy at the upper ends of the planks. It is possible that the building may, in part, have been made of adobe brick, since adobe bricks and adobe mud were seen near the edges of the pit at the surface, apparently in original position. These bricks may, however, have been merely banked against the building.

Objects found in excavating Latrine No. 2 showed quite clearly that the pit had been in use at an earlier period than the other, and during the military period. Several military objects were obtained, with fragments of men's shoes, fabrics, and personal possessions. This pit was doubtless intended for the use of the Hospital personnel and patients, and several Hospital Department, patent medicine, and drug bottles of glass were obtained there, as well as the base of an older type of glass whiskey flask.

The fill in neither of these pits revealed anything significant, in structure or composition. In both instances, lime had been used from time to time while the pits were open, and gravel and waste soil, including some fine lignite, had also been used to fill the pits.

### OBJECTS RECOVERED

In the following account of objects recovered in excavations at the site of Fort Stevenson, intended chiefly as a descriptive report, the objects have been grouped as far as possible according to logical relationships, rather than according to the nature of the materials of which they were made. It has not always been possible, however, to achieve a completely satisfactory arrangement of such a large and miscellaneous group of materials. Many objects obtained had served more than one purpose and have relationships other than those of the most important or obvious. Where several relationships have been observed, in different directions, these have been mentioned.

The various uses to which the site of Fort Stevenson had been put—military, Indian school, and agricultural—merge imperceptibly into one another, and many of the objects described here have no clear-cut provenience. Several kinds of military objects obtained are obviously derived from the period of the military use of the post, just as the few

materials derived from the Indian school belong to a subsequent period and some agricultural objects to still another. But much of the material of the specific periods is not clearly related to one or another. An example is the marked white earthenware, probably first used in quantity at the site during the Indian school period. The firm which manufactured most of this, Burgess and Campbell, of Trenton, N.J., began operations in 1879 and could, presumably, have supplied the enlisted men's messes of the military post. It seems unlikely, however, that the military messes would have been furnished with such tableware and it is known merely that the pieces were in the former South Barracks at the time the building was in use as a boys' dormitory, when the structure was burnt in the summer of 1894. Metal mess gear, which may have been used at either or both the military and school messes, was also found at this site.

It is manifestly impossible, from the fragments that have survived from such a site as this, to reconstruct more than a small part of the life at a military post, subsequently used as an Indian school, and last of all as a farmstead. This is particularly true by reason of the fact that what has survived has ordinarily been preserved only by accident. In this respect, of course, the site of Fort Stevenson is like many archeological sites both historic and prehistoric. On the other hand, materials are now available from this site that reveal bits of the physical history of the post nowhere else preserved, or preserved less adequately. One would scarcely expect to find in any document that dominoes was a game played, and perhaps favored, by soldiers or Indian boys who once lived at the post. The example is a trivial one, but archeological investigation frequently contributes such sidelights on more formal history.

Interestingly enough, the great bulk of the objects obtained at Fort Stevenson is derived from essentially modern industrial processes, and are machine made; practically nothing was found, even for later periods of the use of the site, that can be said to represent true handcraft, or even local improvisation. This is scarcely surprising, since the needs of the post could be, and were, supplied from industrial centers by transport, even from a great distance. Supplies of all sorts were at first received by steamboat—even, as has been seen, flooring and millwork, fired brick, and similar bulky construction materials. After the completion of the Northern Pacific Railroad to Bismarck, in 1873, transport was probably largely by wagon from that point, rather than by river, as previously. Though steamboats continued in use for some time after this date, they probably became less important thereafter for transport.

During the development of industrial manufactures in the latter part of the 19th century, new and wider applications and uses were rapidly made of raw materials previously of restricted use or but

newly invented. Some examples of both older and more recent industrial processes are here represented. An example is the replacement of the use of horn, bone, shell, and other natural raw materials by artificially hardened rubber for such objects as combs, brush handles, and the like, following the development of this industry attending Good-year's discovery and patents of 1851 and other dates. Materials such as the present collection thus reveal something of the rapidly changing character of modern industrial manufacture, to which scant attention has sometimes been paid.

In the following section the objects recovered are listed in the manner of an annotated catalog. The class of object is given first and within the class the individual objects are grouped by type. Specimen catalog numbers are given in parentheses immediately following the object referred to. If the object, or one specimen of the group of objects, is illustrated a reference is made to the illustration, also in parentheses. A total of 6,099 specimens of all categories were recovered from the site and these have been cataloged under 2,134 catalog numbers. The catalog numbers are less than the actual number of specimens because of occasional "lotting" of several identical specimens under a single catalog number (e.g., several fragments of window glass recovered from a single findspot are grouped under a single catalog number).

#### MILITARY GOODS

##### UNIFORM AND INSIGNIA:

*Cap* (No. 1823). Six fragments of black leather visors for small forage caps, used in the U.S. Army prior to about 1898.

*Shoulder scales* (Nos. 965, 966, 1245, 1246, 1283-1285, 1517, 1856) (illustrated example pl. 50, *v*). Parts of the brass "shoulder scales" worn by enlisted men prior to about 1872 for dress occasions (4 to 4¼ inches in width; 3½ to 4 inches in depth). The scale jointed, or overlapping. No complete specimen was obtained. (U.S. Army Quartermaster's Dept., 1889, pp. 47, 50.)

*Insignia* (Nos. 632, 639, 1118, 1287, 1833). A brass hat ornament (No. 1833), die stamped with the national emblem (spread eagle), similar in design to that still used by commissioned officers. The specimen is badly broken but bits of a greenish fabric and some coarse fiber (padding) still adhere to it. This type was used for dress until about 1872. It was worn with the stiff black felt hat, on the right side against the brim, which was looped up. Both officers and men at this time also wore the insignia of the branch of service (e.g., the infantry bugle) on the less formal forage cap as well as on the front of the stiff black felt hat.

A die-stamped brass numeral "1" (No. 632), probably a regimental number (1¼<sub>16</sub> inch in height). Companies of the 31st Infantry were at Fort Stevenson in 1867, and of the 17th Infantry in 1870 and 1871 (Mattison, 1951, p. 24). A member of either of these regiments may have lost this numeral.

A die-stamped brass numeral "6" (No. 1287), probably a regimental number (½ inch in height). Companies of the 6th Infantry were at the post from 1872 to 1879 (Mattison, 1951 a, p. 24).

## UNIFORM AND INSIGNIA—Continued

A die-stamped brass letter "K" (No. 639) (pl. 50, *h*), probably a company letter (1 inch in height). De Trobriand refers to Co. K (presumably of the 13th Infantry) as being at Fort Stevenson in 1868 (de Trobriand, 1951, p. 341).

A die-stamped brass bugle (No. 1118) (pl. 50, *l*), a cap ornament (3½ inches in length). The bugle was the original infantry insignia until about 1875 when the crossed-rifle infantry insignia was adopted (G.O. 96, AGO Nov. 16, 1875).

*Buttons* (Nos. 344, 956, 1478, 1854/1-2) (illustrated example pl. 50, *g*).

Die-stamped brass uniform buttons made in two parts with brass loops. The size of the specimens obtained (¾ inch in diameter) suggests that they were for use on the dress blouse. Each has the national emblem (spread eagle) without letters on the shield. This was the style used by enlisted men. Only one (No. 1854/1) is marked with the manufacturer's name: "Horstmann Bros & Co./Phil[adelphia]." This company, and the Scovill Co. of Waterbury, Conn., were important manufacturers of such items during the 19th century. Similar specimens have been excavated at the sites of Fort Laramie, Wyo., and Fort Ridgely, Minn.

*Shoulder-sling plate* (No. 1288) (pl. 50, *i*). A die-stamped brass plate, on a lead base with iron loops molded into the reverse, for attachment to the cartridge-box strap, which passed over the shoulder (2½ inches in diameter). The design, within a border, is the national emblem, the eagle facing to the right. This eagle plate was used for combat until 1872 and for full dress until 1881 depending upon the kind of cartridge box carried.

*Belt buckle* (No. 1892). A brass uniform buckle, oval in outline, with hooks for attachment to belt or cartridge box (1¼ inches in height). The buckle bears the letters "U.S." within a border. Similar specimens have been excavated at Fort Laramie, Wyo.

*Canteen* (No. 1133). Stamped sheet-metal canteen; round, with concentric ribbed design (8 inches in diameter). This type was superseded, about 1898, by one with a smooth surface covered with felt and canvas.

*Spur* (No. 1640) (pl. 50, *k*). Portion of steel spur with geometric design. Presumably of military origin.

## REGIMENTAL PROPERTY:

*Guidon* (No. 1824). Fragment of wood with small hole and brass ferrule (1 inch in diameter). Probably the tip of the shaft of a guidon.

*Mess forks* (Nos. 916, 917). Silver-plated table forks, of trifold handle design. Both specimens have been damaged by fire, and are identical except for markings. One (No. 916) (pl. 50, *p*), is die stamped on the obverse of the handle: "Comp C 6th Reg/U.S. Infty 1868." The other (No. 917), is die stamped on the reverse of the handle: "Wm. Rogers, Smith & Co. A[]." Companies of the 6th Infantry were on duty at the post from 1872 to 1879, and this mess equipment had doubtless been used elsewhere previously.

## ORDNANCE:

*Cartridges and bullets* (Nos. 7-20, 90, 343, 399, 400, 476, 538-547, 959-963, 987, 1119-1128, 1236, 1237, 1356, 1475, 1525, 1609, 1661, 1721, 1763, 1808, 1834, 1858, 1882, 1883) (illustrated examples pl. 50, *a-f*). A detailed analysis of these specimens, by Dr. Carlyle S. Smith, is included in the present report as an Appendix. This analysis was published in the *Plains Anthropologist* No. 1, May 1954, but is repeated here for reference in its context with other items from Fort Stevenson.

## ORDNANCE—Continued

*Cap box* (No. 1855). A shallow, round, brass box (lacks cover), to hold primers ( $1\frac{1}{2}$  inches in diameter;  $\frac{7}{16}$  inch in depth).

*Worm* (No. 1521). Fragment of steel worm for cleaning rifle barrel.

*Ramrod* (Nos. 1606, 1867). Portions of two ramrods. One (No. 1867) has the regularly designed end with an eye to hold a cleaning patch ( $16\frac{1}{4}$  inches in length). Used with model 1864 or 1866 rifle.

*Scabbard* (No. 1857/1-2) (illustrated example pl. 50, *j*). Fragments of the butt ends of sword or bayonet scabbards. Brass ferrules ( $3\frac{1}{4}$  inches in length) are riveted to the leather fragments.

## MEDICAL:

*Bed bracket* (Nos. 60, 566, 701). Steel brackets which were fastened to the end-frames and supported the springs. Other specimens were found in place on end-frames (not collected). Steel cots were in use in the western military posts by 1874. These beds may not be strictly regulation equipment of the Medical Department.

*Scissors* (Nos. 563, 633, 634) (illustrated example pl. 50, *n*). Steel scissors, with small thumb and finger loops, apparently of surgical style.

*Surgical probe* (No. 1798) (pl. 50, *t*). Steel probe; shank  $\frac{1}{4}$  inch diameter; tapers to fine point; end slightly curved (6 inches in length).

*Syringe* (Nos. 336, 514) (illustrated example pl. 50, *m*). Fragments of two glass urethral syringes, with glass plunger ( $3\frac{3}{4}$  inches in length;  $\frac{1}{2}$  inch in diameter). Venereal diseases are specifically mentioned as a problem in the post hospital records (Mattison, 1951 a, p. 22).

*Gauze* (No. 1820). Cotton hospital gauze is present among fabrics found in excavation of latrines.

*Bottles and ground-glass stoppers* (Nos. 515-517, 579, 580, 928, 1281, 1660, 1776, 1840-1842, 1847, 1848, 1852, 1853, 1878). Various containers of glass, clearly for medicinal or patent-medicine use, and ground-glass stoppers. Only one specimen found (No. 1840) (pl. 50, *x*) is known to have been of military issue. This is a round brown-green glass bottle, small mouth, containing approximately 32 ounces liquid, bearing letters molded horizontally on the side: "U. S. A./Hosp. Dept." An assortment of smaller dispensary-type, clear-glass, small-mouth bottles, round or square in cross section, are also probably of military origin. These are preserved in 6-ounce (No. 1842), 4-ounce (No. 1841), 2-ounce (Nos. 579, 1776), and 1-ounce (Nos. 931, 1875) size. Related to these, apparently, are three even smaller, clear-glass, small-mouth bottles, apparently for narcotic drugs, in view of their small size (Nos. 928, 1847, 1848) (illustrated example pl. 50, *n*). These small containers are only  $\frac{7}{8}$  inch in diameter, and range from 2 to 4 inches in height.

Clearly of use for patent medicines are several other glass bottles. Two, of brown glass, hexagonal in cross section, and containing approximately 16 ounces liquid (Nos. 1852, 1853), bear the following lettering molded on one face: "C. Lediard/St. Louis." The firm of Hastings, Lediard and Co., of which Charles Lediard was a member, is listed in the St. Louis directory of 1866, as manufacturers of "Lediard's mixed liquors and bitters." Lediard appears to have been a New York member of the firm (information from Missouri Historical Society, Apr. 9, 1952). Another bottle (No. 1281) (pl. 53, *o*) of brown glass, square in cross section and of approximately the same capacity, bears in recessed panels on two opposite sides: "Paine's/Celery Compound" (similar specimens have been excavated at the site of Fort Laramie, Wyo.).

## SIGNAL:

*Telegraph insulators* (Nos. 1182, 1280) (illustrated example pl. 50, *v*). Two specimens, of green glass ( $2\frac{1}{8}$  inches in diameter;  $3\frac{3}{4}$  inches in height). The design of these two is slightly different, though both are of the type generally familiar today, having an interior molded thread for securing them to a threaded wooden pin fixed to a crossarm of the telegraph pole. One of the specimens (No. 1280) bears the molded lettering: "Cauvet's/Pat./July 1865." Published records show that a patent was issued to Lewis (or Louis) A. Cauvet, New York, N.Y., for such a telegraph insulator, presumably one of the first uses of glass for insulation in this fashion (U.S. Patent Office, Ann. Rep. Comm. of Patents for 1865, published 1867, vol. 1, p. 554 and illustration). On the evidence of the insulators found, and the description of the patent, this type was not covered with wood, as was sometimes the case on the frontier, largely to prevent destruction of the insulators by the Indians. It is known from the Ground Plan of Fort Stevenson, 1879, that the post was provided with a telegraph office at that period (Mattison, 1951 a, opp. p. 28).

## INDIAN SCHOOL GOODS

*Desks* (Nos. 69-75, 140, 373, 758, 792). Approximately 50 parts of cast-iron frames of school desks were found in excavation, particularly at the site of the Hospital, but elsewhere also. Only selected parts, complete in themselves or carrying distinctive designs or lettering, were collected. All had apparently been damaged by the fires that destroyed the buildings. The frames are of two slightly different designs, having open grillwork, and two sizes of desks are represented, as marked in cast letters "C" and "D" (Nos. 74, 69). These desks, of which the frames have been preserved, all appear to have been manufactured by the "Sterling School/Furn. Co./Sterling, Ill.," as appears from the cast letters on several specimens (Nos. 73, 637). Patent dates are legible on one specimen (No. 69) showing that patents were issued on Jan. 21, 1873 [?] and June 5, 1877. Published records show that a patent for school desks was issued to one C. H. Presbrey, Sterling, Ill., on the latter date (U.S. Patent Office, 1877; specifications and illustration). A distinctive feature was a "flake-shaped" nut, of which specimens are preserved on the frames collected. The Sterling School Furniture Co., of Sterling, Ill., originally known as the Novelty Iron Works Manufacturing Co., was organized as a stock company in 1869, and was renamed in 1873. Charles H. Presbrey was one of the directors, and the "Sterling Seat" was among the various types of school equipment manufactured by the company, and widely sold (Bent, 1877, pp. 431-432).

*Inkwells* (Nos. 49, 161-164, 298, 370, 371, 568-570). Cast-iron inkwell covers, doubtless originally part of the desks mentioned above. These wells were furnished with a small sliding cover bearing the die-stamped lettering: "N I W/ Sterling/Ill." The legend probably stands for "Novelty Iron Works."

*Slates* (Nos. 43, 80, 81, 191, 223, 309, 419-422). Fragments of school slates, none of which is sufficiently well preserved to indicate the size of original surfaces.

*Slate pencils* (Nos. 44, 98, 132, 136, 308, 339, 349, 443-447, 554, 577, 912, 1658, 1768). Fragments of school slate pencils ( $\frac{3}{16}$  inch diameter). Though some of the fragments show roughly flat surfaces, most appear to have been machine turned.

*Chalk pencils* (Nos. 133, 209, 448). Fragments (approximately  $\frac{5}{16}$  inch diameter).

