Ceramic Analysis of a Privy at Second Fort Crawford (47Cr247) in Prairie du Chien, Wisconsin

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ABSTRACT

Privies, or "outhouses," are an important source of information in the field of historic archaeology. In addition to their primary use as outdoor toilets, privies were also used as a refuse pit in which garbage (such as broken vessels or bones) or loose objects (such as jewelry or coins) were intentionally, or sometimes accidentally, deposited. In this way, the remains of privies may effectively represent daily life during the time of occupancy at a specific site. The purpose of this paper is to analyze the ceramics found in a privy at Second Fort Crawford (47Cr247), an early to mid 19th-Century military fort in Prairie du Chien, Wisconsin. The privy (Feature 6) was located south of the Officer's Quarters, between the fort and the fort's hospital. Since non-military personnel also inhabited the fort after its abandonment by the army, this paper attempts to determine the time span of use of the privy by analyzing ceramics, concentrating on decoration type, ware type, and vessel form.

INTRODUCTION

Privies, also known as "outhouses" or "latrines," can serve as an important source of information for historic archaeologists. Privies were a necessity until the advent of running water, which is variable from region to region and structure to structure. They are not only associated with residential structures, but also military forts, hotels, and bars and saloons. These outdoor toilets were usually built near the main structure (and hopefully downwind!) and were used not only for the obvious functions, but also as a garbage receptacle. Privies can provide information about "cleanliness, health, beauty, and privacy, as well as providing data on diet, socioeconomic status, divisions between households, construction methods, and maintenance behavior" (Wheeler 2000:1). Shifts in occupation of the site can sometimes be determined by the separations of deposits with caps or fill (Wheeler 2000). When possible, individual groups can be associated with privies and archaeologists can determine "behaviors, socioeconomic status, and state of health" as they are preserved in the archaeological record (Carnes-McNaughton and Harper 2000). The importance of excavating privies to archaeologists quite literally follows the phrase, "one person's trash is another person's treasure!"

There are generally three cultural processes associated with privies: construction, use, and abandonment. Arguably, privy size can be related to the intensity and/or length of its use, although no research has been performed on this (Wheeler 2000). Although "their function remains the same throughout time and space, their location, architecture, and subsequent contents represent considerable variation" (Carnes-McNaughton and Harper 2000:97). Privies

have variable life spans. The soil from a newly-dug privy is many times used to fill in a "full" privy. This explains why consecutive privies are often built close together (Bush 2000). Lime and clay were also sometimes thrown into the privy to reduce odors (Bush 2000). When a privy is abandoned, its use changes. When abandoning a site, the owner usually needs pits to dump unwanted material. "One option for the landowner is to take advantage of an opportunistic midden – a pit or trench dug for one purpose used secondarily for the disposal of trash" (Wheeler 2000:11).

Researching ceramics from a privy can give added insight to individual status and behaviors. General identification of vessel forms and decoration types can give archaeologists a picture of what daily activities were performed at the site. Dating diagnostic aspects of ceramics, such as vessel decoration and/or vessel form, may also help place the feature or site into a temporal context. However, this can become difficult, as the dates of manufacture did not necessarily reflect the beginning and ending dates of when the ceramics were being sold or used. More complex methods, such as economic scaling produced by George Miller (1980), can ascertain the economic status of those living at the site. For the sake of simplicity, this paper covers only a general identification (ware type, decoration type, and vessel form) and interpretation of the ceramics found.

Site Summary

Building Second Fort Crawford

In May of 1829 the United States purchased a plot of land in Prairie du Chien, Wisconsin (see Figure 1) for the construction of a new stone military fort (Mahan 2000). This construction was the result of the rapidly deteriorating Fort Crawford I, or Old Fort Crawford, on St. Feriole Island along the Mississippi River. Despite constant maintenance, the old wood fort could not withstand the constant flooding in the area. Although the new fort would be twice as expensive of an investment, it was believed that the structure would last ten times as long. During the summer of 1829, a garrison of 10 officers and 173 men was brought to help begin building the new fort (Mahan 2000). Some officers stationed at the fort during its existence included Dr. William Beaumont, the resident surgeon, and Colonel Zachary Taylor in command.

Figure 1. Location of Prairie du Chein, Wisconsin

By the summer of 1830, one quarter of the new fort was completed, including the powder magazine, an impressive structure of stone walls with three feet thick. The Black Hawk War (1832) and several outbreaks of cholera constantly delayed progress on the fort. Finally, during the fall of 1834, the new fort was complete. An inspection at that time indicated that the barracks were clean and orderly, the hospital had enough supplies, and the soldiers were well groomed and well equipped (Mahan 2000).

The new fort consisted of a rectangular enclosure (see Figure 2). The North and South sides consisted of stockades made of pine logs each 16 ft. long and 1 ft. square (Mahan 2000:138). The East and West walls consisted of the outside walls of two enlisted men's bar-

racks. Each barrack was 35 ft wide by 175 ft long, and was separated by a sally port 26 ft. wide (Mahan 2000:138). Inside the stockade on the North and South sides were the Officers' Quarters and the storerooms. Each were 35 ft. wide and 242 ft. long (Mahan 2000:138). The total enclosure thus measured 242 ft. North-South by 376ft. East-West. The enlisted men's barracks and Officers' Quarters were made of stone and had an elevated basement with one story above. A paved porch 10ft. wide ran along the inside of the fort and was covered with a shingled roof. The parade ground on the inside of the fort was "intersected in the center at right angles by a paved walk running North and South and by a wide paved sally-port which extended East and West through the fort…" (Mahan 2000:138-139). A tall flagstaff was positioned on the Southeast corner of the parade ground, along with the powder magazine. At the South end of the West barracks, one room was fitted as a theater. The hospital was located South of the fort and the Commadant's home was North of the fort. Two cemeteries were also created: one for the officers, North of the fort, and one for the enlisted men, East of the fort (Mahan 2000). A level drill ground was also present East of the prairie to the bluffs.

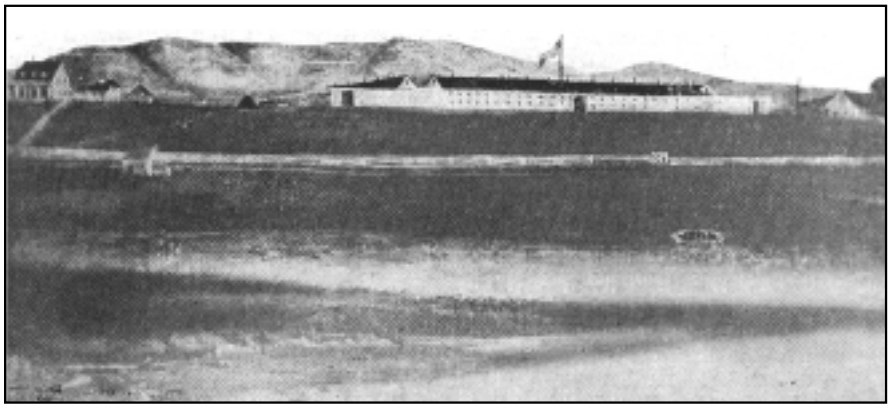


Figure 2. Photograph of Second Fort Crawford (taken from Mahan 2000:128)

Duties At The Fort

The new fort dealt mainly with Native American issues that arose in the surrounding area. Fort Crawford / Prairie du Chien was named the Indian Affairs station for the Wisconsin Territory, which now consists of: Wisconsin, Minnesota, Iowa, and Illinois. In 1829 and 1830, the fort was involved with summer treaties between the Chippewa, Ottawa, Pottawattamie and Winnebago tribes. While many treaties were signed in this area, conflict continued, especially between the Sioux and the allied Sauk and Fox. Colonel Zachary Taylor and troops from Fort Crawford took part in the Black Hawk War in 1832. Chief Black Hawk, the leader of the Sauk and Fox, was a prisoner at Fort Crawford for a short time after his capture (Mahan 2000).

The fort was a crowded and busy place, housing as many as around 260 men between 1834 and 1836 (Mahan 2000). Women, children and slaves were also present at the fort, and the children were well educated. Supplies for the fort were brought from St. Louis and included "flour, beans, pork, salt, candles, clothing, whiskey, soap, tobacco, coffee and miscellaneous articles for the sutler's store" (Mahan 2000:264).

The fort was generally kept in good condition (inspections usually indicated a clean, healthy environment). Relations were kept with other forts in the region, including Fort Winnebago, Fort Snelling, and Fort Atkinson (see Figure 3). Some of the soldiers at Fort Crawford even constructed a road from Fort Crawford to the general location of Fort Winnebago (Mahan 2000).

Figure 3. Relationship of Second Fort Crawford to surrounding forts in the area (taken from Mahan 2000:113)

The life of the enlisted men was not incredibly varied. A regular day included drills and maintenance activities. Occasional trips to the lead mine region were carried out in order to enforce United States laws. Other trips were made to "Indian country to capture renegade Winnebago or Sauk and Fox" (Mahan 2000:242). While the fort was under construction, the men quarried stone, cut wood for a sawmill in operation nearby, burned lime, and performed other tasks to build the post (Mahan 2000). During the spring and summer, the men cultivated gardens and harvested hay for the horses and cattle. Others cut firewood for the fort. Occasional balls were held at the fort, and the officers formed their own library for recreational reading. The fort also entertained many visitors during its existence, including top administrators and local upper class families (Mahan 2000).

The soldiers spent the 1840s quelling Native American disputes and relocating Native Americans to reservations. In April of 1849, the fort was no longer needed and was mostly abandoned, with a limited number of men remaining in the Officer's Quarters (Mahan 2000). Some of the men were restationed at Fort Snelling, Minnesota, and others moved to Fort Leavenworth, Texas. The last of the men departed in May of 1849, after selling and disposing of property and stores (Mahan 2000). One lone caretaker was left to maintain the fort. Six years later, in 1855, 247 men and 11 officers from Fort Snelling arrived at Fort Crawford to quiet a Native American uprising. They left in 1856.

