An Archaeological Study of Common Coarse Earthenware in the Eighteenth-Century Chesapeake

Lindsay Bloch

A thesis submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Anthropology

Chapel Hill
2011

Approved by:

Dr. Anna S. Agbe-Davies

Dr. Vincas P. Steponaitis

Dr. C. Margaret Scarry

ABSTRACT

LINDSAY BLOCH: An Archaeological Study of Common Coarse Earthenware in the Eighteenth-Century Chesapeake
(Under the Direction of Anna Agbe-Davies)

As some of the most frequently recovered historic artifacts on domestic sites, common coarse earthenwares have great promise as an interpretive tool. However, archaeological common coarse earthenwares are not easily attributed to a particular potter or period. The earthenware potters operating in North America, England, and elsewhere in Europe largely shared manufacturing methods, vessel forms and decoration. For over two hundred years, the process of producing common coarse earthenware went largely unchanged. Through comparative analysis of domestic site assemblages across the Chesapeake, I demonstrate that common coarse earthenwares are not homogenous, instead exhibiting both temporal and spatial patterning. Over time, the proportion of coarse earthenware in ceramic assemblages decreased, and glazing patterns changed. Certain attributes of common coarse earthenware are more common at some sites than others, indicating differential availability or functional requirements among sites and sub-regions of the Chesapeake, and are perhaps evidence of discrete production origins.

ACKNOWLEDGMENTS

Many thanks to my advisor, Anna Agbe-Davies, and to my committee members Vin Steponaitis and Margie Scarry, for their support and guidance throughout this project. I would like to thank the Digital Archaeological Archive of Comparative Slavery (DAACS) for the data, without which this analysis would not have been possible. I am also indebted to Fraser Neiman, Sara Bon-Harper and the staff of the Monticello Department of Archaeology, who have been fundamental in helping me to develop my research skills in general, and this project in particular.

TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF FIGURES

Figure

CHAPTER 1:

INTRODUCTION

> The same poor Potter's work is still continued at York Town without any great Improvement or Advantage to the Owner, or any Injury to the Trade of Great Britain.
>
> –William Gooch

> Let us unite in solemn resolution and engagements with and to each other … by not consuming the British manufactures on which they are to levy the duties. Let us agree to consume no more of their expensive gewgaws. Let us live frugally, and let us industriously manufacture that we can for ourselves.
>
> -Benjamin Franklin

In 1736, Governor of Virginia William Gooch made his annual report to the English Board of Trade, reassuring the Board that domestic craft production was still no match for the imports of the mother country (Straube 1995:30). His description of the "poor potter" affirms common statements made by historians about craft production in the American colonies; namely that it was insignificant in comparison to the quantity and quality of imported goods (Breen 2004:68; Bridenbaugh 1950; Russo 1988). However, the potter to which Gooch referred was, in fact, "the owner one of the largest, most significant, and most successful pottery factories in colonial America" (Barka 2004:17). Documentary and archaeological sources show that the "poor potter" William Rogers had a prosperous business, reaching consumers throughout the colonies of the Mid-Atlantic (McCartney and Ayres 2004:55), and as distant as the West Indies (Straube 1995:30). Governor Gooch's vague language conveyed the idea that the potter's goods were inferior and his production small-scale, intentionally downplaying the role of colonial

production in the local economy (Barka 2004:18). Knowing that the British government actively discouraged American industry that it saw as competition to its own exports (Dickerson 1912:301), it is likely that many colonists chose to conduct their business covertly. Whether due to acts of active or passive omission, little was recorded about the burgeoning craft industries in the American colonies. Influential men such as Benjamin Franklin promoted economic self-sufficiency for the colonies, especially in the years leading up to the Revolution (1768[1837]:253). The local, regional, and inter-regional trade of American-made goods throughout the seventeenth and eighteenth centuries brought together disparate individuals and interests, fostering a sense of shared American experience. Though generally not a major threat to English trade (Dickerson 1912:302), the products of American craftspeople may have played a large social role in colonial life, paving the way for independence by fulfilling the needs of everyday life.

Overall, our understanding of colonial craft production is lacking, partially due to fragmentary documentary evidence (for overview see Bridenbaugh 1950; Quimby 1984). Archaeology is well suited to the task of redressing this problem, through the recovery of tangible evidence of domestic craft production. By analyzing archaeological sites of craft production and their output, in the form of artifacts, it is possible to shrink this gap in our knowledge of early American life. Specifically, by tracing craft products from their origins to their use contexts, we will better understand the contributions of early North American craftspeople to the construction of an American society. Crafts were made to be used; only by understanding the entire process, from manufacture to final discard, will we come to know the full extent of their use, as objects and as symbols. By delineating the historical relationships between producers and consumers of these crafts, we will be

able to address not only economics but also social networks within communities and across the colonies more broadly.

Ceramics are a logical choice for research into craft production, as ceramics are more durable than most materials, and thus preserve well archaeologically. Additionally, they are nearly ubiquitous on historic archaeological sites. Common coarse earthenware, as one of the few ceramic types manufactured in quantity in the American colonies, was chosen for this analysis. This study represents the first stage in a larger research project investigating the sources of these coarse earthenwares in the eighteenth-century Chesapeake. While encompassing a fairly small geographic area, the Chesapeake represents a historically distinct region, through its early European settlement and tobacco-based agriculture. Spanning the colonial and republican eras, and still largely pre-industrial, the eighteenth century was a time of great change within the Chesapeake, reflected in the region's ceramic assemblages. The long-term research agenda is to ascertain where the common coarse earthenwares used in the Chesapeake were produced, and the routes through which they entered domestic assemblages.

However, it is first necessary to define the variation present within the ware as a whole. In this initial portion of the study, I have analyzed ceramic assemblages from enslaved domestic sites of the eighteenth-century Chesapeake, in order to identify the artifact attributes that could signal meaningful variation. Distinctions among assemblages were found to represent temporal and spatial patterning in common coarse earthenwares. The variation among assemblages may signal localized production or distribution of common coarse earthenwares, as well as specific functional requirements of households. These results emphasize that historic utilitarian ceramics, exemplified by

common coarse earthenwares, do not form a homogeneous group, but instead vary in meaningful, and to an extent predictable, ways.

CHAPTER 2:

COMMON COARSE EARTHENWARES

On historic sites in the Chesapeake region, household ceramic assemblages commonly contain a wide variety of ware types, from coarse earthenwares and stonewares to refined earthenwares and porcelains. These types represent both utilitarian vessels used for storage, food preparation, and other household activities, as well as finer forms meant for the table. Prior to the twentieth century, most wares used in America were produced in England and other European countries, with the exception of porcelain, predominantly of Asian origin. Nevertheless, a few ceramic wares were successfully reproduced in North America as well. Small potteries for local markets sprang up almost immediately after colonization to meet the needs of the expanding European-American population. As early as the 1620s, pottery was being produced in Virginia, near Jamestown (Straube 1995:5; Figure 1). In the early years North American potters mainly produced coarse earthenwares, transitioning to stoneware production in the early to mid-nineteenth century. Lead glazed on the interior, exterior, or both, American-made coarse earthenwares often were produced in simple, undecorated forms, without makers' marks. The term "common coarse earthenware" will be used to distinguish these wares from decorated coarse earthenwares, such as Moravian slipwares, and other named coarse

earthenware types of American or European manufacture. It must be noted that the wares I am considering here are habitually identified as "redware," reflecting the color of the fired ceramic body. However, this term does not accurately convey the range of colors in which these vessels are found. While the name "common coarse earthenware" is less frequently used, it does have historical precedent (Myers 1984b:205), and better encompasses the characteristics of these wares, descriptive of both their ubiquity and plainness.

Figure 1. Common coarse earthenwares produced at Jamestown, between 1625 and 1640. Excavations uncovered the site of the kiln in 1955. Image: Cotter and Hudson 1957.

Defining the Research Problem

Within the Chesapeake region, the lack of research linking production areas to use contexts has limited the utility of coarse earthenwares for archaeological interpretation. Most broadly, these wares have two possible origins: domestic production within the Chesapeake and neighboring colonies, or importation from European, predominantly English, sites of production. There are several documented and archaeologically tested areas in or near the Chesapeake where pottery was being produced in quantity during the eighteenth century. These include the Rogers pottery in Yorktown, (Barka 1973, 2004; McCartney and Ayres 2004; Straube 1995) and Henry Piercy's pottery in Alexandria (Magid and Means 2003). However, most production operated at a smaller scale, in rural areas. With some exceptions (see Russ 1999), small-scale local pottery production sites exist largely outside of the historical or archaeological record of the Chesapeake.

It has also been commonly hypothesized that many coarse earthenwares found archaeologically in the Chesapeake were produced domestically outside of the region, in larger potting centers such as Philadelphia (Bower 1985; Pendery 1985; Steen 1999) or central North Carolina (Heath 1999:58). Common coarse earthenwares were also shipped directly to the Chesapeake through trade with England. Though producing in different quantity, the potters operating in North America and Europe largely shared manufacturing methods, vessel forms and decoration, and the differences between their wares have not been systematically examined (Turnbaugh 1985b:2). Lacking concrete evaluations of their differences, common coarse earthenwares are not easily attributable to one distinct source, and therefore the mechanisms through which they were obtained historically remain uninvestigated.

There have been two prevalent assumptions about early pottery production in the American colonies as a whole, and the Chesapeake region in particular: either it was rare and largely unnecessary, or it was a common practice, but the products were somehow inferior to imported goods. Those of the first position suggest the domestic tradition in the Chesapeake to have been negligible in comparison to imported wares, considering that "the majority of seventeenth- and eighteenth-century coastal plantation culture settlers produced little redware, relying instead on cheap and plentiful English imports" (Turnbaugh 1985:23). Finding no potters in the documentary record of Talbot County, Maryland, Russo (1988:401) concludes that, "competition from the abundant imports pouring into the colony explains the complete absence of such crafts as pottery." Economic strategies of the colonial powers did indeed limit local industries, but the presence of kiln sites in both urban and rural settings instead points to pottery manufacture as a widespread practice in the colonies. Others, recognizing this, have positioned the domestic coarse earthenware tradition as an effective if not laudable competitor with English imports:

> By the mid [eighteenth] century much of the colonists' ceramic need was filled by local craftsmen. The word *local*, however, remained the key to American potting well into the eighteenth century, for most of the products were vastly inferior to imported wares and so did not find markets beyond their area of manufacture, where they had the advantages of cheapness and availability [Noël Hume 1969:98-99; emphasis in original].

Local it seems, can be pejorative. While there are underlying historic trends that support an interpretation of limited craft production, disciplinary biases to some extent have kept us from further exploration of the topic. As is clear from Noël Hume's statement and his use of the term "inferior," investigations into the origins of these wares has not been treated objectively by historians or archaeologists. Why does Noël Hume describe

American-made coarse earthenwares as inferior? The inferiority does not seem to have been a matter of technical skill, as he writes in the same passage "in the lowly field of coarse, lead glazed earthenwares the colonial potters were the match of their English cousins" (1969:99). Yet again, the judgment reflected by "lowly" speaks to some other aspect of the wares; namely to their utilitarian nature and lack of ornamentation. It is these qualities of common coarse earthenwares that have led to their dismissal as objects of study. Though present archaeologically, common coarse earthenwares have not been viewed as useful by archaeologists.

Decorative elements appeal to archaeologists aesthetically, but also pragmatically, as decoration is seen as one of the most viable distinctions upon which to establish classification systems and site chronologies. In such a mindset, simple, undecorated wares appear homogenous and thus unhelpful as tools in answering archaeological questions. However, Russ (1999:222) observes, "the attitude that coarsewares are of limited value for interpretation is not based on any study or data which detail their lack of utility for understanding the past." Russ suggests that it is simple prejudice rather than any fundamental problem with the wares themselves that has precluded their use.

I believe that the value of common coarse earthenwares for archaeological analysis lies in their ordinariness. Common coarse earthenwares are found at many archaeological sites. They were used by the rich as well as the poor, by the free and the enslaved. They formed readily available and "acceptable" parts of most household assemblages (Teller 1985:254). Writing about the nineteenth century, but equally applicable to the eighteenth, Neuwirth and Hurry argue,

> The apparent sameness of … consumer culture hides worlds of unique regional and cultural practice, that can inform us about the differences between urban and

> rural cultures, about ethnic diversity and assimilation, about world view, and about regional differences and the uniqueness of different communities who joined the market economy at different rates and times [1999:143].

Though at first glance appearing homogeneous or unpatterned, assemblages of common coarse earthenwares demonstrate variation reflective of the social realities of life in the Chesapeake. Determining how and why common coarse earthenware assemblages varied is a crucial step to understanding the relationships among craftspeople, merchants, and consumers in the eighteenth-century Chesapeake. Assemblages may have varied due to the specific functional requirements of households, or through differences in the availability of manufactured goods at the local or regional level. Both reasons would have affected the strategies of a potter.

How did local potters participate within the market and how successfully did they compete with imports? Was the Chesapeake consumer a passive purchaser of anything available or an active agent requesting certain forms or styles of common coarse earthenware? Were personal relationships with the neighborhood potter a factor in consumption choices? In order to address these questions, it is necessary to establish connections between production and consumption of common coarse earthenwares, linking vessels from their manufacturing sites to the sites of their eventual use and disposal. Lacking immediately recognizable distinctions, common coarse earthenwares must be analyzed in a way that best discovers underlying variation. Sourcing strategies for ceramics are rapidly evolving and increasingly feasible for archaeologists. Determining the source of ceramic wares through the chemical characterization of their pastes and glazes is the long-term goal of this project. However, prior to such a focused scientific study, it was first necessary to examine the attributes of common coarse

earthenware more basically, in order to define the variation within the ware type. With an understanding of the macroscopic variation it is easier to develop meaningful hypotheses that can be tested using chemical characterization techniques. I therefore approached this analysis with three main questions: (1) What are the diagnostic attributes of common coarse earthenware? (2) Does common coarse earthenware within the Chesapeake exhibit temporal patterning in its frequency or attributes? (3) Does common coarse earthenware exhibit spatial patterning in its frequency or attributes?

These questions were answered through the analysis of archaeological materials from predominantly eighteenth-century slave quarter sites across the greater Chesapeake. Using exploratory data analysis techniques, I have found that sites in the Chesapeake have demonstrable differences in their coarse earthenware assemblages. Patterns within the data indicate local as well as regional trends in common coarse earthenware usage, and change in these wares through time. Though my results do not concretely reflect specific locations of manufacture, the results suggest intraregional variation, which may represent localized production or distribution of these wares.

Below, I will explain the history and production of common coarse earthenwares, and the ways in which they have been previously studied, in order to contextualize my units of analysis within the broader discipline.

General Attributes of Common Coarse Earthenware

Coarse earthenwares are low-fired wares, frequently with visible paste inclusions. Fired below 1000°C, the clay body of the vessels remains unvitrified and therefore somewhat porous (Rice 1987:5). In order to render earthenwares less permeable, North

American potters normally glazed the wares on one or more surfaces. On historic sites in North America, coarse earthenwares may present with a wide range of paste colors—from bright orange to dark brown or lighter colors of buff or yellow. These colors are representative of two interrelated factors: the chemical composition of the clay, and the way in which the vessel was fired. Often, the color of the fired paste will vary from the color of raw clay. Note that the term coarse earthenware is established to distinguish these wares from refined earthenware, which, though similarly low-fired, tends to have a lighter colored and finer-grained paste. Refined earthenwares such as creamware and pearlware were commonly produced as tablewares, and press-molded or slip-cast rather than wheel thrown. Also, with few exceptions (Bivins 1973; Hudgins 2009; Hunter 2009; South 1999), refined earthenwares were not produced in North America prior to the nineteenth century.

During the historic period in North America, coarse earthenwares were available from a number of sources. In addition to its own domestic production, England imported wares from the Netherlands, France, Germany, Italy and Spain (Barker 1999), which then made their way to across the Atlantic to the English colonies. By the eighteenth century, several well-known production sites in England, centered around London and in the West Country, were producing common coarse earthenware for the British and colonial market (Nenk and Hughes 1999; Noël Hume 1969:102). Regional British and European ware types have been generally well defined through distinctive decoration, shape or other attributes. For example, Buckley-type ware (Figure 2) is typically found in utilitarian forms such as milk pans. It has an unusual marbled paste made by combining red and yellow clays, and is almost always black glazed. Produced in Buckley, in northwest

England, and a handful of other British sites, its production origins may be fairly clearly defined. Unfortunately, not all historic coarse earthenwares can be sourced through visual inspection. Undecorated lead glazed coarse earthenwares with a range of paste colors (Figure 3) were produced in both Europe and North America.