## OTHER CIVILIAN GOODS

## CONSTRUCTION MATERIALS, BUILDING HARDWARE, AND FITTINGS:

*Adobe bricks* (Nos. 381-386, 1091, 1092) (illustrated examples pl. 52, *j*, 1).

Accidentally fired adobe bricks. Six specimens (Nos. 381-386) are from the site of the West Wing of the Hospital; two (Nos. 1091, 1092) from the site of the South Barracks. Although it is known that during the manufacture of the adobe bricks at Fort Stevenson, changes were made in their dimensions, those seen were all of the original size as given by de Trobriand (de Trobriand, 1951, p. 335) (11½ inches to 12½ inches in length, 6 inches in width, and 4 inches in thickness). As a result of the accidental firing, they are of a yellowish-red color, similar to the "brick red" of common fired brick. It is known that cut prairie grass was used in molding the adobe bricks, and the specimens show fiber-impressions (e.g., Nos. 384, 385). The bricks were used exclusively with adobe mortar in the masonry, so far as was visible in excavations at the various building sites. One specimen (No. 1092) shows the fired mortar adhering.

De Trobriand's comments on the experiments made in changing the size of adobe brick to that used in the Southwest, and on experience at the post in using adobe bricks for building, are of considerable interest (de Trobriand, 1951, pp. 43, 211, 335; Howell, 1908, p. 400). Southwestern adobe bricks vary in size, but are generally about 18 inches in length, from 8 to 10 inches in width, and from 4 to 6 inches in thickness (Hodge, 1907, vol. 1, p. 14).

*Common fired bricks* (Nos. 126, 176-179, 387-394, 537, 1093-1098) (illustrated examples pl. 52, *g*, *h*, *i*, *k*, *m*). Common red, yellow, and gray fired bricks (8 to 8¼ inches in length; 3¾ to 4 inches in width; 2¼ to 2½ inches in thickness). True firebricks, which are more highly fired, and are used for special purposes, were not found at the site. By far the greater number of the bricks found at the site were unmarked, but two marked varieties (die stamped while wet) are as follows: "Evens & Howard/St. Louis, Mo.," (numerous) (No. 388), and "S B" (infrequent) (No. 389). The latter mark may stand for "S[aint Louis] B[rick]," or indicate grade or style of brick. The firm of Evens and Howard was established in 1857 by R. J. Howard and John C. Evens, who had purchased a plant in operation since 1832 at St. Louis. The original plant is said to be still in use, and the company is now known as the Evens and Howard Sewer Pipe Co., 5200 Manchester Ave., St. Louis (information from Superintendent Walter C. Ude, Apr. 17, 1952).

One common fired brick may be of a special type. This brick (No. 126) (pl. 52, *m*), the only one of its kind found in excavation, has a shallow longitudinal channel along one face. Since only one specimen was found, it is possible that this brick may have been accidentally included in those shipped to the post.

Two fragments of fired-brick slabs were found, which may be chimney fittings. The first (No. 178) is stamped with letters and a number (incomplete) (3¼ inches in width, ¾ inch in thickness). The other (No. 179), a channeled slab, has a sloping upper surface (1¼ inches in thickness).

*Lime plaster and mortar* (Nos. 99, 116-125, 272, 320, 321, 1367, 1490, 1540-1545, 1560-1566, 1625). Specimens of common lime mortar and plaster; one fragment (No. 1624) shows a copious use of hair, in this instance apparently cow hair, perhaps obtained from the hides of beef cattle used at the post. Specimens of plaster from the site of the Command-

## CONSTRUCTION MATERIALS, BUILDING HARDWARE, AND FITTINGS—Continued

ing Officer's Quarters show painted surfaces. These are pink on white (No. 1542) and pink on white over pink on white (No. 1560/3); gray green over yellow (No. 1561/2); gray green over white (No. 1563); yellow over gray green (No. 1564); yellow on green on white (No. 1544); green on white (No. 1541); brown on white (No. 1540); and uncolored white. It is impossible to correlate these colors with the wall decorations mentioned by de Trobriand, and it is probable that some of the colors represent subsequent redecorating of the rooms (de Trobriand, 1951 a, p. 340). The lime plaster, like the fired bricks, was doubtless obtained on contract, from St. Louis.

*Boards* (Nos. 1616, 1625, 1626, 1754). Various specimens of plain and tongue-and-groove wooden boards (some damaged by fire); various dimensions.

*Shingle* (No. 1629). Fragment; apparently cedar.

*Wooden molding* (Nos. 1615, 1627, 1628). Various specimens of moldings; clear white pine.

*Door* (No. 1751). Clear white pine (66 by 28 by 1½ inches). Four panels. The door is fastened wholly with wooden dowels.

*Door sills* (No. 1753/1-2). Cottonwood sills of local manufacture. One is much worn through use.

*Window casing* (No. 1752). One portion of clear white pine, window casing (No. 1754/17) is of particular interest in view of original markings preserved on it. This was obtained at the site of the Commanding Officer's Quarters, and bears two painted stencils—one the name of the manufacturer of the millwork, the other the address to which the millwork was shipped. The first stencil reads, in part: "The / Market Street Planing Mill / Philibert, Branconier & [Cole ? illegible] . . . St. Louis, Mo." It is known from St. Louis city directories that the firm of Benjamin Philibert and David Branconier were in the millwork business there as early as the year 1857. The name of Nelson Cole first appears as a member of the firm in 1866. A successor to the original owners, known as the William C. Frye Manufacturing Company, appeared in these directories as late as 1913 (information from the Missouri Historical Society, St. Louis, Apr. 9, 1952). The second stencil referred to, reads "A[cting]. A[ssistant]. Q[uarter]. M[aster]./Ft. Stevenson / D[akota] T[erritory]." Dakota Territory was established in 1861, and was succeeded by the States of North and South Dakota, admitted in 1889. Since the millwork of which this is a part was shipped to a representative of the Quartermaster Department, and during the military occupation of the post, which ended in 1883, it is probable that this is actually a portion of the original millwork used in the Commanding Officer's Quarters, and belongs to the period of 1867.

*Roofing* (No. 1416). Fragment; galvanized iron.

*Gutter* (No. 1629). Fragment; tin with shingle fragment attached.

*Glass, window* (Nos. 39, 76, 97, 172, 210, 310, 333, 412, 413, 472-474, 551, 935, 1191, 1318, 1470, 1533, 1578, 1745, 1773, 1816, 1844). Numerous lots of fragmentary window glass; specimens are available from each individual site excavated, including both of the latrines. Much of this appears to be the older, thinner window glass (ca. ⅛ inch in thickness). A few specimens are of thicker dimension, possibly of more recent date (e.g., No. 551/78). Much of the glass collected shows evidence of fire damage. Glass not so affected was doubtless shattered, without other damage, at the time of the burning of the buildings.

## CONSTRUCTION MATERIALS, BUILDING HARDWARE, AND FITTINGS—Continued

*Nails and spikes* (Nos. 21-23, 53-57, 92-93, 110, 127-131, 248, 249, 273, 323-326, 353-357, 376, 377, 449-455, 457, 477, 555, 556, 614, 684, 685, 752, 861, 862, 1210-1220, 1233, 1393-1395, 1499, 1550-1553, 1555, 1597, 1622, 1699, 1700, 1755, 1789, 1790, 1792-1795, 1825) (illustrated examples pl. 51, *b-i*). Numerous lots of nails and spikes; specimens are available from each individual site excavated, including both of the latrines. Only two specimens of the entire collection appear to be hand forged, and both of these may have been made and used during the period subsequent to the military post and Indian school. One (No. 1555) is a long spike (7 inches in length). Another (No. 1792) is a small round nail, with rosette head ( $2\frac{1}{2}$  inches in length; the head  $\frac{1}{2}$  inch in diameter). All other specimens are the customary manufactured cut nail, which are still manufactured. Cut nails were obtained, about 1941, by the National Park Service for building restoration at Fort Laramie National Monument.

*Screws* (Nos. 52, 91, 137, 138, 322, 345, 351, 352, 427, 456, 457, 478, 497, 559, 560, 562, 600, 601, 750, 858, 1201, 1254, 1702, 1796). Wood screws of various sizes.

*Door knobs* (Nos. 86, 87, 135, 193, 194, 342, 401, 582, 623, 624, 760, 761, 834, 836-838, 986, 1159, 1269, 1270, 1310, 1377, 1457, 1530, 1657, 2054) (illustrated specimen pl. 51, *l*). Glazed earthenware doorknobs (and fragments), some of which retain original steel spindles. Spindles were ordinarily fastened by the use of lead. The earthenware appears to have been of only two types, a mottled brown (e.g., Nos. 624, 1530), and a white (e.g., No. 1657), both highly glazed. No specimens of metal knobs were found, though metal knobs must also have been commercially available at the time the post was in use. In view of the fact that only one complete specimen of the white glaze type was found and this from the site of the Commanding Officer's quarters, it is possible that white knobs were not originally used at the post, and that the specimen found represents a replacement, subsequent to the sale of this building in 1897. A metal door-lock plate (No. 1595), oval in outline and bearing a beaded margin, from the same site, appears also to be a replacement.

*Door handles* (Nos. 88, 152, 300, 770, 1247, 1637). Metal thumb latch door handles (and fragments).

*Door locks* (Nos. 151, 284, 372, 433, 573, 612, 657, 728, 731, 787, 874, 919, 1110, 1136, 1238, 1249, 1398, 1496, 1498, 1595, 1862, 1866, 2057). Door locks and latches of various types, and lock parts such as strikers. The majority of these specimens are of rim locks. Although damaged by fire, some specimens show that many of these were black japanned ware, still common in cheaper hardware. One lock (No. 787) (pl. 51, *o*) bears the cast letters: "Patented /May[1863/June[1864." This specimen was undoubtedly manufactured under patents issued to Burton Mallory of New Haven, Conn. for a lock and latch and improvement dated May 5, 1863, and June 7, 1864 (U.S. Patent Office, 1866-72 Rep. Comm. of Patents for 1863, vol. 1, p. 402, published 1866; Rep. of Comm. of Patents for 1864, vol. 1, p. 545, published 1866). Another lock, still retaining the spindle for the knob, bears the cast letters, "Patented/June 8, 1880." A patent for a latch was issued to William E. Sparks of New Britain, Conn. on this date (U.S. Patent Office, Official Gazette, vol. 17, No. 23, June 8, 1880). Other specimens (e.g., No. 728) also carry lettering and probably patent dates but because of fire damage are not legible. One lock (No. 284), bearing an arabesque design, has a sliding manual bolt, and probably served as a stop for an interior door.

## CONSTRUCTION MATERIALS, BUILDING HARDWARE, AND FITTINGS—Continued

*Door springs* (Nos. 1583, 1596).

*Door roller* (No. 439). Probably from a barn door.

*Door fittings* (Nos. 705, 739, 785, 1698).

*Door hooks* (Nos. 26, 139, 479, 558, 860).

*Latches and hasps* (Nos. 24, 25, 141, 153, 598, 602, 756, 1198, 1232, 1503, 2058).

*Hinges* (Nos. 29, 106, 108, 142, 156-160, 258-264, 288-295, 368, 436, 437, 509, 510, 597, 599, 603-605, 607, 608, 619, 620, 696-699, 704, 727, 730, 733, 735, 740, 746, 827, 864, 869, 911, 920, 922, 1067-1072, 1080, 1156, 1202, 1226, 1399, 1501, 1509, 1546-1548, 1633, 1758, 1863, 1864). Numerous door hinges, of several sizes, and several strap hinges. The latter may be largely of recent farm origin, derived from farm machinery. The door hinges of "butterfly" type are decorated in many instances with an arabesque design, cast or etched into the metal. The use of similar arabesque designs for machine-made objects is well represented in the objects excavated at the site, notably in the lamps and lamp brackets mentioned elsewhere.

*Keys and key-plates* (Nos. 150, 404, 590, 591, 1400, 2057). Four iron household keys (Nos. 590, 591) found together, three of the four on the original ring (pl. 51, *p*), on the site of the West Wing of the Hospital. The keys have tongues of different patterns, and may have opened special locks about the Hospital. One brass key (No. 404) (pl. 51, *k*) with decorated grip probably fitted a cabinet lock.

*Padlocks* (Nos. 246, 1203, 1402, 1495, 1889). Specimens of several styles of sheet-steel padlocks (pl. 51, *a*) and one of heavy cast brass. The latter (No. 1203) (pl. 51, *j*), possibly a military issue item, bears the etched lettering: "United States/Lock," with six-pointed stars. This lock was found in excavation along the front wall line of the Commissary Storehouse and may have been a military issue item for use on public stores.

*Safe-knob* (No. 1227). Knurled safe-knob, with graduations (1½ inches in diameter). Like the padlock mentioned above, this item was found in excavation along the front wall line of the Commissary Storehouse, and may represent a military item.

*Window-shade holder* (No. 1502).

*Shelf bracket* (No. 784).

*Faucets* (No. 1242, 1255, 1554) (pl. 52, *b*). One (No. 1242) of heavy brass (1 inch in diameter).

*Pipe fittings* (No. 1865/1-2).

*Corner plate* (Nos. 921, 1248, 1695).

*Wall or clothes hooks* (Nos. 434, 584, 1221-1223).

*Building pin* (No. 859).

## DOMESTIC FURNISHINGS AND UTENSILS:

*Stoves and furnaces* (Nos. 68, 240, 242, 244, 252-255, 276, 278-283, 360-362, 465, 466, 483, 485, 491, 495, 611, 613, 641-650, 652-656, 658-672, 702, 706, 855, 991, 1204, 1228, 1229, 1361, 1504, 1603, 1650, 1872). The base of a heating stove of sheet steel, probably suitable for use with the lignite available at the post, was found in the excavation of the site of the West Wing of the Hospital. It was badly damaged by the heat of the fire that destroyed the building and was not preserved. Army type mess-kitchen range (pl. 49, *b*) of sheet steel was found at the site of the Commissary Storehouse, on the surface at the site of the cellar, which had been used as a dump. This range hardly seems suited to farm kitchen needs, and probably had been left at the site when the Indian school was removed. The range may also have been used prior

## DOMESTIC FURNISHINGS AND UTENSILS—Continued

to 1883, at the military post. The range was not collected because of its size. A third, larger stove (pl. 49, *a*), is represented by many fragments of a furnace, of heavy sheet steel, found in excavation at the cellar of the Commissary Storehouse, resting in original position on the floor. These fragments of furnace, much fire damaged, were not collected.

Other stove parts collected (listed above) are fragmentary. Many may pertain to more recent use of the site of the post. One fragment (No. 278) bears the letters "Patented 1875," but is too small to identify it with any of the stove designs patented during the year 1875. A stovepipe damper (No. 1504) carries the cast letters "The Adams Company/Diamond."

*Stove equipment* (Nos. 635, 717, 871). A long-handled small coal shovel (No. 635), suitable for use with a heating stove having a small door, was excavated at the site of the West Wing of the Hospital. Two lid lifters (Nos. 717, 871) were also found. The latter bear illegible lettering and "No. 382."

*Chairs* (Nos. 1611, 1690, 1691, 1732). Fragments of chair rungs, of turned wood, obtained at the site of the Commanding Officer's Quarters. Though some of the fragments may be of some age, nothing of the design of the chairs could be learned from the fragments obtained.

*Cabinets*. Hardware from various types of cabinets is represented in the collections. Among these are locks and latches, some with arabesque designs (Nos. 265, 266, 745, 842, 850, 863, 872, 918, 1139, 1225, 2056) (illustrated example pl. 51, *n*); casters of white earthenware and metal (Nos. 1252, 1422, 1423, 1601); and knobs for cabinet doors or drawers (Nos. 950, 951, 2053).

*Stands* (Nos. 786, 923). Parts of two twisted-wire objects, perhaps stands for picture frames.

*Lamps* (Nos. 50, 51, 61, 63, 155, 180, 239, 269, 277, 285-287, 358, 359, 369, 374, 435, 481, 482, 492, 502, 576, 754, 767, 768, 771, 828, 1058-1060, 1102, 1107, 1240, 1415, 1505, 1719). Numerous cast-iron lamp baskets and brackets (and fragments) for holding kerosene lamps of glass, encountered especially on the sites of buildings that were destroyed by fire. These baskets and brackets (e. g., Nos. 435, 481, 502, 754) appear to be of very similar design (though damaged), and carry arabesque designs or openwork.

One lamp chimney (No. 1102), a large portion of which was preserved, is a cylindrical tube, apparently of more heat-resistant glass, of the Argand style ( $1\frac{1}{4}$  inches in diameter at the upper end;  $1\frac{1}{8}$  inches in diameter at the lower end; incomplete). In this lamp, which was for use with kerosene and other fuels, a tubular wick permitted a circular flame. The special chimney increased the brilliance of the flame (Hough, 1928, pp. 71-72 and pl. 66, *a*). Other fragments (e. g., No. 1107) are derived from the more common bulbous variety of lamp chimney.

