

Northeast Historical Archaeology

Volume 33

Article 11

2004

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Recommended Citation

Breen, Eleanor E. (2004) "Whose Trash is it, Anyway? A Stratigraphic and Ceramic Analysis of the South Grove Midden (44FX762/17), Mount Vernon, Virginia," *Northeast Historical Archaeology*: Vol. 33 33, Article 11.
<https://doi.org/10.22191/neha/vol33/iss1/11> Available at: <http://orb.binghamton.edu/neha/vol33/iss1/11>

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Cover Page Footnote

I am grateful to the following people for their contributions at every stage: Dennis Pogue, Esther White, Steve Mrozowski, and David Landon. I must thank my on-call math consultant, Dr. Denis Breen (my dad), for his help on the statistical requirements of this study. My thanks also go to the anonymous scholars who reviewed this paper.

Whose Trash is it, Anyway? A Stratigraphic and Ceramic Analysis of the South Grove Midden (44FX762/17), Mount Vernon, Virginia

Eleanor E. Breen

Throughout the twenty-year history of professional archaeological excavations at George Washington's Mount Vernon, a single refuse feature represents the only deposit unearthened that can speak to the material manifestations of changes in the Washington households within a pre-Revolutionary War context. With the discovery of the large, oval-shaped feature that came to be known as the South Grove Midden (44FX762/17), Mount Vernon archaeologists realized they had uncovered a stratified deposit that could link the successive Washington households with their material culture. This paper asks: whose trash is it, anyway? To answer this question, I employ the methodology of increasingly specific seriation analyses on groupings of ceramics to view stratigraphic variations in ceramic use and discard. The interpretive framework of household archaeology unites the archaeological record with the historical context of household cycles at pre-1775 Mount Vernon. This paper concludes that the bulk of the midden represents those household goods purchased by Lawrence Washington, and used and discarded by his and young George Washington's households.

Durant les vingt années de fouilles archéologiques professionnelles au Mont Vernon de George Washington, on ne trouve qu'un seul endroit aménagé pour recevoir les rebuts. C'est le seul dépôt découvert pouvant indiquer les manifestations des changements matériels survenus dans les maisonnées de Washington dans un contexte de guerre pré-révolutionnaire. Avec la découverte de cet élément ovale de taille importante nommée la fosse à déchets de South Grove (44FX762/17), les archéologues ont réalisé qu'ils avaient détéré un dépôt stratifié qui pouvait relier les maisonnées successives de Washington à leur culture matérielle. Cet article tente de répondre à la question suivante: à qui appartient ces déchets? Nous tenterons de répondre à cette question par une méthode visant à appliquer une analyse par sériation de plus en plus spécifique à des groupes de céramiques. Ceci nous permettra de voir les variations stratigraphiques dans l'utilisation et la mise au rebut des objets. Le cadre interprétatif de l'archéologie de la maisonnée réunit l'évidence archéologique et le contexte historique des cycles d'une maisonnée au Mont Vernon avant 1775. Cet article propose en conclusion que la plus grosse partie de la fosse à déchets contient les articles ménagers achetés par Lawrence Washington, utilisés et jetés ensuite par les membres de sa maisonnée et de celle du jeune George Washington.

Introduction

In 1948, landscapers at Historic Mount Vernon excavated a large hole in the South Grove, located down slope from George Washington's house, and planted a holly tree. The physical evidence exposed during this excavation intrigued archaeologists at Mount Vernon for the next 50 years. Over 35 individual wine bottles, in addition to numerous other artifacts dating to the 18th century, suggested to archaeologists that the South Grove area contained midden deposits formed from the disposal of kitchen and Mansion refuse during George Washington's lifetime. In the spring of 1990, the Mount Vernon Archaeology

Department began to explore this artifact rich area (FIG. 1) in order to determine if intact midden deposits survived (White 1993).

From the first discovery of the eastern edge of the intact midden in 1990 until the end of the field season in 1993, archaeologists systematically excavated the midden, paying close attention to fine-grained changes in soil color, texture, and artifact contents. Dennis Pogue (1991: 29) described the feature as "an extensive 'sheet midden,' or shallow complex of layers of trash and soil... beginning just 80 feet [24.38 m] south of the Mansion, extend[ing] east and south and appears to be at least 30 feet [9.15 m] in diameter and in excess of one and one-half feet thick at its center" (FIG. 2).