After The Military

During the years 1856 and 1857, local residents who claimed ownership of the land rented out rooms at the fort to local residents of Prairie du Chien. In doing so, they "proceeded to demolish part of the buildings and carry away the materials for their own use" (Mahan 2000:271). By 1858, much of the fort was in disrepair and a new boarding house was built on the property and opened to the public. Residents of the town argued over the rights to the land until the beginning of the Civil War, when a limited number of soldiers were stationed at the fort (which served as a hospital). In 1867, ownership of the land was transferred to the Department of the Interior, and in 1868, John Lawler bought the land containing the fort (Mahan 2000). There, in 1872, he built St. Mary's Academy over the northern Officer's Quarters, which served as a school for girls (Twinde 1999). Finally, during 1873, part of the fort and the old hospital building were removed to make way to extend Church Street to the South. In 1923, Church Street was paved and in 1930 was renamed Beaumont Road (see Figure 4).

Today's Evidence Of The Fort

While much written evidence of this fort and its formal duties and activities exist today, little is known about daily life of the early frontier soldiers. A variety of maps of the fort exist, however, there are discrepancies in its actual measurements and layout. Through excavation and preservation of what remains of the fort, these research topics can be addressed.

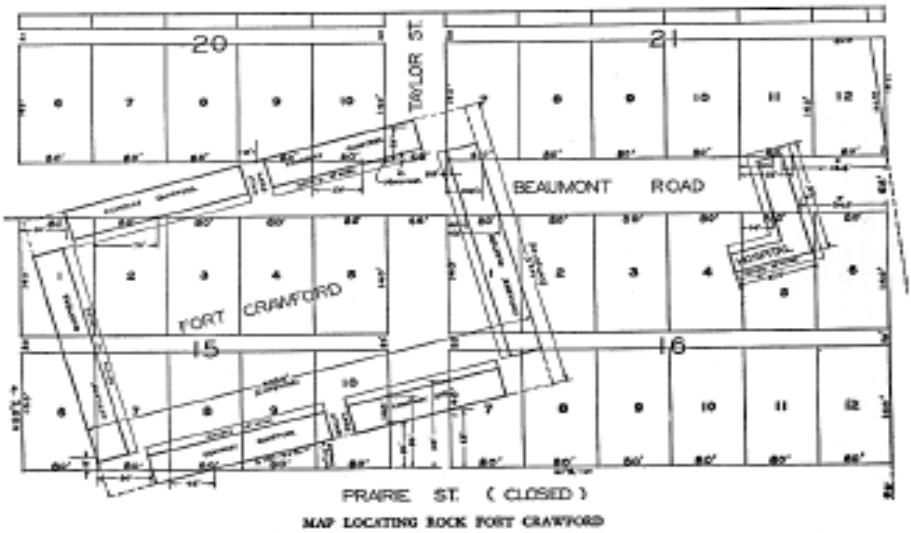


Figure 4. Current location of second Fort Croaford

The Fort's Rediscovery

During the summer of 1999, the Mississippi Valley Archaeology Center (MVAC) at the University of Wisconsin-La Crosse uncovered portions of the fort while monitoring road construction and deep water and sewer trenching in Prairie du Chien (see Figure 5). After about

one foot of overburden and limestone was removed, portions of intact foundations were discovered (Twinde 1999). The resulting excavation uncovered the interior and exterior walls of the eastern Company Quarters and the Southern Officers' Quarters. Overall, "portions of seven rooms, portions of the interior boardwalk/gallery, and the … privy were located and excavated. Five partial rooms were excavated in the Company Quarters, as were two rooms in the Officers' Quarters" (Twinde 1999).

Figure 5. Photograph of Archaeological Excavation in 1999 (taken from Mahan 2000:279)

Feature 6, the only privy discovered during the 1999 excavations, was found South of the fort, between the fort and the fort's hospital. The privy was not identified as such until after excavations were underway. It was identified at the end of one workday. A quick mitigation was stressed, as the feature was in the line of construction and there was a potential for looting if it was left exposed overnight. The feature measured 160cm North-South by 240cm East-West and reached a maximum depth of 100cm.

Because no existing map of the fort identifies any outhouses constructed, there was a question as to whether this privy was associated with the habitation of the fort by the soldiers or by the local residents after the fort's abandonment. This paper attempts to determine the time span of use of the privy at the Second Fort Crawford through the analysis of the ceramics found in the privy. Unfortunately, because of time constraints, the feature was not excavated in controlled levels, thus diminishing vertically sensitive information that could be gathered from its contents. Regardless, a general identification and interpretation was still possible.

METHODS

In order to successfully identify the ceramics from Feature 6, background research was first carried out, including research at the University of Wisconsin-La Crosse library and examination of current site reports for ceramic references. Research also included a visit to the Office of the State Archaeologist in Iowa City, Iowa to study its historic ceramic comparative collection. There, archaeologists and student employees who have worked with identifying ceramics from the 1800s assisted in the learning process and provided reliable references to be used. After studying these references, standard definitions used for this analysis were determined for ware type, decoration type, and vessel forms. A table was also produced, showing various dates associated with decoration and ware types found in the privy.

Next, ceramic vessels from the feature were reconstructed in order to record the Minimum Number of Vessels (MNV). This was also done to better determine wares, decora-

tions, and vessel forms. These three variables were then identified using the definitions (see below), and were recorded onto a catalog sheet. Sherds which were glued together were counted as one piece, representing one vessel. This helped in determining the MNV. The information was entered into an Excel spreadsheet and the results were examined more closely through percentages of ware types, decorations, and the number of identified vessels. Next, the range of time periods for each ware type represented was determined and compared to the various habitation periods at the site. Lastly, all of the information was synthesized to determine when the privy was most likely used.

Ware Type Definitions

Ware types for 19th Century ceramics can be, arguably, the toughest part of the ceramic assemblage to identify. Wares can be divided into three major categories, including: porcelain, refined earthenwares, and coarse earthenwares. Refined earthenwares can be further subdivided into seven types: creamware, pearlware, whiteware, ironstone, white granite, stoneware, and yellowware. Coarse earthenware can be subdivided into four types: stoneware, yellowware, redware, and miscellaneous coarse earthenware.

Porcelain

Porcelain was traded to the United States from China until about 1800, when its production switched to England and the United States. Porcelain was most popular from about 1800 until the 1850s, although its manufacture spans from the 1600s until today. During 1921, a law in the United States came into effect requiring all imported Japanese ceramics (the original manufacturer of porcelain) to have the words "Made in Japan" printed on them, although some companies were practicing this before the law was enacted, as early as 1900 (Peterson 2001). Porcelain is described as "white and translucent." True porcelain has thin walls and fractures conchoidally like glass. All porcelain is generally thin and delicate-looking. Because it is fired at extremely high temperatures, manufacturers are limited as to the colors they can use for decoration. Porcelain can be subdivided into three types:

1. *True Porcelain*: This type was made in China until 1709. It has a hard paste and is fired at higher temperatures than any other ware type. It has a distinct body-glaze layer. It breaks with a glassy conchoidal fracture.
2. *Soft Paste Porcelain*: This type of porcelain is fired at a lower temperature and has a more brittle and slightly porous body. It was created to imitate true porcelain. The paste comes in white, yellow, orange, and brown and fractures with a grainy, sugary texture (Porubcan and Benchley 1995). This is the most common type found in the Midwest area. Sometimes the glaze may pool blue (Voinovich and Wray 1991).
    a. *Bone China*: This type was produced starting around the mid-18th Century (an English development), although Majewski and O'Brien (1987) suggest that this porcelain was first produced after 1790. The paste consists of 50 percent bone ash. It consists of a more complex firing system, but can produce more brilliant colors and is the strongest of the three types of porcelain.

Bisque Porcelain: This porcelain is fired unglazed. It produces a "matte" finish on the surface.

a. *Parian*: A type of granular bisque, this porcelain is highly vitrified and translucent. It is used mostly for figurines and decorative wares (Voinovich and Wray 1991).

Refined Earthenwares

Creamware

Also called "Queen's ware" or "Leed's ware," creamware contains a yellowish or cream-colored paste. The glaze also gives off a yellowish or greenish cast. The coloring can best be seen where the glaze pools (in the footrings, handles, or in molded decoration). The cross section is porous and light, and the body is fine (Porubcan and Benchley 1995). Earlier ceramics, considered better quality, are extremely thin-walled. While the majority of creamware vessels are thin (delicate-looking), some creamware can be thicker (more durable-looking). Often times this ware is embossed.

Creamware-pasted vessels were originally produced by Josiah Wedgwood in England in the 1750s, and were perfected by him by 1762 (Hume 1970). Creamware ideally should have appeared in the Americas around 1765, although the record thus far has only indicated a date as early as 1769 (Hume 1970:126). Creamware remained popular in the Americas until Wedgwood's next invention, pearlware, in about 1820 (South 1977).

Pearlware

True pearlware contains a white paste and a "clear" lead glaze (which is hard to test). The glaze gives off a slightly bluish or blue-green cast, the distinguishing characteristic of pearlware. This is the result of adding cobalt in the glaze in order to offset the yellowish tint, giving it a deeper blue color where the glaze puddles. Like creamware, pearlware is very thin, although some references state that it is slightly thicker than creamware (Sutton and Arkush 1998). This type is more durable than creamware.

Pearlware is almost always decorated. Earlier transfer printed pieces of pearlware are mainly black or darker cobalt blue decorated, with other earthen colors. Earthen colors are more predominantly seen on handpainted vessels (Porubcan and Benchley 1995). The hand-paint and transfer print is always added before glazing ("underglaze paint").

Pearlware paste, like creamware, was first produced by Josiah Wedgwood. He had been "experimenting with the production of a whiter ware than creamware" from 1765 until the early 1770s (Hume 1970:128). In 1779, he introduced his new paste, "Pearl White" (Hume 1970). Pearlware was introduced to America in the early 1780s, and some believe it could have been produced as late as 1865 (Hume 1970, Price 1979).

Whiteware

Whiteware contains a white paste and a clear, "colorless" glaze. The glaze lacks any tint, except for an occasional slight blue tint where the glaze puddles (due to cobalt in the glaze – an addition that first occurred c.1830). This ware is usually considered heavier than creamware and pearlware. The glaze is clearer and thicker than pearlware, and it tends to crackle with age (Porubcan and Benchley 1995). This ware is hardest to distinguish from ironstone and white granite. Whiteware paste has larger "grains" that are visible in the paste, as opposed to ironstone or white granite, whose grains are hardly visible. Because of this, whiteware paste is more porous and will stick to your tongue.