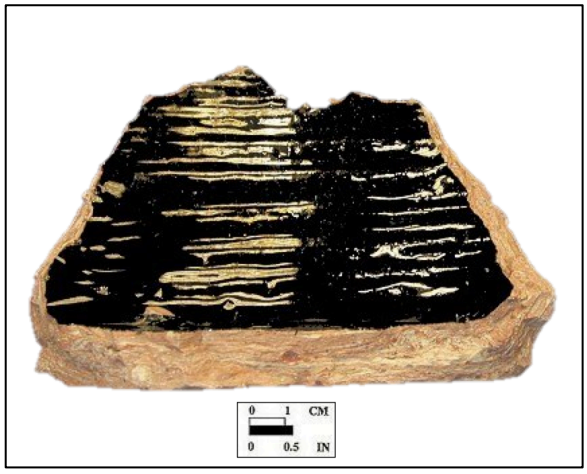

Figure 2. Buckley-type ware with characteristic marbled paste and shiny black glaze. Oxon Hill Site 18PR175, Maryland. Image courtesy of the Maryland Archaeological Conservation Lab.

Figure 3. Common coarse earthenware sherds recovered from kiln sites in North Carolina, reflecting range of paste color. (a) Solomon Loy Site 31AM191, Alamance County. (b) William Dennis Site 31RD981, Randolph County. (c) and (d) Henry Loy/Jacob Albright Site, Alamance County.

Utilizing the manufacturing techniques they learned in their homeland, the first potters to arrive in the colonies were English, setting up workshops in New England and the Mid-Atlantic. In the eighteenth century, Huguenot, Moravian, and other German

immigrants began to arrive, settling in Pennsylvania and western Maryland, and producing distinctive types of slip-decorated coarse earthenware in addition to common coarse earthenwares. Later, these populations migrated into western Virginia and the North Carolina piedmont along the Great Wagon Road and other colonial trails, establishing pottery traditions in these new locales.

Methods of Production

Producing pottery was labor intensive and took skill, but had fairly few material or equipment requirements and thus could be done cheaply (Myers 1984a:52). Pottery making was typically learned through apprenticeship, as with other trades at that time (Starbuck and Dupré 1985:144), or less formally taught within families (Beckerdite et al. 2010:19; Carnes-McNaughton 1997). Common coarse earthenwares were produced in both urban and rural areas. Generally, goods made in urban workshops were distributed locally and regionally, through retail and wholesale settings (Daniels 1993:753). These were more commonly full-time ventures, with multiple employees and permanent setups. Despite the time commitment necessary to learn the trade, there is evidence that many potters did not produce full-time; rather there was a tradition of the rural farmer-potter who turned to making pots in order to supplement agricultural income, or vice versa (Starbuck and Dupré 1985:151, Worrell 1985b:153). Farmer-potters worked within the rhythms of rural life, accommodating the needs of their neighbors and anticipating seasonal pottery demands (Myers 1984a:55). The small-scale nature of the craft as practiced by many early potters, and traditional methods, have made the term "folk pottery" common in the literature for referring to this American tradition. The folk

tradition, ascribed to rural production, is distinguished from urban production. For example, within the Chesapeake, the William Rogers site in Yorktown would be classified as urban, while the Jamestown pottery site (Cotter and Hudson 1957; Straube 1995) is typical of rural production.

The most pressing need for a potter was a steady supply of clay with the necessary properties for ceramics manufacture. Some potters established their shops near suitable clay beds (Pendery 1985:68), so they could easily extract the clay they needed. The raw clay was dug and separated through various methods to remove larger particles and impurities. After being consolidated, the clay was then ready to be worked. Historic coarse earthenwares mostly were wheel-thrown, though some forms were press-molded or drape-molded. While using a wheel was a fast way to produce many forms, it had some limitations. Press-molding (described in Brown 2009) was a technique that worked well for small and detailed forms such as figural bottles; while drape-molding, laying flattened slabs of clay into or over a mold, was a way to produce large, open forms such as platters that were difficult or time consuming to create on the wheel. Potters incorporated multiple shaping techniques on vessels through the addition of handles, spouts, and decorative elements.

A competent potter could manufacture dozens of nearly identical vessels a day (Worrell 1985b:157). Once the vessels had dried sufficiently, slip decoration could be applied, though utilitarian wares were generally left unadorned. Then the pots were ready for the kiln. Kilns were built of brick, sometimes dug partially into a hillside, which enhanced stability and heat retention. It was difficult to control the air intake and maintain an even firing temperature throughout these kilns, though developments such as

the downdraft kiln increased the efficiency and control over time (Rye 1981:100). Kilns required frequent maintenance and replacement (for a more complete description of the types and workings of earthenware kilns see Carnes-McNaughton 1997). Second to clay and glaze materials, potters also needed a steady supply of fuel for the kiln. In England, coal was regularly used as fuel, but in America wood was more widely available.

Prior to the mid-eighteenth century most coarse earthenwares were only once fired, and were dusted with powdered glaze prior to being placed in the kiln. However, in the later period, potters developed a glazing technique using liquid glazes. In this case, the pots were usually fired first without glaze, at a lower temperature, in order to consolidate the vessel and remove water. This process was called a bisque or biscuit firing. Then the bisqued pots were dipped in a liquid glaze and fired a second time in a glost, or glaze, firing to maximum temperature. This two-step firing process resulted in better glaze adhesion (Rice 1987:99).

Glazes for coarse earthenwares predominantly were lead-based. Lead acts as a flux, lowering the melting temperature so that the glaze could vitrify at the kiln temperature for coarse earthenware. The lead was obtained from ore sources, or in a more refined state, such as lead shot or bars (Starbuck and Dupré 1985:143). Either was then ground to a powder with other ingredients. Without the addition of colorants, lead glaze was clear and shiny, though often with a yellowish tinge that brightened the underlying paste. Most lead glazes were translucent: different quantities of iron would produce olive green or brown; manganese would produce a more opaque brown, and in larger quantities would create an opaque black glaze (Comstock 1994:55-59). Copper was sometimes used as well to produce green. These four variants, clear, brown, green

and black formed the basic glaze repertoire of early American potters. Though it appears they were able to generally exert control over the colors produced, inconsistencies within the glaze compound or firing process could produce uneven results. Worrell (1985a:95), documenting the workings of a reproduction pottery workshop has found this to be the case: "a manganese compound that regularly produces a lustrous black glaze has occasionally become bright green." Thus, the glaze colors found on finished pots may not always reflect the color intended by the potter. The application of an all-over slip, known as an engobe, or of an oxide wash prior to the bisque or glaze firing could also change or enhance the color of the fired vessel.

Use and Decline

Potters regularly sold their wares straight out of the kiln, announcing a kiln unloading through newspapers (Gibble 2005:36) and word of mouth. Remainders or special commissions were sold at other times to individuals and retailers. Being low-fired, common coarse earthenwares were somewhat fragile and subject to frequent breakage and replacement, but their affordability partially made up for this shortcoming. Coarse earthenware served a wide range of purposes in the home. At one Massachusetts site occupied from 1681 to 1784, Turnbaugh (1983:3) reports that nearly 90% of all ceramics at the site were North American-made wheel-thrown earthenwares, most meant for the table. This is in contrast to the Chesapeake, where coarse earthenware is not the predominant ware type, and most examples found archaeologically represent utilitarian wares rather than tablewares. Both teawares and tablewares were used for food service and consumption, while utilitarian forms were used for food preparation and storage

(Table 1, Figure 4). Hygiene forms, such as chamber pots, were also made of common coarse earthenware.

Table 1. Common Vessel Forms by Vessel Type

Teawares	Tablewares	Utilitarian
coffee and chocolate pots	mugs	bowls
handled tea cups	pitchers	jugs
saucers	plates	milk pans
sugars	platters	pipkins
tea bowls	soup bowls	storage bottles
teapots	tankards	storage jars
	tureens	

Note: after DAACS 2008

Figure 4. Vessel forms. Row 1, tea and tableware forms: teapot, saucer, mug, pitcher, tankard, plate. Row 2, utilitarian forms: bowl, jug, pipkin, milk pan. Row 3, utilitarian forms: storage pots or jars. After Beaudry et al. 1983.

Lead is toxic, and lead poisoning due to chronic exposure was a significant danger for potters and consumers alike. Contact with acidic elements such as vinegars and milk caused the lead to leach from the glaze, mixing into the food. Though knowledge of the occupational dangers of lead had been known for some time, by the early nineteenth century, consumers began speaking out about the lead content of their domestic wares (Comstock 1994:54; Myers 1984a:56). With the growing recognition of this danger, as well as discontentment with the fragility of coarse earthenwares, and increasing technological capacity on the part of the potters, stoneware production became more prevalent in America. Stoneware required new clay bodies and glazes that could withstand higher temperatures. Stoneware is fired above 1200˚C, which vitrifies the clay, making it less permeable to liquids, especially with the addition of an alkaline or salt glaze. By the mid-nineteenth century, coarse earthenware production in the United States was greatly reduced, more often limited to certain specialized forms such as drain tiles (Barber and Hamell 1971), flowerpots (Myers 1984a; Starbuck and Dupré 1985:143), grave markers (Veit and Nonestied 2003) or industrial uses such as sugar molds (Magid 2005; Zipp and Zipp 2004).

Studies of Common Coarse Earthenware

Common coarse earthenwares in America have been investigated by scholars in a variety of academic fields, primarily archaeology, history, and folklore, as well as by antiquarians and collectors. In the twentieth century, collectors of early American crafts became interested in folk pottery, prompting research into its origins. These non-academic studies have frequently been of use to archaeologists, in understanding the

techniques and sites of American pottery production. However, the works geared towards collectors are less helpful for identifying artifacts. Often the extant examples being considered by collectors represent rare forms or decorative techniques, rather than the plain utilitarian wares most commonly found archaeologically. As Worrell (1985b:162) comments,

> that preoccupation is due to the fact that the common utilitarian redwares, which make up the overwhelming preponderance of historical production, broke during use or were overlooked by collectors and art historians whose fixation with high style and things unusual is endemic.

Within archaeology as well, though we are accustomed to broken pots, these wares have received little attention because their generic nature makes them "undatable" (Bower 1985:265). The discrepancy between the museum collections and reference manuals we have at our disposal and our archaeological assemblages makes it difficult to learn about and compare the more pedestrian vessels. Instead, it reproduces a system where some pots are valued and analyzed as individual works of art, while others are classed generically; their ubiquity obviating the need for the same degree of description and analysis.

One way in which archaeologists have approached the study of coarse earthenwares has been through the development of vessel form typologies. Classification systems in general and types in particular are created by archaeologists as problem-solving tools, and thus may reflect more the needs of the archaeologist than the realities of the past. The question of whether assigned types reflect "real" differences in how artifacts were recognized by past people is a consistent subject of debate within the discipline (Hill and Evans 1972; Wylie 2002). The Potomac Typological System (POTS), a folk typology for common coarse earthenware was developed by Beaudry et al

(1983). The system arose out of frustration with the proliferation of terms for vessel forms that were unevenly used and at times nonspecific or overlapping. In their search for better terminology, Beaudry et al. turned to historical documents such as probate inventories, discovering the names given to these forms by the people who had used them. Though established within records and assemblages of the Chesapeake, later scholars have adapted POTS for use in Massachusetts (e.g. Turnbaugh 1985a) and Pennsylvania (e.g. Gibble 2001, 2005).

The explicit use of folk taxonomy was an attempt to establish categories that reflect past realities, and therefore have relevance outside of the mind of the analyst. Within historical archaeology it is sometimes more effective to create folk typologies, such as POTS, which return to traditional classifications. Such a typology provides a useful way to think about the functional variation of vessel assemblages, providing a common language in which to converse. However, whole or reconstructable vessels must be present within an assemblage in order to make use of the system, a pre-requisite that often is unavailable in archaeological collections.

Studies of common coarse earthenwares and other domestically produced pottery largely have focused on production sites to the exclusion of sites of ceramic use, an oversight that this study hopes to address. Production sites have been located through documentary sources or traditional local knowledge. The best-documented regional pottery traditions are those located in the northeast (e.g. Turnbaugh 1985; Watkins 1950) and the middle colonies (e.g. Branin 1988; Gibble 2005; Lasansky 1979). North Carolina pottery traditions are increasingly receiving attention as well (e.g. Carnes-McNaughton 1997; South 1999; Zug 1986; 2009 and 2010 issues of *Ceramics in America* are dedicated

to North Carolina earthenware). An overview of known kiln sites throughout Virginia is provided by Russ (1999), yet, for much of the Chesapeake region pottery production is sparse or unknown. In Virginia, collectors have intensively studied the output of potters who moved into the Shenandoah Valley in the late eighteenth century (e.g. Comstock 1994; Rice and Stoudt 1929; Wiltshire 1975), but archaeological analysis in that area has not followed. Archaeological investigations have however uncovered multiple late seventeenth- and early eighteenth-century pottery production sites in the tidewater. Straube (1995:5) provides a synthesis of information on these sites, but observes that "from the mid-eighteenth century to the beginning of the nineteenth century there is no evidence of coarse earthenware being produced in tidewater Virginia." Urban production sites other than the William Rogers site in Yorktown, many producing both coarse earthenware and stoneware, have been excavated in Baltimore (e.g. Magid 2005; Myers 1984a) and Alexandria (e.g. Magid and Means 2003; Zipp and Zipp 2004). This fragmentary map of pottery sites in the Chesapeake provides a sharp contrast with the American colonies to the north, where pottery production is better documented, more consistent, and more visible archaeologically. Does the invisibility of historical potters in the Chesapeake signal a lack of production; or were its potters just operating out of sight?

Returning to the first assumption made about the Chesapeake pottery production, namely that it was unnecessary; due to the region's particular history and development, it is likely that the residents of the Chesapeake did not require locally made pottery and other crafts in the same ways as other colonies (Bridenbaugh 1950; Russo 1988; Walsh 1988). During the colonial period, the Chesapeake region was distinct from the middle colonies to the north, and the Carolinas to the south, largely because of its trade in

tobacco. In writing about eighteenth-century planters in Virginia, Breen (2001:41) explains, "tobacco touched nearly every aspect of their existence. It was a source of the colony's prosperity, a medium for commercial transactions and payment of local taxes, and a theme of decorative art." Much of the trade operated through the consignment system, in which planters sold tobacco directly to English merchants and received manufactured goods from England in return. "Absent viable alternative sources of market revenue, tobacco production and the exchange of export earnings for imported goods and services … drove the seventeenth- and early-eighteenth-century Chesapeake economy" (Walsh 1999:57). Though planters abandoned tobacco monoculture over the course of the eighteenth century in response to falling market prices, the tobacco trade nevertheless structured the economic system of the Chesapeake. The land requirements for tobacco growing and the need to easily ship the harvested crop also influenced the settlement patterns of the Chesapeake colonists, who established isolated plantations along water networks rather than nucleated settlements (Breen 2001:42-43). Pre-nineteenth century, rural residence was the standard. Towns developed very late in the Chesapeake; the colonial governments had to enact laws to force the founding of towns, because they were not economically useful to the colonist trading directly with England (Luckenbach 2002:132). Instead, "London was the metropolitan center" for the Chesapeake (Carr and Walsh 1988:139). The lack of markets and centralized customer bases that would exist in urban areas have been proposed as factors that kept potters from plying their trade in the rural Chesapeake (Russo 1988:423; Walsh 1988:218).

However, pottery shipped from England as payment for the yearly tobacco harvest likely would not have satisfied all the needs of an early Chesapeake resident.

Local pottery production or intercolonial trade of pottery may have filled gaps within domestic pottery assemblages. The absence of documentary records for domestic pottery production is not atypical; as many scholars of the northeast have commented, rural pottery production existed largely outside of official records (Russo 1988:399). "Rural potters were so taken for granted that only the sparsest evidence for them exists in primary documentation" (Worrell 1985a:84). Even though census records exist for many areas, "potter" is rarely listed as occupation (Starbuck and Dupré 1985:133). Commonly, rural potters considered themselves first and foremost as farmers. Worrell (1985b:163) suggests that being a farmer was valued more highly than being a potter or artisan in some early American communities. The "nuisance" status of pottery production areas, due to their mess and smoke, may have also led to their absence in historical records (Schooner 2002:246). Additionally, as referenced previously, we must recognize the possibility that willful downplaying of American craft production was a strategic tactic on the part of colonists, leading to gaps in documentary evidence. Further investigation into the products, sites, and documentary sources of common coarse earthenwares are needed in order to better grasp the extent of pottery production in the Chesapeake.