One brass wick mantle part (No. 1415) is die stamped "Steel Mantle, Toledo Ohio" ( $2\frac{1}{4}$  inches in diameter). Another similar mantle (No. 180) bears die stamped on the wick-roller knob, the legend: "Pat. Jan. 16, 83 & Feb. 11, 73 [sic]." A patent record of the earlier date has not been found, but a record of the later date shows that a patent was issued on January 16, 1883, to Thomas Burns, Brooklyn, N.Y., for an extinguisher for lamp burners (U.S. Patent Office Official Gazette, Jan. 16, 1883, vol. 23, p. 211). An earlier patent, for a lamp, had been issued February 11, 1873, to Lewis J. Atwood, Waterbury, Conn., assigned to the Plume and Atwood

## DOMESTIC FURNISHINGS AND UTENSILS—Continued

Manufacturing Co., of the same place, and the two patents are doubtless those referred to on this specimen (U.S. Patent Office Official Gazette, Feb. 11, 1873, vol. 3, p. 166).

*Candleholder* (No. 1871) (pl. 53, *h*). A small brass candlestick (without grip), of rolled sheet metal (2½ inches in height, the base 3½ inches in diameter). Surface find, but probably of some age.

*Clocks* (Nos. 507, 1427, 1582). Fragments of the works of three clocks. One set of works (No. 507) fire damaged, from the site of the West Wing of the Hospital, is of brass and apparently of the alarm-clock type. These works bear a die-stamped legend: "S Thomas/Thomaston, Ct./U.S.A.," a monogram of the letters S and T in a lozenge, and the numerals "9½" (presumably referring to the size of the clock). The famous Seth Thomas clock factory, originally established at Plymouth, Conn., was continued after the founder's death in 1859; about this time the community was made into a separate town, and named Thomaston in his honor (Mitman, 1936).

*Chamber pots* (Nos. 1830, 2041-2043). Fragments of heavy white earthenware (Nos. 2041-2043) from two or more broken vessels. All were found at the site of the South Barracks. Galvanized metal cover (No. 1830), with decorated knob, probably for chamber pot.

*Trunk* (No. 1206). The lock of a small trunk or chest, of brass.

*Vase* (No. 1450). Miniature molded bisque vase or pitcher (damaged), bearing an arabesque design (ca. 3 inches in height) (pl. 53, *f*).

*Figurines* (Nos. 527, 1456, 1737). A molded earthenware figurine (No. 1737) (pl. 53, *g*), the figure being that of a tortoise-shell cat (2½ inches in height). The cat is seated on its haunches, the forelegs straight, the head turned to the right, and the tail curled up on the right side. The body is painted gray to simulate the markings of a tortoise-shell cat, the nose and mouth are outlined in pink. A ribbon around the neck tied in a bow at the front is gilded. The whole piece is highly glazed.

A fragment of molded earthenware figurine (badly damaged) of a seated woman (No. 1456), has the skirt outlined in blue and red bands, and decorated with red spots. The seat against which the figure reclines is outlined in green, and the whole piece has a low glaze.

Another item (No. 527) listed as a figurine (ca. 3 inches in height) may also be the cover of a small jar for a dressing table. This item bears the figure of a woman leaning against a fence or gate, and is probably intended to represent "Mistress Mary" of the nursery rhyme. Her skirt is a bright blue, the background pink. A white and gray cat plays with a ball in front, and the figures are encircled by a row of objects probably intended for cockleshells.

*Pin tray* (No. 1137). Of pewterlike metal.

*Inkwell* (No. 1849) (pl. 53, *j*). Molded blue-green glass inkwell, hemispherical in shape, and provided with an opening or neck at the side. (Opening ½ inch diameter.) The bottle bears the molded lettering "J. J. Butler, Cin[cinnati], O[hio]," around the side. James J. Butler, a prominent ink manufacturer of Cincinnati, is listed as a druggist there as early as 1844. By 1850 he was listed as agent for ink and in 1867 as having a factory. He died in 1874 (information from Historical and Philosophical Society of Cincinnati, Apr. 29, 1952). This bottle was found in excavating the earlier of the two latrines (No. 2) adjacent to the Hospital site, and is undoubtedly derived from the military period.

*Knives, table* (Nos. 143, 458, 615, 720, 722, 778, 783, 795, 805-807, 810, 814, 818, 820, 823, 824, 845, 847, 848, 851, 854, 992-1016, 1057, 1062, 1063, 1065,

## DOMESTIC FURNISHINGS AND UTENSILS—Continued

- 1099, 1100, 1111, 1112, 1144, 1147, 1148, 1152, 1194, 1231, 1250, 1273, 1387, 1388, 1592, 1594, 1809, 1870). Table knives of steel or silver plate (pls. 50, *o*, 53, *a*). One style (e.g., Nos. 994, 1870) appears to be a true mess knife, with a plain recessed handle. Two knife blades (Nos. 998, 1144) appear to be from carving knives. A small knife (No. 1112) (pl. 53, *c*) of the fruit-knife class bears a stamped or etched arabesque design on the handle. This knife is of brass and bears a different design on each side of the handle.
- Forks, table* (Nos. 713, 721, 779, 781, 797, 799, 803, 804, 808, 809, 811–813, 816, 817, 819, 825, 853, 915–917, 1017–1036, 1064, 1101, 1114, 1592, 1710). Table forks of steel and silver plate. The former (e.g., Nos. 1034, 1036) (pl. 50, *r*, *s*) appear to be exclusively three tined, having originally had wood or bone handles, or a recessed handle—probably an issue mess fork. The silver-plate specimens have no separate fittings.
- Spoons* (Nos. 31, 144, 327, 723, 777, 780, 794, 796, 798, 800–802, 815, 821, 822, 831, 833, 835, 843, 844, 846, 849, 852, 875–886, 887, 914, 925, 1037–1054, 1061, 1141–1143, 1145, 1146, 1389–1392, 1518–1520, 1557, 1591, 1711, 1724, 1828). Teaspoons and tablespoons of iron and silver (pl. 50, *q*). One teaspoon (No. 800) bears an arabesque design on the handle. One spoon (No. 1061) is a large mixing spoon. One serving spoon (No. 1389), of silver plate, bearing a beaded design on the handle, on the reverse carried the die-stamped letters: “Extra <sup>Coin</sup> Plate.” Another (No. 1145) (pl. 53, *b*) engraved with the letter “W” in Gothic bears on the reverse the die-stamped legend “Rogers & Son ~~Greenfield~~ Greenfield, Mass.” No firm at this location is known, nor any other Greenfield firm manufacturing sterling or silver-plated ware at the period in question. It is possible that the piece was manufactured elsewhere, the place name then being added by a Greenfield jeweler, as was sometimes done. (Information from Mrs. Hester C. McKeage, Greenfield Public Library, Greenfield, Mass., June 30, 1954). One teaspoon (No. 852) (pl. 53, *d*) of German silver bears several unidentified hallmarks die stamped on the reverse. Another teaspoon (No. 794) is die stamped on the reverse: “Wm. Rogers Sold in/German silver.”
- Fork, basting* (Nos. 718, 1113). Two-tine steel basting forks with wooden handle fittings.
- Cups, metal* (Nos. 881–883).
- Mess plate, metal* (Nos. 686–695, 1085–1090). One group (No. 1085) damaged by fire is rusted together (9 inches in diameter).
- Meat saw* (Nos. 751, 962).
- Butcher's steel* (No. 715). Lacks handle; for sharpening kitchen knives.
- Kitchen vise* (Nos. 790, 870). With screw clamp.
- Kettles* (Nos. 716, 1076, 1138). Fragments of metal kettles.
- Skillet* (Nos. 734, 1079). Sheet iron.
- Griddle* (Nos. 1074, 1078). Cast iron.
- Muffin pan* (No. 1073) (pl. 53, *n*). Cast iron.
- Food mill* (No. 1084). Fragment of top, probably from sausage mill.
- Coffee mill* (No. 1418). Fragment of top, with part of handle.
- Egg beater* (No. 1424).
- Funnel* (No. 1656).
- Bottle opener* (No. 1196).
- Jar lids* (Nos. 1329, 1385, 1762).

## DOMESTIC FURNISHINGS AND UTENSILS—Continued

- Scouring brick* (Nos. 1586, 1769) (pl. 52, *c, f*). Fragments of fire brick used about kitchens.
- Menu holder* (No. 617). Metal holder probably for menu card ( $4\frac{3}{4}$  inches in height;  $3\frac{1}{4}$  inches in width).
- Matchbox* (No. 484). Fragment of matchbox of cast iron with corrugated striking surface.
- Matches* (Nos. 1838, 1839). Fragment of pocket matchbox (No. 1839). A metal cylinder, with wooden match sticks adhering. A group of matches identical with the others (No. 1838) ( $2\frac{1}{2}$  inches in length;  $\frac{3}{16}$  inch by  $\frac{3}{16}$  inch). The sticks appear to be clear white pine, and show only faint traces of chemical treatment.
- Clothespin* (No. 1687). Wooden.
- Pail and tub handles* (Nos. 610, 744, 793, 1257–1259, 1696).
- Wringer fitting* (No. 1241).
- Mopheads and clamp* (Nos. 503, 708, 724).
- Clamp* (Nos. 743, 1256).
- Spring scale* (No. 1632).
- Candy tongs* (No. 1575).
- "China" (*White Earthenware*). Numerous specimens and fragments, generally fire damaged. Nearly all are undecorated.
- Platters* (Nos. 1902, 1924–1928).
- Vegetable dishes* (Nos. 1898, 1899, 1975–2000). Two different styles, the only difference being in the thickness and weight of the pieces.
- Bowls* (Nos. 1265, 1964–1966). Medium large and heavy (4 inches in height;  $4\frac{1}{4}$  inches in diameter). One bears a transfer mark of the British coat of arms and the words "Royal Ironstone/China/Anchor Pottery." Although it would appear that this piece was of British manufacture, there was an Anchor Pottery at Trenton, N.J., and there was at one time much imitation of British china and earthenware by American firms.
- Dinner plates* (Nos. 1369, 1900, 1906–1923).
- Soup plate* (No. 1901).
- Gravy boat* (No. 1967).
- Cups* (Nos. 1289–1294, 1368, 1894, 1933–1957). Several were made without handles.
- Saucers* (Nos. 1896, 1897). Two different styles, the only difference being in the shape of the rim portion; one group is straight rimmed, the other curved.
- Sauce dishes* (Nos. 1958–1960).
- Pitchers* (Nos. 1895, 1961–1963).
- Butter pats* (Nos. 942–945, 1929–1932) (illustrated example pl. 53, *i*). Seven white earthenware butter pats, square in outline, bearing a transfer design in brown of a harebell. This transfer had also been hand painted in blue, on the blossom.
- Cover knobs* (Nos. 418, 949, 1082).
- Wash basin* (No. 2134) (pl. 52, *a*). Plain lip ( $4\frac{1}{2}$  inches in height;  $14\frac{3}{4}$  inches in diameter). Bears the transfer mark of the firm of Burgess and Campbell. This firm, of Trenton, N.J., was established in 1879.
- Unidentified shapes* (Nos. 35, 36, 42, 175, 192, 222, 319, 337, 338, 415–417, 528–535, 762, 1162, 1168, 1266, 1267, 1296–1305, 1330, 1333–1339, 1370–1374, 1430–1449, 1451, 1452, 1454, 1567–1570, 1670–1672, 1694, 1736, 1739, 1779, 1781, 1782, 1814, 1880, 1903, 1904, 1968–1974, 2001–

DOMESTIC FURNISHINGS AND UTENSILS—Continued

2040). Sherds of small size or lacking distinctive features. The great bulk are obviously derived from dinner plates, saucers, and the like.

*Stoneware (colored earthenware):*

*Jugs and jars* (Nos. 1160, 1163, 1192, 1243, 1268, 1275-1279, 1308, 1376, 1905, 2046-2049) (illustrated example pl. 52, *d*). Large food-storage crocks.

*Churn cover.* (No. 1167). Fragment.

*"Bitters" bottle* (No. 1268/1-4). Die-stamped "P. & J. Arnold, London."

*Glass dishes and plates* (Nos. 524, 594, 764, 913, 1183/1, 1184-1187, 1260, 1316, 1317, 1321, 1351, 1379, 1380, 1461-1463, 1746/19). Numerous fragments and small groups of fragments. One group (No. 764) is derived from a green-glass molded dish with an iridescent "gold"-painted surface. This is similar to the "premiums" given away by merchants, and probably represents objects of the farm period at this site. Another fragment (No. 1463) is from a pressed "hobnail" plate, carrying letters about the rim. Two letters, "... B R ..." show on the fragment, which may be from a calendar plate (February). Imitation cutglass (actually pressed glass) is represented (Nos. 1185, 1186). Several fragments of glass (No. 913), damaged by heat, are derived from a small ribbed blue-glass dish or container. Most of these glass fragments are probably from the last period of occupation of the site.

*Goblets and tumblers* (Nos. 316, 765, 938, 1104, 1105, 1183/2, 1188, 1260-63, 1322, 1326, 1350, 1352, 1679, 1817, 2050). Various fragments of clear glass. One goblet (No. 765) is of imitation cutglass. A portion of a whiskey glass (No. 1188) of 2-ounce size, is damaged by heat.

*Cruet* (No. 1743). Clear glass stopper from cruet or castor set of molded glass.

*Glass bottles* (Cf. also Military goods—Medical):

*Liquor, wine, and beer bottles* (Nos. 190, 941, 1083, 1170, 1466, 1746/23, 1845/18, 1851, 1879/11). A fragment of the base of a pint whiskey flask (No. 1845/18), of clear bluish glass, is of a type familiar to glass specialists. This bears a spread eagle with olive branch and arrows, and "Pittsburgh/Pa." molded in an oval panel on one face; the other face is lacking (McKearin, 1941, pp. 537-542). A similar specimen was excavated at the site of Fort Ridgely, Minn. A fragment of the base of another clear-glass quart whiskey flask (No. 941) bears, in molded letters in a depression on the base, "W. McC. & [ ]". This probably stands for William McCully and Co., Pittsburgh glass makers at least as early as 1832 (McKearin, 1941, pp. 594, 600). Other McCully pieces have been excavated at Forts Laramie and Ridgely.

A few wine-bottle fragments were obtained, in dark-brown or dark-green glass (Nos. 190, 1746/23, 1879/11).

Two brown-glass quart beer bottles (Nos. 1083, 1851) appear to be somewhat more recent glass types. The first of these bears the molded letters on the base: "D. S. G. Co./18." Still more recent beer bottles (No. 1170) are represented by a fragment lettered "Golden Grain Belt Beers." This firm, of Minneapolis, Minn., still uses similar bottles.

*Condiment bottles* (Nos. 927, 1580). Clear molded glass stoppers of condiment bottles, marked with the name "Lea & Perrins," a New York firm that has been in business for more than a century.

## DOMESTIC FURNISHINGS AND UTENSILS—Continued

*Flavoring extract bottles* (Nos. 526, 1744, 1850). Fragments of three small-mouth, clear-glass, flat extract bottles. One (No. 526) (pl. 53, *k*) originally holding 1½ ounces, has molded on the two sides the name "Burnett" and "Boston." The well-known firm of Joseph Burnett and Co. was established at Boston in 1854 (Kasten, 1929). A very similar bottle (No. 1850) of 2-ounce size is unmarked.

*Infants' food bottles* (No. 1660) (pl. 53, *e*). Three soft white rubber stoppers for "Mellin's Food containers," another old Boston product.

*Corks* (Nos. 94, 134, 1617, 1688/1-6, 1731). Numerous specimens of natural corks, most of which are wine-bottle size (ca. ¾ inch in diameter). One cork (1688/5) of larger dimension is probably the stopper of a condiment or pickle bottle (1¼ inches in diameter).

## TOOLS AND IMPLEMENTS :

*Shovels* (Nos. 146-148). Metal parts only.

*Tack hammer* (No. 753). Steel head only.

*Tinner's hammer* (No. 585) (pl. 51, *m*). Steel head only.

*Axes* (Nos. 1826, 1868) (pl. 52, *e*). Steel heads only; both are from single-bit axes.

*Hatchets* (Nos. 165, 732, 1869). Steel heads only.

*Whetstone* (No. 1884).

*Chisel* (No. 431).

*Files* (Nos. 328, 461, 1081, 1131, 1132, 1404, 1536, 1547, 1652, 1653). Most are flat files (e.g., No. 328). Two (Nos. 461, 1081) are triangular.

*Drill bit* (No. 788). 1 inch diameter.

*Screw driver* (No. 1605).

*Flat wrench* (No. 1157).

*Saw* (No. 751). Clamp for holding saw blade.

*Bucksaw* (No. 1607).

