Part 4

Material Recovered from the Archeological Investigation

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Buttons from military members of the Long Expedition. NSHS, State Archeology Office. Prepared by Kelli Bacon

The archeological excavations recovered more than 3,700 artifacts, nearly 2,000 identifiable fragments of plant and animal remains, and about 600 pounds of limestone and architectural debris. These materials are directly related to the Long Party's nine-month stay at Engineer Cantonment and are the most complete collection of Early American period material culture from a very specific time period recovered archeologically anywhere on the Great Plains. When combined with remains from other sites—Fort Atkinson, the Fontenelle and Cabanne trading posts, and the early townsites of DeSoto, Cuming City, and Rockport—they form an exceedingly important material record revealing Euroamerican life along the Missouri River during the first half of the nineteenth century.[1]

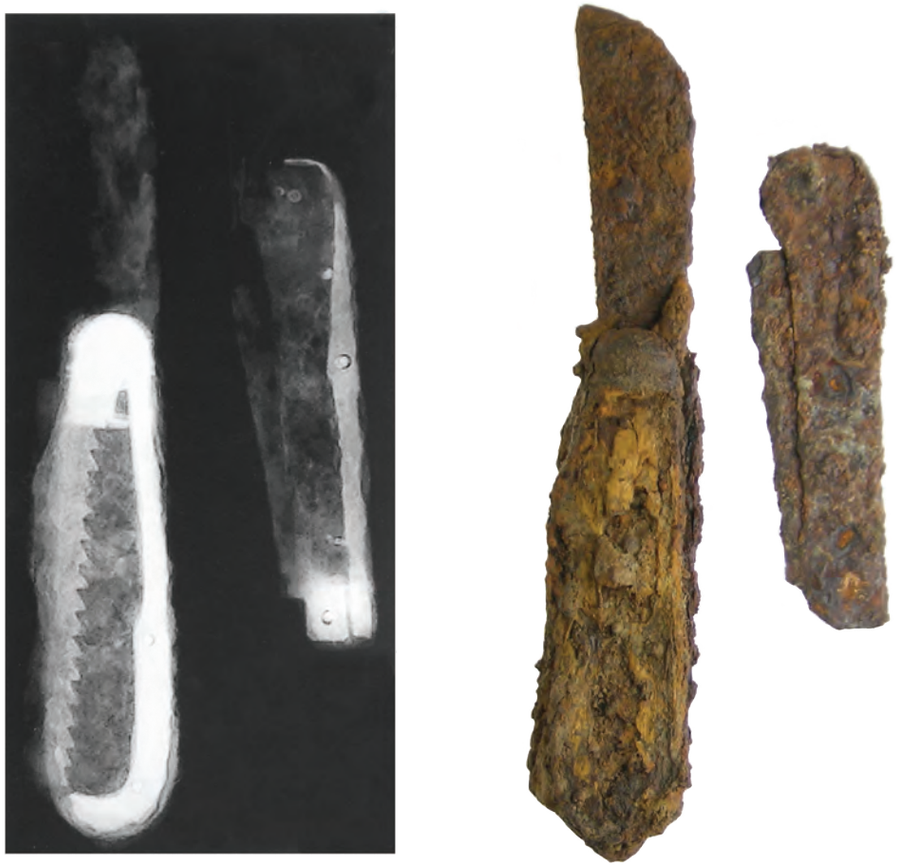
The archeological collection not only provides an important material archive of the period, but has significant potential to sharply enhance our collective understanding of what happened at Engineer Cantonment. The artifacts, plant fragments, and bones left behind offer important insights into tasks conducted, subsistence practices, interaction with tribes, technology, construction methods, and the function and arrangement of interior and exterior spaces. While some of this is evident in the archival record, the archeological data sheds exciting additional detail. In many respects, the recovered collection is remarkably consistent with what is known about the cantonment occupation. A full description and analysis of the collection is available elsewhere, but a brief summary is below.[2] A summary inventory of the collection is in Table 1.

Table 1. Summary of recovered materials.

