Chapter 5: Public Education and Outreach

The investigation of the Boyle Site was undertaken as part of the annual field partnership between the Department of Anthropology at the University of Notre Dame and the Beaver Island Historical Society. The project was widely publicized and we were able to reach many members of the community.

Five undergraduate students from Notre Dame participated in this important training opportunity. The field investigation consisted of one week of excavation on Beaver Island with laboratory processing and analyses of the data recovered completed at the Reyniers Laboratory of the University of Notre Dame during the subsequent 2012-2013 academic year.

During the field portion of the project, many people stopped by to see what we were doing. The site was informally open to visitors every day and a formal open house was held on one day as part of "Museum Week" activities for the Beaver Island Historical Society. A total of 55 people signed the Site Visitor Log during our six field days. Some of their recorded comments included "So interesting," "Educational and interesting," "Impressive," and "Thanks for doing this!" A number of visitors had information about Irish immigration to the island generally and/or the Boyle Farm Site specifically, which was very useful to our interpretations of the archaeological record of the site. We also had Elk Rapids Middle School schoolteacher Ann Vogel and ten of her students volunteer one morning at the site. This was a marvelous opportunity to get students excited about history, archaeology, and historic preservation.

A public lecture was given at the Beaver Island Community Center as part of our outreach efforts. Dr. Deb Rotman, Principal Investigator, discussed the results of the previous years' field excavation at the Gallagher Homesite (20CX201) and what we were learning about the Irish immigrant history of the island. More than 60 people attended this presentation.

The project also has a blog, which can be accessed at <u>http://blogs.nd.edu/irishstories</u>. The students post the results of their small research projects and we have solicited for public input on our preliminary research results. Student theses and publications from the project as well as the state-required technical reports are also available online.

The goal of the public education and outreach component of this project was to energize members of the public about historic and archaeological resources on the island and heighten awareness about preservation issues specific to those resources. We also sought to connect to the community as a way of building this project as a collaborative enterprise, an undertaking on which we can work together for (hopefully) many years to come.

Chapter 6: Historic Materials Recovered

There were 2,476 historic artifacts recovered during the 2012 archaeological investigation of the Boyle Farm Site (20CX204). The following section provides a descriptive discussion of the artifacts recovered, which follows an analytical scheme developed and artifact descriptions utilized by Cultural Resource Analysts, Inc. in Lexington, Kentucky. A complete inventory of the artifacts is provided in Appendix A.

Artifacts recovered during the field excavation are currently in the possession of the University of Notre Dame while analyses are on-going, but will ultimately be curated with the Beaver Island Historical Society. Brick and mortar fragments, coal, and wood charcoal were counted, weighed, and then discarded in the field or laboratory, unless otherwise unique or diagnostic.

Assemblages of historic artifacts are often classified and grouped according to a scheme developed originally by Stanley South (1977). South believed that his classification scheme would present patterns in historic site artifact assemblages that would provide cultural insights. Questions of historic site function, the cultural background of a site's occupants or regional behavior patterns were topics to be addressed using this system.

South's system was widely accepted and adopted by historical archaeologists at first. Since that time, however, his categorization scheme has been criticized on theoretical and organizational grounds (Orser 1988; Wesler 1984). One criticism of South's pattern recognition system is that the organization of artifacts is too simplistic. Swann (2002) observed that South's groups can potentially be insufficiently detailed. She suggested the use of sub-groups to distinguish between, for example, candleholders used for religious purposes and those used for general lighting. Despite its imperfections, most archaeologists recognize the usefulness of South's classification system to begin organizing and present complex data sets.

Stewart-Abernathy (1986), Orser (1988), and Wagner and McCorvie (1992) have subsequently revised the classification scheme. In this report, artifacts are grouped into the following categories including: Architecture, Arms/Munitions, Clothing, Communication and Education, Domestic, Fauna/Flora, Furnishings, Maintenance and Subsistence, Personal, and Unidentified (Table 6.1).

Artifact Category	#	%
Architecture	1,260	50.9
Arms & Munitions	1	< 0.1
Clothing	38	1.5
Communication & Education	2	< 0.1
Domestic	621	25.1
Flora/Fauna	312	12.6
Furnishings	15	0.6
Maintenance & Subsistence	180	7.3
Personal	27	1.1
Unidentified	19	0.8
Prehistoric	1	< 0.1
Total	2,476	100%

Table 6.1 Historic Artifacts Recovered from the Boyle Farm Site (20CX204).