*Level* (No. 1537). Wooden and metal fragment with hand grip—perhaps the handle of a rough level or plasterer's trowel.

*Scythe* (No. 1759). Tightener for scythe handle.

*Hoe* (No. 1158) (pl. 54, *e*). Steel head only.

*Pulley* (No. 1705).

*Scissors* (Cf. also Military goods—Medical) (Nos. 791, 1516).

## HARNESS AND FARRIERY :

*Ox shoe* (No. 1707) (pl. 54, *h*).

*Horse and mule shoes* (Nos. 66, 508, 729, 1066, 1638, 1873).

*Neckyoke* (No. 504).

*Ring and strap* (No. 1493).

*Buckles* (Nos. 1513-1515, 1642).

*Harness ornament* (No. 749).

*Sleigh bell* (Nos. 1282, 1344) (pl. 54, *o*). Cast bronze (3½ inches in height). These two fragments (which complete the bell) were found separately at the sites of the Commissary Storehouse and South Officers' Quarters and are probably of farm rather than earlier origin.

## AGRICULTURAL OBJECTS :

*Barbed wire* (No. 1135) (pl. 54, *b*).

*Fence wire* (No. 1801).

*Fence staples* (Nos. 67, 1396, 1494, 1599, 1631, 1697).

*Counter balance* (No. 726). Steel weight, probably from safety valve of a piece of farm machinery.

*Windmill shaft* (No. 1614). Fragment.

## CLOTHING AND FOOTWEAR:

- Fabrics* (Nos. 1686, 1785, 1797, 1820, 1828). Bits of fabric—wool, cotton, and the like. Some are knit fabrics, probably stocking material.
- Buttons* (Cf. Military goods—Uniform and insignia, above) (Nos. 102, 307, 341, 593, 748, 776, 952-955, 1130, 1209, 1271, 1345, 1477, 1529, 1573, 1574, 1647, 1682, 1729, 1766, 1819, 1929). Numerous buttons of milk glass, mother-of-pearl, bone, and hard rubber, ranging in size from  $\frac{1}{4}$  inch to  $\frac{5}{8}$  inch diameter. Most of these are 2- or 4-holed. One (No. 1574), of milk glass, is 3-holed. One 2-part metal button for work clothes ( $\frac{3}{4}$  inch in diameter) bears a die-stamped design showing a locomotive with three drivers and a tender on rails—a style familiar to button collectors.
- Suspender buckles* (Nos. 424, 1767). Die-stamped brass buckle: "437/S & G.M. Co. / Pat. March 7, 1871." The buckle may be derived from a truss, for which a patent was issued on this date to Adam Hinoult, Montgomery, N.Y. (U.S. Patent Office Ann. Rep. Comm. of Patents 1871, published 1872, vol. 1, p. 158, March 7, 1871).
- Suspender fastener* (No. 1428). Stamped metal fastener, bearing patent date: "Pat. Dec. 4, 1900" (patent record not found).
- Belt fastener* (Nos. 1426/1-2, 1708, 1770).
- Corset stays* (Nos. 1149-1151). Steel.
- Shoes* (Nos. 775, 830, 971-973, 1386, 1489, 1663, 1664, 1693, 1787). Men's and boys' shoes, some in pairs. All are square toed. Some have original lacings and eyelets. Some were found in excavation of the later of the two latrines (Latrine No. 1).
- Hats* (No. 1785). Fragments of black felt hats, apparently of boys' sizes, and perhaps issue items of the Indian school period, found in excavation of the later of the two latrines (Latrine No. 1).

## PERSONAL POSSESSIONS:

*Tobacco pipes* (Nos. 196, 197, 340, 640, 1103, 1487, 1678, 1836-1838, 1859, 1888). Several of the specimens are fragments of bowls and stems of white clay trade pipes. The bowl of one pipe (Nos. 197, 1888) (pl. 54, *k*) is decorated with rows of stars in relief. Another (No. 1836) is one variety of a well-known style, bearing the letters "T D" on the side of the bowl toward the stem, encircled by 13 6-pointed stars. Another row of 13 stars of this kind encircles the rim of the bowl, and a floral design follows the mold joint from rim to heel, opposite the stem. Similar styles of "T D" clay pipes have been excavated at the sites of Forts Laramie and Ridgely. The use of 13 stars on this specimen suggests that the piece is of American manufacture, but similar pieces are known which are of European manufacture. A "T D" pipe found at Fort Ridgely, Minn., was manufactured by A. Coghill, of Glasgow, Scotland. The initials "T.D.," commonly found on clay pipes of the 19th century, are thought by many to be derived in some fashion from the name of "Lord" Timothy Dexter, the famous eccentric merchant of Newburyport, Mass. (1747-1806) (Mathews, 1951, vol. 2, p. 1697; Fuess, 1930, vol. 5, pp. 281-282 and references therein). There seems, however, to be no mention of his connection with the manufacture of, or trade in, clay pipes, and the specimens of European manufacture similarly marked suggest that this identification of "T. D." is in error.

Another clay pipe bowl (No. 640) (pl. 54, *i*) obtained is of distinctive pattern bearing on one side of the bowl, between the mold joints, the British crown encircled by a wreath. On the other side of the bowl (pl. 54, *l*) is the crest of the Prince of Wales (three plumes), also encircled by a wreath. This pipe may belong in the commemorative class. Edward,

## PERSONAL POSSESSIONS—Continued

Prince of Wales (Edward VII of England) who was born 1841, visited the United States in 1860 and was cordially received. The pipe may have been designed at this period. The Prince's recovery from typhoid fever, in 1871, was also the occasion for special observances throughout the British Empire. Other commemorative clay pipes of 19th-century manufacture are known (Lincoln, Grant, and others). Another interesting bowl fragment (No. 1103) of white glazed earthenware, a rarer type than the unglazed clays, bears a floral design in relief on the heel. This style of glazed pipe may be of Continental rather than British origin—perhaps specifically Dutch or German. Two similar glazed pipes were excavated at Fort Ridgely, Minn.

Two pipe bowls from this site (Nos. 1487, 1837/1) (pl. 54, *j*) are of brier. The latter of these was found in association with a curved hard-rubber stem (No. 1837/1-2) (pl. 54, *q*) showing toothmarks on the bit.

*Tobacco label* (No. 957). Small metal tag bearing letters "Lorillard-Climax Plug." The well-known Lorillard Company, of New York, first marketed this brand of plug tobacco in 1875.

*Snuff jar* (No. 946) (pl. 53, *m*). White glazed earthenware jar with narrow mouth, 3 inches in height (lacks stopper), probably for snuff.

*Locketts* (Nos. 1524, 1772, 1861). A nickel-plated locket face (No. 1524), 1½ inches in diameter, is of special interest in representing the only literally personal item found in excavations at this site. This locket face bears, in hand-engraved script, the name "Robert Benzinger / Co. G. 7th Infty." Companies of the 7th Regiment were on duty at Fort Stevenson from 1880 to 1883 (Mattison, 1951, p. 24). A round glass disk (No. 1772) with ground edges appears to be from a locket (¾ inch in diameter).

*Pocket watches* (Nos. 1140, 1155, 1483/1-5, 1725, 1835). A group of watch-parts (No. 1483/1-5) probably from the same watch, bear the die-stamped legends "Trenton Watch Co. / Patented" and the number "85186," and "Elgin Nat'l Watch Co." and the number "62298." The numbers probably refer to watch parts. A division of labor between affiliated watch companies is a feature of the business history of this industry, as illustrated here. The Elgin National Watch Company, incorporated in Illinois in 1865, adopted this form of the name in 1874. One watch complete with silver case (No. 1835) (pl. 54, *n*) was found in excavation of the earlier latrine (Latrine No. 2). Though badly corroded, this piece appears to be intact.

*Watch chain* (No. 1765). Twisted brass links, a portion of a watch chain. The links are ¼ inch in width.

*Pocket knives*. (Nos. 967, 1195, 1251, 2055) (illustrated example pl. 54, *p*). Various styles (some specimens fragmentary) with bone or wood inlays.

*Wallet* (No. 1821). Leather wallet with leather lacings apparently hand-made (3¾ inches by 5 inches).

*Purse* (No. 774). Metal clasp of small coin purse.

*Coins* (Nos. 636, 1117, 1572). A silver U.S. dime (No. 636) (pl. 54, *e*) minted 1877, figure of seated Liberty. A nickel 5-cent piece (No. 1117) (pl. 54, *g*), minted 1866, design of shield with rays. A bronze 1-cent piece (No. 1572) (pl. 54, *f*), minted 1889, figure of Indian head. The dime and nickel have been damaged by fires, and appear to have been lost at the site during the military period.

*Savings bank* (No. 1357). Nickel-plated brass bank (one leaf only), die-stamped "Oakland / Savings / Bank / 1028 / Oakland, / Iowa . . ." The

## PERSONAL POSSESSIONS—Continued

numeral doubtless gives the account number. The object is probably very recent in origin.

*Spectacles* (Nos. 587, 932). Glass lenses with ground edges, oval in outline. The first specimen is  $1\frac{3}{8}$  inches in width, 1 inch in height; the second,  $1\frac{3}{16}$  inches in width,  $\frac{7}{8}$  inch in height.

*Political badge* (No. 1286). Brass badge, shield shaped and pierced for suspension ( $1\frac{3}{4}$  inches in height). Die stamped on the obverse is the lettering: "National / Republican Convention / Minneapolis / 1892"; on the reverse: "Schwaab / Stamp & Seal Co. / Milwaukee." The shield has a circular opening at the center originally holding a celluloid portrait of the candidate. The nominee at this convention was Benjamin Harrison. Specimens of similar political badges are well known to collectors.

*Buttonhook* (No. 1429).

*Shoe dauber* (No. 1733).

*Mirror* (Nos. 329, 330, 1846). One fragment (No. 1846) is of a small pocket-size mirror. Other fragments are too small to estimate original size.

*Combs* (Nos. 306, 402, 1115, 1365, 1571, 1740, 1887). A portion of one hard-rubber comb (No. 306) is reinforced with a brass backing. This bears the die-stamped legend, on the two faces of the brass: "E. M. Noyes. Pat. June 7, 1864" and "E. M. Noyes. Pat. Apr. 14, 1868." Patent records show that patents for toilet combs were issued on these dates to Elfameo M. Noyes, Newark, N.J. and Joseph P. Noyes, Binghamton, N.Y., respectively (U.S. Patent Office, Rep. Comm. of Patents for 1864, vol. 1, p. 545, published 1866; Rep. Comm. of Patents for 1868, vol. 1, p. 807, published 1869). A hard-rubber comb (No. 402) (pl. 54, *d*) provided with fine teeth on either edge, in the style long used for children's combs, is stamped with the legend: "I. R. Comb Co. Goodyear/Patent May 6, 1851." ( $3\frac{3}{4}$  inches in length;  $1\frac{5}{8}$  inches in width.) A fragment of another comb of hard rubber is stamped "Hercules. Warranted unbreakable. No. 1024" and on the reverse "Goodyear 1851." The famous Nelson Goodyear patents for hard rubber were probably widely infringed upon by manufacturers and the present specimens are, of course, of later manufacture than the year 1851.

*Toothbrush* (No. 1741). Fragment of bone handle of brush, the part originally carrying the bristles, which were set in three rows.

*Perfume bottle* (No. 1843). Clear glass bottle, oval in cross section, containing approximately 6 ounces, bearing on one face the molded lettering: "J. Huel/Philadelphia." A similar specimen was excavated at the site of Fort Ridgely, Minn. One Jules Huel, perfumer, is listed in Philadelphia directories from 1840 to 1866 (information from Historical Society of Pennsylvania, Apr. 4, 1952).

*Ice skates* (Nos. 1134, 1512) (illustrated example pl. 54, *a*). Solid steel runners of shoe skates. One (No. 1512) is die stamped on the side: "Halifax Pat./Club Skate."

*Harmonicas* (Nos. 548, 1153, 1154). Fragments of specimens. One (No. 1154) is the brass plate originally holding the reeds.

*Dominos* (Nos. 627-631, 840, 1364) (illustrated examples pl. 54, *m*). Ivory and ebony dominos, the parts fastened with brass pins. All but one are of a single size, and apparently belong to one set ( $1\frac{3}{4}$  inches by  $\frac{7}{8}$  inch by  $\frac{5}{16}$  inch). This group is engraved with shallow black-painted dots ( $\frac{1}{4}$  inch in diameter). Of the group, one domino is "double six," one "six four," one "six naught." The single specimen (No. 1364) of

## PERSONAL POSSESSIONS—Continued

smaller size, a "six five," has slightly smaller dots ( $1\frac{5}{8}$  inches by  $\frac{3}{4}$  inch by  $\frac{5}{16}$  inch).

*Toys:*

*Animal* (No. 1712). Cast-iron figure of horse.

*Dolls* (Nos. 588, 589, 1340/1-2, 1455, 1458, 1675/1-2, 1676, 1818). Fragments of two high-glaze painted "porcelain" doll heads. One (No. 1455) has the skin surface painted in pink. The other (Nos. 1458 and 1675/1-2), the surface of which is white and undecorated, has hair, eyebrows, and eyelashes in black, the eyes blue and black and outlined in red. Two molded white earthenware legs of small jointed dolls (Nos. 588, 589) bear impressed numbers "V" and "VI," perhaps size or part numbers.

*Dishes* (Nos. 1673, 1674, 1735). Two miniature molded white earthenware cups (Nos. 1673, 1735), ( $\frac{5}{8}$  inch in height). One miniature molded white earthenware cover for dish, lacking knob, oval in outline ( $1\frac{1}{2}$  inches by  $2\frac{1}{4}$  inches).

*Trivet* (No. 1602). Cast-iron openwork stand for holding toy sad-iron, arabesque design.

"*Spider*" (No. 1645). Miniature cast-iron handled pan, round bottomed.

*Wheeled toys* (Nos. 1559, 1644, 1690/5, 1713). Two fragments (Nos. 1644 and 1713), of cast iron, from toy railroad coaches. One fragment of wooden wheel (No. 1690/5) is a solid hub, with holes to receive the spokes ( $1\frac{1}{4}$  inches in diameter).

*Marbles* (Nos. 1677, 1719). One (No. 1677) is of the "agate" variety.

*Blocks* (Nos. 1727, 1728). Children's wooden alphabet blocks. One (No. 1727) is painted red, with the letter "T" stenciled in black paint ( $1\frac{3}{4}$  inches by  $1\frac{3}{4}$  inches by  $\frac{1}{4}$  inch). The other (No. 1728) is a cube with engraved and painted letters. One face bears the letter "D" in red with "E" in blue on the opposite face. The other faces are painted red but carry no letters.

*Sewing thimble* (No. 1630). Steel ( $\frac{9}{16}$  inch interior diameter).

*Thread spool* (No. 1689). Wooden.

*Safety pins* (No. 1480).

*Beads* (Nos. 1472, 1577, 1646, 1714, 1860). Two blue glass beads (Nos. 1472, 1860/1) are apparently from personal possessions of women of the post, being larger ( $\frac{1}{2}$  inch diameter) than those ordinarily available in Indian trade. Two other similar beads (Nos. 1646, 1714) are of white milk glass ( $\frac{5}{16}$  inch diameter). Another (No. 1577) is of blue milk glass ( $\frac{1}{4}$  inch diameter).

*Animal trap* (Nos. 789, 1706/2). Steel trap parts. One (No. 789) is of the "Victor" style, size "0," sometimes referred to as the "Oneida trap."

*Shotgun shells* (Nos. 772, 1129, 1272, 1355/1-3, 1476/1-3, 1610, 1662, 1764). Numerous specimens of 10- and 12-gage shells, the largest number of which are of recent origin (see Appendix).

## UNCLASSIFIED:

*Bolts, metal* (Nos. 58, 59, 367, 428-430, 459, 496, 498, 500, 559-561, 583, 596, 609, 857, 867, 1239, 1397, 1405-1407, 1500, 1600, 1756).

*Brackets, metal* (Nos. 154, 257, 268, 296, 301, 366, 567, 738, 754, 755, 757, 759, 990, 1522).

*Buckles, metal* (Nos. 1734, 1761).

*Jet burner, metal* (No. 505).

*Chains* (Nos. 1491, 1492).

## UNCLASSIFIED—Continued

*Clamps* (Nos. 743, 865, 868).

*Containers* (No. 1485). Portion of a cylindrical hard-rubber container, mold lettered on the end: "N. R. Co./Goodyear's Pat. May 6, 1851" ( $\frac{3}{4}$  inch in diameter; more than  $14\frac{1}{2}$  inches in length). Perhaps the container for a farm thermometer or other veterinary equipment.

*Corner plate* (No. 433).

*Cotterpin* (No. 683).

*Covers and lids*, metal (Nos. 27, 28, 149, 769, 964, 1235, 1830); glass (Nos. 1179, 1180, 1319, 1347, 1381).