Category	Number
Lead shot/ball	538
English and French gun flints and fragments	91
Other gun parts	4
Pipe bowls and fragments	164
Pipe stem segments	233
Metal buttons	39
Ceramic buttons	1
Bone buttons	13
Buckles	3
Pocket knives	2
Finger rings	4
Spanish coin	1
Cross-like ornament	1
Jewelry settings	2
Straight pins	6
Plates, cup, bowl fragments	1051
Drinking glass fragments	72
Bottles	14
Stemmed goblet	1
Knives and flatware	9
Paper	1
Drawer pull	1
Iron crucible	1
Iron muleshoe	1
Lead plumb bob	1
Lead hook	1
Lead spoon handle	1
Lead slab	1
Lead coil	1
Brass chain	1
Brass tacks	8
Brass strips	11
Brass fragments and unidentified pieces	64
Metal rings	6

Sheet iron	61
Iron band and straps	9
Iron rod	1
Possible boat hardware	1
Hand wrought nails	98
Cut nails	245
Door bolt keepers	2
Spikes	2
Pins	2
Lead lumps	366
Lead strips	48
Window glass	159
Coal, coke, clinker	8.5 kg
Other stone	8 kg
Mortar	.15 kg
Burned earth	12 kg
Ash	.4 kg
Limestone	277kg
Catlinite pipes	2
Metal arrow points	2
Bell	1
Ceramic gaming pieces	2
Glass beads	434
Shell beads	2
Cut antler	2
Bone awl	1
Seeds and other plant remains (18taxa)	1035
Snails (7 taxa)	Present
Mussel shell	3
Fossil clam	2
Fish, amphibian, reptile bone (14 taxa)	88
Bird bone (26 taxa)	275
Small mammal bone (16 taxa)	256
Horse bone	8
Pig bone	34
Elk bone	3
Deer bone	79
Bison bone	2

From left, horseshoe, crucible for melting lead, and a possible plumb bob for surveying equipment. Shown larger than actual size, NSHS, State Archeology Office. Prepared by Kelli Bacon



Pocket knives with x-rays showing detail of blade types folded into handle. NSHS, State Archeology Office. Prepared by Kelli Bacon

Top Left: Restored creamware platter. See page 28 for view of this platter as it was being excavated. NSHS, State Archeology Office. Prepared by Kelli Bacon

Top Right: Mocha ware bowl. NSHS, State Archeology Office. Prepared by Kelli Bacon

Middle Right: Blue transfer-printed pearlware bowl. NSHS, State Archeology Office. Prepared by Kelli Bacon

Below Left: From left, table knives, fork, and bone utensil handle. NSHS, State Archeology Office. Prepared by Kelli Bacon

Below Right: White ball clay smoking pipe with floral decoration and "TD" maker's mark. NSHS, State Archeology Office. Prepared by Kelli Bacon

Weaponry is represented principally by gunflints, ball, and shot, with only a couple of actual gun parts. The data suggest that all types and sizes of weapons may have been present but there certainly seems to be a preference for smaller civilian guns. This is clearly a reasonable expectation for a group tasked with collecting biological specimens. Perhaps most telling is the common occurrence at Engineer Cantonment of 'dust' and other small shot, typically used to kill smaller birds and mammals while minimizing damage to skin and feathers. Shot found in the very small to small caliber range is appropriate for natural history field collection according to a taxidermy reference which suggests:

> For hummingbirds dust shot is suitable, but for warblers, small sparrows, and others within this size limit the best shot is No. 12 chilled. The great number of pellets in a load of dust shot is likely to riddle a bird and cause too great a loss of feathers. For the larger sparrows use No. 10 shot; for blackbirds and grackles use No. 9 shot. In general, use as small a load as will reach the bird and at the same time give a pattern dense enough to put several pellets into the bird.[3]

This high frequency of smaller shot is not found in the Fort Atkinson assemblage; and the components of a standard military musket cartridge of the time (the buck and ball load) are noticeably absent from Engineer Cantonment.[4] Statistically, a significant difference was found between the ball sizes found at Engineer Cantonment and those at Fort Atkinson.[5]