The midden seems to have formed in a natural depression, based on the profile of the walls and base of the deposit (Pogue 1991: 34). Over 50 distinct deposits comprised the eastern profile of the midden (FIG. 3). Without the stratigraphic, systematic excavation and recording of the feature, the opportunity to search for micro-scale changes in the South Grove Midden would have been lost.

As a result of thorough excavation, in conjunction with initial stratigraphic and artifact analysis, archaeologists Dennis Pogue and Esther White postulated that this midden possessed complex stratigraphy with a high degree of integrity (Mount Vernon Archaeology Department 1990). A brick drain, constructed in ca. 1775 to direct water run-off from the new wing of the Mansion (Breckenridge 1996, Pogue 1991: 32), intruded into the strata of the South Grove Midden thereby providing a valuable terminus ante quem (TAQ). Therefore the decision was made to focus on the pre-1775 deposits of the midden, which then begged the question: what is the terminus post quem (TPQ) or beginning date of the feature? If the midden below the brick drain was to be studied as a distinct deposit, could it then be linked to a particular Washington household? Could it be



Figure 1. Aerial photo of excavations of the South Grove Midden, facing north.

subjected to stratigraphic and artifact analysis that would then, in turn, tease out changes in the extended Washington family and their material culture in the decades before the Revolution?

The ceramic seriation method used in this study directly addresses George Miller's (1991) critique of historical site analysis where he argues against the conflation of artifact assemblages to the detriment of understanding change in the archaeological record. Simply put, "Lumping [artifact assemblages] is not a way to control the element of time as it masks changes that took place, which is one of the major subjects of archaeological inquiry" (Miller 1991: 5). Miller (1991: 3) writes:

Clearly, the lumping of excavated collections, particularly in sites occupied for long periods of time, is a cop out on one of the main objectives of archaeological research which is the study of changes through time... Even for sites occupied for short periods of time it is sometimes possible to break the collections into sub-assemblages... That level of control of our data is necessary to deal with questions of acquisition and deposition of ceramics, and of course the site formation process will be better understood by establishing better control of the element of time.

The ability to amass historic assemblages into broad phases or break collections down

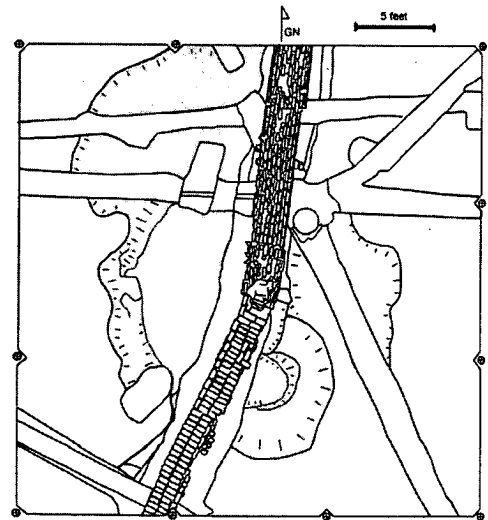


Figure 2. Plan view map of the midden feature after excavation.