*Fastener, threaded* (No. 737).

*Fitting, threaded* (No. 856).

*Grillwork, lead* (No. 989). From lamp bracket (?). Floral design.

*Handles, metal* (Nos. 89, 746, 1077, 1634, 1806).

*Hooks* (Nos. 479, 1197, 1511, 1704, 1760, 1827).

*Rings, metal* (Nos. 299, 571, 572, 1635).

*Rods or pins, metal* (Nos. 432, 460, 462, 557, 558, 707, 736, 1199, 1200, 1555, 1598, 1639, 1641, 1701, 1703, 1791, 1867).

*Springs, metal* (Nos. 606, 926, 1205, 1224, 1654).

*Tubing, glass* (Nos. 513, 578).

*Turnbuckle* (No. 442).

*Valve, screw* (No. 866).

*Washers* (Nos. 103, 375, 1508).

*Wire* (Nos. 423, 425, 712, 773, 786, 958, 1723, 1807). One object of wire (No. 958) is formed in a rosette, the purpose of which is not known.

## MISCELLANEOUS

CLINKER (No. 1802).

## METAL, MISCELLANEOUS:

*Iron and steel* (Nos. 47, 48, 101, 104, 236-238, 241-243, 245, 246, 256, 277, 331, 346-348, 350, 363-365, 377-380, 403, 441, 480, 506, 616, 709, 711, 714, 725, 741, 751, 826, 832, 924, 969, 970, 1230, 1253, 1331, 1401, 1403, 1408-1412, 1414, 1420, 1507, 1510, 1556, 1623, 1636, 1643, 1709, 1722, 1757, 1800, 1826).

*Tin* (Nos. 100, 107, 145, 228-232, 234, 235, 463, 464, 574, 617, 673-682, 888-910, 1208, 1383, 1384, 1506, 1584, 1649, 1651, 1717, 1799, 1805, 1810).

REFUSE BONE (Nos. 37, 166-171, 200-208, 302-305, 332, 395-397, 511, 974-984, 1116, 1332, 1531, 1532, 1587-1590, 1667-1669, 1683, 1747-1750, 1783, 1784, 1803, 1812, 1813, 1832). Refuse bone obtained from the site may be divided into two groups. The first is composed of the remains of domesticated animals including beef, hog, duck, and goose—all doubtless food refuse—and domestic cat. The second is composed of native species, many of which doubtless are also food refuse. These include bison, deer, antelope, white-tail jackrabbit, cottontail rabbit, skunk, raccoon, muskrat, Canada goose, great blue heron, sage grouse, prairie chicken, crow, and egret. The duck and goose bones listed in the first group are of unidentified species, probably domestic but also possibly native. Identifications of all bird bones were made by Dr. Herbert Friedmann of the U.S. National Museum, Washington, D.C. Identifications of all other bones were made by Dr. Theodore E. White, formerly of the River Basin Surveys staff in Lincoln, Nebr.

SEEDS (Nos. 1659, 1715).

SHELLS, MUSSEL (Nos. 1473, 1684, 1777, 1778).

SHELLS, NUT (Nos. 1608, 1659).

STONE, MISCELLANEOUS (Nos. 38, 398, 1366, 1685). One of the specimens (No.

1366) is a fragment of sawed marble and may be a portion of a lamp base.

TREE SECTION (No. 1891). From an ash located in front of the South Officers' Quarters. The section is from the main trunk which was dead.

WOOD, MISCELLANEOUS (Nos. 95, 96, 586, 1244, 1274, 1538, 1539, 1612, 1613, 1726).

OBJECTS OF NATIVE MANUFACTURE:

*Bead* (No. 512). Broken bead of dentalium shell.

*Gaming pieces* (No. 1771). Eight circular pieces of clear sheet glass, probably fragments of window pane, roughly smoothed by hand at the edges. These are probably gaming pieces used in the native plum-stone game. Similar pieces of both glass and modern earthenware, have been found at the sites of Like-a-Fishook Village and Fort Berthold II (32ML2) and elsewhere.

*Grinding slab* (No. 638). A burned, broken, fine-grained basaltic slab 8 inches wide by 13½ inches long. It had been deeply pecked over the central portion of one surface and ground to a basin shape. It had subsequently been used in the masonry footing of the Bakery where it was found.

*End scraper* (No. 1665). A bulbous flake of "Knife River flint" (brown chalcedony) chipped over most of the upper surface and with secondary chipping along the edges.

*Flake* (Nos. 1-5, 1666). Six slightly modified flakes, probably used as scrapers, also made of "Knife River flint."

*Worked bone* (Nos. 1667, 1890). One (No. 1890) is a small, blocklike portion of scapula, with a cut hole in the center; perhaps a shaft wrench. The other (No. 1667) is a lightly incised distal end of a humerus. Neither was of identifiable species.

## CONCLUSION

The documentary record of physical structures of the permanent military post known as Fort Stevenson is remarkably full and detailed. The post archives have been preserved, apparently without major gaps, and these provide a good record of the design and construction of the fort. The interesting personal record preserved in the journal kept by General de Trobriand supplements these documents in several ways, as do certain pictorial records. The total range of information available in customary historical sources concerning this western military post may very well be unique. These facts are now supplemented by a body of archeological data concerning the site.

The preservation of good documentary sources concerning the post is especially fortunate in view of the fact that the physical remains of the various structures once comprised in Fort Stevenson had undergone major changes and alterations before archeological work became possible. The history of these buildings would at a great many points be obscure were the documentary record missing. No single structure of the military period had survived above ground, even in ruin. Alteration of the site through extensive and disastrous fires, followed by intentional demolition and plundering of various

ruins for usable building materials, had sharply reduced the information that could be obtained through archeological investigation. The excavations made at the site have, however, permitted some final additional observations on the site as well as providing, for the first time, actual object materials properly documented, for permanent preservation.

Experience gained at this site may, perhaps, serve as a caution to archeologists elsewhere concerned with any site, historic or prehistoric, that has been subjected to extensive and obvious changes subsequent to the period of its use, or at which such changes may be suspected. In this instance, little had been preserved for study, aside from the inevitable smaller "artifactual" materials, beyond the most massive and resistant kinds of construction, such as the well-protected stone masonry. Little more than the general plan of the whole post and of the general nature of individual buildings could have been learned by excavation alone. In rare instances, vestiges of above-ground structures, the buildings proper, afforded details of design and construction. Incautious speculation in such instances, based solely upon archeological evidence, might lead to unwarranted conclusions. In this case, the documentary sources constitute primary evidence, the archeological data being of subordinate significance. For other sites, at which documentary evidence may be inadequate, the situation may, of course, be reversed. In still other instances, archeological evidence may afford information nowhere else available, and constitute the sole surviving evidence for historical study.

The investigation of the site of Fort Stevenson was accomplished because of the existence of a practical problem. The impending obliteration of the site (with many others, prehistoric as well as historic), with the filling of Garrison Reservoir, dictated that investigation be made of the actual historical values that were to be lost. Manifestly, knowledge of physical remains of man's history is inadequate until actual excavation, however limited, has been performed, and it is rarely possible to predict archeological findings. If in this instance new information obtained is limited, the experience can hardly be applied directly to other sites still uninvestigated. Irreplaceable information may be lost at many sites unless actual excavation is performed, and the hope of adding significant bits to the mosaic of history amply justifies investigation of sites even of recent provenience. Even more recent periods of western history seem to warrant comparable field study, not yet made. An example is the little-known physical history of townsites widely scattered over the West. In the Garrison Reservoir area there were several such sites, some not established until after 1900, for which there was little or

no documentary evidence (e.g., Old Garrison, Expansion, Ree, and others (see Mattison, 1955)). In those instances, excavation might have afforded information nowhere else available—however, the opportunity for that work is gone.

Salvage archeology has now been accomplished at the historic site of Fort Stevenson. It is believed that these investigations establish two facts. It seems clear that the physical resources of the site were definitely limited, and supplement the documentary record in only minor ways. The results obtained also suggest that the general significance of the surviving remains was somewhat meager. However, a comparative study of selected sites of similar provenience would seem to offer prospects of knowledge of wider significance than any further data concerning Fort Stevenson itself. The need for continued work on such subjects is apparent. Little more than a beginning has been made on investigations of historic sites of such relatively late dates in the West, and while there is no way of predicting the value of such studies, they should be a worthwhile addition to customary historical research. These historical resources are immediately related to modern history in the American West—perhaps even more intimately and directly than those of native Indian affiliation. There is little question of the value or importance of archeological sites, whether historic or prehistoric. Each has a contribution to make to knowledge of man's use of these regions, and each should be investigated as time and opportunity permit.

## APPENDIX

### CARTRIDGES AND BULLETS FROM FORT STEVENSON, NORTH DAKOTA

By CARLYLE S. SMITH

The cartridges and bullets from Fort Stevenson fall into two groups on the basis of age: (1) Specimens attributable to the military use of the site from 1867 to 1883, and (2) those dropped on the site by hunters and casual visitors from about the time of its abandonment by the U.S. Army until shortly before its excavation in 1951. Most of the identifications were made on the basis of familiarity with firearms and ammunition. Additional facts were obtained from ammunition catalogs and from Logan's excellent pictorial digest.<sup>1</sup>

This study serves as an experimental check on the dating of sites through the use of objects of White origin. It must be recognized, however, that the military have always been subject to sudden changes in equipment with the discard of the obsolescent in the interests of uniformity. Such would not be the case in regard to the use of objects of White origin in an aboriginal or other nonmilitary setting.

<sup>1</sup> Logan, Herschel C., Cartridges. Standard Publications, Huntington, W. Va. 1948.

The cartridges and bullets from the occupation by the U.S. Army reveal that two principal military rifles were in use: The .50-caliber Springfield rifle introduced into the service in 1866, improved in 1868 and 1870 and discarded after 1873, and the .45-caliber Springfield rifle introduced in 1873, improved in 1884 and 1888 and discarded after 1892. The .50-caliber Sharps and Remington arms may have been present too. One or more, already obsolete, muzzle-loading rifled muskets of the Civil War were also in use. A Henry rifle, or a Model 1866 Winchester, using the .44 Henry cartridge was present, along with .45-caliber Colt revolvers, a .54-caliber Burnside carbine and, possibly, a 12-gage shotgun.

The specimens pertaining to the military occupation of the site furnish the following dates of manufacture: 1855-65, 1861-65, 1866-1880, October 1866 to March 1868, 1868-1880, May to December 1871, 1873-1890, 1873-1900, June 1880, February 1881, April 1881, April 1882. Discounting the extreme time spans based on typology, the dates conform with the documentation remarkably well: ca. 1865-1885.

The cartridges dating from after the military occupation indicate the use of a .22-caliber rifle, lever action hunting rifles of moderate power, high-power bolt action rifles, a .38-caliber revolver, and some shotguns. Most of the weapons were designed for the use of smokeless powder, which did not come into general use until after 1900. The dates of manufacture are less satisfactory than those pertaining to the military occupation of the site because they fall within the period when technological change in firearms and ammunition had reached a more static level and also because old designs persist in use longer among civilians. Most of the cartridges are indistinguishable from those manufactured and sold today. The dates are as follows: 1886-1901, 1887-1940, and from 1890, 1900, 1902, 1906, and 1913 to date. The specimens may have been dropped on the site at intervals from 1886 to 1951 or the bulk of them may pertain to no more than two hunting parties, one about 1900, the other after 1913. The presence of both shotgun shells and rifle cartridges, however, suggests seasonal hunting for birds and larger game.

In the detailed analysis below, the specimens belonging to the second group are marked by asterisks (\*) in front of the paragraph numbers.

#### SEPARATELY PRIMED CARTRIDGE:

1. .54 Burnside, brass. Case tapered to rear and perforated to receive the flash from a separate percussion cap placed on the nipple mounted in the breechblock. Manufactured by the Burnside Rifle Company, Providence, R.I., for use in the Burnside cavalry carbine ca. 1861-65. The U.S. Ordnance Department purchased 21,819,200 of these cartridges for use in the Civil War.

Catalogue No.: 1236----- Total 1

## RIM-FIRE CARTRIDGES :

- \*1. .22 Long Rifle, copper, sunken letter "H" on base. Complete cartridge. Manufactured by Winchester from 1890 to date.  
Catalogue No.: 1858/1----- Total 1
2. .44 Henry, copper, raised letter "H" on base. Older marking than sunken letter. Manufactured by Winchester from ca. 1866-1890 for use in Henry rifle, patented in 1860, for the Model 1866 Winchester and for several single-shot rifles. This cartridge was fired in either a Henry or a Winchester on the basis of double-firing pin marks.  
Catalogue No. 1858/3----- Total 1

## CENTER-FIRE, INTERNALLY PRIMED CARTRIDGES :

1. .45 Colt Revolver, copper. Complete cartridge. Benét cup primer. Manufactured at Frankford Arsenal ca. 1873-90, for use in Colt Single-Action Army Revolver.  
Catalogue No.: 1475/3 (illustrated pl. 20, *b*)----- Total 1
2. .45 Government (.45-70), copper. Benét cup primer. Manufactured at Frankford Arsenal from 1873 to ca. 1882 for use in U.S. Model 1873 and later carbines and rifles.  
Catalogue Nos.: 539, 1128, 1356/6, 1475/8, 1661/1, 1763/2 (illustrated example pl. 20, *d*)----- Total 6
3. .45 Government. Same as No. 2 above but stamped for rifle (R), Frankford Arsenal (F), and dated: June 1880 (6-80), February 1881 (2-81), and April 1881 (4-81).  
Catalogue Nos.: 90, 540, 1858/4----- Total 3
4. .50 Government (.50-70), copper. Bar anvil primer. One complete cartridge. Manufactured at Frankford Arsenal from October 1866 to March 1868 for use in U.S. Model 1866 and later rifles, also Sharps carbines.  
Catalogue Nos.: 538, 960, 961, 963, 987, 1122, 1123, 1808/2, 1808/4, 1834, 1856/6, 1858/7, 1125 (illustrated example pl. 20, *a*)----- Total 13
5. .50 Government (.50-70), copper. Bar anvil primer. Blank cartridge. Manufactured at Frankford Arsenal from October 1866 to March 1868 for use in same arms as number 4 above.  
Catalogue No.: 399----- Total 1
6. .50 Government (.50-70), copper. Benét cup primer. Manufactured at Frankford Arsenal from March 1868 until about 1880 for use in same arms as No. 4 above.  
Catalogue No.: 1808/1 (illustrated pl. 20, *c*)----- Total 1
7. .50 Government (.50-70), copper, deep annular depression in base Martin primer. Manufactured at Frankford Arsenal from May to December 1871 for use in same arms as No. 4 above.  
Catalogue No.: 544----- Total 1

## CENTER-FIRE, EXTERNALLY PRIMED CARTRIDGE :

- \*1. .250 High Power, brass case. Manufactured by Remington-Union Metallic Cartridge Co. since ca. 1913 for use in Savage Model 1899 and similar rifles.  
Catalogue No.: 1721/7----- Total 1
- \*2. .30-30 brass. Manufactured by Remington-Union Metallic Cartridge Co. since 1902 for use in Model 1894 Winchester and similar rifles.  
Catalogue No.: 1475/2----- Total 1
- \*3. .30-30, brass. Manufactured by Western Cartridge Co. since ca. 1900 for use in same arms as No. 2 above.  
Catalogue Nos.: 1126, 1356/2----- Total 2