Though much pottery was likely made in the folk tradition, considering only this scale of manufacture reinforces the conception of North American pottery as provincial: being made in small numbers for very local consumption (i.e. Hume 1969:98-99). The systems of both local and regional production must be acknowledged as contributors to Chesapeake ceramic assemblages. Though the Chesapeake colonies of Maryland and Virginia did not participate as widely in intercolonial trade as the colonies to the north (Shepherd and Williamson 1972:797-801), they did have documented economic

relationships with other colonies (Klingaman 1969; Merritt 1964), and especially with Pennsylvania (Gough 1983:411-412). Those who have considered intercolonial imports of coarse earthenwares into the Chesapeake particularly cite Philadelphia as a source (Bower 1985; Pendery 1985; Steen 1999).

Steen (1999:69) has explicitly considered the movement of Pennsylvania coarse earthenwares through intercolonial trade, finding examples of these wares as far away as Bermuda and Barbados. He argues that "the tendency for the colonies to trade among themselves indicated a growing economic independence that would soon translate into political independence." From this point of view, domestic craft in the English colonies was an important factor in attaining the social cohesion necessary for revolt. Though Steen's study focuses on slip decorated coarse earthenwares, it nevertheless challenges the assumptions made about the provincial nature of coarse earthenwares more generally, and affirms the significance of craft production in the colonies as meaningful beyond the service of immediate and local material needs.

Common coarse earthenware production in the British colonies was a continuation of earlier European traditions, but was also innovative. Though many techniques and the resulting vessels were largely unchanged through time, potters working in North America adapted the customary technology and methods to account for new environmental and economic conditions. The output of early American potters has been studied most commonly for its aesthetic value, rather than its function and resulting economic or social significance. In order to redress this imbalance, I have undertaken an analysis, based on archaeological materials, that foregrounds utilitarian pottery and the

ways in which domestic ceramic assemblages reflect both the needs of eighteenth-century Chesapeake households and the potter's role in fulfilling them.

CHAPTER 3:

CHESAPEAKE ARCHAEOLOGICAL ASSEMBLAGES

The data analysis portion of this research considers common coarse earthenwares found on 22 Chesapeake household sites occupied by enslaved individuals, and ranging in occupation date from approximately 1690 to 1830. The excavation and artifact data from these sites have been made available through the Digital Archaeological Archive of Comparative Slavery (http://daacs.org). DAACS is a Web-based initiative to promote comparative quantitative analysis among historic sites. An initial goal of DAACS was "to convert archaeological artifacts and data into evidence that can be brought to bear on important questions in the cultural, social, and economic history of the Chesapeake" (DAACS 2010a), though this goal has since been expanded to include research in the Carolinas and Caribbean. In order to facilitate this comparative research, DAACS has developed a relational database, along with standardized recording and cataloguing protocols, so that site excavation and artifact data from multiple sites can be integrated and evaluated. In this manner, data from sites excavated at different time periods by different archaeologists have become not only available, but also mutually intelligible.

As the name implies, DAACS is concerned primarily with the history of slavery in the US and the Caribbean. Thus the sites entered into DAACS are typically known or suspected domestic sites for enslaved Africans and African-Americans. While the

historic use of coarse earthenwares in the Chesapeake was not tied to slavery, neither were enslaved individuals excluded from using or purchasing these goods, as common coarse earthenwares are found in quantity at most of the DAACS sites within the region. At this exploratory stage, the DAACS data provide a more than adequate sample of common coarse earthenwares. On the other hand, the focus on African-American ceramic assemblages also introduces its own particular set of questions, and opportunities for interpretation. The experience of enslavement and the possibilities for consumer choice within it varied regionally and individually. As I will later discuss in greater detail, the consideration of common coarse earthenware and other utilitarian wares at slave quarter sites may add further nuance to understandings of the foodways and domestic practices of enslaved individuals in the Chesapeake. Not to lose sight of the larger goals of this project, it is anticipated that later stages of research will incorporate data from non-slave sites as well, in order to ensure that a representative sample of coarse earthenware has been obtained for the region.

The 22 site assemblages under analysis include all currently available Chesapeake sites in DAACS (Figure 5, Table 2). The Chesapeake can be further divided into the piedmont and coastal plain. When Europeans arrived, they settled first along the coast, which had easier access to trade through waterways, as well as fertile alluvial soils. Only once the coastal plain had been fully populated did colonists move westward past the fall line and into the piedmont (Savelle 1973:311). Piedmont communities were smaller and more remote from broader trade networks; though rivers continued to be important to the movement of people and goods, overland routes may have connected the piedmont more closely to neighboring colonies than to the coastal portions of Virginia and Maryland.

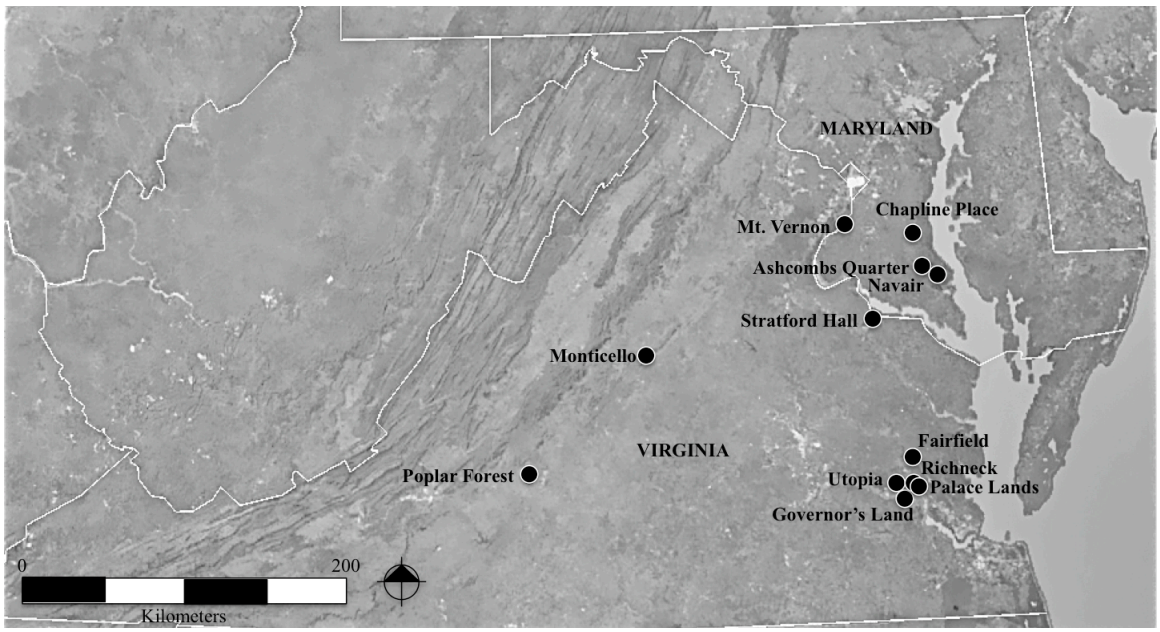

Figure 5. Map of the greater Chesapeake region with the location of DAACS sites used in this analysis. Monticello, Poplar Forest and Utopia plantations contain multiple sites.

Table 2. Chesapeake Sites Used in Analysis

Plantation	Site Name	Occupation Date Range	Mean Ceramic Date	Subregion
Ashcombs Quarter	Ashcombs Quarter	1700-1750	1773	Coastal Plain
Chapline Place	Chapline Place	1750-1810	1774	Coastal Plain
Fairfield Plantation	Fairfield Quarter	1700-1750	1779	Coastal Plain
Governor's Land	44JC298	1690-1720	1751	Coastal Plain
Monticello	Site 8	1750-1805	1791	Piedmont
Monticello	Site 7	1750-1805	1778	Piedmont
Monticello	Building o	1770-1790	1791	Piedmont
Monticello	Building s	1770-1826	1810	Piedmont
Monticello	Building l	1780-1810	1796	Piedmont
Monticello	Building t	1793-1826	1803	Piedmont
Monticello	Building r	1793-1826	1806	Piedmont
Monticello	Elizabeth Hemings Site	1800-1807	1797	Piedmont
Mount Vernon	House for Families	1759-1792	1763	Coastal Plain
Navair	Navair	1750-1800	1790	Coastal Plain
Palace Lands	Palace Lands Quarter	1740-1780	1783	Coastal Plain
Poplar Forest	North Hill	1770-1780	1795	Piedmont
Poplar Forest	Quarter Site	1790-1810	1797	Piedmont
Richneck	Richneck Quarter	1750-1770	1764	Coastal Plain
Stratford Hall	ST116	1770-1820	1783	Coastal Plain
Utopia	Utopia II	1700-1730	1763	Coastal Plain
Utopia	Utopia III	1730-1750	1780	Coastal Plain
Utopia	Utopia IV	1750-1780	1762	Coastal Plain

The piedmont is represented in this analysis by 10 sites from two plantations, Monticello and Poplar Forest. It is noteworthy that the same man, Thomas Jefferson, owned both of these plantations, and thus it is necessary to consider the possibility that similar management may have played a role in shaping the ceramic assemblages found in the piedmont. The analysis also includes 12 coastal plantation sites ranging geographically from the western shore of Maryland, across the Potomac River to northern Virginia, and south to the tidewater region of Virginia. In this research, I have considered the Chesapeake region as a whole, as well as the smaller sub-regions as units of analysis, in order to pinpoint more localized differences in ceramic assemblages.

Units of Analysis

Within the larger ceramic assemblages of these sites, I have focused on coarse earthenwares likely of Euro-American manufacture for this analysis, though as I discuss in greater detail below, it is necessary to contextualize these wares within a site's complete ceramic assemblage. DAACS classifies coarse earthenwares into the named types listed in Figure 6. Of these, I am considering two for analysis, Redware, and Coarse Earthenware, unidentified (CEU). By far, they represent the most frequent coarse earthenware types on these sites. Ceramics classified as Redware within DAACS are coarse earthenwares with a paste color falling within a range of four colors found within the Munsell Glossy Color Book: 2.5YR 5/6, 5YR 6/6, 5YR 5/10 or 2.5YR 4/10 (DAACS 2008:25). Any coarse earthenware not classified as Redware under this rubric, and not matching any other coarse earthenware type, is classified as coarse earthenware, unidentified (CEU). Figure 7 shows common paste colors for each ware.

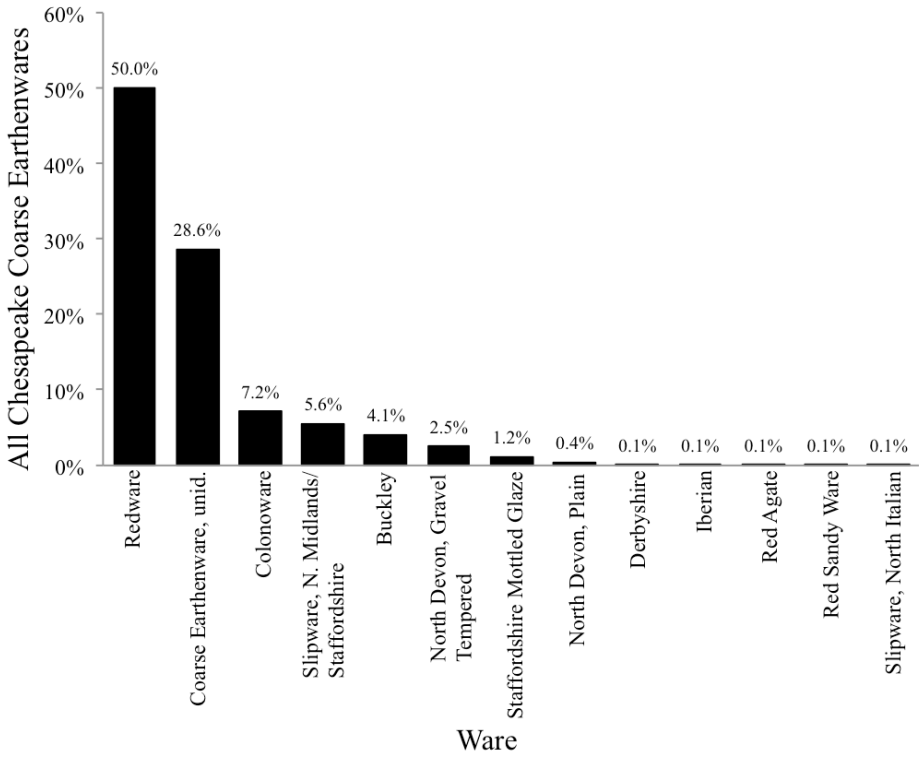

Figure 6. Aggregate of coarse earthenware from all Chesapeake sites, by ware frequency. Native American coarse earthenwares have been removed from this analysis.

Within DAACS, Redware and CEU are generic terms, encompassing wares that are not distinctive to one locus of production. Though it is possible that some sherds catalogued as Redware or CEU are non-diagnostic examples of named ware types, such as those listed above (Figure 6), predominantly these two types represent the output of many potters working throughout Europe and North America. Together, I refer to these as common coarse earthenwares. For the most part, sherds of both types are wheel thrown, lead glazed, undecorated by slip, and appear in European forms. The distinction based on paste color, made by DAACS, was established to more accurately reflect the physical attributes of the ceramics. By retaining the label Redware, DAACS acknowledges the dominant nomenclature within the discipline; yet at the same time it attaches more specificity to the term, potentially making it more analytically robust. The

validity of this distinction and relationships between sherds classified as CEU and sherds classified as Redware will be discussed in greater detail below.

Figure 7. Sherd of CEU (A) compared with sherd of unglazed redware (B). Note yellowish-buff color of the paste and translucent brown glaze of CEU sherd. Dark specks within the glaze likely represent naturally occurring hematite or manganese inclusions in the clay body. Images courtesy of DAACS.

Note that while DAACS recognizes other coarse earthenwares types produced in America, such as Native American and colonoware, those wares, hand built and unglazed, were clearly made using different production methods and are not counted within this sample. The total sherd count for CEU and Redware across the 22 sites under consideration is 7913. Within this count there are often great differences in coarse earthenware frequency among sites (Table 3). However, at this exploratory stage, I have retained all assemblages, even those with very low counts. The smaller assemblages increase the sample size at a regional level, and may reflect real patterning at the site level that should be considered. Each ceramic sherd had been individually catalogued into the database, except those smaller than 30mm in diameter, and considered non-diagnostic, which generally meant that they were body sherds with no unique attributes (DAACS 2008:29). These small sherds were batched by context into single database

entries, based on shared attributes. Working with unmended and largely unreconstructable sherd assemblages introduces specific considerations, which will be discussed in detail below. For the purposes of this analysis, I have utilized the following attributes of each sherd (after DAACS 2008):

Paste Color: Though a field in DAACS, it has not been entered for the majority of sherds. Nevertheless, since the distinction between CEU and Redware is based on paste color, this division separates the sample population into two potentially useful analytical groups.

Interior Glaze and Exterior Glaze: These fields list the type of glaze or surface treatment for each sherd. The vast majority of these sherds are lead glazed on at least one surface, but Unglazed/Bisque, and Wash are also common surfaces for these wares. In this analysis, examples with wash are considered unglazed.

Glaze Color: Glaze colors for the interior and exterior of sherds have been listed separately in DAACS. For opaque glazed examples, the given color descriptor simply represents the glaze color. However, for clear and translucent glazes, the description in this data field more accurately represents the color of the combined paste and glaze. So, while many sherds have a clear glaze, "clear" does not appear as a glaze color descriptor. Though recognizing that lead glaze colors exist on a continuum rather than as discrete categories, within this analysis, I have batched glaze colors into four main groups: clear, black, brown, and green, based on the given prose descriptions. For example, glaze colors given as red or orange were classified as clear under my system. The glaze color fields are also completed in DAACS for unglazed surfaces, but for the purposes of this analysis

the color of unglazed surfaces has not been included, as it is already reflected in the paste color.

Sherd Thickness: The sherd thickness measurement is taken only on examples that still have both interior and exterior original surfaces, and have not been batched. I refer to these as "complete sherds." When possible, the thickness measurement is taken at the rim.

Form: This field is used to describe the form of the original vessel as specifically as possible. Forms such as "mug" and "bowl" are used, as well as the more generic classes "utilitarian," "tableware," and "teaware." The majority of the sherds have been catalogued as "utilitarian: unid" due to their fragmentation.