As Stanley South (1977) clarifies, "To our knowledge, what historical archaeologists call 'whiteware' has never been adequately defined in the literature. There seems to be general agreement that pearlware begins to disappear by about 1825, and that the succeeding ware is 'whiter'" (p.8). Most archaeologists believe that whiteware represents the first lead-free glaze used in ceramics. Although many authors date its beginning to 1820, whiteware sherds are not usually seen in the archaeological record until 1830 (South 1977). Since its first appearance, whiteware has remained popular and it still used occasionally today.

Ironstone

Like whiteware, ironstone has a hard white paste and a clear glaze. Different sources have described it as having a "grayish-white", blue, gray, or stark-white color; almost all ironstone has an overall slightly blue or grayish tint to the glaze. Ironstone almost resembles a thin version of stoneware. The paste is very refined and looks smooth, not "grainy" like whiteware. The glaze almost never crackles and the vessels are usually visibly thick and appear very durable. Manufacturer marks are common and most vessels are highly decorated. Variation in paste hardness or change in glaze color cannot always be the deciding factor in distinguishing it from other wares, like whiteware.

Ironstone is very difficult to distinguish from whiteware (especially before 1870). In general, ironstone vessels can date from 1805 until the present. Many archaeologists have debated the usefulness of the term "ironstone." Many times the *word* "ironstone" is confused with the *brand* "ironstone," which was patented by Charles Mason in 1813. Because of this, ironstone many times is included in the whiteware category.

White Granite

White granite was introduced in the early 19th century and was most commonly used after the Civil War, from the 1850s to the 1890s. This ware was used extensively by the American military during the 19th century because it is so sturdy (Sutton and Arkush 1998). The very fine-grained paste in white granite can almost be mistaken for a thick sherd of white-pasted porcelain. Like ironstone, the glaze almost never crackles.

Refined and Coarse Earthenwares

Stoneware

Stoneware in America has been produced since the early to mid-18th Century by local residents. By the 1730s, some potters were manufacturing stoneware vessels that were as high quality as English-produced vessels (Hume 1970). "Size numbers and factory labels are often stamped on examples of the early to mid-nineteenth century" (Hume 1970:101). Stoneware is still produced today and remains a popular item for tableware and storage vessels. The most common stoneware vessel forms in the archaeological record include: crocks, mixing bowls, and inkwells. Stoneware can be separated into two groups:

1. *Wheel Thrown*: These vessels have tool marks or fingerprints in the interior of the vessel ("ridges and valleys" inside the vessel). Sometimes, concentric lines will be visible on the base (from "spinning" the vessel on the wheel) (Peterson 2001). These rings on the base can be compared to "tree rings."
2. *Mold Cast*: These vessels will not have any distinguishing marks like the wheel thrown vessels.

Refined stoneware is fired at higher temperatures. The body is durable and there is usually a clear distinction between the glaze and paste (except when salt-glazed). The paste looks shiny and smooth (like porcelain), although it will be thicker and usually gray, buff or brown in color. The vessels can be unglazed and/or slipped. Many stoneware vessels were manufactured locally, making it hard to identify the origin of the glazes or slips.

Coarse Stoneware has been poorly potted and fired and is thicker than refined stoneware. Many impurities exist in the paste. Most vessels are undecorated (Porubcan and Benchley 1995). Cobalt blue with folk designs are the most popular designs. The cobalt blue color was the only one that could withstand the high temperatures during fir-

ing (Porubcan and Benchley 1995). Glazes, slips and pastes vary widely, although in the Midwest region Albany and Bristol Slips are the most common.

Mid 19th Century: straight-sided wares, allowing only glaze and stenciling
Late 19th Cent: Mass production caused time constraints, meaning minimal decorations
Beginning of 20th Century: more undecorated pieces were produced (Porubcan and Benchley 1995)

Yellowware

Yellowware was first produced during the late 18th Century in England, and was produced by the 1830s in New England. Its production reached the Midwest by the 1850s (Porubcan and Benchley 1995). It was popular in America from the 1830s until 1900, although it continued to be produced into the middle of the 20th Century (Peterson 2001). Yellowware vessels can range from thin and delicate to thick crockery (as thick as a finger).

Refined yellowware has a "soft, thick yellowish-buff paste" (Porubcan and Benchley 1995). Clear lead and alkaline glazes were commonly used, and these glazes have a tendency to crackle. Many times refined yellowware is decorated, annular decoration being the most popular, but other decorations are not unusual.

Coarse yellowware can be split in Pre-Civil War and Post-Civil War:

1. *Pre Civil War*: surface treatments: salt, slip, clear, brown, unglazed
2. *Post Civil War*: uniformity (due to the railroads/mass production)

These vessels were usually made for food preparation, processing, storage (Porubcan and Benchley 1995) and for chamber pots. Common decorations on coarse yellowware include Rockingham and annular. Glazes on this yellowware can vary in texture (salt-glazing was common).

Redware

Redware vessels were generally used for the same function as yellowware vessels. The paste in redware sherds has a distinct reddish color and can be extremely thick (as thick as a finger). Most redware containers were produced locally. The glazes on these vessels are clear, brown or dark brown, green or dark green, mustard, or can range from red-orange to dark purple-red. The glaze is applied to the interior and sometimes over the lip of the vessel. Some vessels have brown specks from manganese. If iron is added, it turns the glaze brown or black, and copper turns it green (Porubcan and Benchley). Locally, in the Midwest, many redware vessels are glazed with a distinct "Galena" glaze, making the outer sides look green with orange-yellow or yellow "spots." Common vessel forms include: jugs, pots, flower pots, crock jars, mixing bowls, chamber pots, and pitchers (Porubcan and Benchley 1995).

Redware vessels have been produced locally throughout most of U.S. history and mostly resemble utilitarian vessels. "'Not requiring the great capital investment, technological expertise, or refined clay materials required for stoneware manufacture, redware manufacture produced cheap utilitarian vessels amenable to production on even a part-time basis'" (Porubcan and Benchley 1995:79). Because of the similarity of American-made vessels to English designs and decorations, these vessels are many times hard to date. Locally-produced vessels date generally to the 19th Century (Porubcan and Benchley 1995), and Peterson (2001) indicates the dates 1830-1880 or 1800-1850.

COARSE EARTHENWARES

Miscellaneous Earthenware

Coarse earthenwares, or "crockery," were produced locally and thus can be difficult to identify and/or date. These vessels are distinctly thicker than refined earthenwares (usually as thick as a finger). Coarse earthenwares resemble coarse stoneware, although the paste is "grainier" (less refined) than stoneware. Most vessels have a brown or buff paste. Glazes, slips and pastes vary widely, although in the Midwest region Albany and Bristol Slips were the most commonly used decorations.

Redware and yellowware are types of coarse earthenwares, although they are common enough in the archaeological record and distinguishable enough to have their own category.

DECORATION TYPE DEFINITIONS

While ware types will fall into a general range of dates for production, identifying decoration types can sometimes give an even more accurate and concise date range. Decoration types are much easier to identify than ware types, and are thus used more often as the primary identification mark of historic ceramics. While decorations types fall into general date ranges, keep in mind that manufacturers commonly reproduced or attempted to copy popular decorations. Some reproductions were made decades after the original design. Other copies were produced during the same year as the listed design by a competing manufacturer. Variations also occur in many of these decoration types, the most common example being the infinite variations in the "sprig pattern" in the handpainted category. Therefore, be wary of dates associated with these decorations. The most accurate analysis of historic ceramics is through a combination of ware, decoration, and vessel form identification.

Transfer Print

Transfer printing is the decoration of a vessel from a paper impression that was taken off of an inked copperplate engraving. The designs are made up of dots or dashes. These are not always visible to the eye, although should be visible under a microscope. Popular designs include: floral, geometric, historical, and other scenes (Price 1979). Staffordshire of England was the most popular manufacturer. Before the 1830s, blue was the predominant color, and Majewski and O'Brien (1987) suggest that blue transfer printed earthenwares were produced as late as 1840. After the 1820s, a wider range of colors was used (red, purple, lavender, green, brown, and brighter/lighter blues). This decoration was popular with the upper class after 1860, and was replaced by decal decoration around 1875 (Porubcan & Benchley 1995). The design was always placed under the glaze (Sutton/Arkush 1998).

The transfer print design process was first produced in England by the Buttersea Enamelworks from 1753 to 1756 (Norman-Wilcox 1965). The design decorations were popular from the late 1700s until the mid-1800s, although Peterson (2001) argues that they continued to be produced into the early 1900s.

Flow Blue

This decoration consists of painted or transfer printed decorations where the color has flowed out into portions of undecorated areas (Price 1979). This is the result of adding lime or chloride of ammonia while firing the vessel (Peterson 2001). Flow prints can exist in blue ("Flow Blue"), mulberry ("Flow Mulberry"), and sometimes black ("Flow Black"). It mostly occurs on whiteware vessels. The haziness of the picture can range from only a slight blur to

almost indistinguishable patterns. Sometimes it is mistaken for handpainting (some of these decorations have handpainting on top of the transfer print).

Flow blue decorations first became popular on pearlware vessels in 1795 (Voinovich and Wray 1991). While pearlware vessels were eventually replaced by whiteware pastes, the flow blue decoration remained in style, and was produced on whiteware vessels from 1825 until 1862 (Peterson 2001, Sutton and Arkush 1998).

Early Victorian: Darker, denser colors, these patterns are most often "oriental and scenic patterns, including Willow, apple trees, tea houses, tiny costumed figures." The borders tend to be "stylized Far-Eastern patterns" (Peterson 2001:12).

Middle Victorian: Gilding is common with these patterns, which are "most often with floral patterns;" the border often has "elaborate scroll work, shells, foliage, or cartouches. The design may include statues, columns, wreaths, or large urns" (Peterson 2001:12).

Late Victorian: These patterns have a "softer look," a lighter color, and the designs are cleaner and sharper. These are "most often Art Nouveau patterns (curved designs taken from natural shapes)" (Peterson 2001:12).

Decal/Decalcomania

Decal decoration consists of a series of raised dots in the form of a decal "sticker." The sticker is placed over the glaze and shows a slight relief under certain lights (Sutton and Arkush 1998). Multiple-colors are very common, especially flower decorations. The term decalcomania is used to describe the rise in popularity of the use of decals.