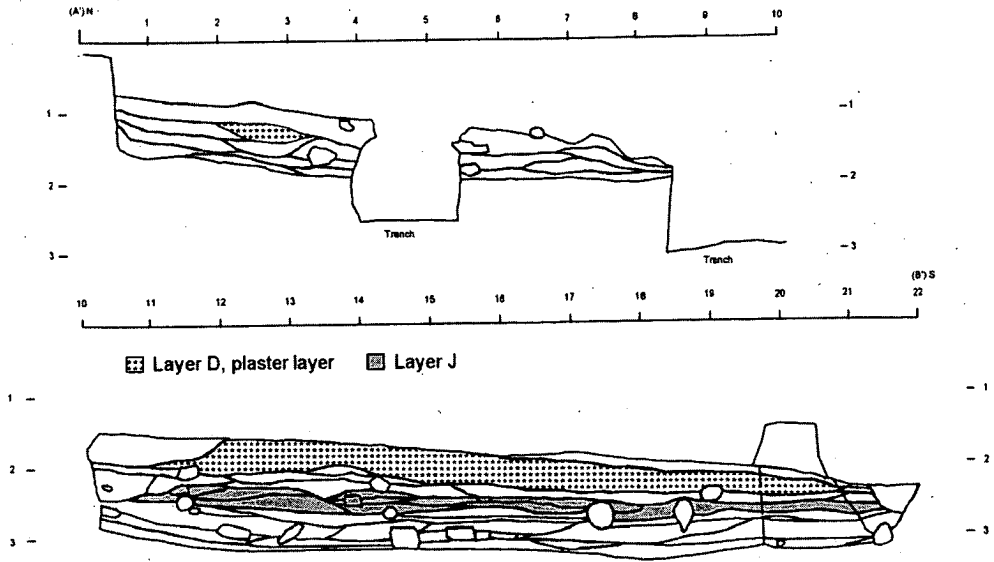


Figure 3. Profile views of test units 328 and 348, facing east.

into sub-assemblages, however, assumes the archaeologist has thoroughly analyzed all existing data. One issue facing historical archaeology today is how to deal with or analyze the body of data collected in the field. I advocate an inductive approach that involves studying all strata excavated (including characteristics such as soil color and texture, artifact contents, and spatial relationships) and only then beginning to search for patterns that will support groups or phases. This is opposed to a deductive approach where the archaeologist lets his or her impressions guide the interpretation and presentation of field research. The seriations performed on the South Grove Midden assemblage, as one method of an inductive approach, support Miller's methodology and indicate that, though the deposit formed within a relatively short period of time, changes in ceramic use and discard are evident. Instead of reducing the South Grove Midden artifact assemblage to one general time period and attributing it to one household occupation, this research employs a series of archaeological analyses to demonstrate that change can be seen and the deposit can be linked to the households at Mount Vernon.

Archaeological evidence works in tandem with historical documentary sources in order to support the hypothesis that the pre-1775 deposit relates to the ca. 1735–1765 period at Mount Vernon, the bulk of which dates to the 1740s and 1750s. Additionally, this paper hypothesizes that micro-level studies of ceramic assemblages are critical for addressing change. Just as the artifacts of a feature should not be lumped, neither should the history of the Washington family be subsumed into one pre-1775 historical narrative. The concept of household archaeology represents the overarching framework of this paper as it seeks to interpret household deposits by integrating known documentary histories with stratigraphic analyses in order to illuminate the link between material culture and the household. This paper concludes with a hypothesis as to how the deposits and changes in ceramic frequency in the South Grove Midden relate to changes in the Washington households in the mid-18th century.

Household Archaeology

Historical archaeologists realized early on that houses and their associated features were

the predominant site type found in the historic archaeological record and, therefore, demanded critical attention if broader and more meaningful conclusions based upon this evidence were to be made. Historians (Demos 1970; Laslett 1972; Goody 1971), anthropologists (Wilk, Netting, and Arnould 1984), and archaeologists (Kramer 1982; Beaudry 1984; Starbuck 1984; Pinello 1989; King 1993) alike have explored the idea of the household as a valid unit through which to study culture change. Historical archaeologists have looked at household-level archaeology and have identified as critical the ability to link individual archaeological features to specific periods in the lifecycle of the households in which they are interested (Wilk and Rathje 1982; Mrozowski 1984; Beaudry 1999; Groover 2001).

A household archaeology research framework should include the following elements: "fine-grained quantitative analysis" (Groover 2001: 54) of both site formation and depositional history; an understanding of the feature's spatial relationship to the landscape (Beaudry 1986); artifact analysis beyond a sherd count and mean ceramic date (Mrozowski 1984; Groover 2001); and historical research on household cycles during the relevant time period (Beaudry 1984, 1999). Beaudry (1999: 123) characterizes this type of approach as "full-fledged contextual archaeology." Household archaeology is a research framework that requires archaeologists to perform fully contextualized analyses at the household level in order to understand broader questions of culture change. More and more, contextual household archaeological studies have become ingrained in historical archaeological inquiry. Because of the collective work of archaeologists such as Mrozowski, Beaudry, Groover, and others, the discipline expects that archaeologists working at the household level will synthesize all available aspects of data related to a site. I begin the contextual household archaeological study of the South Grove Midden by placing the refuse deposit within the broader history and landscape of Mount Vernon.