Table 3. Counts of Common Coarse Earthenware by Site

			Count CEU and Redware		CEU		Redware	
Plantation	Site	Location	All Sherds	Complete Sherds	All Sherds	Complete Sherds	All Sherds	Complete Sherds
Ashcombs Quarter	Ashcombs Quarter	Coastal Plain	446	186	66	32	380	154
Chapline Place	Chapline Place	Coastal Plain	126	58	13	6	113	52
Fairfield Plantation	Fairfield Quarter	Coastal Plain	984	274	196	57	788	217
Governors Land	44JC298	Coastal Plain	10	2	7	2	3	0
Monticello	Elizabeth Hemings	Piedmont	3	2	0	0	3	2
Monticello	Site 7	Piedmont	432	308	72	40	360	268
Monticello	Site 8	Piedmont	1959	331	1726	152	233	179
Monticello	Building o	Piedmont	142	134	120	112	22	22
Monticello	Building l	Piedmont	9	7	3	2	6	5
Monticello	Building s	Piedmont	133	109	46	38	87	71
Monticello	Building t	Piedmont	76	64	22	19	54	45
Monticello	Building r	Piedmont	29	26	14	11	15	15
Mount Vernon	House For Families	Coastal Plain	43	38	6	5	37	33
Navair	Navair	Coastal Plain	692	424	51	36	641	388
Palace Lands	Palace Lands Quarter	Coastal Plain	54	47	30	25	24	22
Poplar Forest	Quarter Site	Piedmont	457	411	17	14	440	397
Poplar Forest	North Hill	Piedmont	248	103	31	21	217	82
Richneck	Richneck Quarter	Coastal Plain	438	186	183	78	255	108
Stratford Hall	ST116	Coastal Plain	31	22	10	4	21	18
Utopia	Utopia II	Coastal Plain	10	2	2	0	8	2
Utopia	Utopia III	Coastal Plain	1430	353	198	41	1232	312
Utopia	Utopia IV	Coastal Plain	161	87	66	29	95	58
		Totals	7913	3174	2879	724	5034	2450

Excavation Bias

Each dataset has its own vagaries that must be acknowledged when undertaking analyses. These problems affect the suitability of different ways of conceptualizing and analyzing the data. Especially when using quantitative methods, it is necessary to consider potential issues that may make interpretations problematic. In this research, there were two main, interrelated concerns with the dataset: variability in excavation recovery techniques and the validity of sherds as unit of analysis. Concerns over these issues have led me to utilize certain methods, namely exploratory data analysis techniques, which make best use of the data available, without misrepresenting them.

The sites within this data set were primarily excavated in the past 30 years, by multiple researchers. Some sites were excavated by academic research institutions and others by cultural resource management (CRM) firms. Due to different site conditions and constraints, excavation techniques varied across sites, in ways that likely impacted artifact recovery. This variation in recovery has potentially skewed sherd frequencies and sherd attributes related to size, since depending on recovery technique, smaller sherds might not have been recovered as frequently.

Vessels can fracture in highly variable ways, leading to an unpredictable number of sherds ultimately recoverable archaeologically. With wheel-thrown vessels in general and utilitarian wares in particular, vessel walls tend to be thicker at the base, thinner in the body, and either thick or thin at the rim, depending upon the neck and rim treatment. These thick and thin spots fracture differently, and thin body sherds are apt to be most fragile. Low-fired wares such as coarse earthenwares also tend to shatter more easily as a whole than denser wares such as stoneware (Rice 1987:322). Thus, sherd counts may

inflate difference in frequency within and among wares. In spite of this issue, since only coarse earthenwares are being considered, predominantly classed as utilitarian, the similarity of vessel sizes and shapes suggests that taken as a group the fracturing would pattern similarly.

Additionally, the sites chosen for this analysis were located on plantations, which tend to have specific archaeological signatures. On a plantation, arable land was at a premium and thus buildings that had exceeded their use life were often razed to recover the land for agricultural production. While vessel fragmentation also happens during the process of use and disposal, post-depositional plowing has had a significant effect on the archaeological record of these sites, further fragmenting archaeological materials. Consecutive encounters with the plow blade will fragment a sherd until it reaches a size where it is less and less likely to critically encounter the plow (Dunnell and Simek 1995:308). Regardless of how a vessel was broken, how do we deal with the aftermath? The majority of studies that classify common coarse earthenwares have relied upon vessel form as the defining characteristic. However, due to the fragmentation of these assemblages, the vessel form frequently cannot be determined, or lacks specificity. Likewise, though minimum number of vessel (MNV) calculations have been used to discuss frequency of ware types, given the nature of these data in which forms cannot be distinguished with any accuracy, and decoration or glazing is consistent across vessel categories, such calculations would be unreliable.

Sherd counts and sherd weights are both commonly used as ways of quantifying ceramic frequency. At this exploratory phase, in which the relative frequency of an attribute is not as significant as its relative *presence*, counts more clearly represent

assemblage variability. As a check of the validity of sherd counts, I compared sherd counts to sherd weights for common coarse earthenwares by site (Figure 8). The sherds in question were predominantly utilitarian in nature; consequently it was presumed that all would fall towards the thicker and therefore heavier end of the spectrum, as opposed to thinner and lighter tablewares. As shown, sherd weight and sherd count are highly correlated. While both weight and count may be biased within these assemblages by site formation processes and recovery methods, they are biased in similar ways. Thus there seems to be no benefit to using weight rather than count.

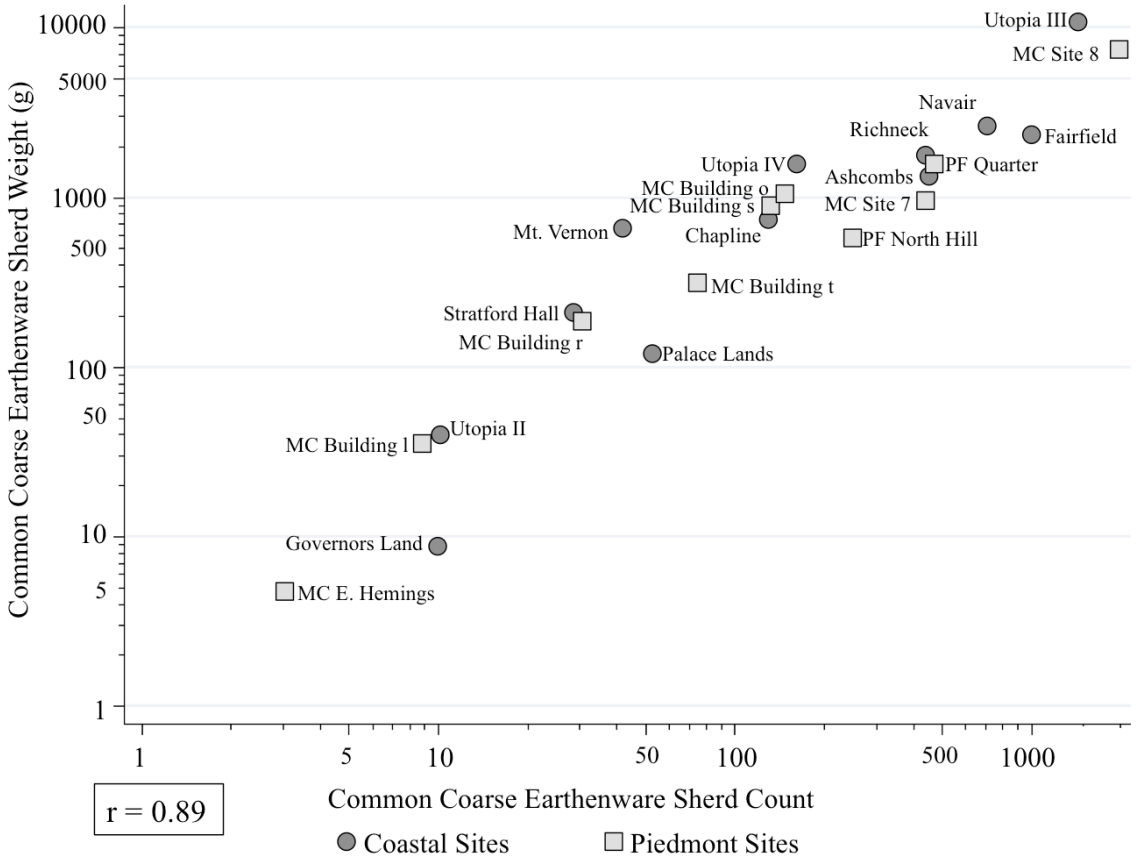

Figure 8. Comparison of sherd weight and sherd count by site. Correlation coefficient (Pearson's r) equals 0.89, indicating a strong positive association of weight and count. Logarithmic scale.
Note: MC stands for Monticello, PF for Poplar Forest.

Given the variable sample sizes across sites and the incomplete condition of many of the sherds, it was necessary to be as conservative as possible with respect to sample size. A non-hierarchical approach, such as that proposed by Rouse (1960), allowed me to temporarily exclude or include certain sherds, depending on the attribute under consideration. For example, all common coarse earthenware sherds (n = 7913) could be used to consider ware frequency across sites. However, when considering glaze combinations, only complete sherds (n = 3174) retained the necessary information.

In order to address the questions of common coarse earthenware characteristics and distribution, I utilized a number of exploratory data analysis techniques. These provided visual representations of sameness and difference within and across regions. Given the wide variability in sample sizes, statistical tests were not appropriate at this stage of the research. The analyses revealed patterning of common coarse earthenware frequency and attributes, which I present in the following pages.

CHAPTER 4:

ANALYSIS

Quantitative analysis based upon sherd counts was used to define the characteristics and distribution, chronologically and spatially, of common coarse earthenwares. The distribution of each sherd attribute was considered both separately and in conjunction with other attributes. Attributes considered were: paste color, sherd thickness, ceramic form, presence of glaze, and glaze color. I first determined the utility of separating common coarse earthenware sherds based on the attribute of paste color, as this is one of the most visually striking differences between sherds.

Cataloguing protocols within DAACS established two separate types for common coarse earthenware: Redware, and coarse earthenware, unidentified (CEU). As explained previously, this distinction is based on the color of the paste. However, one must question whether the formation of distinct analytic categories also represents real differences in the production and historic use of these ceramics. Considering their attributes, while there is variability between CEU and Redware, within regions as well as sites they are more similar than different. These findings indicate that the analytical distinction based on paste color likely did not have historical significance. Several lines of evidence are presented below.

Paste Color

Paste color is a problematic characteristic to use as a basis for classification, as color is affected not only by composition of the clay source, but also by the firing atmosphere of the kiln (Rice 1987:333). The clay beds utilized by early potters in North America as sources for raw clay were not composed purely of clay minerals. Clay deposits usually consist of one or more clay minerals along with other mineral or organic inclusions (Rye 1981:29). These inclusions affect both the workability of the clay and the color of the clay in raw or fired stages. The color modifying inclusions are usually either carbon or iron-based. In the raw stage, carbon-rich clays will appear grayish, while iron-rich clays will usually be yellowish to red in color. When these clays are fired, a variety of color changes may occur, depending on the firing atmosphere.

The firing atmosphere refers to the amount of oxygen and carbon present in the kiln during firing. During a firing, potters carefully manipulate fuel and air intake in order to control the temperature and atmosphere within the kiln. If there is more fuel than oxygen, the fire will smolder, the carbon in the clay body is trapped and more will adhere to vessel surface, rather than reforming into gaseous CO_2. This *reducing* environment will also suck oxygen out of iron oxides present in the clay. Thus, carbon- or iron-rich clay in a reducing environment will come out dark gray because of the presence of carbon. In the opposite atmosphere, there is more oxygen than fuel for combustion, termed an *oxidizing* environment. The carbon from the clay escapes, reacting with oxygen to form CO_2 gas, while the oxygen combines with iron in the clay bodies to form iron oxides, which are bright red to brown in color. Thus, pottery fired with iron-rich clays in an oxidizing environment will appear bright and warm in color, even if the

original clay did not appear red. With the prevalence of red-bodied wares in these assemblages, it is clear that eighteenth-century potters generally achieved an oxidizing atmosphere in their kilns. If the proportion of fuel to air is such that full combustion can occur, with all oxygen being converted to carbon dioxide, then the atmosphere is termed *neutral*. Under this condition, the carbon within the clay leaves to form CO_2 while the iron minerals do not oxidize. A neutral environment will result in a lighter colored paste. Overall, firing atmospheres can either remove or enhance the natural colorants in clay.

However, air does not reach all areas of a kiln equally; some spots may exhibit differences in paste color depending on its access to the air. Within one kiln load, there is likely to be variability in paste color, depending on where in the kiln a vessel was fired. In viewing wares from multiple kiln firings, even with the same clay source, the paste may vary depending on the firing atmosphere of each kiln firing. Additionally, the post-depositional environment, and refiring specifically, may alter ceramics. The dwellings at some sites, such as Monticello's Site 8, were burned to the ground after habitation ceased in order to remove the architectural traces and create an agricultural field. During this process, localized areas of the fire reached temperatures hot enough to refire ceramics. Depending on the atmosphere, carbon might be deposited or iron oxides formed during this refiring process, altering the paste color (Rice 1987:345).

The above considerations underline the possibility that in at least some cases, CEU and Redware may be the same ware—made by the same potter, from the same clays, under varied firing atmospheres (Magid and Means 2003:78). Such was found in excavations at William Rogers' pottery, where paste colors ranged from reddish-orange to buff, both containing hematite inclusions (Straube 1995:34). Alternately, clays from

different geologic sources may appear identical to the naked eye once they have been fired. Chemical analysis of CEU and Redware should be undertaken to determine the extent to which these possible outcomes are reflected in common coarse earthenware assemblages. Taking into account the underlying variability possible in common coarse earthenware pastes, in comparing other attributes of CEU and Redware further patterns emerge which emphasize their interchangeability as consumer goods.

Within the broader category of coarse earthenwares, Redware and CEU are the most common ware types represented within these Chesapeake sites (Figure 6). Both types were found at most sites studied. Combined, they account for 78.6% of all historic coarse earthenwares, though Redware is nearly twice as common. Within sites, the proportion of Redware to CEU is quite variable, presenting no clear temporal or regional patterning. However, the overall similarity of CEU and Redware can be demonstrated by comparing the wares as a whole through the attribute of vessel form, as well as comparing regional differences in sherd thickness.

Due to the fragmentation of sherds at these sites through plowing and other taphonomic processes, there are few that can be classified as a specific form. As compensation, those that are unable to be identified specifically may be classed within DAACS more generically as *utilitarian: unid., tableware: unid., or teaware: unid*. Thinner, more finely potted wares tend to appear in forms meant for the table, such as plates, teapots, and mugs; while thicker, sturdier forms are generally for food preparation, storage or hygiene. When these generic vessel forms are considered, proportions of CEU and Redware are nearly identical (Table 4). This reinforces the idea that both categories of wares were produced in similar forms and used in similar ways.

Table 4. Ware Type Separated by Vessel Form

Ware	Count	Utilitarian Forms	Tableware Forms	Teaware Forms
Coarse Earthenware, unid.	933	94.0%	5.6%	0.4%
Redware	2237	95.3%	4.4%	0.4%

Note: Count represents individual sherds. Counts of sherds classified as specific forms have been added to counts of general vessel forms.

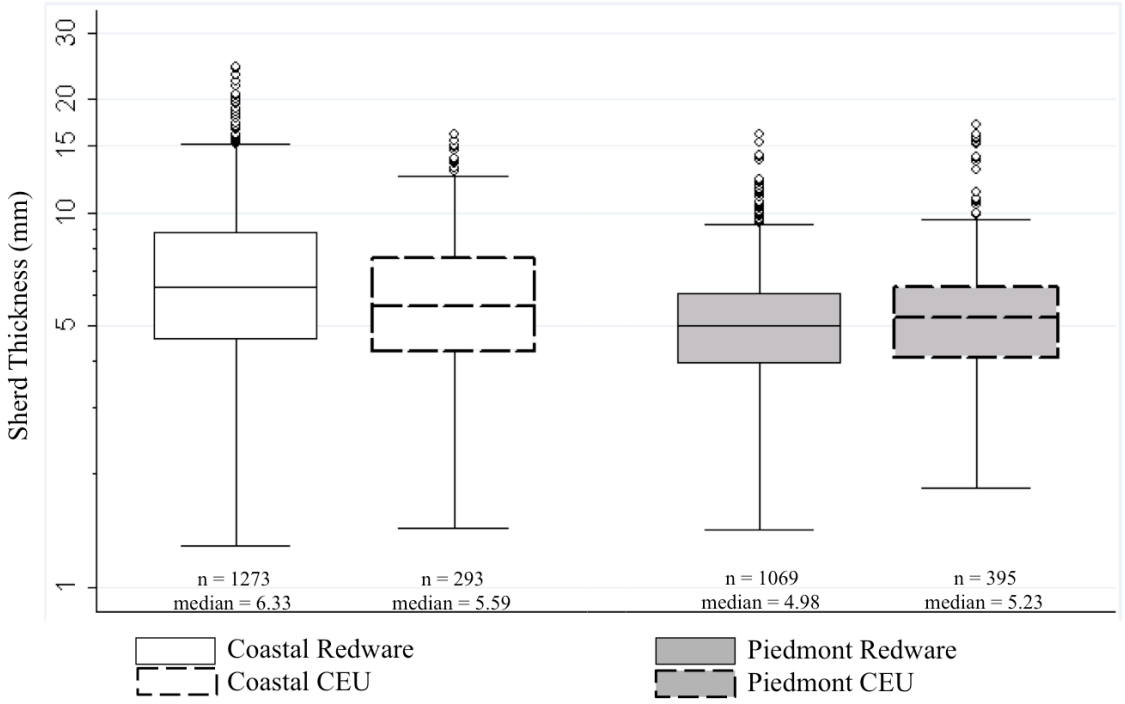

Figure 9. Comparisons of sherd thickness by ware within regions. Bar represents median sherd thickness (m). Note that medians and ranges are more similar by region than by ware. Logarithmic scale.