Handpainted

Handpainted decorations consist of a wide variety of designs (floral or other) painted by hand onto the vessel. One of the earliest designs was the Chinese house painted in blue on pieces of pearlware. Bird, animal, and insect designs are also popular, although the most popular designs consist of floral patterns. Handpainting results in uneven, irregular results. It was a less expensive decoration (these vessels were more common in everyday households), but the design deteriorates fast (Sutton and Arkush 1998). Whiteware handpainted pieces are usually bright-colored (see below). Cups and saucers are most commonly decorated in this fashion. Some manufacturers around the mid-1800s used stencils to produce the designs.

Earthen Colors include: green, brown, yellow, orange (Price 1979:21)

Bright Colors include: pinkish red, light bright-green, dark blue green, light and bright blue, and black (Price 1979:21).

Sprig: A very small element or motif repeated around the vessel (many times a flower).

Broadline: Large flowers/foliage take up a large area of the vessel. Many times this design also has a narrow band painted around the rim (Price 1979).

Handpainted decorations can appear on all categories of refined earthenwares and date throughout the 19th Century. Porcelain and creamware vessels with handpainting can date to as late as 1820 or 1830 (South 1977). Pearlware vessels were produced from 1780 until 1830 (Lofstrom et. al 1982). Whiteware vessels were decorated with handpainting after 1820 (Voinovich and Wray 1991). White granite decorations were produced during the latter part of the century, from 1877 until 1883 (Peterson 2001). Handpainted ironstone was popular

from 1810 until 1930 (Sutton and Arkush 1998), and stoneware vessels were handpainted after 1850 (Peterson 2001). Handpainting was most popular in the United States from 1880-1930 (Peterson 2001).

Edge Decoration

Edge decoration includes a solid painted band around the interior rim of the vessel (usually molded), most commonly found on plates. The paint "runs" down slightly into the interior of the vessel. Shell edge decorations are the most common. Dark cobalt blue is the most common color, although green and rarely pink have been found. Most pieces also have a painted or sponge decoration in the center (Price 1979).

Shell Edge: A variety of featheredge, called so because of the "shell-like texture on the vessel" (Peterson 2001:18). A handpainted color may be present (blue, green, and rarely red). A molded "ribbed" pattern, (sometimes referred to as "lines" or "mars") is also present. The outer edge of the lip of the vessel is usually scalloped.

Edge decorated vessels vary widely in their design. Pearlware vessels generally date from the late 1700s until the early- to mid-1800s. Whiteware vessels were produced from the late 1700s until the mid- to late-1800s.

Molding / Incising

Molding does not consist of a painted or printed design, but instead raised ("molded"/ "embossed") decorations. Designs can be geometric, floral, or other, and are usually located around the rims of plates or on the body of bowls or cups. Vessels are often thick, but not always. Plates are the most common form.

Molded vessels, although produced on all categories of refined earthenwares, are most popular on whiteware, ironstone and white granite. Generally, they were manufactured during the latter part of the 19th Century, although some designs were produced earlier. Molded porcelain dates from 1880-1960 (Peterson 2001), pearlware from 1780-1840, and whiteware after 1840 (Peterson 2001, Price 1979, Porubcan and Benchley 1995). All molded designs on ironstone and white granite were produced after 1840. A few general dates and designs are listed below:

Early Period: Gothic hexagonal, octagonal or Sydenham-type. Similar to contemporary transfer prints. These vessels functioned as "higher class wares"

Middle Period: Grain or garden motifs

Late Period: American attempts to copy Staffordshire designs (Porubcan and Benchley 1995)

Annular

Annular, or "slip banded," decoration is a "series of differently colored concentric bands applied to the vessel body" (Price 1979:18). It should not be confused with gilding. The vessel can be decorated further (swirled colors that look like marble or geometric designs). Pearlware forms are rare. Earlier vessels use more earthen colors with narrower strips and more colors per one vessel. Later vessels have wider bands of brighter colors, with narrow bands of black or white (Price 1979). The most common colors include: brown, blue, red, and white. The bands are usually narrower when more are applied to a vessel. Common vessel types include: bowls, mixing bowls, chamber pots, mugs, and pitchers. In addition to annular decoration, other decorations may further be applied.

Annular decorations on creamware and pearlware vessels were generally produced from 1780 or 1790 until 1815 or 1820 (South 1977). Whiteware vessels with annular decoration were generally produced from 1830 until 1860 (Lofstrom et. al 1982, Peterson 2001, Porubcan and Benchley 1995, Price 1979). Finally, annular decoration was produced on yellowware from 1827 until 1940 (Peterson 2001).

Mocha

Mocha decoration, used from 1790 until 1890 (Peterson 2001), generally looks like a "branching brown or black tree or fern-like design on a muddy yellow, burnt orange, brown, cream, or green slipped background" (Peterson 2001:8). The patterns look like feathers, seaweed, and/or trees. It is mostly found on yellowwares, although it is not uncommon on other earthenwares. It is formed by applying "an acidic mixture of tobacco juice and urine or tobacco juice and hop on a light-colored alkaline slip" (Price 1979:18).

VESSEL FORM DEFINITIONS

Vessel forms become easier to identify as more vessels are studied. In archaeology, most vessels are represented by portions of the whole vessel. There are three unique attributes to a vessel: base, rim, and body. Identification of these attributes helps determine the MNV (Minimum Number of Vessels). A vessel is considered "partially present" when two or more of these parts are present (ex: base and body, or rim and body, etc). For a visual of the cross section of cups, saucers, and plates, see Figure 6.

Cups

Cups are deep vessels with steep sides and small diameters. They can be handleless or handled. Cups are also generally thinner than other vessels.

Handleless: There are generally three forms of handleless cups, all concentrating on the shape of the shoulder for identification:
Shoulder is steeply angled,
Shoulder is gently angled / rounded
Paneled (no shoulder) (Price 1979)

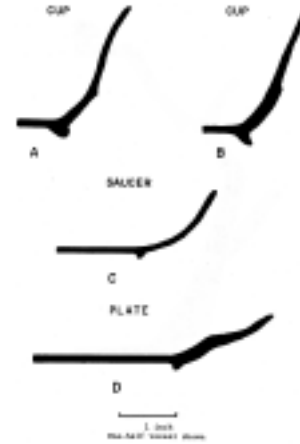


Figure 6. Common Vessel Forms ca. 1810 to 1870 (taken from Price 1979:24)

Bowls

These vessels look like cups, although they are larger in diameter, sometimes not as deep, and may or may not have a shoulder (Price 1979). Bases of bowls changed similarly to the changes in cup bases. Bowls are also comparatively thin, although they are usually a little thicker than cups.

Saucers

Saucers can be described as a deep plate, although smaller than a plate with a curved, deep lip. Saucers have a relatively deep dish-shaped form (Porubcan and Benchley 1995). The only difference is that saucers are deeper and smaller in diameter than plates. Saucers can also have "incurved rim profiles while plates generally have flat rims" (Porubcan and Benchley 1995:76). Sometimes a depressed area for a cup is present in saucers. Saucers should not be confused with small bowls.

Plates

These vessels have a larger diameter and a flat rim (the rim can sometimes curve slightly up). After 1830, plates became larger, heavier, with more rounded edges, and lacked "wheel-thrown characteristics" (Porubcan and Benchley 1995). They can be relatively deep, and can sometimes have a smaller diameter. Plate can vary in style, size and function, ranging from dinner plates to dessert plates to salad plates and more. Wider variations in plate styles are more commonly found in upper class households, whereas lower class households generally only owned one or two plate designs.

Toiletries

These vessels were used for personal sanitation and beauty, and include items most likely found in the bathroom or washroom: chamber pots, washbasins (lavatories), soap dishes, bed pans, shaving mugs/bowls, etc. Some of these vessels, including wash basins and chamber pots, were used prior to running water as a substitute for the sink and toilet in today's bathrooms.

Chamber Pots: These vessels are large bowls, very bulbous, with a flat rim around the outer edge of the lip.

Lavatories: Also known as "washbasins," these vessels are large bowls with the lip curving outward.

Crockery

The term "crock" is a general term and the vessels associated with it can be divided into two categories, depending on the date of manufacture:

Ovoid shape: round shoulders (wheel thrown)

Cylindrical: these crocks were produced later and have straight sides

Crockery (coarse earthenware) can come in a variety of vessel forms, including chicken waterers, feeders, mixing bowls, bean pots, etc. They represent more utilitarian uses than decorative.

Figurines

Figurines can include any animal or human shape made out of ceramic. Dolls are usually made out of porcelain. Figurines can be made out of any refined earthenware and can include a variety of animals or even statues.

RESULTS

WARE TYPES

Overall, 239 sherds were identified from the excavation of the Second Fort Crawford privy. Of those, 227 (95%) are refined earthenwares. The refined earthenware sherds represent a variety of ware types (see Table 1) including: porcelain (14 sherds), creamware (2 possible sherds), pearlware (35 sherds), whiteware (164 sherds), ironstone (11 sherds), and white granite (1 sherd). Whiteware is the best represented of the ware types (see Figure 7).

Twelve sherds (5%) of coarse earthenware were recovered. Coarse earthenwares identified include: stoneware (2 sherds), yellowware (5 sherds), redware (4 sherds), and miscellaneous coarse earthenware (1 sherd) (see Table 2). Yellowware and redware are the most represented of the coarse ware types (see Figure 8).