Information on the age of artifacts as described in the artifact tables is derived from a variety of sources, which are cited in the materials recovered discussion. The beginning and ending dates cited need some clarification. Usually, an artifact has specific attributes that represent a technological change, an invention in the manufacturing process or simple stylistic changes in decoration. These attribute changes usually have associated dates derived from historical and archaeological research. For example, bottles may

have seams that indicate a specific manufacturing process patented in a certain year. The bottle then can be assigned a "beginning date" for the same year of the patent. New technology may eliminate the need for the same patent and bottles using that technology would no longer be produced. The "ending date" will be the approximate time when the new technology takes hold and the old bottles are no longer manufactured.

Specific styles in ceramic decorations are also known to have changed. Archaeological and archival researchers have defined time periods when specific ceramic decorations were manufactured and subsequently went out of favor (e.g., Lofstrom et al. 1982; Majewski and O'Brien 1984, 1987). South's (1977) mean ceramic dating technique uses this information. The dates presented here should not be considered absolute but are the best estimates of an artifact's age that is available at this time. A blank space indicates the artifact could not be dated or that the period of manufacture was so prolonged that the artifact was being manufactured before America was colonized. An ending date of "P" was assigned for artifacts that may still be acquired today. The rationale for presenting dates for the artifacts recovered is to allow a more precise estimate of the time span the site was occupied, rather than the main occupation date of a site.

Architecture Group (N=1,260)

The architecture group is comprised of artifacts directly related to the physical structures on the landscape as well as those artifacts that were used to enhance the interior or exterior of buildings. These artifacts primarily consisted of window glass, nails, and construction materials, such as chinking. Artifacts from this group represented more than one-half of the total assemblage from the site.

Construction Materials (N=142)

Construction materials refer to all elements of building construction. For this project, the building materials collected included primarily mortar, with minor amounts of plaster, wood fragments, and other materials. Curiously, no bricks were recovered during the excavation at the site, suggesting that the deposits we excavated were not sampling near the former hearth/chimney. A variety of other construction-related materials were also recovered. These included: asphalt, caulk, chinking, an escutcheon, two hinges (one rectangular and one strap hinge), paint chips (white and brown), and mortar (Figures 6.1 and 6.2).



Figure 6.1. Diamond-shaped escutcheon (left) and hinge (right) (Unit 5, Level 1).

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Figure 6.2. Heavy-duty hinge (Unit 5, Level 2).

Flat Glass (N=423)

Each fragment of flat glass was measured for thickness and recorded to the nearest hundredth of a millimeter. The differences between window glass, mirror glass (Personal group), and plate glass (special function such as shelving) were in part determined by the thickness and wear of each flat glass shard. Any glass that measured 2.86 mm or larger was considered plate glass. An analysis of the window glass was presented in Chapter 7.

Nails (*N*=695)

The largest portion of artifacts from the Architecture Group are metal nails. There are three stages recognized in the technological chronology of nails; wrought nails, cut nails, and wire-drawn nails.

Wrought nails were handmade and were the primary type of construction fastener in the eighteenth and early nineteenth centuries. Their use ended by around 1830 with the widespread use of the square cut or machine cut nails (Nelson 1968:8).

The cut nail, which was introduced in approximately 1790, originally had a machine cut body with a handmade head. Not until technological advancements around 1815 had produced a totally machine-made cut nail did they begin to replace wrought nails in the construction industry. In the 1820s crude machine-made heads replaced the handmade heads on cut nails. These nails also exhibit a "rounded shank under the head" (Nelson 1968:8). By the late 1830s these "early" cut nails were replaced with "late" (or modern machine) cut nails.

The first wire-drawn nails were introduced into the United States from Europe by the mid-nineteenth century. These early wire nails were primarily used for box construction ad were not well adapted for the building industry until the 1870s. Although the cut nail can still be purchased today, the wire nail nearly universally replaced it by the turn of the century (Nelson 1968:8).

At the Boyle Farm Site, the distribution of nails was as expected for mid-nineteenth- to early twentieth century site. There were four wrought nails, 605 cut nails (all of which appeared to have been machine cut), and 86 wire nails and/or nail fragments.