When the sherd thickness is compared by ware, regional patterning becomes evident (Figure 9). In the figure above, the sherd thickness of Redware and CEU has been considered by sub-region. The thicknesses of the wares are more similar within the sub-regions of the piedmont and coast, than by ware type. This would indicate that common coarse earthenware assemblages contain similar proportions of certain vessel

forms and sizes, within sub-regions, in both Redware and CEU. Within the piedmont, there is also a smaller spread of sherd thickness values, a trend to be discussed below in greater detail.

Considering the sum of the chemical, technological, and quantitative evidence, it seems clear that while CEU and Redware are not perfectly identical in their patterning in the Chesapeake, they are more similar than different in attribute. Are they the same type? This question can be answered in several ways. From the perspective of manufacture, the wares display similar ranges of form and sherd thickness, which would mean that their overall production was the same, save for the possible use of different clay sources, or variations in firing atmosphere. From a use perspective, the co-occurrence of both wares at the site and regional level shows that they could have been used interchangeably. All indications suggest that the producers or consumers of common coarse earthenwares made no distinction among paste colors. Nonetheless, potters could have used dark or opaque glazes strategically to cover up paste color differences. The most frequent glaze for common coarse earthenware is iron based brown, often present as an opaque or semi-translucent shell on the exterior and interior. Whether it was intentionally used for this purpose is unknown, but depending on the opacity, this glaze masks paste color differences, making it unlikely that consumers would necessarily notice whether they had a light-bodied ware or dark-bodied ware. While paste color may prove a very important variable in future investigations into the source of these wares, at this level it appears that the temporal or spatial variation of common coarse earthenwares as a whole is more significant than compositional variation between CEU and Redware. In the following analyses, I have combined both ware types as common coarse earthenware.

Temporal and Spatial Variation in Common Coarse Earthenwares

The sites within this study encompass a temporal span of approximately 140 years. I used mean ceramic date (MCD) as calculated by DAACS to order these sites (DAACS 2010c), but it should be noted that many of the MCDs for these sites were problematic, falling outside of the known occupation date ranges. This skewing of dates was due in part to the presence of wares with long production sequences such as Redware, which has a manufacturing range of 200 years. Therefore, I have also found it useful to refer to the known occupation date ranges at times, as these more concretely situate the site ceramic assemblages in time. Unfortunately, there is little overlap between the site occupation of coastal plain and piedmont sites within this dataset. This lack of temporal continuity makes it difficult to distinguish temporal trends from spatial variation between these sub-regions.

In order to understand the patterning within common coarse earthenware, it is first necessary to contextualize it within overall site ceramic assemblages. DAACS divides ceramic assemblages among four main ceramic materials: Coarse Earthenware, Refined Earthenware, Stoneware, and Porcelain. While coarse earthenwares and stonewares had been made in Europe in great quantity since before the colonization of North America, and thus appear in even the earliest ceramic assemblages, refined earthenware was a later innovation and (with the exception of delft) does not enter assemblages until the mid-eighteenth century. Porcelain, whose high cost made it a luxury for most households, does not appear in quantity until the end of the eighteenth century (Hume 1969:257). Generally then, there is the expectation that early site assemblages will have higher proportions of coarse earthenwares and stonewares, reflective of temporal availability.

To reveal the underlying variation within the data I have used correspondence analysis (CA), a technique of exploratory data analysis that graphically displays the relationships within and between two categorical variables. CA simplifies multivariate datasets, by extracting the dominant patterns and representing them as dimensions.

Figure 10 shows a CA biplot of site ceramic assemblages against the four main ceramic materials, based on sherd counts of each material (Appendix 1). In effect, the biplot shows a seriation of assemblages from left to right, along the first CA axis: the assemblages to the left have a higher proportion of coarse earthenwares and are therefore more strongly associated with that ceramic material; to the right, site assemblages exhibit a higher proportion of refined earthenwares and porcelain. Since common coarse earthenware represents nearly 80% of all coarse earthenware in the Chesapeake, a positive correlation with coarse earthenwares can also be taken as a positive correlation with common coarse earthenwares. Though the plot of sites is largely chronological, meaning that their ceramic assemblages reflect the wares available during their occupation, there are some exceptions.

Navair, on the western shore of Maryland, is one of the few sites within this dataset that was located in the coastal plain and dates to the latter portion of the eighteenth century, with an occupation date range of 1750-1800 and MCD of 1790. However, in this plot it clusters among site assemblages with earlier MCDs and occupation dates falling within the first half of the eighteenth century. This indicates that Navair's assemblage has a proportion of coarse earthenwares that is uncharacteristically high for that period. During the consumer revolution of the latter half of the eighteenth century, there was an influx of refined earthenwares, reflected in changing assemblage

composition: from predominantly utilitarian in the earlier period, to predominantly table and teawares by the end of the century. Due to its high proportion of utilitarian coarse earthenwares, the Navair assemblage is more highly correlated with its geographic neighbors, such as nearby Ashcombs Quarter, rather than its temporal companions in the piedmont.

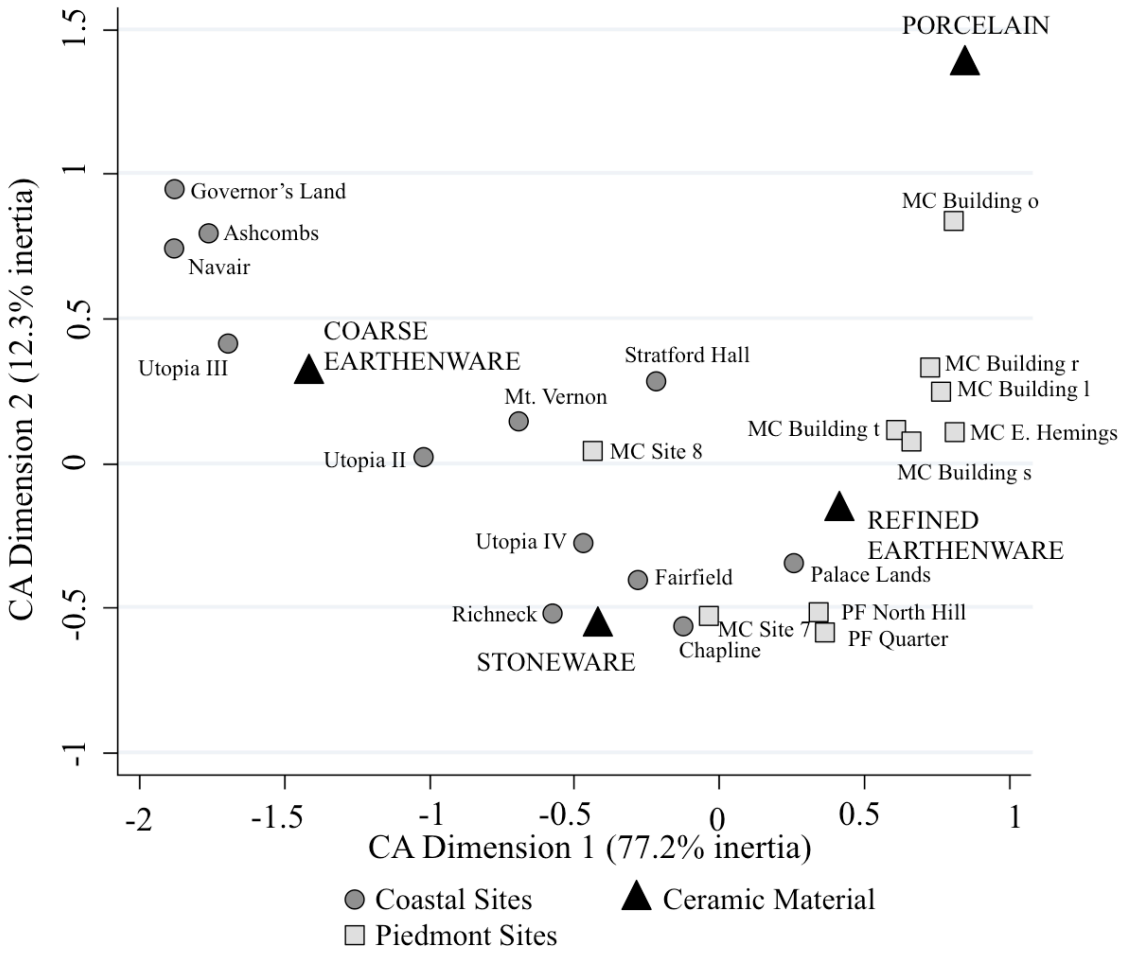

Figure 10. Correspondence analysis of site ceramic assemblages against ceramic materials. Sites clustering near ceramic material types are characterized by high proportions of wares of that type. Dimension 1 scores (x-axis) capture the temporal availability and use of these wares.

As Figure 11 shows for other sites, the CA, represented by the dimension 1 scores (CA x-coordinate values), fairly accurately captured the temporal variation in site assemblages. Most sites cluster with their contemporaries according to mean ceramic date. This is expected, as both MCD and the CA are based on weighted distributions. A main difference is that while MCDs were calculated from the counts of specific ware types, this CA was based on counts of the larger category of ware materials. While the position of most sites in Figure 11 reflect the close relationship of MCD to the CA dimension 1 score, Navair, along with Ashcombs Quarter and Utopia III are outliers. An uncharacteristically high proportion of coarse earthenwares separate them from the rest of the Chesapeake sites.

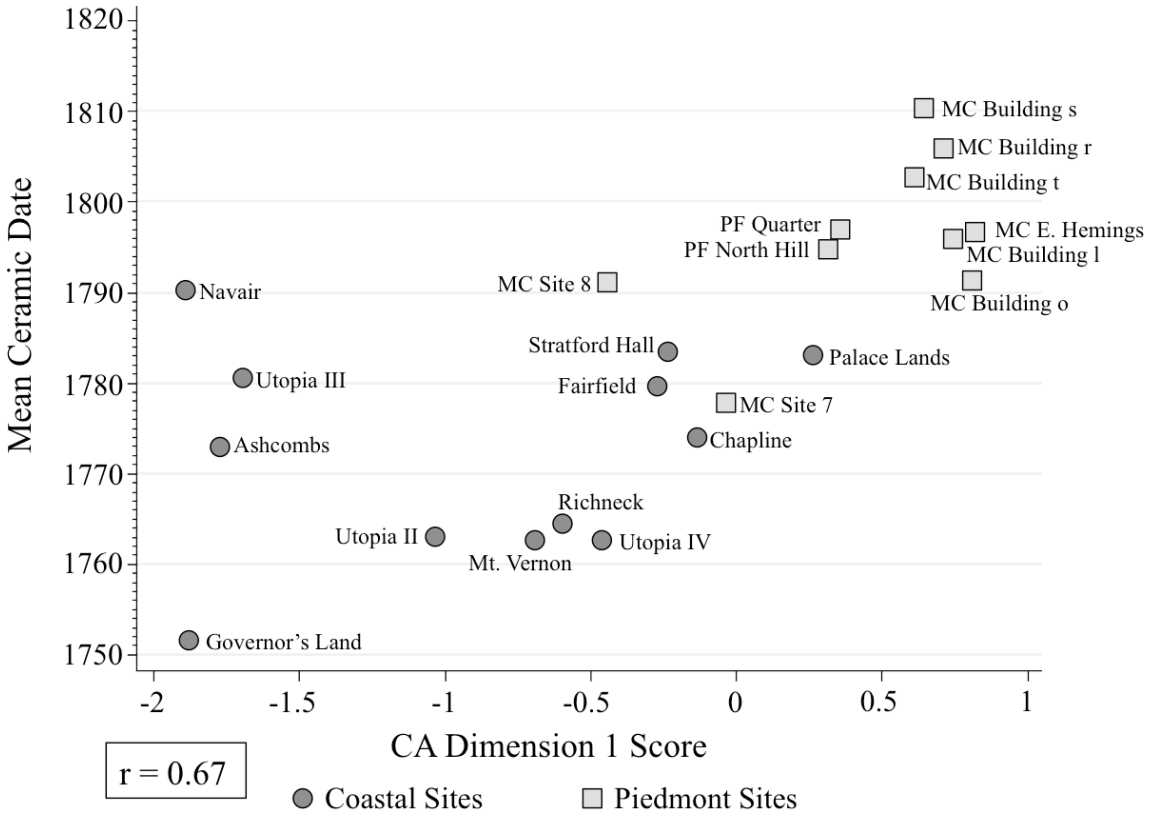

Figure 11. Plot of site mean ceramic date against correspondence analysis dimension 1 scores. This graph reflects the degree to which the CA accurately captured the chronology of these ceramic assemblages. The clustering of sites by date indicates that time is an effective predictor of ceramic assemblage composition. The correlation coefficient (r=0.67) was calculated using Pearson's r.

That the Navair assemblage would be more similar to other coastal assemblages is not wholly surprising, due to the previously discussed historic coastal-piedmont divide. Still, it begs the question of why this site, which due to its location on the river would appear to have greater access to imported refined wares, instead continued to rely heavily on coarse utilitarian wares. The neighboring Ashcombs Quarter assemblage also contains more coarse wares than expected. Additional data from late eighteenth-century ceramic assemblages in the coastal plain are needed to understand whether the Navair and Ashcombs Quarter assemblages are typical for the coastal plain during that time. It is possible that the residents of Navair and Ashcombs Quarter may have continued to rely upon coarse earthenware after it was supplanted elsewhere because of proximity to a manufacturing site, but there is currently no direct evidence supporting this interpretation. However, the common coarse earthenware of Utopia has been identified as a product of the nearby Yorktown potter William Rogers (Fesler 2004:167, 180, 181). The distinctiveness of Utopia assemblages, explored further below, suggests that the availability of local pottery influenced ceramic assemblage composition and attributes in recognizable ways.

Focusing on common coarse earthenwares in particular, I considered the attributes of sherd thickness and glazing. As described above, sherd thickness tends to vary predictably at several levels. The thickness of an individual pot will fluctuate from base to body to rim, and more generally, thicker sherds tend to indicate larger vessels, while thin sherds represent smaller or more finely potted wares. Thus a predominance of thicker sherds suggests an assemblage with a higher proportion of large vessels, and the opposite for thinner sherds. Domestic assemblages with similar sherd thickness data may have

been supplied by the same sources, or have had the same functional needs, whereas sites with unusually low or high sherd thickness values may have had unique sources or needs. Figure 12 shows a plot of site median sherd thickness against the site mean ceramic date. The correlation coefficient of this relationship, calculated using Pearson's r, shows a very weak negative correlation between time and sherd thickness ($r = -0.20$). The extreme low median sherd thickness values are from sites with low sherd counts, such as Governor's Land and Mount Vernon's House for Families. The extreme high median sherd thickness values are from sites on the same plantation: Utopia II, III, and IV. The unusual thickness of the Utopia sherds, in comparison to those found at other Chesapeake sites, further strengthens the assertion that the products of individual sources are recognizable at the assemblage level.

Once these extreme values are removed, there are no readily identifiable patterns in the range of sherd thickness by time or between coastal and piedmont sub-regions. This indicates that for the most part, though occupied at different times, both coastal and piedmont sites had assemblages with vessels of similar size. Worrell (1985b:169), working in the northeast, has also noted a lack of temporal change, finding that coarse earthenware "was made according to conventions dictated by pragmatic functional needs of the clientele, and those slight variations of form that can be determined are attributable to an individual craftsman's preference rather than serial change." Figure 12 also begins to explain why, in comparing CEU and Redware above, the coastal plain had a wider distribution of sherd thickness values than the piedmont. The higher values are predominantly coming from the Utopia sites.