Table 1. Identified Refined Earthenware Ware Types

Ware Type	Total	Percentage
Porcelain	14	6%
Creamware	2	1%
Pearlware	35	15%
Whiteware	164	72%
Ironstone	11	5%
White Granite	1	1%
TOTAL	**227**	**100%**

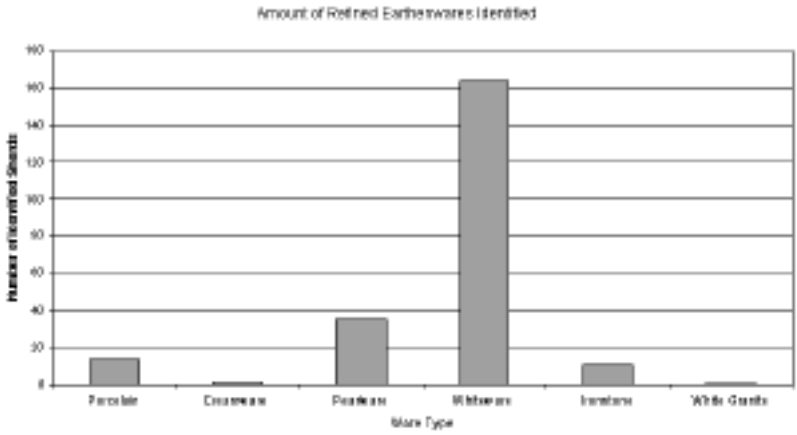


Figure 7. Identified Refined Earthenware Ware Types

Table 2. Identified Coarse Earthenware Ware Types

Ware Type	Total	Percentage
Stoneware	2	17%
Yellowware	5	42%
Redware	4	33%
Earthenware	1	8%
TOTAL 1	**2**	**100%**

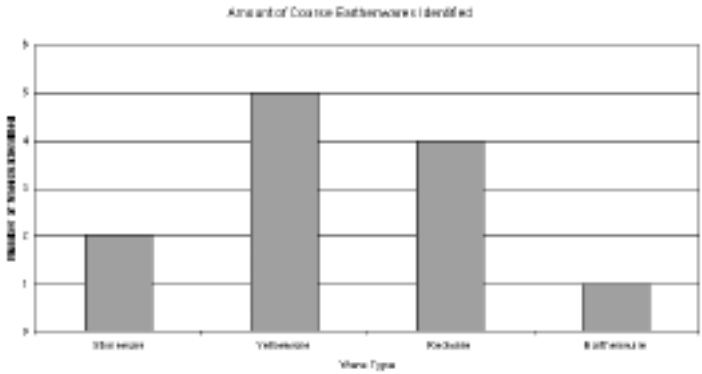


Figure 8. Identified Coarse Earthenware Ware Types

DECORATION TYPES

Overall, 13 general categories of decorations were identified, including: undecorated, handpainted, decal, gilding, transfer print, molded, flow blue, shell edge, annular, mocha, appliqué, galena glaze, and Bristol/Albany slip. Some of the categories were further divided to provide for more concise date ranges. Consult Table 3 for the results.

Porcelain

Of the 14 porcelain sherds identified, nine sherds (65%) were identified as soft paste porcelain with decal print. Three are undecorated soft paste porcelain (21%). One sherd is a soft paste porcelain gilded with gold (7%), possibly from a figurine. The last is a bisque porcelain with a handpainted decoration, possibly from a figurine (7%) (see Figure 9).

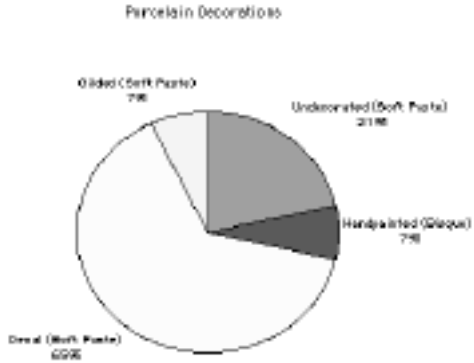


Figure 9. Identified Porcelain Decorations

Table 3. Identified Refined Earthenware Decorations

Ware Type	Decoration	Decoration Sub-Type	Quantity
Porcelain			
	Undecorated (Soft Paste)	3	
	Handpainted (Bisque)	figurine - doll?	1
	Decal (Soft Paste)		9
	Gilded (Soft Paste)	Gold – figurine/doll?	1
Creamware			
	Undecorated	possibly creamware	2
Pearlware			
	Undecorated		16
	Black Transfer Print		2
	Handpainted (Geometric Lines)	geometric lines	2
	Handpainted (Blue Broad Floral)	broad floral (blue)	10
	Molded		5
Whiteware			
	Undecorated		114
	Black Transfer Print		1
	Blue Transfer Print		14
	Red Transfer Print		2
	Brown Transfer Print		1
	Burned Transfer Print		1
	Flow Blue		2
	Handpainted (Sprig Pattern)		14
	Blue Shell Edge		3
	Green Shell Edge		1
	Annular		7
	Mocha		1
	Molded		2
	Applique		1
Ironstone			
	Undecorated		2
	Molded		9
White Granite			
	Molded		1
Stoneware			
	Wheel Thrown		2
Yellowware			
	Undecorated		1
	Annular		4
Redware			
	Undecorated		2
	Galena Glaze		2
Earthenware			
	Bristol Slip	Albany Slip on inside	1

Creamware

Two undecorated creamware sherds were recovered. Although the paste and glaze appeared slightly cream-colored, the creamware identification was tenuous.

Pearlware

Thirty-five sherds were identified as pearlware. The majority of the pearlware sherds, 16 (45%), are undecorated. Ten sherds (29%) are pieces from a single handpainted plate (see Appendix B). Five sherds (14%) are molded. Two sherds (6%) are pieces from a single small handpainted plate and two other pieces (6%) are from two different black transfer print saucers. See Figure 10 for the resulting decoration distribution. Originally, some of the more diagnostic vessels were originally broken into many pieces. For example, the two black transfer print saucers originally consisted of many sherds. Because the glued sherds were counted as one piece, the figure below may appear skewed in the representation of each decoration type.

Whiteware

Figure 10. Identified Pearlware Decorations

Like pearlware, the majority of the whiteware sherds (114) are undecorated (69%). Nineteen sherds have a transfer print design. Of these, 14 sherds have blue transfer print (8%), two sherds have red (1%), and one sherd each has black and brown, and one was burned (each 1%). Two sherds (1%) have a flow blue design. Fourteen sherds (8%) are handpainted with the sprig pattern. Four sherds are shell edged; three are blue (2%) and one is green (1%). Seven sherds have annular decoration around the rim (4%) and one sherd has a mocha decoration with an annular band (1%). Two whiteware sherds are molded (1%) and one whiteware pitcher has a blue appliqué design on its outer surface (1%). See Figure 11 for the distribution of these decorations.

Remaining Ceramics

Of the 11 ironstone sherds identified, nine are molded (82%). The remaining two (18%) are undecorated. One piece of white granite was identified as molded. Both stoneware sherds were identified as wheel thrown and contain an unidentified slip and glaze. Four sherds (80%) of annular decorated yellowware were present in the privy. The remaining one sherd (20%) is undecorated. Of the four redware sherds discovered in the privy, two (50%) are undecorated and the other two (50%) have a galena glaze applied to the exterior surface. Finally, one miscellaneous earthenware sherd is decorated with a Bristol slip on the outside and an Albany slip on the inside.

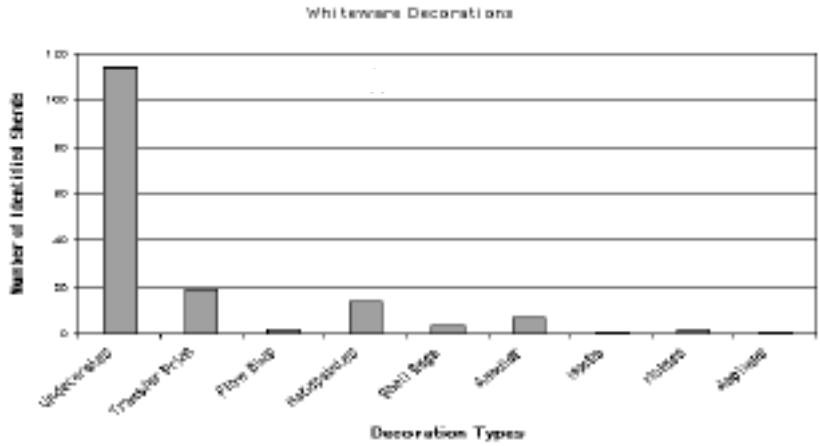


Figure 11. Identified Whiteware Decorations

VESSEL FORMS

Parts of vessels or whole vessels can be present in the archaeological record. All must be acknowledged by the researcher. The Minimum Number of Vessels (MNV) for each vessel form is found in Figure 12 and Table 4. Table 5 gives coarse earthenware information.

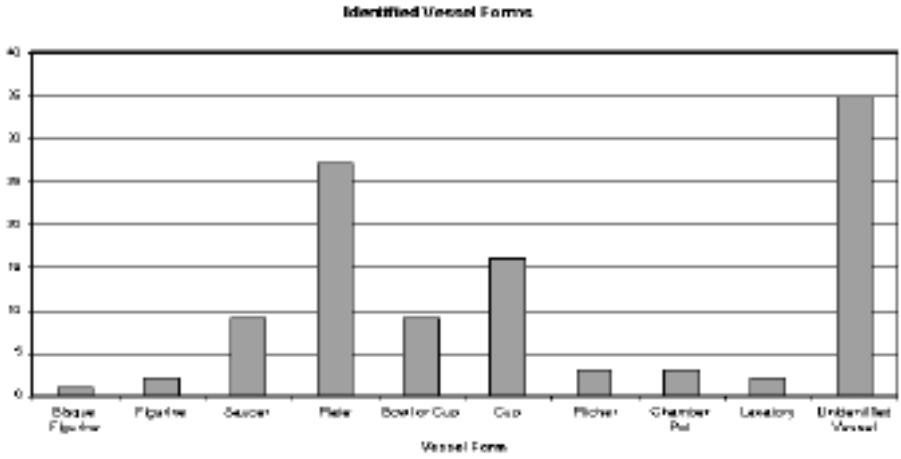


Figure 12. Identified Vessel Forms

Table 4. Identified Refined Earthenware Vessel Forms

Ware Type	Represented Vessel	Associated Decoration	Number of Sherds	MNV
Porcelain				
	Bisque Figurine (?)	Handpainted	1	1
	Figurine (?)	Gilded	1	1
	Saucer	Decaling	5	3
	Plate	Decaling	4	1
Creamware				
	Cup		2	2
Pearlware				
	Saucer	Transfer Print: “Rhone Scenery”	2	2
	Saucer	Molded	2	2
	Plate	Handpainted: Broadline	10	1
	Plate	Handpainted: geometric lines	2	1
	Plate	Molded	3	2
	Plate	Undecorated	3	3
	Cup/Bowl	Undecorated Base fragments	4	4
Whiteware				
	Saucer	Transfer Print (blue)	2	1
	Saucer	Molded	1	1
	Plate	Transfer Print (blue)	2	1
	Plate	Handpainted	2	1
	Plate	Edge Decoration (blue)	3	1
	Plate	Edge Decoration (green)	1	1
	Plate	Annular	1	1
	Plate	Molded	1	1
	Plate	Undecorated	18	10
	Cup	Transfer Print (blue)	1	1
	Cup	Handpainted	10	8
	Cup	Mocha	1	1
	Bowl/Cup	Transfer Print (blue)	1	1
	Bowl/Cup	ndecorated	14	4
	Pitcher H	andpainted	3	2
	Chamber Pot	Undecorated	4	3
	Lavatory	Undecorated	6	2
	Unid. Vessel	Transfer Print (red)	2	2
	Unid. Vessel	Transfer Print (black)	1	1
	Unid. Vessel	Transfer Print (brown)	1	1
	Unid. Vessel	Flow Blue	2	2
	Unid. Vessel	Handpainted	1 1	
	Unid. Vessel	Annular	6	6
	Unid. Vessel	Undecorated	82	2
Ironstone				
	Plate	Molded		3
	Cup	Molded	5	3
	Unid. Vessel	Molded	2	2
	Unid. Vessel	Undecorated	2	1
White Granite				
	Unid. Vessel	Molded	1	1

Porcelain

At least two possible porcelain figurines are represented in the privy. One sherd is handpainted bisque porcelain and the other is a soft paste and gilded porcelain, most likely part of a porcelain figurine. From the nine decal print pieces, at least three saucers and one plate were identified.