Arms & Munitions Group (N=1)

The arms category includes artifacts generally associated with civilian and military weaponry. Examples of arms include gun parts, bullets or projectiles, shot shells, and gunflints. The artifacts recovered in this group were reflective of civilian firearms use. Only one artifact from group, the handle of a handgun (Figure 6.3), was recovered from this group.



Figure 6.3. Handle of a hand gun (Unit 4, Level 3).

Clothing Group (N=38)

The Clothing Group incorporates buttons, clothing fasteners, and footwear. Other clothing related items such as belts, hats, hosiery, and fabric are also included in this category.

Nineteen buttons were included in the assemblage, including sew-through and self-shank buttons made of metal, glass, shell, and bone (Figures 6.4, 6.5 and 6.6). Other clothing-related artifacts included four suspender clasps (Figure 6.7), one buckle (Figure 6.8), and 13 shoe fragments (Figure 6.9).



Figure 6.4. Heavy-duty self-shank button (as with blue jeans) (Unit 6, Level 3).



Figure 6.5. Metal buttons with fabric coverings (left) and milk glass sew-through button (right) (Unit 5, Level 5).



Figure 6.6. Milk glass sew-through button with accent brown rim (Unit 10, Level 12).



Figure 6.7. Metal suspender clasp fragments (Unit 2, Level 7).



Figure 6.8. Metal clothing or shoe buckle (Unit 4, Level 3).



Figure 6.9. Metal shoe sole (Unit 10, Level 5).

Communication and Education Group (N=2)

The Communication and Education Group includes items associated with printed matter, writing implements, electronics such as television, radio, computer, telephone, and telegraph as well as miscellaneous office related items. The assemblage from the Boyle Farm Site included only one slate pencil and a fragment of a stoneware inkwell (Figure 6.10).



Figure 6.10. Stoneware inkwell rim and fragment (Vessel S1).

Domestic Group (N=621)

Artifacts included in the Domestic Group consisted of ceramics (N=209), glass containers (N=145), container closures (N=4), food containers (N=248), glass tableware (N=2), cookware (N=9), and utensils (N=4). The ceramic inventory consisted of a variety of refined and unrefined earthen wares. A full description of ceramic types recovered is listed below followed by descriptions of other Domestic group artifacts. An analysis of the ceramics and glass containers was presented in Chapter 7.

Ceramics (N=209)

The ceramics recovered were grouped into nine major ware types, including: whiteware (N=104); ironstone (N=45); yellowware (N=9); stoneware (N=44); redware (N=6), and one sherd of pearlware. Ceramics within each of these ware groups were separated into decorative types that have temporal significance. Each of these ware groups is reviewed below, followed by discussions of associated decorative types. A more detailed analysis of the ceramics was presented in the next chapter.

Whiteware (N=104) As a ware group, whiteware includes all refined earthenware exhibiting a dense, relatively non-porous, white to grayish-white clay body. Undecorated areas on dishes exhibit a white finish under clear glaze. This glaze is usually a variant combination of feldspar, borax, sand, nitre, soda, and china clay (Wetherbee 1980:32). Small amounts of cobalt were added to some glazes, particularly during the period of transition from pearlware to whiteware and during early ironstone manufacture. Some areas of thick glaze on whiteware may therefore exhibit bluish or greenish-blue tinting. Weathered paste surfaces are often buff or off-white and vary considerably in color from freshly exposed paste.

Most whiteware produced before 1840 had some kind of colored decoration. These decorations are often used to designate ware groups, i.e., edgeware, polychrome, and colored transfer print. Most of the decorative types are not, however, confined to whiteware and taken alone are not particularly accurate temporal indicators or actual ware group designators (cf., Price 1981).

The most frequently used name for undecorated whiteware is the generic "ironstone," which derives from an "Ironstone China" patented by Charles Mason in 1813 (Mankowitz and Hagger 1957). For purposes of clarification, however, "ironstone" will not be used when referring to whiteware. Ironstone is theoretically harder and denser than whiteware produced prior to about 1840. Manufacturer variability is, however, considerable and, therefore, precludes using paste as a definite ironstone identifier or as a temporal indicator. Consequently, without independent temporal control, whiteware that is not ironstone is difficult to identify, as is early versus later ironstone. For our analysis, the primary determining factor in classification of a sherd as whiteware was the hardness and porosity of the ceramic paste. Decorative types observed in our assemblage on the whiteware sherds are defined in the following discussions.