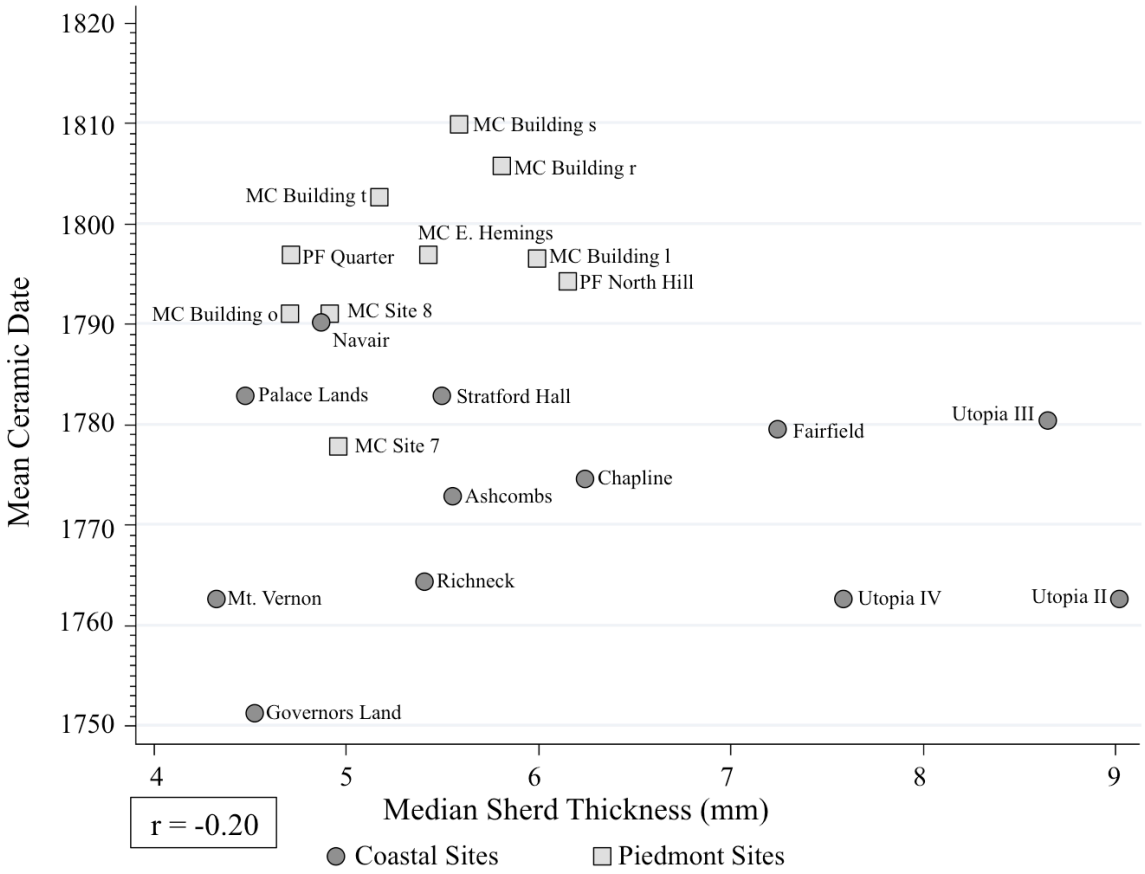

Figure 12. Median sherd thickness of common coarse earthenwares against site mean ceramic date.

The lack of temporal overlap in this dataset between coastal and piedmont is problematic. However, as shown by the attribute of glaze color, there are indications that contemporaneous sites were obtaining wares that were visually distinct. In order to discover temporal or spatial variation in the attribute of glaze color, I categorized common coarse earthenware sherds at each site based upon the presence or absence of exterior glaze and its color, and the presence of interior glaze, and its color. Glaze colors were batched into the four most basic variants: clear, brown, green, and black. This process resulted in 36 possible combinations, as wares with one or more unglazed surfaces were also included. In the following correspondence analysis (Figure 13) the 10 most common glaze combinations, accounting for over 90% of all sherds, have been

considered for the 10 site assemblages with highest common coarse earthenware counts (Appendix 2 presents all glaze combinations in all site assemblages). Only complete sherds were used.

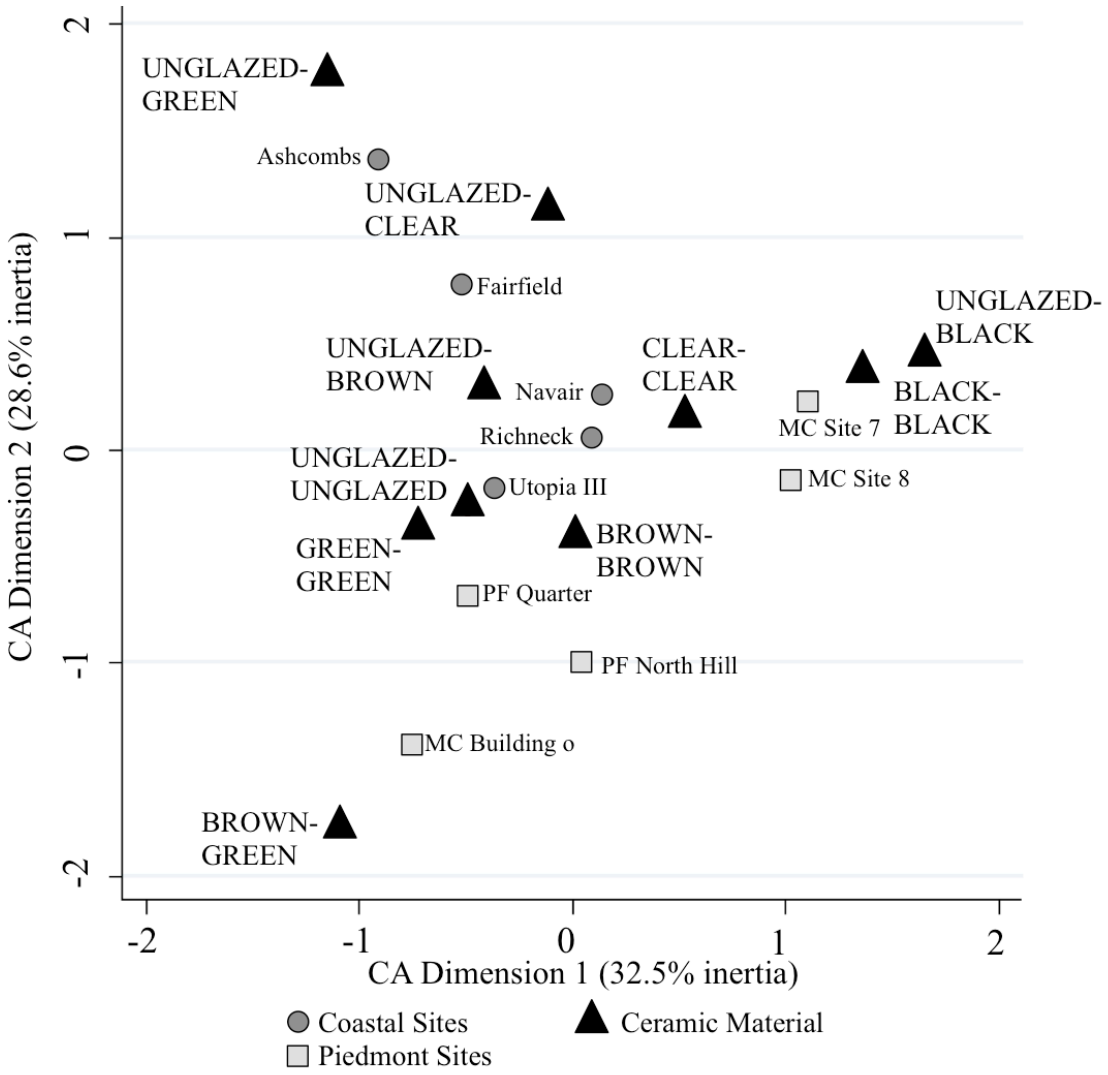

Figure 13. Correspondence analysis of glaze combinations (exterior glaze-interior glaze) and counts of those combinations in site assemblages. 61.1% of the variation within the dataset is explained by the first two CA dimensions.

Among glaze combinations, brown glazed exterior and interior is the most common type, accounting for over 40% of all sherds in this subsample, and appearing in quantity at most sites. Its ubiquity accounts for its central position in the correspondence

analysis biplot. On the other hand, sherds with black glaze, either on both surfaces or on the interior only, are very distinct from all other sherds, and appear primarily at piedmont sites, such as Monticello's Sites 7 and 8, as shown on the plot. This would seem to reflect a discrete difference in available forms or production origins between the piedmont and coastal Chesapeake.

Of the black glazed (exterior and interior) sherds that could be identified with any specificity, 12.5% represented tea or tablewares. Since the overall frequency of non-utilitarian forms is around 5% (Table 4), it is apparent that black glazed wares differ from the majority of common coarse earthenwares. Turnbaugh proposes that American potters produced black glazed table and tea wares in imitation of English Jackfield-type refined earthenwares (1985:222). Thus these wares may represent a distinct use category of coarse earthenwares in the Chesapeake. A closer examination of black glazed coarse earthenwares and comparison with Jackfield-type wares is needed to support this hypothesis. Whether or not they are Jackfield imitations, it seems that the piedmont had greater access to these more finely potted wares.

As in the previous CA, the sites cluster according to time. The early coastal sites all appear in the upper left portion of the chart, indicating correlation with vessels having unglazed exteriors and glazed interiors, as well as more clear glazes. Later piedmont sites, on the other hand, cluster towards the bottom and right of the biplot, with a stronger correlation to fully glazed vessels. The development of liquid glazes and popularity of more finely-potted wares likely contributed to the shift through time towards fully glazed common coarse earthenwares, offering a temporal explanation for this clustering, as a

result of changing ceramic technology. Vessels with unglazed exteriors tend to be thicker than fully glazed vessels, reflecting heavy-duty utilitarian functions.

Results

The foregoing analysis has begun to answer the questions set out at the beginning of this study. Considering the diagnostic attributes of common coarse earthenware, I have determined that paste color, while visually distinctive, may be the most problematic. The attributes of sherd thickness, vessel form, and glaze color, on the other hand, offer potentially useful distinctions among site assemblages. Although partially obscured by lack of overlap in occupation dates of the sites studied within the coastal plain and piedmont, there is both temporal and spatial variation, by site and sub-region in the assemblages of common coarse earthenwares. Temporally, there is a decline in the proportion of coarse earthenware in site assemblages over the course of the eighteenth century, which can be largely understood through changes in ceramic production and marketing. Common coarse earthenwares at most sites came to represent a smaller proportion of the ceramics used. Sherd thickness of common coarse earthenwares, on the other hand, remained largely consistent over time, indicating that potters continued to make vessels in roughly the same sizes and shapes. Sites such as Navair and Utopia, which offer exceptions to these overall findings, suggest that an individual site's direct access to sources of these common coarse earthenwares resulted in notably distinct assemblages.

The glazing patterns of common coarse earthenwares also shifted through time, with more vessels lacking exterior glaze in the earlier period, and more fully glazed

wares in the later period. Certain glaze colors, notably black, appear more frequently in the piedmont than in the coastal plain. These results offer promise for future research into the origins and uses of common coarse earthenware in the Chesapeake.

CHAPTER 5:

DISCUSSION

Though this analysis has uncovered variation in assemblages across the Chesapeake, the difficulty lies in determining the degree to which these differences are due to ware availability or household functional requirements. If the differences are of availability, then the variation may indicate alternate production origins or trade networks. For instance, manufactured goods as well as potters themselves entered western Virginia from the north via the Great Wagon Road, originating in Philadelphia and running southward along the Blue Ridge Mountains (Figure 14). As has been proposed, black glazed wares in particular may have entered the piedmont from Philadelphia via overland routes. It is also likely that piedmont ceramic assemblages include wares from local potting communities established by migrants from the north. Coastal sites, on the other hand, tended to have more direct access to ships arriving with manufactured goods from England, as well as those conducting coastwise intercolonial trade. Additionally, there are known kiln sites within the region that would have supplied some local communities' needs, such as explains the unusual assemblages at Utopia.

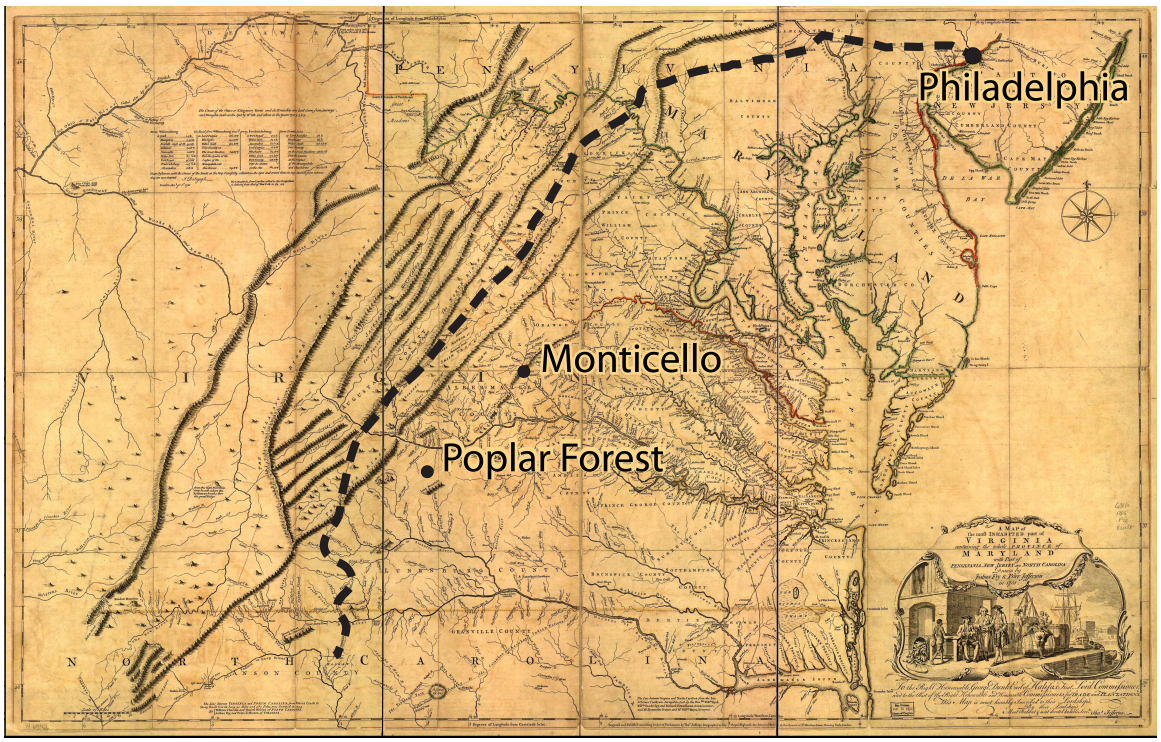

Figure 14. 1751 Fry and Jefferson map of Virginia. The Great Wagon Road is indicated as a dashed line, and the piedmont plantations of Monticello and Poplar Forest are noted. Modified from Fry and Jefferson 1751.

Is it possible to determine whether it was a ready supply or heightened demand for these common coarse earthenware vessels that accounts for the uneven distribution of ceramic wares at sites across the Chesapeake? Is the Navair assemblage typical for the coastal plain during the late eighteenth century, or does it represent special circumstances? In considering these questions, it is necessary to return to the nature of the sites within this study. While we know that enslaved Africans and African-Americans were at times able to make money and participate as consumers (Martin 1996:10; Stanton 1996), it is likely also that provisioning of food and household items by plantation owners played a role in shaping their ceramic assemblages (Otto 1984; Thomas 1998:540). Heath (199:59) proposes that enslaved people at Poplar Forest may

have bought or been provided with underfired or imperfect locally made wares, the "potters' seconds."

The provisioning of food at the coastal plantations has not been well documented; however Stanton states that the rations doled out at Monticello were typical of the larger region.

> The weekly food rations for each adult consisted only of a peck of cornmeal, a half-pound of pork or pickled beef, and four salted fish-a diet that was standard plantation fare in Virginia, although Jefferson's provision of meat was smaller than that of many of his contemporaries [2000:29].

Jefferson's slaves, at both Monticello and Poplar Forest, also had poultry yards and vegetable gardens that supplemented their allotted rations. Provisioning on a weekly basis may have precluded some need for long-term storage in storage vessels, but Heath notes that at Poplar Forest,

> residents of the quarter site stored food in stoneware and earthenware pots, in glass bottles, and probably in other containers made of biodegradable materials. They dried, pickled, or brandied fruits and vegetables to preserve them throughout the winter [1999:59].

The enslaved residents of these sites were clearly able to obtain utilitarian ceramic vessels, but also had the option of using other materials. Baskets, barrels, wooden bowls and other objects made of organic, ephemeral materials may have been substituted for ceramics. For example, in slave narratives gourds are often identified as vessels for storing water, serving food, and as utensils (Perdue et al. 1976:16, 81,164). The roles of these artifacts, which rarely preserve archaeologically, have been discussed infrequently in the historical archaeology literature. However, as Beaudry et al. (1983:20) point out, "if archaeologists are interested, at the very least, in the systematic description of the way in which these folks lived, they need to consider every vessel represented in the

archaeological record as well as some that are not." While we cannot quantify the role of artifacts we cannot find, acknowledging the possibility of their presence opens up new prospects for interpretation.