Creamware

Only two creamware sherds are present. These represent two partially complete cups.

Pearlware

At least four saucers were identified as pearlware. Two of the saucers are decorated with a black transfer print, identified as a Staffordshire "Rhone Scenery" design (c. 1850) (Williams and Weber 1999). The other two saucers are molded on the interior rim.

At least four plates were also identified as pearlware. One is decorated with a blue broadline handpainted design and another is a very small plate decorated with blue lines. Finally, three other sherds represent at least two molded plates. The four remaining pearlware sherds are various undecorated base fragments, which represent four cups or bowls.

Whiteware

At least 56 whiteware vessels are represented in the collection from the privy. Two saucers were identified: one blue transfer print and the other molded. At least 16 plates are represented. Decorations include: blue transfer print, handpainted, blue edge decorated, green edge decorated, annular, molded, and undecorated. At least nine cups are present, including blue transfer print, handpainted, and mocha decorations. Five vessels were identified as either bowls or cups, being either undecorated or decorated with blue transfer print. Two handpainted pitchers, one appliqué pitcher, at least three undecorated chamber pots, and two undecorated lavatories were also identified.

The remaining 15 whiteware vessels are unidentified. Decorations for these included: red transfer print (two vessels), black transfer print (one vessel), brown transfer print (one vessel), flow blue (two vessels), handpainted (one vessel), annular decoration (six vessels), and undecorated (at least two vessels).

Ironstone

A minimum of nine ironstone vessels are present. At least three molded plates are represented, along with three molded cups. The remaining three vessels are unidentified and include two molded vessels and one undecorated ironstone vessel.

White Granite

The one piece of molded white granite was very small. The vessel form could not be determined.

Stoneware

The two stoneware sherds represent a minimum of one vessel. The form could not be identified.

Table 5. Identified Coarse Earthenware Vessel Forms

Ware Type	Represented Vessel	Associated Decoration	Number of Sherds	MNV
Stoneware				
	Unid. Vessel	Bristol Slip	2	1
Yellowware				
	Cup	Annular		1
	Utilitarian vessel	Undecorated	1	1
	Unid. Vessel	Annular	1	1
	Unid. Vessel	Annular	1	1
Redware				
	Crockery	Galena Glaze	2	1
	Crockery	Unidentified glaze	2	1
Earthenware				
	Crockery		1	1

Yellowware

At least four yellowware vessels are represented. One cup with annular decoration is present, along with an undecorated utilitarian vessel. The remaining two annular decorated sherds represent two more vessels, although the forms could not be identified.

Redware

Of the four redware sherds, at least two vessels could be identified. Both vessels are most likely storage crockery. Two are decorated with Galena glaze and the other two have an unidentified glaze applied to the outer surface.

Misc. Earthenware

The one coarse earthenware sherd present represents at least one crockery vessel. This is a probable storage vessel.

DISCUSSION

When dating the ceramics from the privy at the Second Fort Crawford, a number of references were consulted. Nine were chosen to be included in this paper, as they contain the most current and agreed-upon dates in the profession. Unfortunately, inconsistencies in date ranges continue to exist. For consistency, the references were placed in a "pecking order" produced by the author. Primary references were listed first, ordered by importance based on personal communication with historic archaeologists and the frequency of their use in other references used for the paper. These were followed by more widely used secondary sources, then tertiary sources, etc. See Figure 13 for the result. As inconsistencies in the chronologies exist, all date ranges found were included in Table 6. For this research paper, and for consistency, the date range listed first in the table is used as the primary date range.

The result of the ceramic analysis reasonably indicates that the privy from Second Fort Crawford was present during the military occupation of the fort (see Table 7). Several diagnostic decorations were identified, which can be dated to a period of only a few years during the fort's military existence. These decorations include: two black transfer print saucers, one blue transfer print saucer, one plate and one cup with blue transfer print, several sherds containing a handpainted sprig pattern, molded pearlware sherds, three blue shell edge plate sherds, and two redware sherds decorated with Galena glaze. Likewise, some ceramic sherds

Table 6. Dates for Decoration Types

Ware Type	Decoration	Decoration Sub-Type	Quantity	Total	Associated Dates	Reference(s)
Porcelain				14		
	Undecorated		3		c.1826	Peterson 2001
	(Bisque - doll?)	Handpainted	1		post 1850	Peterson 2001
					post late-1850s	Peterson 2001
	Decal		9		post 1850	Majewski/O'Brien 1987
	Gilded	Gold - figurine?	1		post 1850	Majewski/O'Brien 1987
Creamware				2	1762-1820	South 1977, Lofstrom et.al 1982, Voinovich/Wray 1991
	Undecorated possibly creamware		2		1760-1820	Peterson 2001, Price 1979
					1730-1820	Porubcan/Benchley 1995
					1765-1837/1838	Norman-Wilcox 1965
Pearlware				35	1780-1830	South 1977, Price 1979
	Undecorated			16	1783-1840	Lofstrom et.al 1982
					1790-1830	Peterson 2001
					1780-1830/1840	Porubcan/Benchley 1995
					1780-1840	Voinovich/Wray 1991
	Transfer Print					
		Black "Rhone Scenery"	2		1841-1855	Snyder 1977
	Handpainted					
		geometric lines	2		1780-1830	Lofstrom et.al 1982
		broad floral (blue)	10		1810-1830	Lofstrom et.al 1982
	Molded		5		pop. 1840s	Porubcan/Benchley 1995
Whiteware				164		
	Undecorated	114			post 1820	South 1977, Peterson 2001, Voinovich/Wray 1991, Price 1979
					1840-1890	Lofstrom et.al 1982, Porubcan/Benchley 1995
					1830-1969	Peterson 2001
	Transfer Print					
		Black	1		1830-1850	Lofstrom et.al 1982, Peterson 2001
					1820-1915/	prod.1830-1969 Peterson 2001
		Blue	14		1830-1860	Lofstrom et.al 1982, Peterson 2001
					1820-1915	Peterson 2001
		Red	2		1830-1850	Lofstrom et.al 1982
					1830-1860	Peterson 2001
		Brown	1		1830-1850	Lofstrom et.al 1982
					1820-1915	Peterson 2001
		Burned	1	?		
		Flow Blue	2		pop.1840-1860/ 1825-1862	Peterson 2001
					1820-1870	Voinovich/Wray 1991
					1830-1860	Price 1979
	Handpainted	Sprig Pattern/ Floral Design	14		1840-1860	Lofstrom et.al 1982, Peterson 2001
					1830-1860	Porubcan/Benchley 1995, Price 1979

Ware Type	Decoration	Decoration Sub-Type	Quantity	Total	Associated Dates	Reference(s)
	Shell Edge					
		Blue, scalloped edge & incised lines	3		1830-1860	Lofstrom et.al 1982, Porubcan/Benchley 1995
		Green, scalloped edge & straight lines	1		1813-1834	Peterson 2001
	Annular		7		1830-1860	Lofstrom et.al 1982, Peterson 2001, Porubcan/Benchley 1995
					1820-1860	Peterson 2001
					1820-1850	Voinovich/Wray 1991
	Mocha		1		1825-1840	Peterson 2001
					1820-1890	Voinovich/Wray 1991
	Molded		2		post 1840	Peterson 2001
	Applique		1		?	
Ironstone					11	
	Undecorated		2		1805-1850	Peterson 2001
					common post 1850	Price 1979
	Molded		9		1805-1850	Peterson 2001
White Granite				1		
	Molded		1		1840-1890	Porubcan/Benchley 1995
Stoneware				2		
	Wheel Thrown		2		pop. pre 1880s	Peterson 2001
Yellowware				5		
	Undecorated		1		1827-1940	Peterson 2001
					1830-1900	Peterson 2001, Norman-Wilcox 1965
					1850-1930	Porubcan/Benchley 1995
					post 1830	Voinovich/Wray 1991
	Annular		4		1827-1940	Peterson 2001
					post 1860	Porubcan/Benchley 1995
					1840-1930	Voinovich/Wray 1991
Redware				4		
	Undecorated		2		1800-1850/1830-1880	Peterson 2001
					1820-1900	Porubcan/Benchley 1995
	Galena Glaze		2		c.1840s	Peterson 2001
Earthenware				1		
	Bristol Slip	Albany Slip on inside	1		?	

provide dates prior to the fort's presence, and others contain a date range that continues after the fort's military occupation. Discussed below in chronological order is a description of a few of these artifacts and their associated dates. As the main focus of this paper is on the military occupation of the fort, the time period before and after will only be discussed briefly.