<u>Plain or undecorated</u>: This ware type includes dishes with no colored decoration or solid glaze. Plain whiteware can frequently exhibit some form of molding or embossing. While some researchers (Lofstrom et al. 1982:10 and Wetherbee 1980) include molded designs with "plain" white ware, we agree with Majewski and O'Brien (1987:153) that molded vessels should be grouped on their own. Plain white ware shards were the most common ceramic recovered from the site. Although some were clearly rims from undecorated vessels, it is likely that many of these shards are from undecorated portions of decorated vessels.

<u>Molded or embossed:</u> Molded designs were simplified on pearlware, as transfer printing became popular. Molded designs were revived with the introduction of whiteware in the late 1830s but they did not attain the elaborateness of previous forms. Specialized moldings for whiteware were common in the 1840s, when the ware had a more limited and generally, a more affluent market. During the 1860s molding tended to become more soft and shallow relief as opposed to the angular and sculpted forms of the 1840s and 1850s (Wetherbee 1980). During the 1870s and 1880s, molded decorations occupied smaller areas on dishes, with

elaboration confined to handles and lids. British stylistic trends dominated the embossed and molded whiteware industry throughout most of the 19th century (Wetherbee 1980).

<u>Annular</u>: Annular, also known as dipped, banding, or slip banding is a handpainting decoration of applied horizontal bands of color around the vessel exterior. Unlike border line handpainting that is flat, annular banding exhibits a slight relief. It can be found on creamware and pearlware as well as whiteware. The banding was often utilized in conjunction with colored glazes and decorative motifs such as "cat's eye," "earthworm" (finger-painted), and mocha. The latter was incorporated into earlier styles (Van Rensselear 1978:240).

Those English potters who immigrated to the United States in the 1830s and 1840s continued to manufacture banded or annular ware; however, stoneware and yellow ware were the common paste types. The production of American yellow ware, in particular, incorporated many of these designs; banding, "cat's eye," "earthworm," and mocha (dendrites) motifs were utilized, often more than one on the same vessel.

<u>Transfer Print</u>: By the late 1780s transfer printing was being developed in the potteries of Staffordshire, England as a fast and inexpensive method of mass-producing decorated pearlware and whiteware. It was originally perfected circa 1756 for use on porcelains and it was not used on earthenwares until Thomas Minton designed his blue willow pattern circa 1780, which instigated a wider commercial use (Norman-Wilcox 1978).

The required pattern is first engraved by hand on a copper plate, from which a tissue-paper print, called a "pull" or "proof" is taken. Then, by pressing the tissue against a piece of undecorated ware, the design is deposited or transferred to the surface of the article. Glazing and baking complete the process (Norman-Wilcox 1978:167).

According to Hughes and Hughes (1968:150) and others (cf., Godden 1963:113), blue was the dominant color of transfer printed wares prior to the 1830s. With advances in ceramic technology, brown and black prints appeared after 1825, and by 1830, green, red, pink, mulberry, and light blue were being produced (Bemrose 1952:23; Miller 1991; Wetherbee 1980:15). By the late 1840s, a technique for transferring more than one primary color to a vessel was perfected (Godden 1965:xx).

Early patterns include the willow pattern and other Chinese design motifs. Although some Chinesestyle motifs were still being used, the use of classical and romantic scenic themes became popular in the early 19th century. These patterns included country scenes, floral motifs, and travel scenes. Patterns depicting American buildings and scenery were popular after 1812 (Majewski and O'Brien 1987). The patterns on these sherds were suggestive of prints of the early 19th century (Price 1979:19). The transfer printed designs use country scenes and floral motifs. The "blue willow" pattern was especially popular with the first generation Irish family (Earlys) who occupied Site 20CX201 at the end of the nineteenth-century, but only two vessels of this ware were identified at the Boyle site (more on this in the next chapter) (Figure 6.11).

Flow Blue: Flow blue decoration is a variant of transfer printing, and was popular from 1830 to 1860 (Price 1979:21-22). The peak period of production was apparently 1850 to 1860 (Freeman 1954:8). Later varieties of flow blue occur, however, they are not normally found on whiteware bodies. Furthermore, they often exhibit gilding or molding. Little (1969:21) indicates that "flowing" or "flown blue" was developed in England during the 1820s.