CENTER-FIRE, EXTERNALLY PRIMED CARTRIDGE—Continued

- \*4. .30-30, brass. Manufactured by Winchester since 1894 for same arms as No. 2 above.  
 Catalogue Nos.: 1356/3, 1475/4----- Total 2
- \*5. .30 Government, Model 1906 (.30-'06), brass. Manufactured by Remington-Union Metallic Cartridge Co. since 1906 for use in Springfield Model 1903 and similar rifles.  
 Catalogue No.: 1475/9----- Total 1
- \*6. .303 British, brass. Manufactured by Winchester since 1897 for use in British Army rifles and similar arms.  
 Catalogue No.: 1609----- Total 1
- \*7. .32 Special, brass. Manufactured by Remington-Union Metallic Cartridge Co. since 1902 for use in Winchester Model 1894 and similar rifles.  
 Catalogue Nos.: 1121, 1356/4----- Total 2
- \*8. .32 Special, brass. Manufactured by Winchester since 1902 for use in same arms as No. 7 above.  
 Catalogue Nos.: 1120, 1124, 1356/5, 1475/6, 1475/7----- Total 5
- \*9. .38-56, brass. Manufactured by Winchester from ca. 1887-1940 for use in Winchester Model 1886 rifle and single shot rifles.  
 Catalogue No.: 1356/1----- Total 1
- \*10. .38 Smith and Wesson, brass. Manufactured by Union Metallic Cartridge Co. from ca. 1890-1901 for use in Smith and Wesson revolvers and similar arms.  
 Catalogue No.: 1661/3----- Total 1
- \*11. .40-82, brass. Manufactured by Union Metallic Cartridge Co. between 1886 and 1901 for use in Winchester Model 1886 and single shot rifles.  
 Catalogue No.: 1661/3----- Total 1
- \*12. .44-40, brass. Manufactured by Winchester in this form since about 1900 for use in Winchester Model 1873, similar rifles, and in revolvers.  
 Catalogue Nos.: 1237, 1475/5----- Total 2
- 13. .45 Colt Revolver, brass. Maker unknown. For use in Colt Single-Action Army Revolver ca. 1880.  
 Catalogue No.: 1858/2----- Total 1
- 14. .45 Government (.45-70), copper. Stamped for rifle (R), made at Frankford Arsenal (F), in April (4), 1882 (82). For use in U.S. Model 1873 and later arms.  
 Catalogue Nos.: 400, 545, 962, 1661/2, 1721/2, 1721/4----- Total 6
- 15. .45 Government (.45-70), brass. Manufactured by Phoenix Cartridge Co. ca. 1880 for use in same arms as number 14 above.  
 Catalogue Nos.: 541, 1119, 1127, 1475/1, 1525/1, 1525/2, 1721/1, 1721/3, 1721/5, 1721/6, 1808/3----- Total 11
- 16. .50 Government (.50-70), brass. Maker unknown. Manufactured ca. 1880 for use in U. S. Model 1866 and later rifles, also Sharps carbines.  
 Catalogue Nos.: 476, 542, 543, 546, 1763/1, 1858/5----- Total 6

SHOTGUN SHELLS, CENTER-FIRE, EXTERNALLY PRIMED :

- 1. 12-gauge, low-base, brass, paper missing. Manufactured by Winchester ca. 1880.  
 Catalogue No.: 1764----- Total 1
- \*2. 12-gauge, low-base, brass, paper missing. "New Rival," manufactured by Winchester ca. 1890-1900.  
 Catalogue Nos.: 1476/2, 1610----- Total 2

## SHOTGUN SHELLS, CENTER-FIRE, EXTERNALLY PRIMED—Continued

- \*3. 12-gauge, high-base, brass, paper missing. "Leader," manufactured by Winchester, probably after 1900, for smokeless powder loads.  
Catalogue Nos.: 1129, 1476/1----- Total 2
- \*4. 12-gauge, low-base, brass, paper missing. "Sure Shot," manufactured by Western Cartridge Co., probably after 1900.
- \*5. 12-gauge, low-base, brass, paper missing. "New Club," manufactured by Remington-Union Metallic Cartridge Co. after 1902.  
Catalogue Nos.: 772, 1355/1----- Total 2
- \*6. 12-gauge, high-base, brass, paper missing. "Nitro Club," manufactured by Remington-Union Metallic Cartridge Co. after 1902 for smokeless powder load.  
Catalogue Nos.: 1355/2, 1355/3----- Total 2
- \*7. 10-gauge, low-base, brass, paper missing. "Climax," marking in sunken channel with raised letters. Manufactured by United States Cartridge Co. ca. 1900.  
Catalogue No.: 1476/3----- Total 1
- \*8. 10-gage, low-base, brass, paper missing. "Climax." Marking in sunken letters on flat base. Manufactured by United States Cartridge Co., probably after 1900.  
Catalogue No.: 1272----- Total 1

## BULLETS :

1. .45-caliber conical bullet, lead, for .45 Government cartridges as listed above, ca. 1873-1900.  
Catalogue No.: 1883----- Total 1
2. .50-caliber conical bullet, lead, for .50 Government cartridges as listed above, ca. 1866-1880.  
Catalogue No.: 547----- Total 1
3. .58-caliber conical bullet, lead. Minié ball for use in Civil War rifle muskets, Models 1855, 1861, 1863, and 1864. Perforated with two holes for suspension as a fishing sinker or as an ornament. Last made in 1865.  
Catalogue No.: 959 (illustrated pl. 20, *f*)----- Total 1
4. .58-caliber conical bullet, lead, zinc plug in base, tinned sheet-metal disk between. Used to shoot out the fouling in muskets listed under No. 3 above, and made ca. 1861-1865.  
Catalogue No.: 343 (illustrated pl. 20, *e*)----- Total 1

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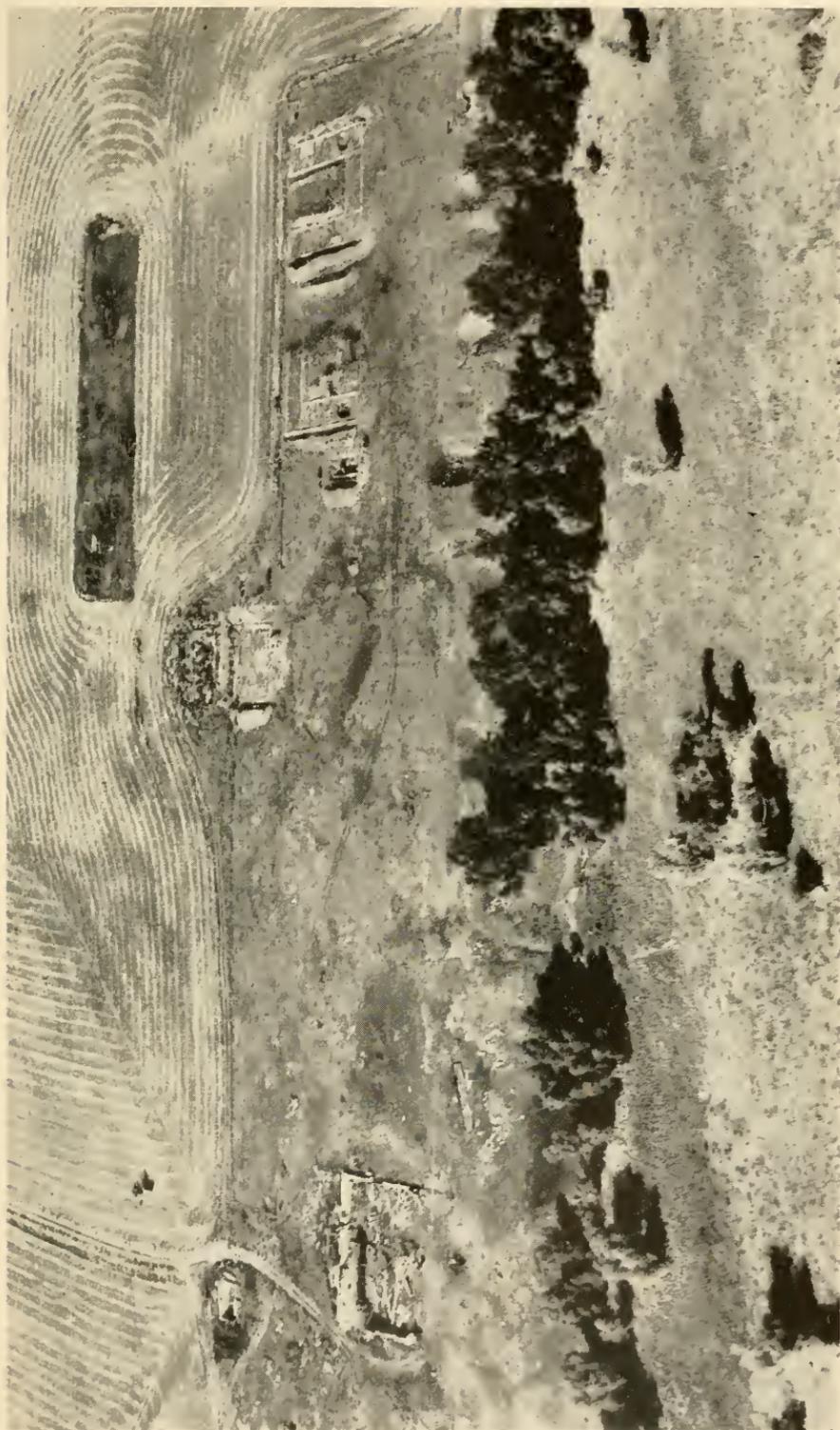
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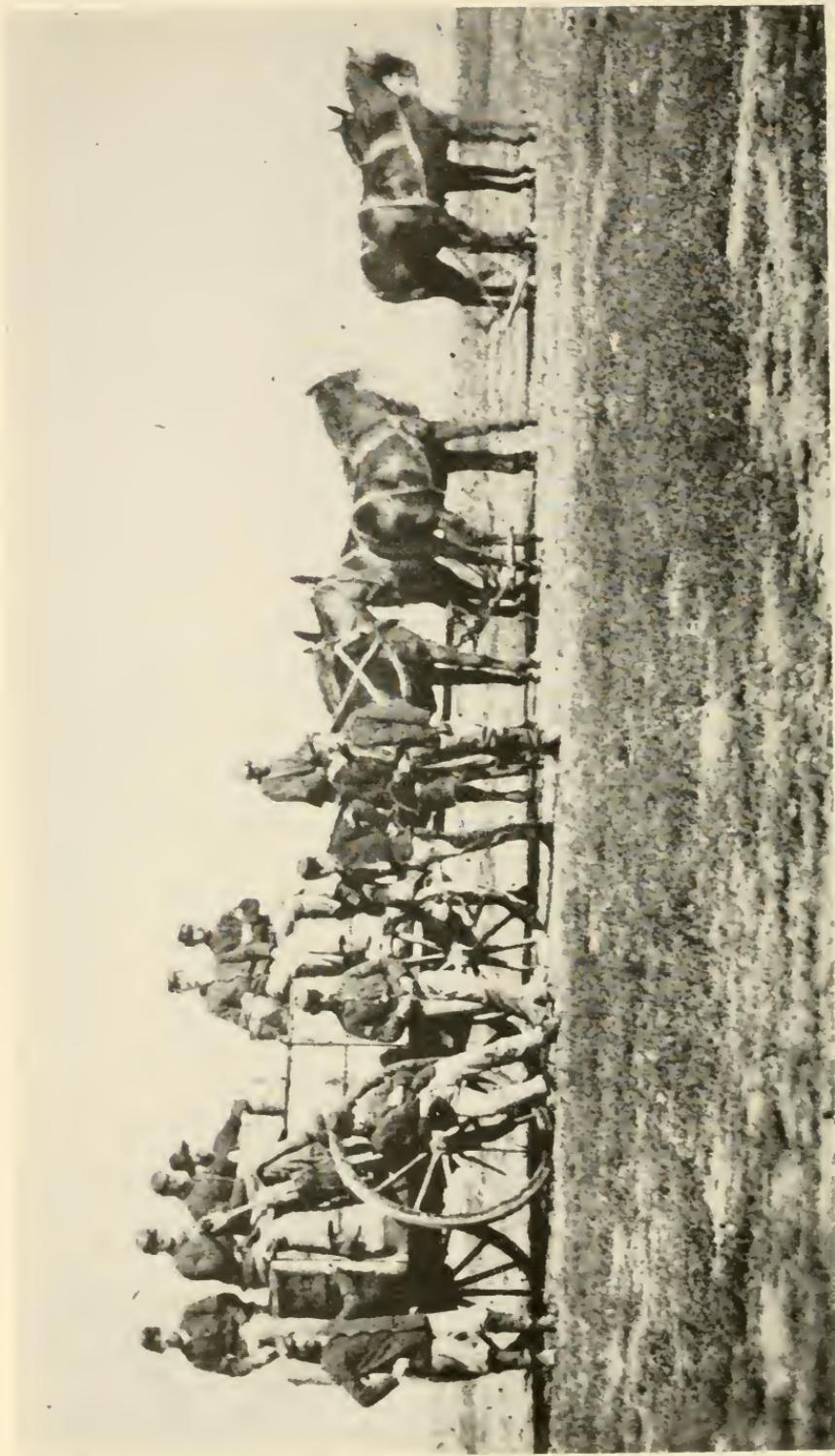
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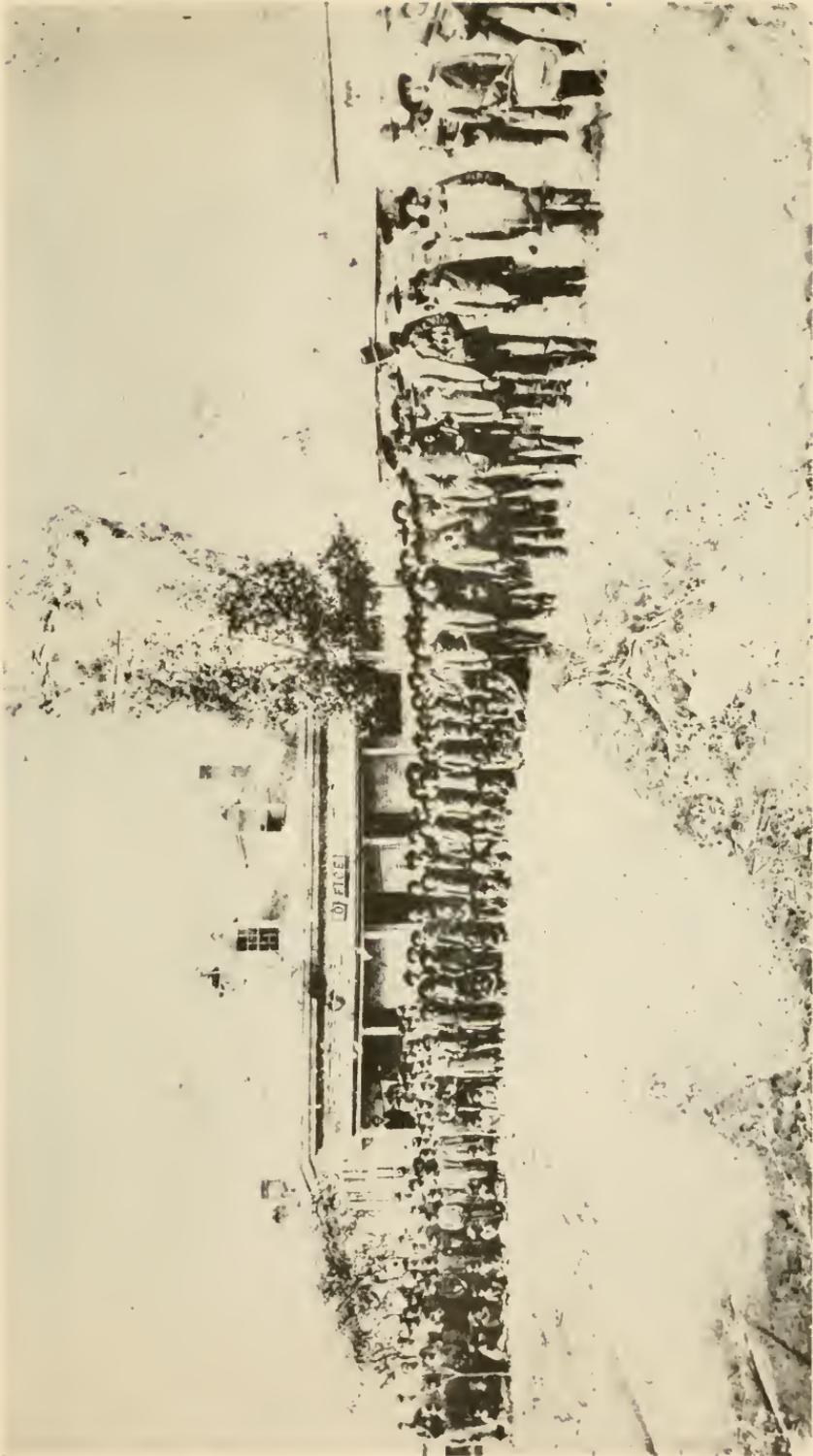
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Aerial view of the site of Fort Stevenson after excavation.



Water wagon detail at Fort Stevenson, ca. 1870.



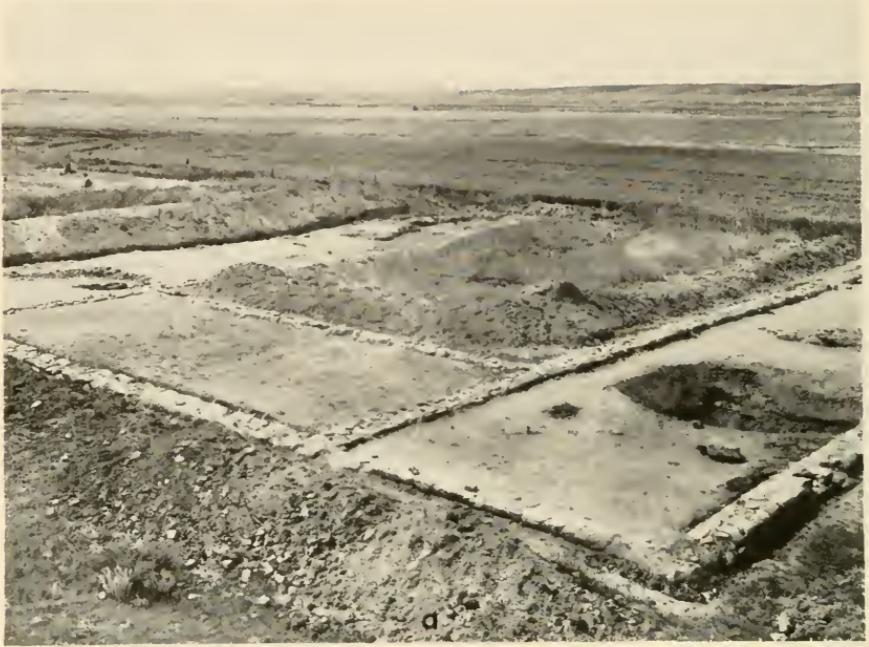
Indian children at the Fort Stevenson Indian School in the 1880's.