Midden Context

In her article on land use in Massachusetts, Beaudry (1986: 44) recommends "that analysis of landscape treatment be combined with the quantitative analysis of fully delineated phases of feature construction and refuse deposition that relate to the documentary chronology of household composition." Quantitative analysis of artifacts, while speaking to issues of commercialism and consumerism, provides only a limited view of the subtleties of social and economic position. Landscape treatments that focus on the symbolic and ideological motives for the manipulation of the house and homelot in addition to a "detailed chronological perspective on changing land use over time," complement quantitative artifact analysis (Beaudry 1986: 38–39). The rise of the Washington family in the colonial class system is mirrored in the changes made to the Mount Vernon house and homelot in the 30-year time span when the South Grove Midden refuse accumulated.

Four different household groups comprised the occupations of Mount Vernon from ca. 1735 to 1760: the Augustine Washington household; the Lawrence Washington household; the George Washington household; and the early George and Martha Washington household. In ca. 1735, the Augustine Washington household built and inhabited the house overlooking the Potomac River (Pogue 1994: 103; Mesick, Cohen, Waite Architects 1993: 77–78). Upon Augustine's death in 1743, his first-born son, Lawrence Washington, acquired the property through inheritance. Lawrence Washington married Anne Fairfax of Belvoir in July of 1743 (Henriques 1992: 243), and subsequently made an undocumented number of architectural changes to the house his father built as an outward symbol of Lawrence's entry into the upper echelons of colonial society. Following Lawrence Washington's death in 1753, George Washington, the younger half-brother, rented the estate, including the house, goods, and slaves contained therein (Abbot et al. 1983: 232–235). Because George Washington was often away on military expeditions during his

first years at Mount Vernon, his brother, John Augustine, and his wife, Hannah, oversaw the plantation in his absence. Pogue (1994: 103) writes, "The plantation that George Washington acquired in 1754 was much different in almost all respects from the one he left behind at his death 45 years later. In addition to being only a fraction of the size it would later achieve, the planter's house and homelot reflected a more humble outlook and station in society." However, "after the French and Indian War in 1758, George Washington sought to earn his place among Virginia's planter elite" by increasing his land, slave holdings, and tobacco production, nearly doubling the size of his house, and marrying the wealthy widow, Martha Custis. Also at this time, George Washington made his first documented purchases of ceramics through the colonial consignment system wherein tobacco was consigned to British factors who would then extend credit to the planters for use in the purchase of goods (Detweiler 1982: 17-34).

George Washington's role as the architect of both his home and surrounding landscape is well documented (Dalzell and Dalzell 1998); however, the changes to both house and homelot from ca. 1735 through 1758 did not find their way into the historical record. Prior to Lawrence Washington's death, our understanding of the evolution of the house and the layout and use of the lands is only tentative. Lawrence Washington's estate inventory of 1753 contains the first clues as to the arrangement of the area south of the Mansion. Walls, identified archaeologically, connected a dairy and a kitchen, extending diagonally from the southwest corner of the Mansion. Because of the smaller size of the Mansion in 1753 and the placement of the early kitchen, the South Grove Midden would have sat farther away from both structures than it does today (Pogue 1994: 104-105). Most likely in the years that the refuse accumulated, the South Grove represented a workspace where activities occurred related to the day-to-day operations of the plantation. Not until 1776 did George Washington seek "to improve on the natural

landscape [in] the area south of the Mansion" and did so by planting a grove of trees (Pogue 1991: 29).

The nature of the archaeological record in the South Grove also confirms the change in waste disposal and landscape use at Mount Vernon noted in the documentary record. The types and quantities of artifacts differ between the pre- and post-1775 deposits. The post-1775 assemblage is comprised of significantly fewer artifacts and the ceramic vessels are made up of only a few sherds suggestive of a sheet midden or secondary deposition, in comparison to the artifact-rich and more extant vessel assemblage of the lower layers that appear to be primary deposits. In other words, the South Grove changed from a space cluttered with faunal and domestic debris to an area kept cleaner by the conscious reduction of trash deposition and the change in activities that took place there. By planting trees and erecting a post-in-ground fence that visually divided the outbuildings of the South Lane from the grove, George Washington effectively changed the South Grove from a utilitarian space to the more formal and naturalistic "pleasure ground" seen today (Pogue 1991). As the generations of Washington households benefited from their participation in the colonial tobacco economy, they improved and enlarged the Mount Vernon house to mirror their prosperity and upward mobility. Symbolically, the transformation of the South Grove area from workspace to formal landscape embodies the social and economic changes of the Washington households.