The term "flow blue" is derived from the fact that the transfer print, or other underglaze decoration, actually flows or blends with the clear glaze during the glost firing. The effect is a blurring of print or handpainted details, and a deep creamy glaze. Many have attributed its success to the reduction in the mechanical effect of the print. The "flowing" was obtained by placing either a flow powder or cups of a flow liquid in the saggers during the glost firing. The "flowing" compound was usually a volatilizing mixture such as lime or chloride of ammonia, which would evolve chlorine at the glost firing temperature. As chlorine evolved from the mixture, it combined with the cobalt glaze, in effect rendering it soluble in the glaze (Dodd 1964:117; Little 1969:21).



Figure 6.11. Fragments of blue willow transfer-printed whiteware (Vessels W1 [bottom row] and W5 [top row]).

It should be noted that there is disagreement as to what should actually be classified as flow blue. Some individuals (often collectors and antique dealers) base classification on pattern and maker's marks. This frequently results in pieces with dark blue transfer print designs being classified as flow blue. For our purposes, only sherds that exhibited a blurred look due to excess dye or ink will be classified as flow blue.

<u>Edge Decorated Whiteware:</u> This decorative type is a continuation of the edge decoration most prevalent on pearlware plates and first appeared circa 1779 (Noel-Hume 1978:45). The age range suggested by Majewski and O'Brien (1987) for whiteware with this decoration, with colors of green or blue, is between 1830 and 1860. It can occur with or without other decorations, such as handpainting or spatter decorations; these usually occur on plate bottoms (Greaser and Greaser 1967). Later ironstone plates generally exhibit only the edge decoration. According to a recent study of shell edged ceramics, which combines the ware types of pearlware and whiteware by George L. Miller (1991), edge decoration was common between 1795 and 1845. Miller suggests a mean date of 1817 for this rim treatment.

Noel-Hume (1978:45-46) provides additional insights into molded varieties of shell edge that were in production during the 1820s. The contrast between this more elaborately molded and more carefully painted style with other varieties is described as follows:

At the outset, the painting of the rims harmonized with the grooved modeling of the shell edge, the brush strokes being carried to the center so that a feathering effect was achieved...Before long, the painters...simply placed the brush at right angles to the rim and applied a stripe as the plate was rotated. This technique was still being used well through the second quarter of the 19th century, though the latest examples were generally not on pearlware, but on harder and coarser whiteware that succeeded it.

However, this contrast in edging styles does not permit unquestionable dating of edge-decorated rims.

A study by Sussman (1977:108) indicates that even for the 19th century pearlware, "The degree of sharpness of the molded relief was not helpful in dating shell edge dinner ware." Sussman (1977:108) notes that the simpler and more stylized shell edge versions were occurring as early as the 18th century and by the end of the pearlware production period, variation in design was significant. It is reasonable to suggest that the degree of refinement on late 19th century edge decorated whiteware is related more to retail price than to temporal change. For this study, the date ranges of 1830-1860 are used for edge decorated whiteware, until as Majewski and O'Brien caution, more information on the differences in edge decoration become available.

Ironstone (*N*=45) Ironstone, a highly refined, vitreous, opaque earthenware with a clear glaze, is often indistinguishable from white ware, particularly when shards are being viewed. Ironstone differs from white ware in that the body is more vitreous and dense and a bluish tinge or a pale blue-gray cast covers the body. In some cases, a fine crackle can be seen in the glaze (Denker and Denker 1982:138); however, this condition is not restricted to ironstones. Confusion in the classification of white-bodied earthen wares if further compounded by the use of the term as a ware type or trade name in advertising of the nineteenth century. Both ironstones and white wares were marketed with names such as "patent Stone China," "Pearl Stone China," "White English Stone," Royal Ironstone," "Imperial Ironstone," "Genuine Ironstone," "White Granite," and "Granite Ware" (Gates and Ormerod 1982:8; Cameron 1986:170). These names do not imply that true ironstone was being manufactured. Some investigators avoid the distinctions entirely by including ironstones as a variety of white ware, while Wetherbee (1980) adopted the opposite course, referring to all nineteenth century white-bodied earthen wares as ironstone. For this analysis, the primary determining factor in classification of a shard as ironstone was the hardness and porosity of the ceramic paste. Shards with a hard vitreous paste were classified as ironstone.