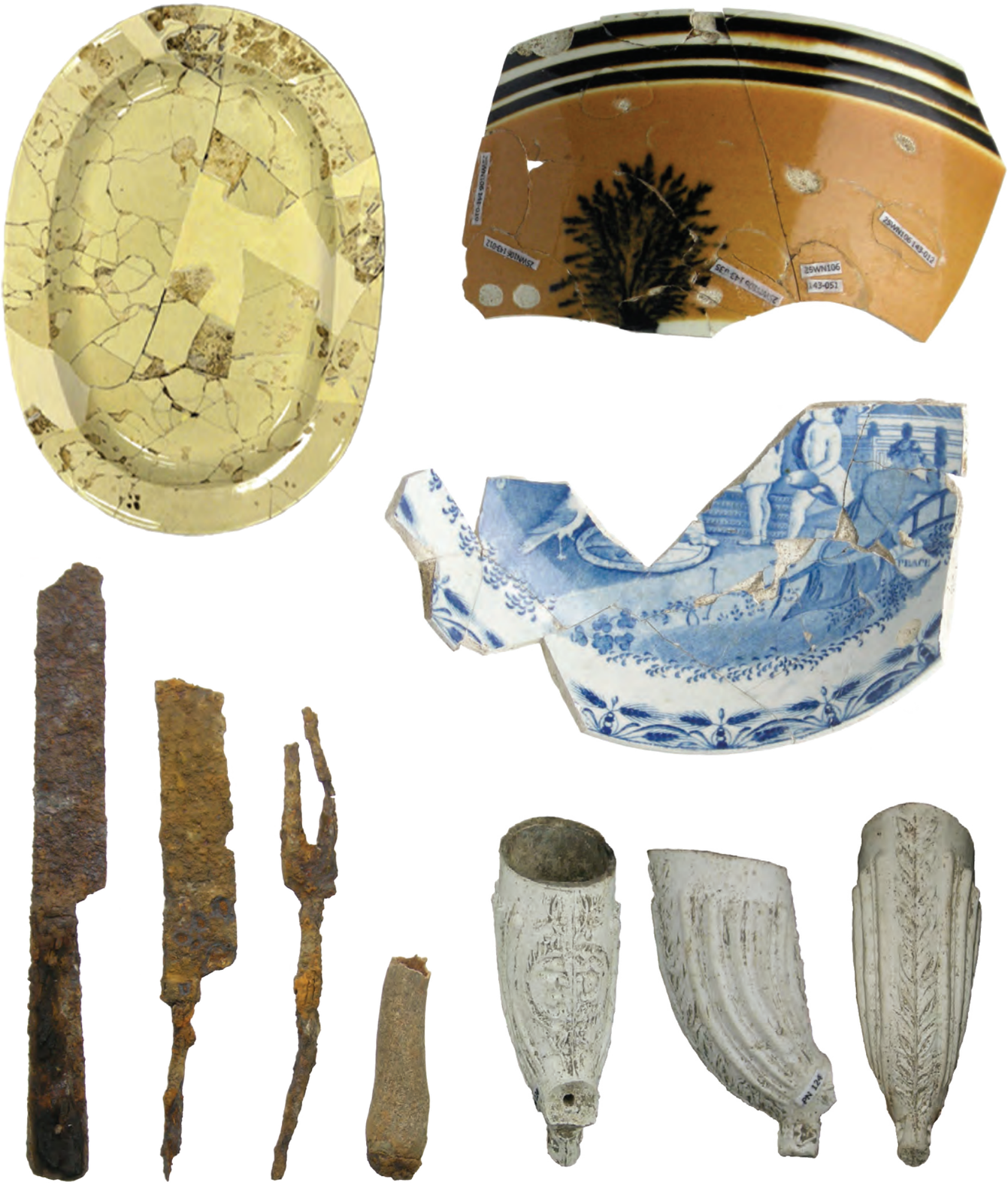
In comparisons with one military site (Fort Atkinson), and three civilian sites, all located on the Missouri River and roughly contemporaneous with Engineer Cantonment, the gunflint assemblage at Engineer Cantonment was most like the civilian sites in all three variables in assemblage composition that were evaluated in the current study. These variables include gunflint size, ratio of musket flints to rifle flints, and ratio of English to French gunflints. These very preliminary findings indicate that the gunflints in the Engineer Cantonment collection represent an assemblage more likely used with civilian weapons than the generally larger flints that could be expected to be associated with the military escort for the Scientific Party. This finding supports the evaluation of recovered ball and shot in concluding that the Engineer Cantonment assemblage is substantially different than the material of known military association from Fort Atkinson, which could suggest that Structure 1 was more likely occupied by the scientists rather than their military escort.[6]

The button assemblage is a mixture of military (artillery, rifle regiment, and infantry dating to the period 1812-1821) and civilian buttons. The composition—roughly 50 percent of each—mirrors the civilian-military mix of men living at the site. The single light artillery button may even be associated with a specific party member, Captain John Bell. The flint, shot, and button data contrast significantly with contemporaneous Fort Atkinson, which was largely a military installation.[7]