Stratigraphic and Ceramic Analysis of the South Grove Midden

I will now explore the archaeological signature of these economic and social changes in Washington households. The first challenge faced in analyzing the South Grove Midden was to determine what subset of the feature to intensively study and then how to create meaningful units out of the excavated strata. The intrusive brick drain feature dates to ca. 1775 and thus provides a valuable chronological benchmark within the midden's layers. This paper focuses on those layers intruded by

and below the ca. 1775 brick drain, which then establishes a TAQ for the lower layers of the deposit. I also chose to examine the western section of the midden (bounded by the brick drain to the east and a utility trench to the north) because the north and south sections, separated by intrusions, could not be chronologically linked with the west section due to low artifact counts (see FIG. 2.) While the uppermost layers of the midden date to the last quarter of the 18th century, only those layers beneath the ca. 1775 brick drain feature are considered for this paper. Significantly, there is no pearlware, creamware, or scratch-blue stoneware in the pre-1775 midden layers. These layers also lack dot, diaper, and basket white salt-glazed stoneware plates or famille-rose porcelain teaware, which arrived at Mount Vernon in ca. 1758 as part of George Washington's first documented orders of ceramics from his British factor (Detweiler 1982: 23 and 31). These ware types do exist in the post-1775 midden layers.

One hundred individually excavated strata existed in this subset of the South Grove Midden, many of which were too small to be

analyzed as single, meaningful units. Therefore, all evidence was taken into account, including artifact counts, standardized soil color descriptions, plan views, profiles, and interpretive comments contained in the field records, to consolidate the 100 stratigraphic units into 14 layers. These were assigned letters A through N, with A being the most recent of the pre-1775 sub-set and N oldest. Layer D is designated as the plaster layer due to the high concentration of this architectural debris.

Table 1 presents the breakdown of total sherds from the pre-1775 midden contexts. I do not analyze all the ware types enumerated in Table 1, but instead focus on those refined ceramics that can be dated more tightly. The colonoware and coarse earthenware excavated from the feature, while intriguing, do not provide the temporal information sought for the purposes of this research and, therefore, were not included in the ceramic analysis. In the future, minimum vessel counts and seriations of the coarse earthenwares will be conducted to study shifts in disposal patterns linked to certain domestic activities and, hence, specific groups. Those ware types over which archaeologists have better temporal control analyzed in the seriations include: Chinese export porcelain; tin-glazed earthenware; manganese mottled ware; Nottingham-like stoneware; Staffordshire slipware; white slip-dipped stoneware; white salt-glazed stoneware; and Rhenish stoneware (TAB. 2).

One important stage of analysis performed on any ceramic assemblage is the minimum vessel count. This exercise requires a detailed look at all the sherds to determine the minimum number of vessels represented and begins by sorting sherds by ware type and then crossmending sherds from multiple strata. After exhausting all possible mends, the individual sherds and crossmended groups were sorted by form. For each vessel form, the number of rims and bases were counted, taking into account those rims and bases possibly constituting the same vessel, where the lower number represents the minimum number of vessels for that form. Distinctive sherds or crossmended groups lacking rims or

Table 1. Sherds by ware type from all pre-1775 layers of the South Grove Midden.