Charles James Mason is usually credited with the introduction of ironstone (referred to as Mason's Ironstone China) in 1813 (Dodd 1964:176), although others, including the Turners and Josiah Spode, produced similar wares as early as 1800 (Godden 1965:xxiii). British potters as a competitive response to the highly popular oriental porcelain instigated this early phase of ironstone production. The ironstone of this early phase bears a faint blue-gray tint and oriental motifs much like Chinese porcelain.

A second phase of ironstone was prompted after 1850 in response to the popularity of a hard paste porcelain being produced in France. This variety of ironstone had a harder paste, and reflected the gray-white color of French porcelains.

While some ironstones continued to use oriental design motifs, the general trend was toward undecorated or molded ironstones (Collard 1967:125-130; Lofstrom et al. 1982:10 in Majewski and O'Brien 1987). Ironstone continued to be produced in England, and after 1870 it was manufactured by numerous American concerns. Majewski and O'Brien (1987) report that by the late 1800s thick, heavy ironstones were losing popularity and began to be equated with lower status (Collard 1967:135; Majewski and O'Brien 1987). Its production all but ceased by the second decade of the twentieth century (Lehner 1980:11). There was a shift to a thinner, liter weight ironstone between 1870-1880. This ironstone was popular in American homes during most of the twentieth century (Majewski and O'Brien 1987:124-125). Heavy ironstone remained on the market, however, and was popular in both hotel/restaurant service as well as home use. All of the ironstone pieces recovered from the Boyle Site were undecorated or embossed (Figure 6.12)

Yellowware (N=9) Ramsay (1939:148) stated that yellow ware represents the transition from "pottery" to earthenware. The paste is finer than the coarse earthen wares but coarser than more refined earthen wares, such as white ware and ironstone. Prior to the gloss firing, the paste is a buff or cream color; however, the addition of an alkaline glaze creates a deep yellow upon firing. Yellow ware was universally a utilitarian ware – chamber pots, slop jars, urinals, mugs, pitchers, bowls, cuspidors, pie plates, food molds, and canning jars were produced.

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Figure 6.12. Undecorated ironstone plate fragments (Vessel I6).

For the purposes of this study, yellow ware is assumed to be American, although it is realized that the wares were generally of English inspiration and that some English yellow ware was imported into this country. James Bennett, and English emigrant who had just left Cincinnati in 1839, is generally credited with the introduction of American yellow ware to East Liverpool in 1840 (Stout 1923:16; Gates 1984:47). Vodrey and Frost of Pittsburgh were the first to produce yellow ware in the United States, perhaps as early as 1827 (Ramsay 1939:74; Ramsay 1947). Yellow ware, produced in molds, was very susceptible to mass production, and other potters in Ohio, Vermont, and New Jersey opened factories in the 1840s. Ohio was one center of yellow ware manufacture, and it is estimated that in 1850, half of all U.S. yellow ware was manufactured in East Liverpool (Gates 1984:47). Yellow ware is rarely marked, although William Bromley, who operated potteries in Cincinnati and Covington during the mid- nineteenth century, included an elaborate molded mark on some of his finer Cincinnati pieces (Genheimer 1987).

One decorative treatment of yellow ware, called Rockingham, is simply a mottled, brown-glazed yellow ware. It is sometimes referred to as Bennington ware; however, it was manufactured throughout the eastern United States. A glaze of pure oxide of manganese produced a brown or purple brown tint resulting in a mottled or streaked effect (Hughes and Hughes 1956:130). Originally, Rockingham ware referred to ornate porcelain manufactured between 1826 and 1842 at Swinton, Yorkshire, England on the estate of the Marquis of Rockingham (Dodd 1964:232). Hence, the term is not actually paste specific; the characteristic glaze was applied to red wares, white wares, porcelain, and yellow ware. Rockingham wares were introduced

to the United States around 1845 by Christopher Webber Fenton at Bennington, Vermont. Yellow ware potteries in East Liverpool and other parts of Ohio and the eastern United States, quickly took up its production. Bennington designs were closely copies in Ohio, including hound- handled pitchers, book flasks, picture frames, mugs, pie plates, and milk plans (Ramsay 1939:76-77). During the mid- nineteenth century, both Rockingham and yellow ware were marketed as "Liverpool" ware and "Queens ware" (Gates and Ormerod 1982:7). Another prominent decorative treatment for yellow ware includes the application of bands, which were usually blue, white or brown in color. All fragments recovered at the Boyle Site were undecorated and probably fragments of a larger decorated vessel.