A number of additional items and features can be interpreted as directly or indirectly associated with the scientific mission. These include a possible lead plumb bob (affiliated with mapping and surveying), boat hardware, whetstones for sharpening butchering knives, pocket knives, a crucible for melting lead for ammunition or other items, and several iron rods and pins. Two of these pins appear nearly identical to one illustrated by Peale and used to hang a hawk carcass during the preparation process.[8]

A piece of light blue paper was found in the roasting pit that was identified as a fragment of wrapping for cone sugar typical for nineteenth century expeditions. According to Franklin, "Conical molded cakes of granulated sugar (were) wrapped in blue paper and tied, as customary for maybe centuries in Europe, and in US in (the) 18th and 19th Century."[9] This being the case, it would appear that this is an unlikely but significant find. Sugar may have been added during the roasting process to improve the flavor.

Ceramics and glassware all fit comfortably with an 1819-1820 affiliation. The dinnerware includes decorated and undecorated creamware, pearlware, and annular/mocha ware along with a few pieces of redware crocks. The sample clearly indicates the Long Party came west fully equipped with relatively fine kitchen and dining ware that they were accustomed to back east. Glassware is not common and is dominated by drinking glass fragments and a few liquor bottle sherds.[10] Window glass was also not common. A formula has been developed to date Euroamerican sites on the Great Plains based on the average thickness of window glass.[11] The date of production of the recovered Engineer Cantonment window glass arrived at using the formula is mid 1816, which


25WN106
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Barrel-shaped blue glass, green spiral glass, and white shell (wampum) trade beads. The beads are shown at roughly twice actual size. NSHS, State Archeology Office. Prepared by William T. Billeck (Smithsonian Institution)

is less than three years away from the known construction date of 1819.[12] Furthermore, it is likely that the window glass was purchased in Pittsburgh sometime before the departure of the expedition and was manufactured at least a short time before that, making the dating of the sample even more accurate. Although this study was not essential to obtain a date of occupation, it does provide further corroborating evidence, and also adds to the body of data on window glass studies in the Great Plains region.

The faunal collection includes remains from more than sixty taxa of animals.[13] The recovered sample is a diverse assemblage of mussels, fish, reptiles, amphibians, birds and mammals. The most common forms include: catfish, geese, ducks, turkeys, rabbits, squirrels, beavers, raccoons, pigs, and most importantly, deer. Botanical remains are not common but include charcoal from elm and several other species of hardwood (probably from use as fuel), hackberry, coffee, black walnut, wild grape, and corn.[14] Much of this material reflects subsistence pursuits and appears to indicate a diverse diet for the Long Party during their nine-month stay. In addition to hunting, fishing, and trapping carried out by expedition members, they were evidently aided by local native groups. Although only a few bison and elk bones were recovered, expedition members went on several buffalo hunts with Indians during the stay; however, much of that meat may have been returned already stripped from the bone, or bone, if returned, may have been discarded in cantonment activity areas not explored during the archeological excavations. Most of the corn was found as cobs in the smudge pit noted above, and may also have been supplied by local tribes or acquired at Lisa's Post. Pig bones were relatively common and could be from barreled pork brought by the expedition from back east, or by personnel from Cantonment Missouri. They also could be from Lisa's Post.

While much of the recovered animal bone is probably subsistence-related, or in a few instances, naturally intrusive (amphibians, snakes and small rodents), some could in fact relate to scientific collecting. The remains of a number of floral and faunal species discovered at the site during the archeological work are also mentioned or described in the Long Party journals and subsequent scientific publications. These include four species of plants, four snails, one frog, one turtle, thirteen birds, and eight mammals. Much of the collection of plant and animal specimens returned to the East Coast by the Long Party has been lost; consequently, some of these archeological items could be the only tangible material remains associated with this very early American natural history study. The Long Party work done at Engineer Cantonment was the first formal biodiversity study and has major significance to past and ongoing biological studies of the plant and animal communities of the central Great Plains. The biological remains recovered during the archeological investigations and those that remain buried at the site have important implications for understanding changes in landscape and plant and animal communities. [15]

One of the more important legacies of the Long Expedition is the rich and detailed ethnographic information gathered during the Engineer Cantonment stay as well as the months of travel before and after. The James account and other sources have provided important information on the Kansa, Oto, Pawnee, Osage, Omaha, and other western and southern groups. We know at least two major councils were held at Engineer Cantonment, and they hosted other smaller parties of native visitors. They also went on hunting expeditions with the Oto and other groups. That ethnographic legacy is partly reflected in 'trade goods' found scattered in the archeological excavations. The most common is the more than 400 glass beads, but also recovered were several ceramic gaming pieces, metal

Iron arrow points, brass bell, and ceramic gaming pieces, shown at close to actual size. All are also trade items. NSHS, State Archeology Office. Prepared by Kelli Bacon

projectile points, pipes, and a trade bell.[16] These items likely represent a mixture of items left by visiting Native Americans and material brought by the expedition members expressly for the purpose of trade. In either case, along with the expedition's artwork and narrative accounts, these trade goods are important to understanding the relationship between the Long Party and local tribes.