The coastal region also contains colonoware, another domestically produced ware, which though hand-built by Native Americans or enslaved Africans and African Americans, was frequently made in European forms. It does not supplant the wheel-thrown coarse earthenwares in the coastal region, instead seeming to fill a domestic need that in the piedmont was filled by a separate artifact, ceramic or otherwise.

In short, though common coarse earthenwares were widely available, the proportion of these wares may vary across sites because people chose, or had access to a wider array of materials. If provisioning across the region was fairly standard, then the residents of sites like Navair may have had special circumstances that necessitated a larger number of utilitarian vessels. Or perhaps Navair is representative of later eighteenth century coastal sites, indicating that the provisioning on coastal plantations was different from those of the piedmont. More data on this period in the coastal plain is needed before drawing conclusions.

Directions for Future Research

This introductory study demonstrates the need for additional investigation of common coarse earthenware production and use in the Chesapeake. Having begun to establish the points of variation within common coarse earthenwares, it now is necessary to consider more concretely the potential for local or interregional sources for these wares of these wares. Recognizing that in terms of domestic North American production a

combination of local and regional distribution was likely in play, this research should be expanded further afield to integrate samples from known urban production areas such as Philadelphia. Chemical sourcing technology will help settle the question of how large a role domestic pottery production played in the Chesapeake, as well as possibly leading to the discovery of discrete production sites. Regional sourcing studies for the historic period are still few, but those underway provide useful instruction (e.g. Monette et al. 2007; Magid and Means 2003; Nenk and Hughes 1999; Owen and Greenough 2010). With sourcing information the relationship between producer and consumer will be elucidated, speaking to the vibrancy of community relationships as well as intercolonial or global networks of interaction.

The addition of data from more eighteenth century coastal sites is necessary to bridge the temporal divide between the piedmont and coast, so as to better distinguish temporal variation from spatial variation at the sub-regional level. It may also be possible, by breaking site assemblages down into shorter occupation phases, to observe more fine-grained changes through time or across region. DAACS identifies occupation phases for many of its sites, and in future research I will make use of these divisions.

There must also be more attention given to the types of sites from which common coarse earthenware assemblages are compared. This study utilized only slave quarter sites, but even so, some belonged to households of enslaved individuals who worked as field hands, while others belonged to those who worked in the plantation owners' homes or as artisans. Thus there are potentially occupation or status related differences among these assemblages. Future study will also incorporate data from household sites of free

Euro-American or African American individuals, so as to obtain a complete picture of the range of common coarse earthenwares used in the Chesapeake.

From the perspective of use contexts, further descriptive analysis of the sherds themselves may be useful as well. For most of these collections, few attempts have been made to mend vessels. Therefore, a project of vessel reconstruction could increase the precision of vessel form classifications. Given the dataset and scope of this introductory study, the development of new, exclusive types within the assemblage was not an effective strategy. Typology requires the establishment of mutually exclusive categories (Adams 1988) and there were simply not enough conclusive correlations among variables, or readily definable visual types from which to create discrete divisions at this stage. Nevertheless, this project is not incompatible with typology. With further samples and the incorporation of materials from a broader spatial and temporal range, it may be possible to distinguish separate varieties within these common coarse earthenwares.

Conclusion

> Pottery displays the values by which human life is shaped. It brings the old and the new, the practical and the aesthetic, the personal and the collective, the social and the economic, the mundane and the spiritual, into presence and connection.
>
> - Henry Glassie

Archaeologists have largely considered common coarse earthenwares from the perspective of production. Thus, the focus has been on individual craftsmen, their workshops and repertoires. While an understanding of production is important in itself, it is necessary that we consider the rest of the story, tracking wares beyond their production origins.

Through an analysis of common coarse earthenwares in the Chesapeake, I have demonstrated that rather than presenting homogenously across the region, the wares instead exhibit temporal and spatial variation. The underlying reasons for this variation have yet to be fully explained, but will be addressed in future research, through the incorporation of additional domestic sites as well as sites of production. This study provides a foundation for further investigations into the sources of common coarse earthenwares. More broadly, it increases our knowledge of the American craft tradition, offering clarification of the relationships between craftspeople and their customers. Domestic pottery production operating within the Chesapeake, as well as in other regions, can be used to understand social relationships and the development of group identities. An elucidation of the relationships that linked producer and consumer will better explain the development and significance of ceramic and other craft production in North America.

As discussed previously, there was a distinct difference between the folk pottery tradition of rural areas and the urban pottery tradition. Research in the northeastern United States has shown that rural potters were not full-time potters; rather, they pursued agriculture and other economic ventures as well. Their wares were sold to or bartered with their neighbors (Starbuck and Dupré 1985:151). Such a system allowed flexibility, both economic and social. It oftentimes removed money from the transaction, through the exchange of goods or labor. Reciprocal bartering relationships with neighbors thus were necessary to maintain their homes and farms.

> Rather than following a model of self-sufficiency, the economy was characterized by a system of local exchange of goods and services in which craft specialists firmly rooted in the rural community played a necessary part [Russo 1988:392-3].

As Russo suggests, rural potters likely operated largely outside of the cash economy, instead offering a flexible alternative to fulfilling household needs. This model worked in the potter's favor as well. Worrell, in his analysis of Hervey Brooks, a potter working in early nineteenth century Massachusetts, found that these local relationships allowed Brooks to continue potting even after technological innovations in pottery-making had changed the larger ceramic market.

> He did not make the production shifts that enabled early nineteenth-century industrial centers to continue competition in the national and world markets. It was only because of his varied involvements in the agricultural exchange network that potting remained a viable component for him [1985b;161].

The connections between potters and their neighbors should not be taken lightly. Though imported wares seemed always to be a draw, for aesthetic reasons or as conspicuous consumption, there were likely also social benefits to purchasing goods from a neighbor. Aside from buying directly from the local potter, consumers could make purchases from rural merchants, important middlemen in the community (Thompson 1999:173). Walsh (1988) has considered social relationships in the early Chesapeake, finding that while rural neighborhoods differed in geographic scale and population density from a town or city model, they were nevertheless close-knit groups. We should consider the role of common coarse earthenware not only as fulfilling a practical need within the home, but also as potentially smoothing social relationships within communities.

Operating at a larger scale, the urban potters of early America had a more visible impact on the regional and continental level. These potters were more often full-time craftspeople, producing wares for wholesale and markets farther afield. The Philadelphia trade is an excellent example of this. These potters created a Philadelphia "brand,"

marketing their wares at the local, regional, and colonial level (Bower 1985:275). The trade of urban potters was largely conducted by sea, and thus it is no coincidence that most large-scale potteries were operated out of port cities. The access to intercolonial trade routes gave them a broader distribution network (Pendery 1985:67).

Intercolonial trade has been seen as economically negligible by economic historians; yet, "regardless of its relative economic importance, the relationships among the colonies that coastwise trading encouraged allowed the colonists to stand together when they were threatened by English policies and to band together and fight when the time came" (Steen 1999:69). Intercolonial trade formed social bonds and helped to foster a national identity, independent from the British Empire. At both the local and national scale, pottery production was a social lubricant, fulfilling daily needs and fostering common goals. During the time of the American Revolution, consuming, or choosing not to consume imported goods became a powerful political act:

> The colonists shared experience as consumers provided them with the cultural resources needed to develop a bold new form of political protest. In this unprecedented context, private decisions were interpreted as political acts; consumer choices communicated personal loyalties. Goods became the foundation of trust, for one's willingness to sacrifice the pleasures of the market provided a remarkably visible and effective test of allegiance" [Breen 2004:xv-xvi]

In this political climate, choosing domestically made goods in lieu of British imports was an act of alliance and trust. American potters during the Revolutionary period offered alternatives to imported ceramics, and therefore opportunities for colonists to collectively resist the imposition of British economic policies. In speaking of American-made coarse earthenwares, Steen (1999:70) argues that "despite being, perhaps, too quotidian to mention at the time, these ceramics are a clear manifestation of a political movement that

swept the colonies and the world." From this perspective, domestic pottery production falls far from the "lowly" and "inferior" attributes proposed by earlier scholars.

This study foregrounds the critical need for examination of the gaps and omissions within our archaeological practice. Coarse earthenwares, though not as showy nor as well documented as other ceramic types, may encode significant cultural information of use to archaeologists. While refined earthenware and other imported goods were sometimes used to convey status, coarse utilitarian wares may be better able to speak to the daily relationships of reciprocity by colonists, relationships that led to the formation of a shared American identity.

APPENDIX 1. SITE COUNTS OF CERAMICS BY WARE MATERIAL

Plantation	Site Name	Coarse Earthenware	Porcelain	Refined Earthenware	Stoneware	Total Site Count
Ashcombs Quarter	Ashcombs Quarter	1109	15	295	88	1507
Chapline Place	Chapline Place	144	38	509	236	927
Fairfield Plantation	Fairfield Quarter	1343	272	3241	1547	6403
Governors Land	44JC298	34	0	9	0	43
Monticello	Elizabeth Hemings	3	87	658	2	750
Monticello	Site 7	493	60	1957	497	3007
Monticello	Site 8	2034	319	3341	858	6552
Monticello	Building o	59	1479	4386	390	6314
Monticello	Building l	20	218	1227	59	1524
Monticello	Building s	150	775	4808	453	6186
Monticello	Building t	81	444	2448	332	3305
Monticello	Building r	31	379	1853	146	2409
Mount Vernon	House for Families	208	72	167	212	659
Navair	Navair	753	3	155	85	996
Palace Lands	Palace Lands Quarter	200	121	1431	283	2035
Poplar Forest	Quarter Site	457	17	4221	258	4953
Poplar Forest	North Hill	271	7	2096	99	2473
Richneck	Richneck Quarter	813	36	1257	775	2881
Stratford Hall	ST116	172	54	354	58	638
Utopia	Utopia II	98	0	82	29	209
Utopia	Utopia III	1929	28	471	504	2932
Utopia	Utopia IV	329	53	562	286	1230
Total Ware Count		10731	4477	35528	7197	57933

APPENDIX 2. GLAZE COMBINATIONS ON COMMON COARSE EARTHENWARES BY SITE

Exterior-Interior Glaze/Site	Brown-Brown	Unglazed-Brown	Black-Black	Clear-Clear	Unglazed-Green	Green-Green	Unglazed-Clear	Unglazed-Unglazed	Unglazed-Black	Brown-Green	Brown-Unglazed	Green-Brown	Brown-Clear
Navair	143	69	40	35	20	27	26	10	11	0	6	4	5
Poplar Forest Quarter	212	78	2	1	4	53	0	0	0	20	0	37	1
Utopia III	173	126	0	12	9	5	2	5	0	4	5	0	5
Monticello Site 8	142	24	72	28	0	1	3	6	20	5	6	0	1
Monticello Site 7	114	48	66	9	1	0	15	5	41	0	1	0	0
Fairfield Quarter	57	86	11	13	31	10	23	9	4	3	12	5	4
Ashcombs Quarter	37	41	9	0	51	8	15	7	3	3	9	0	0
Richneck Quarter	66	30	19	20	10	12	5	8	3	3	1	1	0
Monticello Building o	45	10	3	5	1	3	3	20	1	30	0	0	9
Monticello Building s	26	15	2	33	0	1	2	5	0	0	19	0	3
Poplar Forest North Hill	83	2	0	1	0	1	0	0	0	2	6	0	0
Utopia IV	42	15	16	0	1	1	0	2	1	0	1	0	0
Monticello Building t	27	11	13	3	0	1	3	3	0	0	2	0	1
Chapline Place	20	12	0	1	10	6	3	1	2	2	0	0	1
Palace Lands Quarter	5	5	6	7	1	0	17	1	1	0	0	0	0
Mt. Vernon House for Families	14	13	4	3	0	0	0	3	0	0	1	0	0
Monticello Building r	5	2	0	2	0	0	2	5	0	0	2	0	0
Stratford Hall ST116	11	6	0	0	0	0	1	3	1	0	0	0	0
Monticello Building l	0	1	2	0	0	1	2	1	0	0	0	0	0
Monticello E. Hemings	2	0	0	0	0	0	0	0	0	0	0	0	0
Governor's Land	0	0	0	0	0	0	0	1	0	0	1	0	0
Utopia II	0	0	0	0	2	0	0	0	0	0	0	0	0
Total Glaze Count	1224	594	265	173	141	130	122	95	88	72	72	47	30

Appendix 2. Continued.

Exterior-Interior Glaze/Site	Unglazed-Slipped	Black-Brown	Clear-Brown	Brown-Black	Brown-Slipped	Clear-Unglazed	Black-Unglazed	Clear-Slipped	Clear-Green	Green-Clear	Clear-Black	Green-Unglazed	Slipped-Slipped
Navair	5	3	3	0	0	0	1	3	2	4	2	1	2
Poplar Forest Quarter	0	0	0	0	0	0	0	0	0	0	0	2	0
Utopia III	0	0	6	0	1	0	0	0	0	0	0	0	0
Monticello Site 8	0	10	1	7	0	0	1	0	0	0	1	0	0
Monticello Site 7	4	1	0	1	0	1	1	0	0	0	0	0	0
Fairfield Quarter	2	0	0	0	0	1	1	0	0	0	0	0	0
Ashcombs Quarter	0	2	0	0	0	1	0	0	0	0	0	0	0
Richneck Quarter	1	0	0	0	0	0	2	1	0	0	0	0	0
Monticello Building o	1	1	0	0	0	0	0	0	1	0	0	0	1
Monticello Building s	0	0	3	0	0	0	0	0	0	0	0	0	0
Poplar Forest North Hill	0	0	0	4	4	0	0	0	0	0	0	0	0
Utopia IV	5	0	0	0	3	0	0	0	0	0	0	0	0
Monticello Building t	0	0	0	0	0	0	0	0	0	0	0	0	0
Chapline Place	0	0	0	0	0	0	0	0	0	0	0	0	0
Palace Lands Quarter	0	0	1	0	0	0	0	2	1	0	0	0	0
Mt. Vernon House for Families	0	0	0	0	0	0	0	0	0	0	0	0	0
Monticello Building r	0	0	2	0	0	5	0	0	1	0	0	0	0
Stratford Hall ST116	0	0	0	0	0	0	0	0	0	0	0	0	0
Monticello Building l	0	0	0	0	0	0	0	0	0	0	0	0	0
Monticello E. Hemings	0	0	0	0	0	0	0	0	0	0	0	0	0
Governor's Land	0	0	0	0	0	0	0	0	0	0	0	0	0
Utopia II	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Glaze Count	18	17	16	12	8	8	6	6	5	4	3	3	3

Appendix 2. Continued.

Exterior-Interior Glaze/Site	Slipped-Brown	Unglazed-Green	Black-Green	Green-Black	Green-Slipped	Slipped-Unglazed	Unglazed-Grey	Unglazed-Other	Unglazed-Slipped	Slipped-Clear	Total Site Count
Navair	0	0	0	0	1	0	0	0	0	1	424
Poplar Forest Quarter	0	1	0	0	0	0	0	0	0	0	411
Utopia III	0	0	0	0	0	0	0	0	0	0	353
Monticello Site 8	0	0	1	0	0	0	1	1	0	0	331
Monticello Site 7	0	0	0	0	0	0	0	0	0	0	308
Fairfield Quarter	0	1	0	0	0	1	0	0	0	0	274
Ashcombs Quarter	0	0	0	0	0	0	0	0	0	0	186
Richneck Quarter	2	0	0	1	0	0	0	0	1	0	186
Monticello Building o	0	0	0	0	0	0	0	0	0	0	134
Monticello Building s	0	0	0	0	0	0	0	0	0	0	109
Poplar Forest North Hill	0	0	0	0	0	0	0	0	0	0	103
Utopia IV	0	0	0	0	0	0	0	0	0	0	87
Monticello Building t	0	0	0	0	0	0	0	0	0	0	64
Chapline Place	0	0	0	0	0	0	0	0	0	0	58
Palace Lands Quarter	0	0	0	0	0	0	0	0	0	0	47
Mt. Vernon House for Families	0	0	0	0	0	0	0	0	0	0	38
Monticello Building r	0	0	0	0	0	0	0	0	0	0	26
Stratford Hall ST116	0	0	0	0	0	0	0	0	0	0	22
Monticello Building l	0	0	0	0	0	0	0	0	0	0	7
Monticello E. Hemings	0	0	0	0	0	0	0	0	0	0	2
Governor's Land	0	0	0	0	0	0	0	0	0	0	2
Utopia II	0	0	0	0	0	0	0	0	0	0	2
Total Glaze Count	2	2	1	1	1	1	1	1	1	1	3174

REFERENCES CITED

Adams, William Y.
1988 Archaeological Classification: Theory versus Practice. *American Antiquity* 61:40-56.