1. South (1977)
2. Lofstrom et. al (1982)
3. Peterson (2001)
4. Porubcan and Benchley (1995)
5. Voinovich and Wray (1991)
6. Price (1979)
7. Majewski and O'Brien (1987)
8. Norman-Wilcox (1965)
9. Snyder (1997)

Figure 13. Order of References Used for Decoration Dates

Pre-1829 Evidence

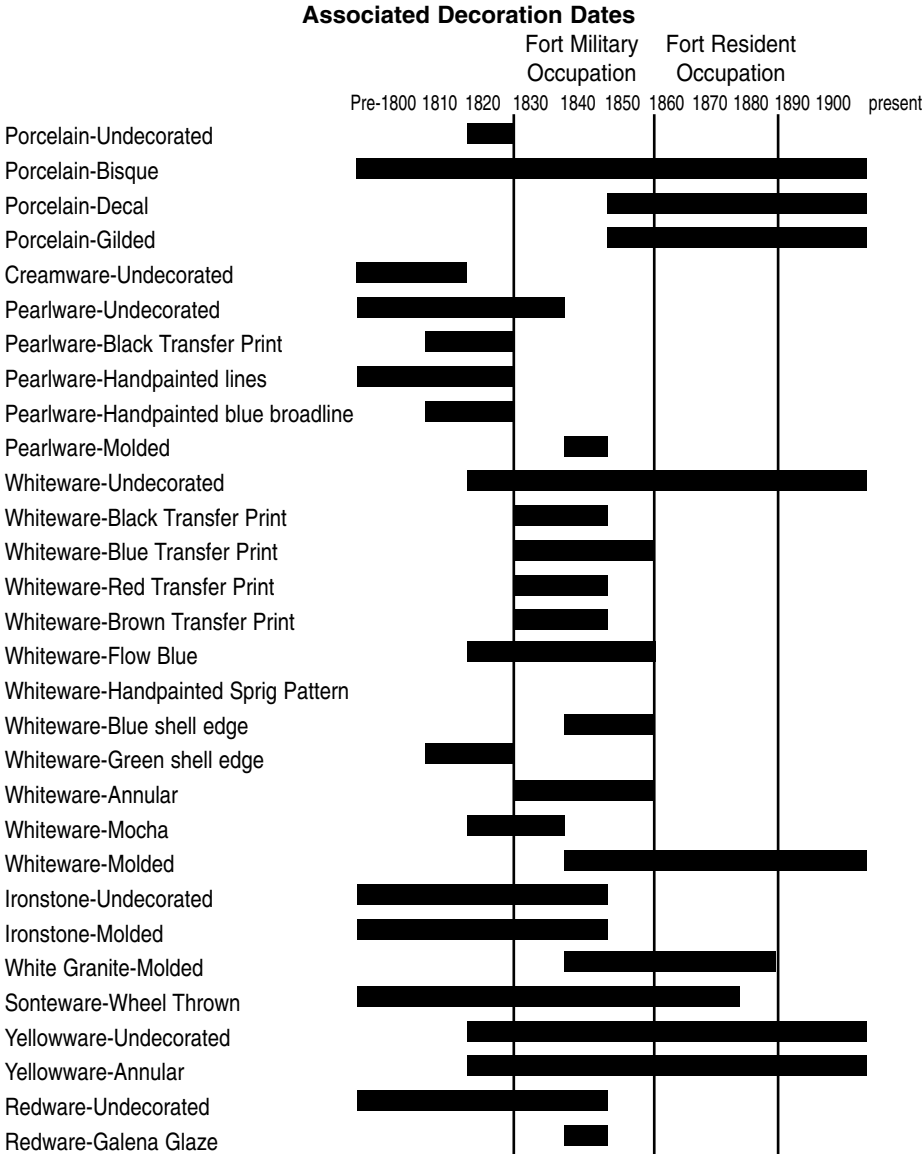
Some of the ceramic sherds from the fort indicate a date of manufacture beginning prior to the construction of the fort. While all of these ceramic decorations were first produced before the fort was constructed, many continued to be manufactured into the occupation period. These sherds include: undecorated porcelain (c.1826)(Peterson 2001), undecorated creamware (1760-1820)(Peterson 2001, Price 1979), undecorated pearlware (1783-1840)(Lofstrom et. al 1982), handpainted pearlware (1780-1830/1810-1830)(Lofstrom et. al 1982), flow blue decorated whiteware (1825-1862)(Peterson 2001), green shell edged whiteware (1813-1834)(Peterson 2001), mocha-decorated whiteware (1825-1840)(Peterson 2001), undecorated or molded ironstone (1805-1850)(Peterson 2001), and undecorated redware (1800-1850)(Peterson 2001).

A few of the ceramics indicate a manufacture date ending prior to the construction of the fort. One possible explanation for this is that the owners of these vessels had bought them before arriving at the fort. These dishes could have been older heirlooms or "hand-me-down" tableware belonging to a soldier who could not afford a new set. They could also represent dishes owned by a higher-ranking officer, who could show off his status with an expensive collection. The ending manufacture date for these ceramics did not necessarily indicate that they were no longer being sold. "Out of print" decorations most likely continued to be sold after they were no longer being produced.

Military Occupation (1829-1856)

The military period of the Second Fort Crawford technically dates from 1829 until 1867, when the government property transferred ownership. However, local residents were renting out rooms in the fort very shortly after the initial abandonment in 1856. Therefore, in order to identify the privy as a military or residential privy, this paper uses the year 1856 as the end of the military occupation.

Table 7. Associated Dates of Identified Earthenwares



In general, the most popular transfer print colors (black, blue, red, purple, brown, and green) date from c.1830 until c.1850 or 1860, a time period when the fort housed military personnel. However, some transfer prints continued to be manufactured after 1860, and thus after the fort

had been abandoned. Five artifacts found in the privy contained identifiable manufacturer marks. Two pearlware black transfer print saucers contain a partial manufacturer mark, identified as J&E Mayer “Rhone Scenery” (Figure 14). “Rhone Scenery” was a design produced by J&E Mayer during the years 1843 to 1855 (Williams and Weber 1999:390).

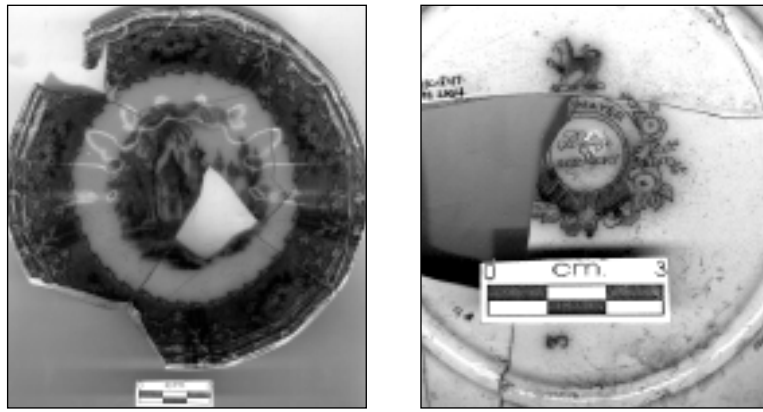


Figure 14. Black transfer print saucer (left) and manufacturer mark (“Rhone Scenery”) on its base (right)

One blue transfer print saucer contained an identifiable partial manufacturer mark “W.R.S. Union” (William Ridgeway, Son & Co.)(Figure 15). Although the dates of this design’s manufacture were not determined, the William Ridgeway, Son and Co. was only in existence from 1841-1854 (Snyder 1997:151-152).

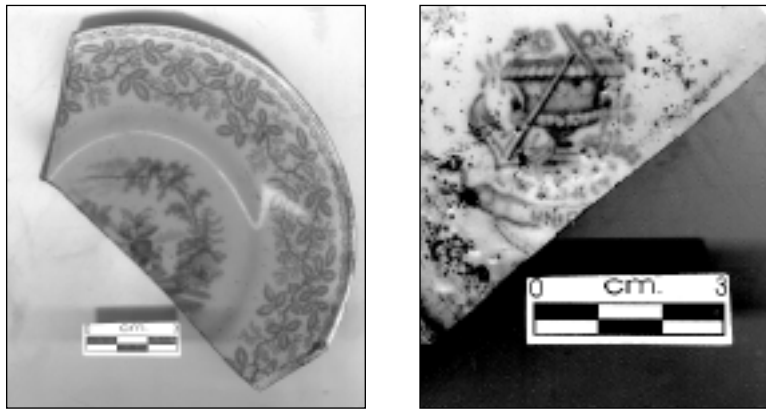


Figure 15. Blue transfer print saucer (left) and manufacturer mark of “W.R.S. Union” on its base (right)

Another blue transfer print design was represented by one plate rim sherd and a cup sherd (Figure 16). The design resembles the Marino pattern produced by George Phillips, a Longport-based manufacturer from 1834 until 1848. While the vessel is not complete, the portion of the design present matches extremely well.

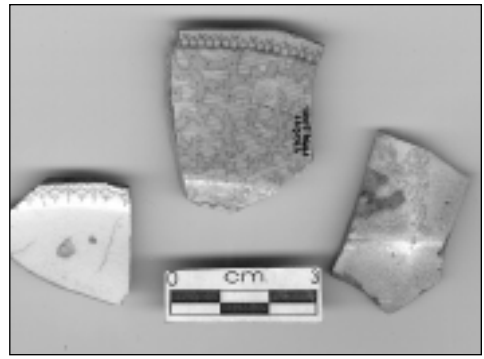


Figure 16. Marino blue transfer print design

Fourteen whiteware sherds were identified as being decorated with a handpainted sprig design (see Figure 17). According to Lofstrom et. al (1982) and Peterson (2001), this design was being produced from 1840 until 1860.

Five molded pearlware sherds were also identified in the assemblage. This decoration was popular during the 1840s.

Three whiteware plate rim sherds decorated with a blue shell edge design were found in the privy. This design was popular from 1830 until 1860 (Lofstrom et. al 1982, Porubcan and Benchley 1995).

Seven whiteware sherds in the assemblage were annular decorated. Several authors date this decoration from 1830 until 1860 (Loftrom et. al 1982, Peterson 2001, Porubcan and Benchley 1995) (see Figure 18).

Lastly, two redware sherds decorated with Galena glaze were identified. This glaze was produced locally in the Midwest and was popular during the c.1840s (Peterson 2001).

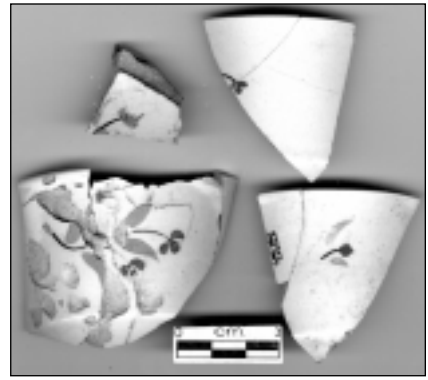


Figure 17. Samples of whiteware sprig pattern decoration

Post-1856 Dates

The ceramics which have the possibility of dating after the fort military occupation can be separated into two groups. First is the group of ceramics manufactured before, during, and after the fort's military occupation. The second group represents those ceramics which date to the end of the fort's military habitation and after. These sherds are the key to identifying the possibility of post-1856 use. Because of the construction of the road during 1873 (which was built over the privy), it can be safely assumed that all artifacts in the privy represent a pre-1873 occurrence.