*a*, Barn of the Indian School period. *b*, Douglas Creek west of the site of Fort Stevenson.



*a*, Beginning the excavation of the East Wing of the Hospital. *b*, Removing part of the recent (ca. 1915) potato cellar.



*a*, General view of excavated site of the Hospital. *b*, View of excavated site of East Wing of the Hospital.



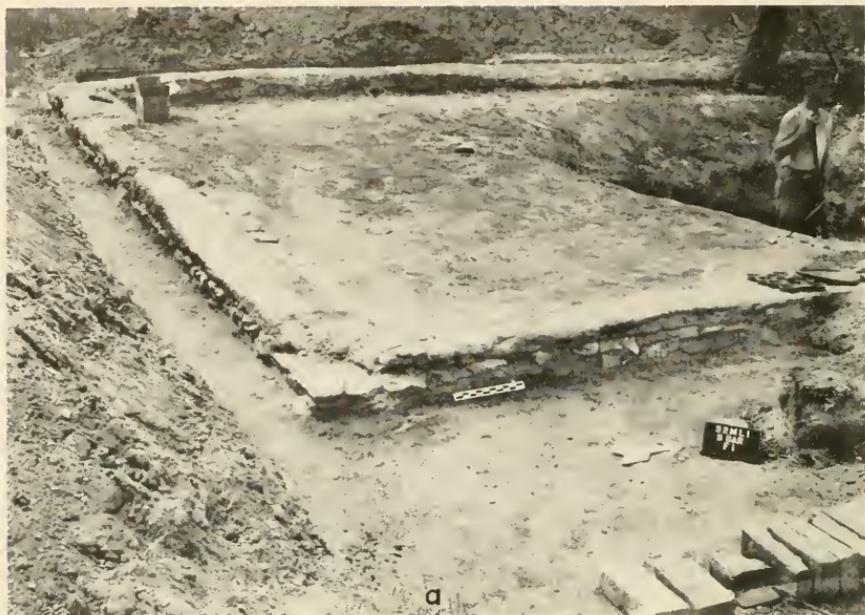
*a*, View of excavated site of West Wing of the Hospital. *b*, Exterior view of footing of the southeast corner of the East Wing of the Hospital.



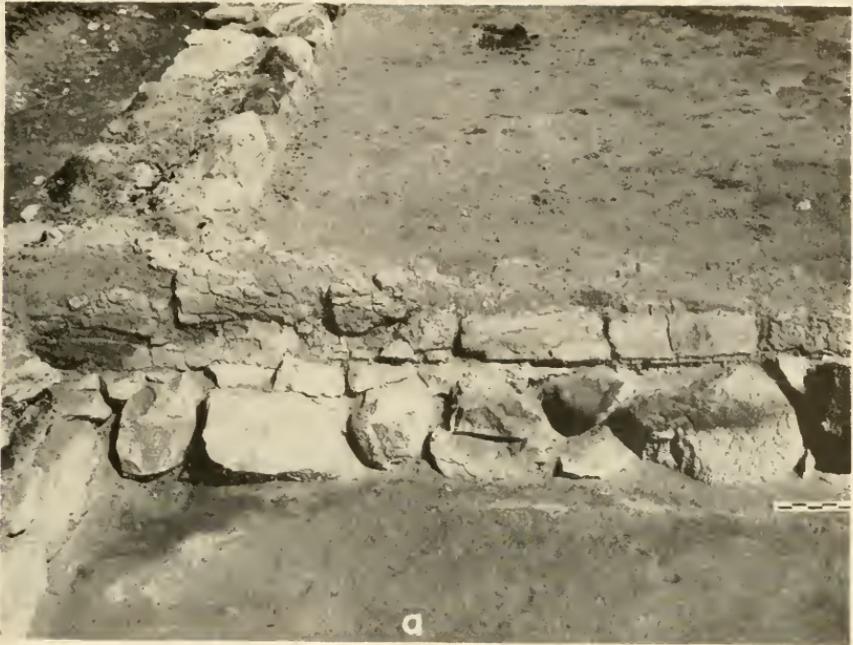
*a*, Interior view of footing of the northwest corner of the main body of the Hospital. *b*, Detail of stone masonry.



*a*, Rear wall footing of the main body of the South Barracks. *b*, General view of the West Wing of the South Barracks.



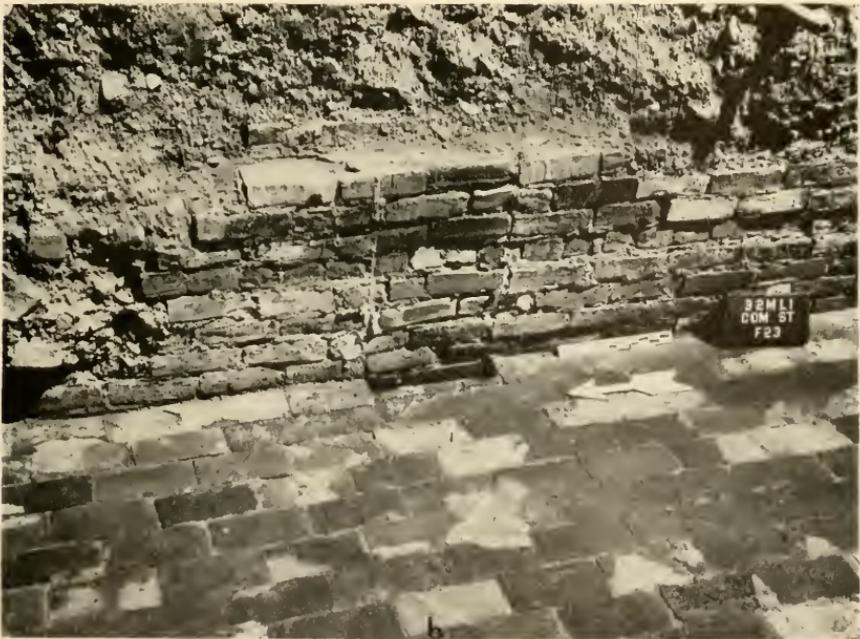
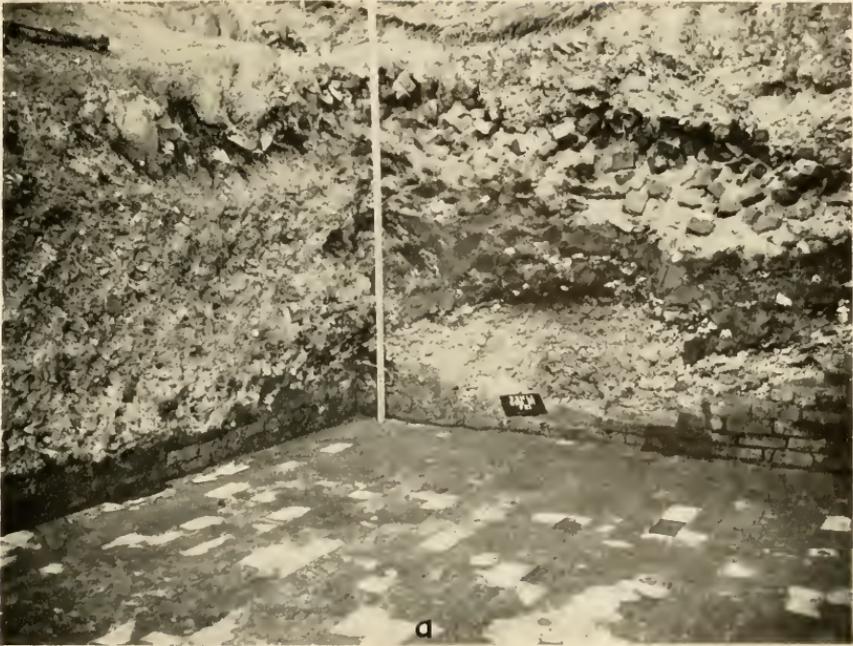
*a*, Exterior view of the southeast corner of the West Wing of the South Barracks. *b*, Interior view of the southeast corner of the West Wing of the South Barracks.



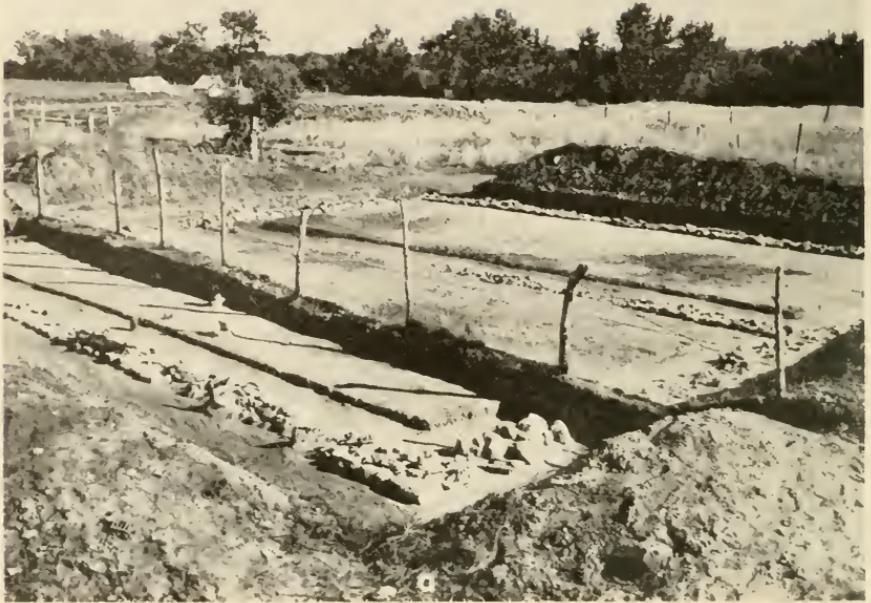
*a*, Detail of the adobe brick masonry wall remnants. South Barracks. *b*, Collapsed chimney. South Barracks.



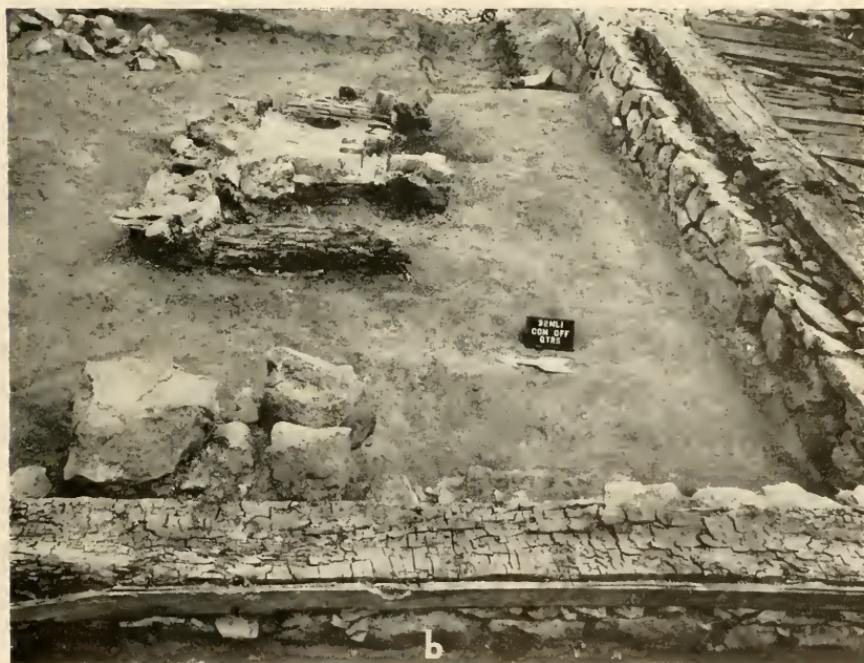
*a*, Remnants of stone masonry footings. Commissary Storehouse. *b*, Excavated portion of cellar of Commissary Storehouse.



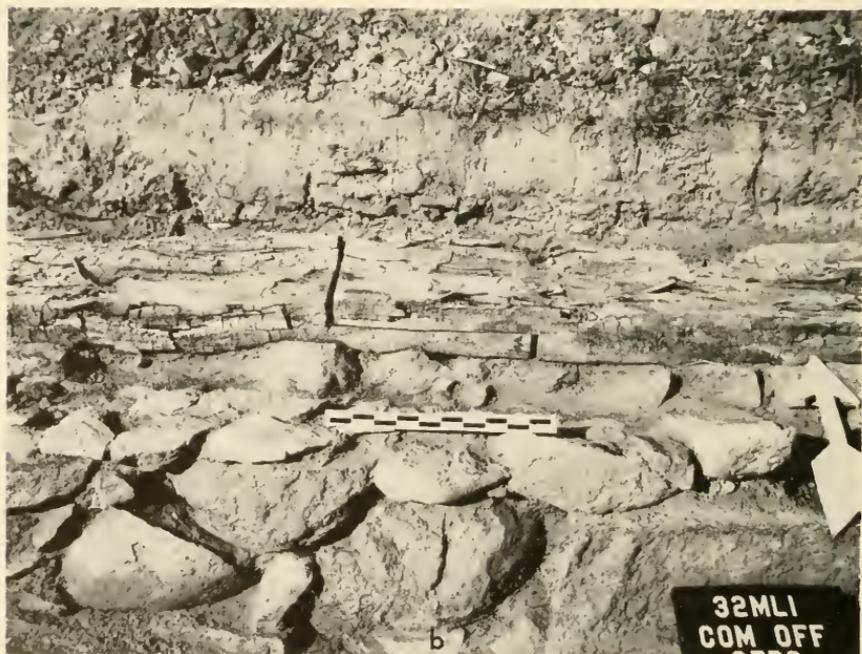
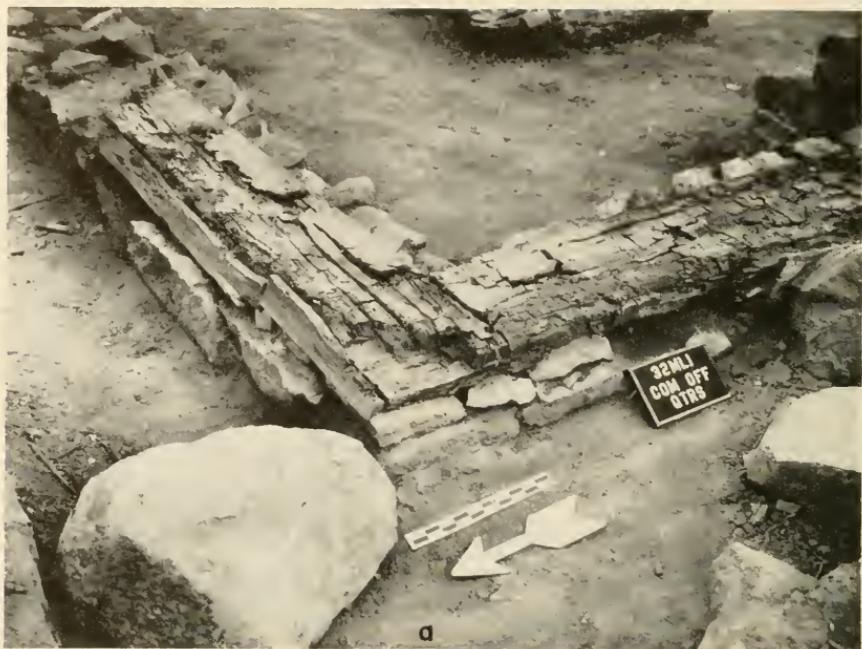
*a*, Detail of floor of cellar of Commissary Storehouse. *b*, Detail of wall of cellar of Commissary Storehouse.



*a*, Excavated site of the South Officers' Quarters. *b*, Excavated site of the Commanding Officer's Quarters.