NOTES

[1] John R. Bozell and Stanley M. Parks, *Data Recovery at 25WN50 and 25 WN46 in the Vicinity of the Territorial Town of Rockport.* Prepared for the Nebraska Department of Roads (ms on file, Lincoln: Nebraska State Historical Society, State Archeology Office, 2010); Gayle F. Carlson, "Archeological Investigations at Fort Atkinson (25WN9): Washington County, Nebraska, 1956-1971," *Publications in Anthropology* No. 8 (Lincoln: Nebraska State Historical Society, 1979); Richard E. Jensen, "The Fontenelle and Cabanné Posts: The History and Archeology of Two Missouri River Sites, 1822-1838," *Publications in Anthropology* No. 11 (Lincoln: Nebraska State Historical Society, 1998); and Terry L. Steinacher and Gayle F. Carlson, "Site 25WN21 (Cuming City)," in *Publications in Anthropology* No. 10 (Lincoln: Nebraska State Historical Society, 1984).

[2] Chapters 4-9 in "Archeological Investigations at Engineer Cantonment: Winter Quarters of the 1819-1820 Long Expedition, Eastern Nebraska," *Publications in Anthropology* No. 12, John R. Bozell, Gayle F. Carlson, and Robert E. Pepperl, eds. (Lincoln: Nebraska State Historical Society, 2018).

[3] "F., W.G., Auxiliary Gun Barrels for Collecting Specimens," *The Wilson Bulletin* 39, no. 4 (1927): 220.

[4] Dean S. Thomas, *Round Ball to Rimfire: A History of Civil War Small Arms Ammunition* (Gettysburg, PA: Thomas, 1997), 104.

[5] Karen A. Steinauer, "Ammunition," in *Publications in Anthropology* No. 12.

[6] Karen A. Steinauer, "Ammunition," and Robert E. Pepperl, "Gunflints," in *Publications in Anthropology* No. 12.

[7] Gayle F. Carlson, "Buttons and Other Clothing Items," in *Publications in Anthropology* No. 12.

[8] Robert E. Pepperl and Gayle F. Carlson, "Maintaining Field Gear and Equipment," in *Publications in Anthropology* No. 12.

[9] Linda C. Franklin, *300 Years of Kitchen Collectibles,* 5th ed. (Fort Collins, Colorado: Krause 2003).

[10] Gayle F. Carlson, "Dinnerware" and "Glassware," in *Publications in Anthropology* No. 12.

[11] Christopher M. Shoen, "Window Glass on the Plains: An Analysis of Flat Glass Samples from Ten Nineteenth Century Plains Historic Sites," *Central Plains Archeology* 2, no. 1 (1990): 57-90.

[12] Gayle F. Carlson, "Metal Items and Window Glass," in *Publications in Anthropology* No. 12, and Andrew J. Moore, "Engineer Cantonment and Dating its Initial Occupancy using Mean Window Glass Thickness," unpublished paper prepared for Quantitative Methods Class, Department of Anthropology, University of Nebraska, Lincoln (2007).

[13] Carl R. Falk, Amy Koch, and Thomas E. Labedz, "Vertebrate Fauna," and Paul R. Picha "Snails and Mollusks," in *Publications in Anthropology* No. 12.

[14] Curtis Nepstad-Thornberry and John R. Bozell, "Botanical Remains," in *Publications in Anthropology* No. 12.

[15] Hugh H. Genoways and Brett C. Ratcliffe, "Engineer Cantonment, Missouri Territory, 1819-1820: America's First Biodiversity Inventory," *Great Plains Research* 18, no. 1 (Spring 2018): 3-31.

[16] William T. Billeck, "Glass and Shell Beads"; Gayle F. Carlson, "Other Trade Goods"; and Michael A. Pfeiffer, "Worked Pipestone," in *Publications in Anthropology* No. 12.