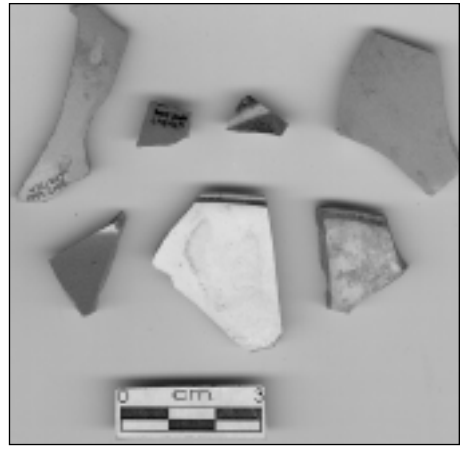


Figure 18. Several samples of annular decoration on whiteware sherds

However, a distinction must be made between the abandonment period of the fort by the army (1856) and the first occupation of local residents at the fort (1857-1860s).

One example of the first group mentioned above is undecorated whiteware, dating from 1820 until the present day (South 1977, Peterson 2001, Voinovich and Wray 1991, Price 1979). Another example is wheel-thrown stoneware, which was popular before the 1880s (Peterson 2001). A third includes bisque porcelain figurines, dating to post 1751 (Peterson 2001). Finally, undecorated and annular-decorated yellowware was produced from 1827 until 1940 (Peterson 2001). While these ceramic types were produced while the military was present at the fort, they were also produced after its decommissioning. Therefore, no positive determination of the dates for which these ceramics were used could be made.

Four ceramic types found in the privy were manufactured near the end of the military occupation of the fort or after. The first, molded white granite, was produced from 1840 until 1890 (Porubcan and Benchley 1995). It is possible that the sample found at this site was utilized during the fort's military occupation. The other two ceramic types are variations of porcelain: decal print and porcelain with gilded decoration. Both have a manufacture date of post-1850 (Majewski and O'Brien 1987).

While the beginning manufacture date of these decorations includes the last part of the fort's military occupation, a definite connection to the military occupation is not possible. In addition, many references date decal design to the turn of the 20th century. This could indicate a later time period for the privy. However, the construction of the road over the privy occurred sometime during the 1870s. Majewski and O'Brien state that the process for producing decal-printed vessels was produced overseas as early as 1850. Although not incredibly common before the 1900s, decal print was available, and was most likely imported (Majewski and O'Brien 1987). However, it is questionable whether these ceramics were deposited during the military occupation (at the bottom of the privy) or the residential occupation (at the top of the privy). Because of the lack of stratigraphic excavation, this cannot be determined with certainty.

FURTHER DISCUSSION

If this was indeed a military privy, the outhouse was needed for a prolonged time period. If it was located on the inside of the fort enclosure, space would have been highly structured and the privy use would have been relatively intense and continuous. Therefore, to maintain a reasonable level of sanitation, and possibly also as part of a disciplinary technique, the refuse pit was most likely repeatedly cleaned out throughout its use and deposited elsewhere. By doing so, most information about the early time period of the fort will not be represented in it. This information will not necessarily be absent, though. The pit was most likely never completely emptied. Therefore, a few earlier artifacts are expected to be discovered, located at the bottom of the pit. Overall, though, later artifacts will be represented more abundantly in the assemblage.

On the other hand, another method of sanitation for maintaining long-use privies was the practice of filling in "full" pits. A new pit would be dug close to the original privy and the outhouse structure would be moved over the new pit. The old, full, pit would then be filled in with loose dirt. This practice was most likely used for privies that were located outside of the fort structure. If this was the case, the archaeological record will show a representation of a smaller date range of artifacts throughout the entire stratigraphy of the pit, with no concentra-

tion of earlier artifacts at the bottom. A concentration of earlier artifacts should be present in a different, unmarked, location.

CONCLUSIONS

Suggested Time-Use For The Privy

From the overwhelming evidence of dates associated with this privy, it can be reasonably assumed that the privy was being utilized during the late military occupation of the Second Fort Crawford. Because of the over-representation of later artifacts and the relatively short date range, it can also be assumed that this privy was used only once and then filled in. The small amount of artifacts dating to an earlier time period probably represent ceramics which were used for a long period of time by a few of the soldiers. The absence of provenience makes this conclusion harder to prove, although reasonable to assume.

Because of the lack of any diagnostic artifacts dating to *solely* after the military occupation, a logical conclusion could be made that this privy represents only the time period during the military habitation. No artifacts were recovered that clearly indicates a post-military occupation, signifying that it is possible that this privy was only used during the military time period. Regardless, this paper accepts the possibility of the privy being used beginning during the military occupation and continuing into the beginning of the residential occupation.

Comments On Excavating Privies

While it could not be helped for this excavation, privies should always be excavated stratigraphically, due to the amount of information they are able to produce. Kathleen Wheeler (2000) states that "the excavation by arbitrary levels obscures much detail and mixes deposits that might otherwise be separated" (p.3). She further implores that "if the separation is not done in the field, it is highly unlikely that artifacts from individual deposits can be distinguished during processing or analytical phases of work" (p.3). In places where stratigraphy cannot be discerned easily, like in areas of the Midwest, excavating at 5cm arbitrary levels can provide a very good vertical control.

In order to help in the excavation, the Harris Matrix can be used (see Further Reading). If anything, it can educate excavators of various deposits, and make them more apt to look for separate deposits. Excess separation is not bad – each identified deposit can be compared once in the lab and recombined appropriately with its associated level(s). A combination of vertical and horizontal (plan view) mapping also needs to be conducted.

An interesting "newer age" method of excavation includes excavating the privy from the outside in, called "side-access" excavation. Excavating from the top down can be very difficult, as privies are very deep. Eventually, it becomes difficult for the excavator to see differences in soil color and/or texture. When excavating halves or quarters of privies, this is even harder (and sometimes it is difficult to find someone able to fit inside to excavate!). Therefore, excavating around the privy first gives more room to the excavators and allows them to better see the natural stratigraphy.

FINAL COMMENTS

In conclusion, this paper attempts to date the ceramic assemblage and associated privy from the 1999 excavations at the Second Fort Crawford. After much evaluation, it has been

concluded that the privy was used during the later military occupation of the fort, and was possibly also used by local residents who inhabited the fort shortly after its abandonment by the army.

While this conclusion has been made, further research is possible and warranted. An analysis of other objects discovered in the privy can help validate the dates given here for the time use of the privy. A future possible research topic is the status of those who threw waste or lost items in the privy. Implementing George Miller's economic scaling method (Miller 1980), for example, could provide important insights into status. Other references can also be used to apply status to various other artifacts within the privy assemblage. It would also be interesting to perform more in depth research concerning military practices and discipline with regards to privy use to better understand the stratigraphy of these features.

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REFERENCES

Bush, David R. 2000. Interpreting the Latrines of the Johnson's Island Civil War Military Prison. In *Historical Archaeology*, Vol.34(1), edited by R. L. Michael, pp.62-78. The Society for Historical Archaeology, California, PA.

Carnes-McNaughton, Linda F. and Terry M. Harper. 2000. The Parity of Privies: Summary Research on Privies in North Carolina. In *Historical Archaeology*, Vol.34(1), edited by R. L. Michael, pp.97-110. The Society for Historical Archaeology, California, PA.

Hume, Ivor Nöel. 1970. *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York.

Mahan, Bruce E. 2000. *Old Fort Crawford and The Frontier*. Prairie du Chien Historical Society, Prairie du Chien, WI.

Majewski, Teresita and Michael J. O'Brien. 1987. The Use and Misuse of Nineteenth-Century English and American Ceramics in Archaeological Analysis. *Advances in Archaeological Method and Theory*. Vol.11. Pp. 97-209.

Miller, George L. 1980. Classification and Economic Scaling of Nineteenth-Century Ceramics. *Historical Archaeology* 14:1-40.

Peterson, Cynthia L. 2001. *Artifact Identification Guide for Iowan Historical Archaeology*. Office of the State Archaeologist, University of Iowa, Iowa City.

Porubcan, Paula J. and Elizabeth D. Benchley. 1995. *The Warren Hause Site (47Da-910): Final Report of Phase III Archaeological Data Recovery at a Mid-19th Century Homestead in Verona Township, Dane County, Wisconsin*. Report of Investigations No. 124. University of Wisconsin-Milwaukee Archaeological Research Laboratory, Milwaukee, Wisconsin. Pp. 64-157.

Price, C.R. 1979. *19th Century Ceramics in the Eastern Ozark Border Region*. Southwest Missouri State University, Center for Archaeological Research, Monograph Series No. 1.

Scanlan, Peter L. *Prairie du Chien: French, British, American*. FINISH

Snyder, Jeffery B. 1997. *Romantic Staffordshire Ceramics*. Shiffer Publishing, Ltd. Hong Kong.

Sutton, Mark Q. and Brooke S. Arkush. 1998. *Archaeological Laboratory Methods: An Introduction*. 2nd ed. Kendall/Hunt Publishing Company, Dubuque.

Twinde, Vicki. 1999. *National Register nomination for Second Fort Crawford (47Cr247)*. Prepared by the Mississippi Valley Archaeology Center for the Wisconsin Department of Transportation.

Voinovich, George V. and Jerry Wray. 1991. *Coding System Manual for the East Liverpool, Ohio Urban Archaeology Project*. Ohio Department of Transportation, Archaeology Series No.1.

Wheeler, Kathleen. 2000. Theoretical and Methodological Considerations for Excavating Privies. In *Historical Archaeology*, Vol.34(1), edited by R. L. Michael, pp.3-18. The Society for Historical Archaeology, California, PA.

Williams, Petra and Marguerite R. Weber. 1999. Staffordshire Romantic Transfer Patterns: Cups Plates and Early Victorian China. Fountain House East, KY.

Further Reading

Schiffer, Michael B. 1987. *Formation Processes of the Archaeological Record*. University of New Mexico Press, Albuquerque.

Harris, Edward C. 1979. *Principles of Archaeological Stratigraphy*. Academic Press, New York, NY.

Harris, Edward C. 1989. *Principles of Archaeological Stratigraphy*, 2nd ed. Academic Press, New York, NY.