Aultman, Jennifer, Kate Grillo, Nick Bon-Harper, and Jillian Galle
2008 DAACS Cataloguing Manual: Ceramics. Electronic document, http://www.daacs.org/aboutDatabase/catalogingManual.html, accessed September 7, 2009.

Barber, Daniel M. and George R. Hamell
1971 The Redware Pottery Factory of Alvin Wilcox- at Mid-19th Century. *Historical Archaeology* 5: 18-37.

Barka, Norman F.
1973 The Kiln and Ceramics of the "Poor Potter" of Yorktown: a Preliminary Report. In *Ceramics in America*, edited by Ian M. G. Quimby, pp. 291-318. Winterthur Conference Report 1972, University of Virginia Press, Charlottesville.

2004 Archaeology of a Colonial Pottery Factory: The Kilns and Ceramics of the "Poor Potter" of Yorktown. *Ceramics in America* 2004:15-47.

Barker, David
1999 The Ceramic Revolution 1650-1850. In *Old and New Worlds*, edited by Geoff Egan and R. L. Michael, pp. 226-234. Oxbow Books, Oxford.

Beaudry, Mary C., Janet Long, Henry M. Miller, Fraser D. Neiman, and Garry Wheeler Stone
1983 A Vessel Typology for Early Chesapeake Ceramics: The Potomac Typological System. *Historical Archaeology* 17(1):18-43.

Beckerdite, Luke, Johanna Brown and Linda Carnes-McNaughton
2010 Slipware from the St. Asaph's Tradition. *Ceramics in America* 2010:14-65.

Bivins, John F., Jr
1973 The Moravian Potters in North Carolina, 1756-1821. In *Ceramics in America*, edited by Ian M. G. Quimby, pp. 255-290. Winterthur Conference Report 1972, University of Virginia Press, Charlottesville.

Bower, Beth A.
1985 The Pottery-Making Trade in Colonial Philadelphia: The Growth of an Early Urban Industry. In *Domestic Pottery of the Northeastern United States*, edited by Susan Peabody Turnbaugh, pp. 133-152. Studies in Historical Archaeology, Academic Press, Orlando.

Branin, M. Lelyn
1988 *The Early Makers of Handcrafted Earthenware and Stoneware in Central and Southern New Jersey*. Associated University Presses, Inc., Cranbury, New Jersey.

Breen, T. H.
2001[1985] *Tobacco Culture: The Mentality of the Great Tidewater Planters on the Eve of Revolution.* Princeton University Press, Princeton, New Jersey.
2004 *The Marketplace of Revolution: How Consumer Politics Shaped American Independence.* Oxford University Press, New York.

Bridenbaugh, Carl
1950 *The Colonial Craftsman*. The University of Chicago Press, Chicago.

Brown, Johanna
2009 Tradition and Adaptation in Moravian Press-Molded Earthenware. *Ceramics in America* 2009:105-138.

Carnes-McNaughton, Linda F.
1997 Transitions and Continuity: Earthenware and Stoneware Pottery Production in Nineteenth Century North Carolina. Unpublished Ph.D dissertation, Department of Anthropology, University of North Carolina, Chapel Hill.

Carr, Lois Green and Lorena S. Walsh
1988 The Standard of Living in the Colonial Chesapeake. *The William and Mary Quarterly* 45(1):135-159.

Cotter, John L. and J. Paul Hudson
1957 *New Discoveries at Jamestown: Site of the First Successful English Settlement in America*. United States Department of the Interior, Washington, D. C. Electronic document, http://www.gutenberg.org/catalog/world/readfile?fk_files=1503439&, accessed December 27, 2010.

Cox, Edward L.
1984 British America. *The International History Review* 6(4):519-528.

DAACS
2010a About DAACS. Electronic document, http://www.daacs.org/aboutDAACS/, accessed February 9, 2010.

2010b Chesapeake Archaeological Sites. Electronic document, http://www.daacs.org/resources/sites/regions/Chesapeake.php, accessed February 9, 2010.

2010c Mean-Ceramic-Date Types. Electronic document, http://www.daacs.org/aboutDatabase/MCDTypes.html#, accessed March 9, 2010.

Daniels, Christine
1993 "WANTED: a Blacksmith who Understands Plantation Work": Artisans in Maryland, 1700-1810. *The William and Mary Quarterly* 50(4):743-767.

Dickerson, Oliver M.
1912 *American Colonial Government 1696-1765: A Study of the British Board of Trade in Its Relation to the American Colonies Political, Industrial, Administrative*. Cleveland Ohio, A. H. Clark Co.

Dunnell, Robert C. and Jan F. Simek
1995 Artifact Size and Plowzone Processes. *Journal of Field Archaeology* 22(3):305-319.

Fesler, Garrett R.
2004 From Houses to Homes: an Archaeological Case Study of Household Formation at the Utopia Slave Quarter, ca. 1675-1775. Unpublished Ph.D. dissertation, Department of Anthropology, University of Virginia, Charlottesville.

Franklin, Benjamin
1768[1837] Causes of the American Discontents before 1768. In *The Works of Benjamin Franklin: Containing Several Political and Historical Tracts Not Included in Any Former Edition, and Many Letters Official and Private Not Hitherto Published, with Notes and a Life of the Author*, vol. 4. Jared Sparks, ed. Hilliard Gray, Boston.

Gibble, Patricia E.
2001 Continuity, Change, and Ethnic Identity in 18th Century Pennsylvania Red Earthenware: An Archaeological and Ethnohistorical Study. Unpublished Ph.D. dissertation, Anthropology Department, American University, Washington D.C.

2005 Eighteenth-Century Redware Folk Terms and Vessel Forms: A Survey of Utilitarian Wares from Southeastern Pennsylvania. *Historical Archaeology* 39(2):33-62.

Gough, Robert J.
1983 The Myth of the "Middle Colonies" an Analysis of Regionalization in Early America. *The Pennsylvania Magazine of History and Biography* 107(3):393-419.

Glassie, Henry
1999 *Material Culture*. Indiana University Press, Bloomington and Indianapolis.

Heath, Barbara J.
1999 *Hidden Lives: the Archaeology of Slave Life at Thomas Jefferson's Poplar Forest.* University Press of Virginia, Charlottesville.

Hill J. N. and R. K. Evans
1972 A Model for Classification and Typology. In *Models in Archaeology*, edited by David L. Clarke, pp. 231-273. Methuen, London.

Hudgins, Lisa
2009 Staffordshire in America: The Wares of John Bartlam at Cain Hoy, 1765-1770. *Ceramics in America* 2009:68-80.

Hunter, Robert
2009 Staffordshire Ceramics in Wachovia. *Ceramics in America* 2009:81-104.

Klingaman, David C.
1969 The Development of the Coast-Wise Trade of Virginia in the Late Colonial Period. *The Virginia Magazine of History and Biography* 77(1):26-45.

Lasansky, Jeannette
1979 *Central Pennsylvania Redware Pottery 1780-1904*. Union County Oral Traditions Projects, Lewisburg, Pennsylvania.

Luckenbach, Al
2002 Ceramics from the Edward Rumney/Stephen West Tavern, London Town, Maryland, Circa 1725. *Ceramics in America* 2002:131-152.

Magid, Barbara H.
2005 Sugar Refining Pottery from Alexandria and Baltimore. *Ceramics in America* 2005:223-229.

Magid, Barbara H. and Bernard K. Means
2003 In the Philadelphia Style: The Pottery of Henry Piercy. *Ceramics in America* 2003: 47-86.

Maryland Archaeological Conservation Lab
2011 Diagnostic Artifacts in Maryland: Buckley-type. Electronic document, http://www.jefpat.org/diagnostic/Historic_Ceramic_Web_Page/Historic%20Ware%20Descriptions/Buckley.HTM, accessed May 10, 2011.

Martin, Ann Smart
1996 Material Things and Cultural Meanings: Notes on the Study of Early American Material Culture. *The William and Mary Quarterly* 53(1):5-12.

McCartney, Martha W. and Edward Ayres
2004 Yorktown's "Poor Potter": A Man Wise Beyond Discretion. *Ceramics in America* 2004:48-59.

Merritt, Richard L.
1964 The Colonists Discover America: Attention Patterns in the Colonial Press, 1735-1775. *The William and Mary Quarterly* 21(2):270-287.

Miller, George L
1984 Marketing Ceramics in North America: an Introduction. *Winterthur Portfolio* 19(1):1-5.

Monette, Yves, Marc Richer-LaFleche, Marcel Moussette, Daniel Dufournier
2007 Compositional Analysis of Local Redwares: Characterizing the Pottery Productions of 16 Workshops Located in Southern Quebec Dating from the Late 17th to Late 19th-Century. *Journal of Archaeological Science* 34:123-140.

Myers, Susan H.
1984a Marketing American Pottery: Maulden Perine in Baltimore. *Winterthur Portfolio* 19(1):51-66.

1984b The Business of Potting, 1780-1840. In *The Craftsman in Early America*, edited by Ian M. G. Quimby, pp. 190-233. The Henry Francis du Pont Winterthur Museum. W. W. Norton & Co., New York.

Nenk, Beverley S. and Michael J. Hughes
1999 Post Medieval Redware Pottery of London and Essex. In *Old and New Worlds*, edited by Geoff Egan and R. L. Michael, pp. 235-245. Oxbow Books, Oxford.

Neuwirth, Jessica and Silas D. Hurry
1999 Nineteenth-Century Material Life in the Chesapeake Countryside. In *The Archaeology of 19th-Century Virginia*, edited by John H. Sprinkle, Jr. and Theodore R. Reinhart, pp. 141-160. Spectrum Press, Richmond, Virginia.

Noël Hume, Ivor
1969 *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York.

Otto, John Solomon
1984 *Cannon's Point Plantation, 1794-1860: Living Conditions and Status Patterns in the Old South*. Studies in Historical Archaeology, Academic Press, Orlando.

Owen, Victor and John D. Greenough
2010 Mineralogical and Geochemical Characterization of Eighteenth-Century Moravian Pottery from North Carolina. *Ceramics in America* 2010:168-187.

Pendery, Steven R.
1985 Ceramics and the Colonial System: The Charlestown Example. In *Domestic Pottery of Northeastern United States*, edited by Susan Peabody Turnbaugh, pp. 67-80. Studies in Historical Archaeology, Academic Press, Orlando.

Perdue, Charles L., Jr, Thomas E. Barden and Robert K. Phillips
1976 *Weevils in the Wheat: Interviews with Virginia Ex-Slaves*. Indiana University Press, Bloomington.

Quimby, Ian M. G., editor
1984 *The Craftsman in Early America*. The Henry Francis du Pont Winterthur Museum. W. W. Norton & Co., New York.

Rice, A. H. and John Baer Stoudt
1929 *The Shenandoah Pottery*. Shenandoah Publishing House, Strasburg, VA.

Rice, Prudence M.
1987 *Pottery Analysis: a Sourcebook*. University of Chicago Press, Chicago.

Rouse, Irving
1960 The Classification of Artifacts in Archaeology. *American Antiquity* 25(3):313-323.

Russ, Kurt C.
1999 The Archaeology of 19th-Century Virginia Coarsewares. In *The Archaeology of 19th-Century Virginia*, edited by John H. Sprinkle, Jr. and Theodore R. Reinhart, pp. 193-252. Spectrum Press, Richmond, Virginia.

Russo, Jean B.
1988 Self-sufficiency and Local Exchange: Free Craftsmen in the Rural Chesapeake Economy. In *Colonial Chesapeake Society*, edited by Lois Green Carr, Philip D. Morgan, and Jean B. Russo, pp. 389-432. The University of North Carolina Press, Chapel Hill.

Rye, Owen S.
1981 *Pottery Technology: Principles and Reconstruction*. Manuals in Archaeology Vol. 4. Taraxacum, Washington, DC.

Savelle, Max
1973 *A History of Colonial America.* Dryden Press, Hinsdale, Illinois.

Schooner, Greg
2002 Review of *Country Pottery: Traditional Earthenware of Britain*, by Andrew McGarva. *Ceramics in America* 2002:246-248.

Shepherd, James F. and Samuel H. Williamson
1972 The Coastal Trade of the British North American Colonies, 1768-1772. *The Journal of Economic History* 32(4):783-810.

Shammas, Carole
1982 Consumer Behavior in Colonial America. *Social Science History* 6(1):67-86.

South, Stanley
1999 *Historical Archaeology in Wachovia*. Springer, New York.

Straube, Beverly A.
1995 The Colonial Potters of Tidewater Virginia. *Journal of Early Southern Decorative Arts* 26(2):1-40.

Stanton, Lucia C.
1996 *Slavery at Monticello*. Thomas Jefferson Memorial Foundation, Charlottesville, Virginia.

2000 *Free Some Day: the African-American Families of Monticello*. Thomas Jefferson Foundation, Charlottesville, Virginia.

Starbuck, David R. and Mary B. Dupré
1985 Production Continuity and Obsolescence of Traditional Redwares in Concord, New Hampshire. In *Domestic Pottery of the Northeastern United States*, edited by Susan Peabody Turnbaugh, pp. 133-152. Studies in Historical Archaeology, Academic Press, Orlando.

Steen, Carl
1999 Pottery, Intercolonial Trade, and Revolution: Domestic Earthenwares and the Development of an American Social Identity. *Historical Archaeology* 33(3):62-72.

Teller, Barbara Gorely
1985 The Founding of a Dynastic Family Industry: The Hews, Redware Potters of Massachusetts. In *Domestic Pottery of the Northeastern United States*, edited by Susan Peabody Turnbaugh, pp. 249-263. Studies in Historical Archaeology, Academic Press, Orlando.

Thomas, Brian W.
1998 Power and Community: The Archaeology of Slavery at the Hermitage Plantation. *American Antiquity* 63(4):531-551.

Thompson, Timothy A.
1999 The Distribution of Consumer Goods in Virginia. In *The Archaeology of 19th-Century Virginia,* edited by John H. Sprinkle, Jr. and Theodore R. Reinhart, pp. 161-191. Spectrum Press, Richmond, Virginia.

Turnbaugh, Sarah Peabody
1983 17th and 18th Century Lead-Glazed Redwares in the Massachusetts Bay Colony. *Historical Archaeology* 17(1): 3-17.

1985a Imitation, Innovation and Permutation: The Americanization of Bay Colony Lead-Glazed Redwares. In *Domestic Pottery of the Northeastern United States*, edited by Susan Peabody Turnbaugh, pp. 133-152. Studies in Historical Archaeology, Academic Press, Orlando.

Turnbaugh, Sarah Peabody (editor)
1985b *Domestic Pottery of the Northeastern United States*. Studies in Historical Archaeology, Academic Press, Orlando.

Veit, Richard and Mark Nonestied
2003 Taken for Granite: Terracotta Gravemarkers from New Jersey and New York. *Ceramics in America* 2003:173-195.

Walsh, Lorena S.
1988 Community Networks in the Early Chesapeake. In *Colonial Chesapeake Society*, edited by Lois Green Carr, Philip D. Morgan, and Jean B. Russo, pp. 200-241. The University of North Carolina Press, Chapel Hill.
1999 Summing the Parts: Implications for Estimating Chesapeake Output and Income Subregionally. *The William and Mary Quarterly* 56(1):53-94.

Watkins, Lura Woodside
1950 *Early New England Potters and Their Wares.* Harvard University Press, Cambridge.

Wiltshire, William E.
1975 *Folk Pottery of the Shenandoah Valley*. E. P. Dutton and Co., New York.

Worrell, John
1985a Re-Creating Ceramic Production and Tradition in a Living History Laboratory. In *Domestic Pottery of the Northeastern United States*, edited by Susan Peabody Turnbaugh, pp. 81-97. Studies in Historical Archaeology, Academic Press, Orlando.

1985b Ceramic Production in the Exchange Network of an Agricultural Neighborhood. In *Domestic Pottery of the Northeastern United States*, edited by Susan Peabody Turnbaugh, pp. 153-169. Studies in Historical Archaeology, Academic Press, Orlando.

Wylie, Alison
2002 The Typology Debate. In *Thinking from Things: Essays in the Philosophy of Archaeology*, pp. 42-56. The University of California, Berkeley.

Zipp, Brandt and Mark Zipp
2004 James Miller, Lost Potter of Alexandria, Virginia. *Ceramics in America* 2004:253-261.

Zug, Charles G.
1986 *Turners and Burners: The Folk Potters of North Carolina*. University of North Carolina Press, Chapel Hill.