Stoneware (N=44) Stoneware served as the "daily use" pottery of America, particularly rural America, after its introduction during the last decade of the eighteenth century. Stoneware is a vitreous, but opaque ware, manufactured of a naturally vitrifying fine, but dense, clay. The pottery was fired longer and to a higher temperature than earthen wares; a kiln temperature of a least 1200 to 1250 degrees centigrade must be obtained (Dodd 1964:274-275; Cameron 1986:319). As a result, stoneware exhibits a hard body and a very homogeneous texture.

Its body is nonporous and well suited to liquid storage. It is not a refined ware, and it was typically utilized for utilitarian purposes such as jars, churns, crocks, tubs, jugs, mugs, pans, and pots. The paste may vary from grays to browns, depending on the clay source and length and intensity of the firing. Vessels were typically glazed; salt glazing and slip glazing were the most common.

Although salt glazing was practiced in England during the eighteenth century, it was not introduced to the United States until the early nineteenth century. Indeed, by 1780 the production of English salt glaze had been virtually supplanted by the manufacture of cream colored earthen wares (Lewis 1950:29). Salt glazing was accomplished by introducing sodium chloride into the kiln, where it quickly volatilized. The vapor reacted with the clay to form a sodium aluminum silicate glaze (see Billington 1962:210; Dodd 1964:239). The surface of the glaze is typically pitted and looks like citrus peel (Figure 6.13).

Stoneware may also be coated with a colored slip, a suspension of fine clay and a pigment. The Albany slip, named after the rich brown clay found near Albany, New York, first appeared in the 1820s. At first, it was mainly used for the interior of stoneware vessels. However, by the 1850s, it was also used as an exterior glaze. Bristol slip, an opaque white slip, was introduced late in the nineteenth century. It was often used in combination with Albany slip (Ketchum 1983:19). A third glaze often used on stoneware is the alkaline glaze. Like the Albany slip it was developed in the 1820s. The basic alkaline glaze is made up of wood ash, clay, and sand. Other additions may be slaked lime, ground glass, iron foundry cinders, or salt. These additions affected the color and texture of the glaze. Colors vary from olive to brown to a gray-green or yellowish hue, depending on adjustments in proportion of ingredients (Ketchum 1991:9). Most of the stoneware vessels from the site had salt-glazed exteriors and Albany-glazed interiors.

Redware (*N*=6) This ceramic type was made from about 1730 up until 1840. As an artifact category, redware comprises a broad spectrum of specific paste and decoration variations. It is generally manufactured from rather unrefined materials and fired at relatively low temperatures. Decoration may take the form of colored slips, colored glazes, incisions, etc. Since redware bodies tend to be quite porous, interior glazing is common on those vessels intended to hold liquids (Ramsay 1947:128 in Fay 1986). The lead glaze on redware affords the vessel a glossy surface finish that may be produced with a low firing temperature. A variety of glazes were recovered. Redware was commonly used from about 1780 through 1860.

Pearlware (*N*=1) The British potter Josiah Wedgwood is also credited for the invention and naming of pearlware, which replaced creamware (Noël-Hume 1972:232; Price 1979:10). "Pearl white," as Wedgwood referred to his new ware as early as 1779, is a late refined earthenware that exhibits a white paste and clear lead glaze to which a small amount of cobalt was added. Pearlware differed from creamware largely because



Figure 6.13. Fragments of salt-glazed stoneware (Vessel S2).

of the pearlware's whitened body and its bonding acceptance of blue painting and blue printing (Noel-Hume 1972:232-233). According to Noel-Hume (1985:129-133), pearlware "is the most common ceramic item found on sites of the early 19th century. It can readily be distinguished from late creamware by the way in which the glaze appears blue in the crevices of footrings and around handles." The popularity of British pearlware began to diminish by the 1820s, being replaced by especially locally made, hard whitewares.

The probable sherd recovered from the Boyle Site was an undecorated footring (Figure 6.14). Lofstrom et al. (1982:7) warns that undecorated pearlware vessels are quite rare and most "plain" sherds are actually from the undecorated portions of edge-decorated vessels. The presence of pearlware is particularly interesting and will be discussed in greater detail in the next chapter.