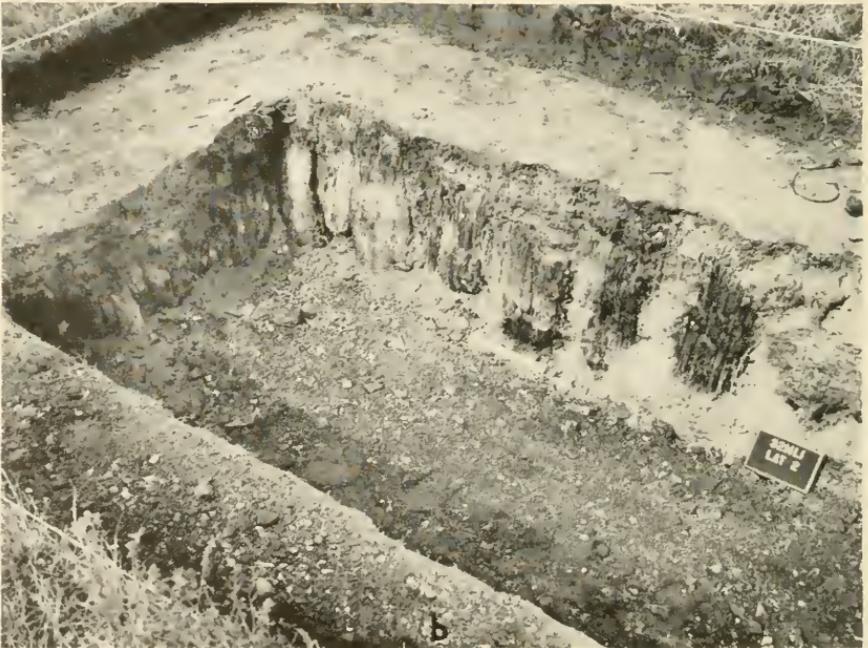
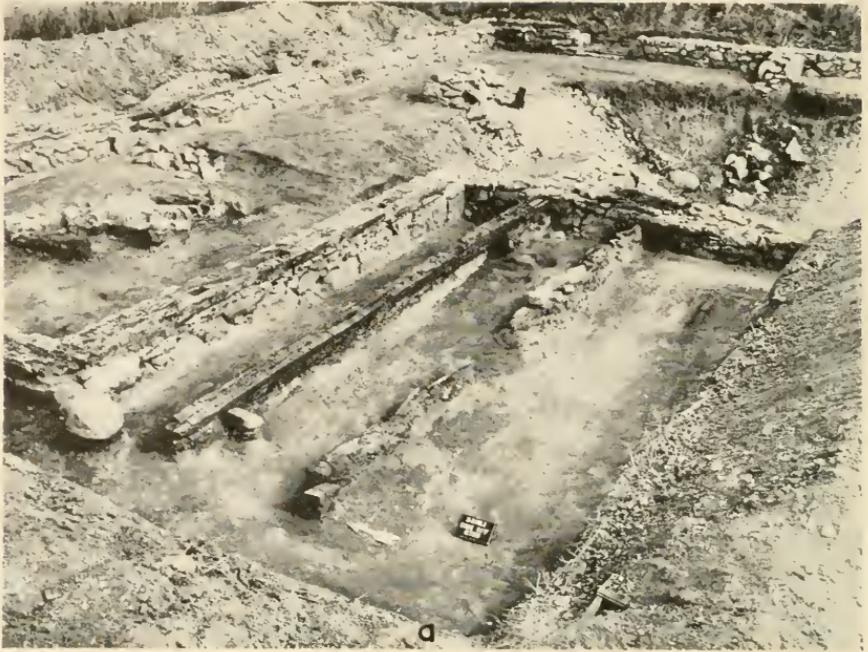
*a*, Interior of the north half of the site of the Commanding Officer's Quarters. *b*, Detail of interior of the rear wing (kitchen) of the site of the Commanding Officer's Quarters.



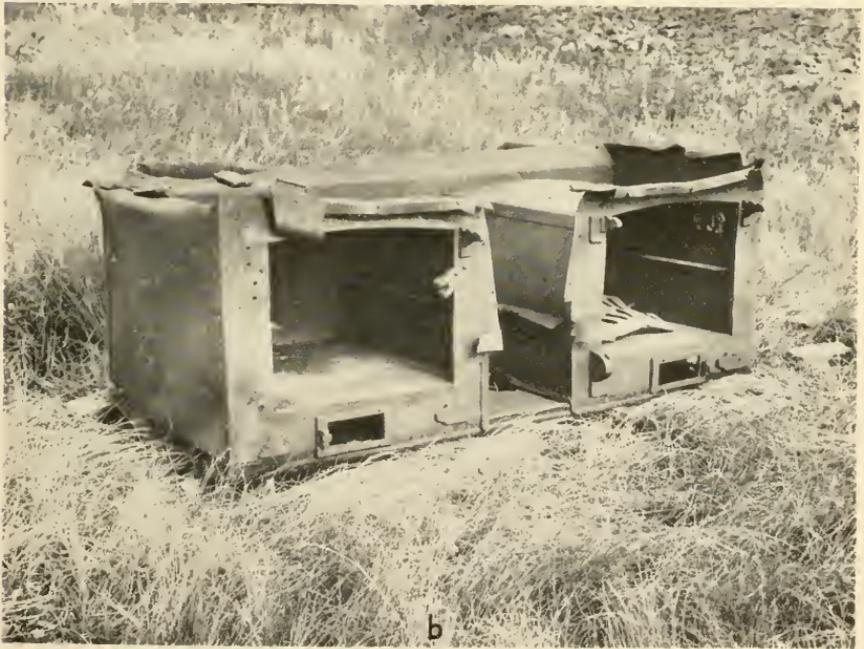
*a*, Detail of remnants of sills. Site of Commanding Officer's Quarters. *b*, Detail of lap joint in sills. Site of Commanding Officer's Quarters.



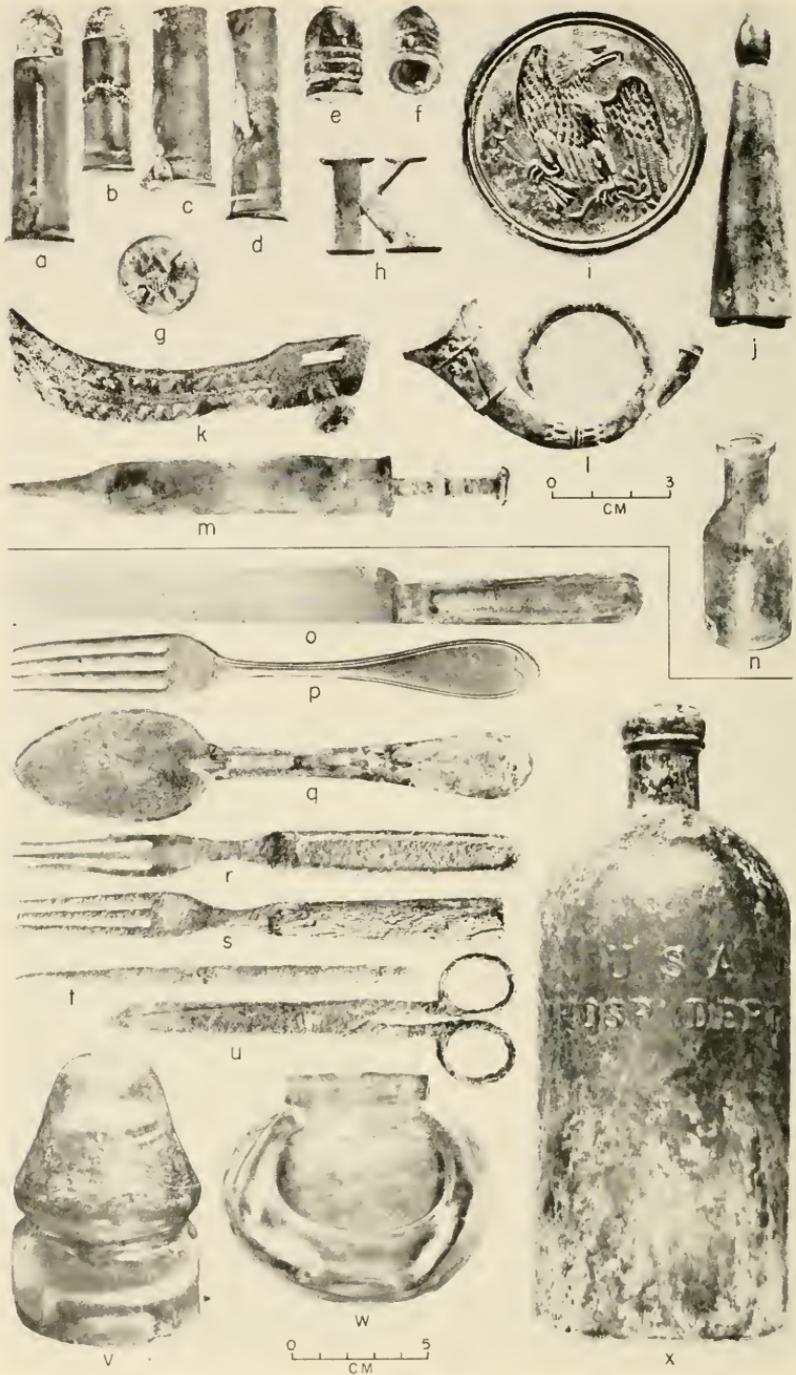
*a*, Remnants of late period porch attached to rear wing of Commanding Officer's Quarters.  
*b*, Remnants of earlier porch attached to rear wing of Commanding Officer's Quarters.



*a*, Porch area of the rear wing of the Commanding Officer's Quarters showing sills. *b*, View of pit and timber cribbing of Latrine No. 2.



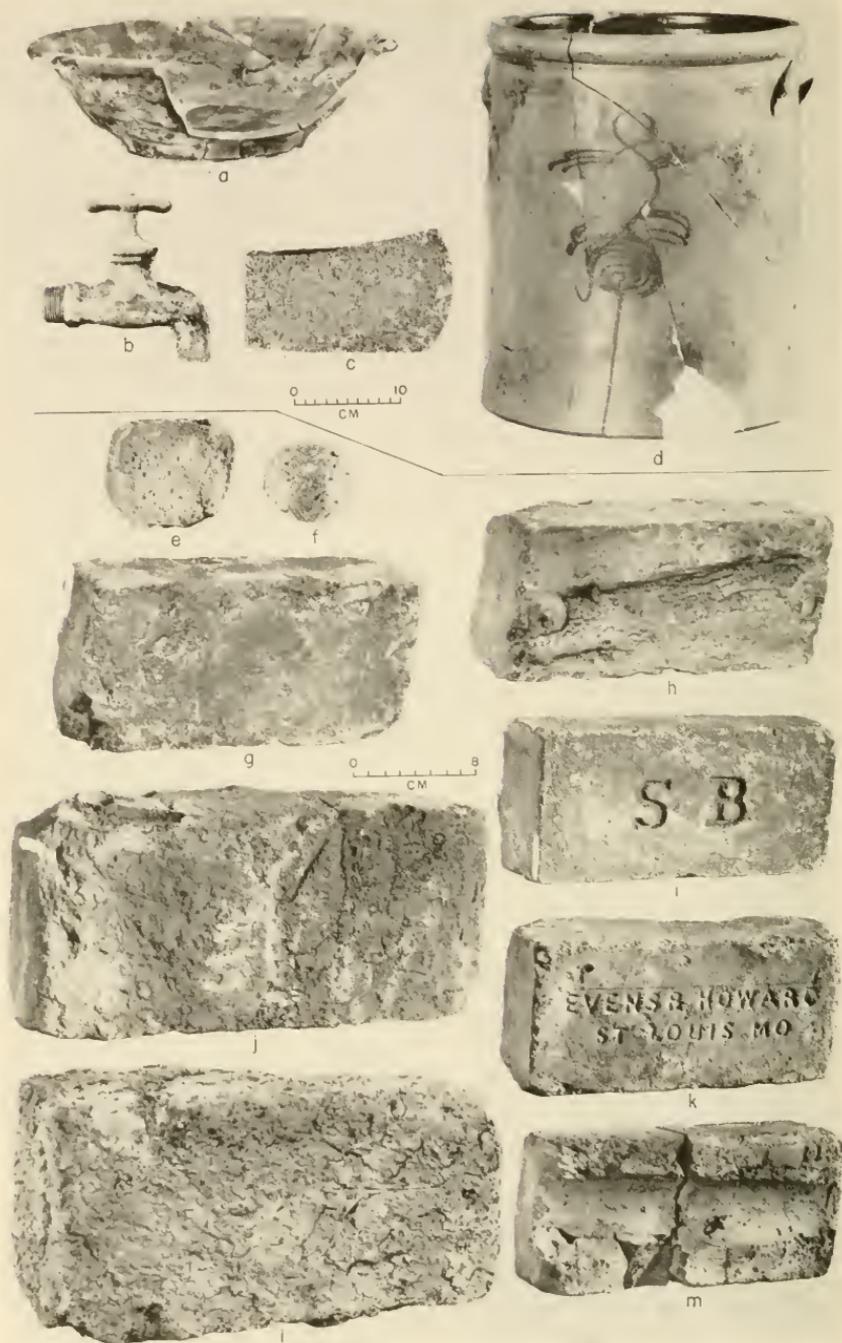
*a*, Furnace parts excavated at the site of the cellar of the Commissary Storehouse. *b*, Army style mess range.



Objects principally of the military period.



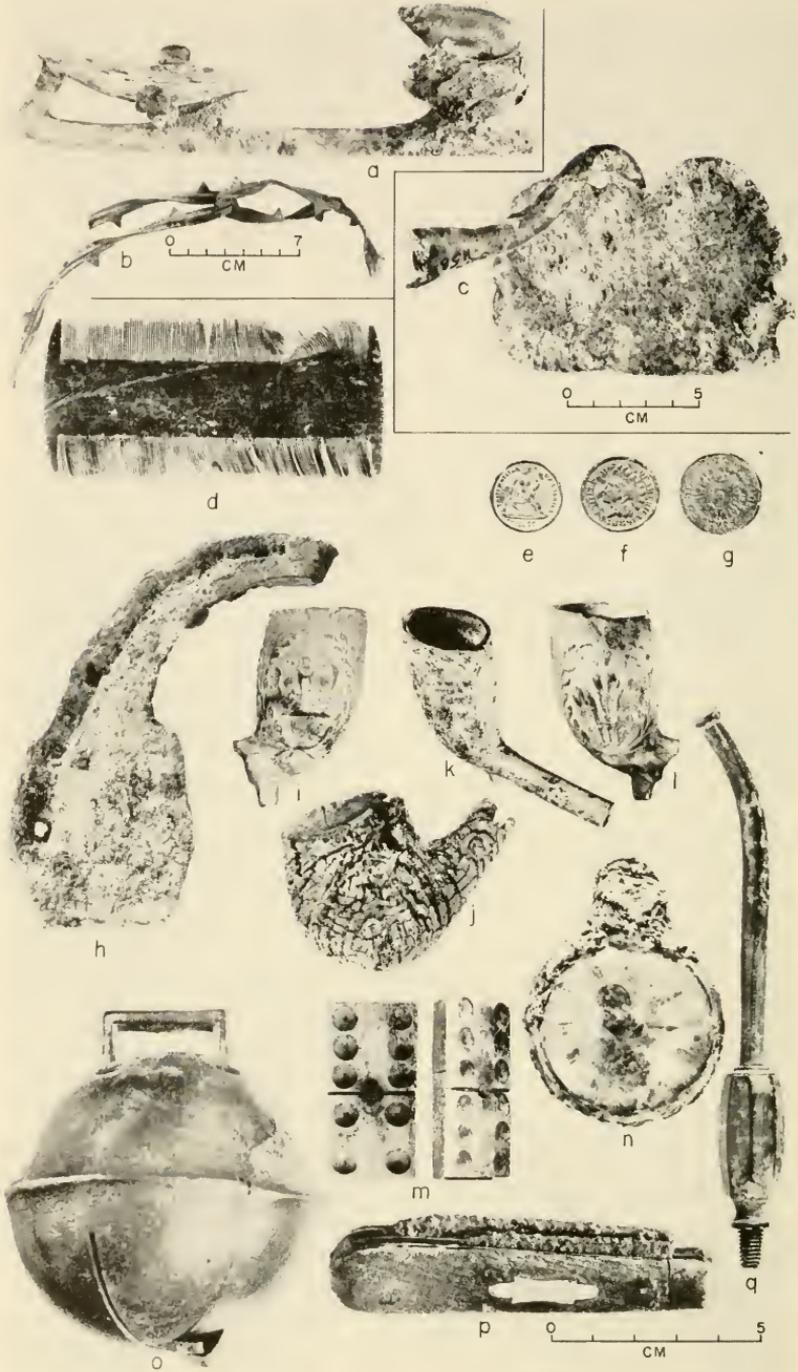
Objects principally representing building hardware and tools.



*a-d*, Domestic furnishings. *e-m*, Adobe bricks and fired bricks.



Domestic furnishings.



Personal possessions and agricultural objects.