<i>Ceramic Ware Type</i>	<i>Sherd Count</i>	<i>%</i>
Coarse Earthenware	687	20.43%
Chinese Export Porcelain	473	14.06%
Colonoware	464	13.80%
Tin-glazed Earthenware	382	11.36%
Nottingham-like Stoneware	258	7.67%
Staffordshire Slipware	255	7.58%
Manganese Mottled Ware	248	7.37%
White Salt-glazed Stoneware	165	4.91%
Rhenish Stoneware	150	4.46%
English Brown Stoneware	105	3.12%
White Slip-dipped Stoneware	73	2.17%
North Devon Earthenware	51	1.52%
Refined Earthenware	27	0.80%
General Slipware	13	0.39%
Other Stoneware	12	0.36%
Total	3363	100.00%

bases were also considered to be individual vessels. Archaeologists completed this process for the South Grove Midden assemblage and Table 3 displays a list of the vessels from the sampled pre-1775 midden contexts by ware type studied for this paper. The table gives the general form (tableware, teaware, hygiene, storage, or unknown) in addition to the specific form of each vessel.

Based upon historical and architectural evidence, the earliest possible TPQ of the midden is ca. 1735, when George Washington's father, Augustine Washington, built the Mansion (Mesick, Cohen, Waite Architects 1993: 77-78). There exists no ceramic evidence (for example, molded or slip-cast white salt-glazed stoneware) in the lowest layers of the midden to contradict this hypothesis. Analyzing TPQs for each layer gave a general range of ca. 1735 to 1765 for the South Grove Midden. Layer K, three layers up from the bottom of the midden, contained a molded white salt-glazed sherd, dated post-1740 (Miller 2000: 10). Layers J and K also contained molded pipe bowls displaying the royal arms motif that date from the early 1740s (Breckenridge 1996). Layer H, in the center of the midden, contained a tin-glazed ointment pot sherd dated to ca. 1750, as did layer E (Noël Hume 1977: 25). The ca. 1750 TPQ of layer H is supported by the appearance of a molded pipe bowl with the maker's mark "TD," dated to 1748 (Breckenridge 1996). Layer

Table 2. Sherds by ware type selected for this study from the sampled layers.

<i>Ceramic Ware Type</i>	<i>Sherd Count</i>	<i>%</i>
Chinese Export Porcelain	300	27.45%
Tin-glazed Earthenware	186	17.02%
Staffordshire Slipware	170	15.55%
Nottingham-like Stoneware	132	12.08%
Manganese Mottled Ware	125	11.44%
White Salt-glazed Stoneware	75	6.86%
Rhenish Stoneware	62	5.67%
White Slip-dipped Stoneware	43	3.93%
Total	1093	100.00%

A is capped by a deposit containing debased scratch-blue stoneware, dated ca. 1765 (Noël Hume 2001: 118).

The household occupations of Mount Vernon can be tentatively linked with this chronology. Augustine Washington and his family lived at the home from ca. 1735 to 1738 (Dalzell and Dalzell 1998: 25) and again, briefly, in 1741 to 1742 (Warren 1999: 5791). Lawrence Washington may have lived at Mount Vernon in 1738 and 1739 as he purchased local lands during those years (Jackson et al. 1976: 227). Augustine Washington willed his son, Lawrence, the property in 1743 whereupon the eldest son took up residence with his wife, Anne Fairfax. Lawrence Washington occupied the plantation until his death in 1752 (Abbot et al. 1983: 234). Anne Fairfax and her second husband leased the property to George Washington (Abbot et al. 1983: 232-234), and he lived there as a bachelor, when he was not off in the French and Indian War, from 1754 to 1759. George Washington started his own family in 1759 with his marriage to Martha Dandridge Custis (Wall 1988: 24). Figure 4 graphically represents the changes in Washington households during the 1735 to 1775 time period.

Based on the demographic information, dates can be assigned to a few of the midden's layers and household occupations can be linked to these dates, but still nothing is known about the way in which the ceramics were deposited or if there was any change in the use and discard of the vessels in the assemblage from the period ca. 1735 to 1765. Seriation can tease out the subtle changes in ceramic deposition within the midden's layers.

Seriation

Archaeologists use seriation to investigate relative dates. Seriation is based on the idea of popularity—where a new object enters the scene, becomes increasingly popular until it hits maximum popularity, and then decreases, fading out to the end of its use. Viewed graphically, the resulting ideal seriation curve resembles what archaeologists call a "battle-

Table 3. Vessels from the South Grove Midden, layers A through N.

<i>Ware Type</i>	<i>Date Range</i>	<i>Number of Vessels</i>	<i>General Form</i>	<i>Specific Form</i>
Chinese Export Porcelain	1690-1775* 1660-1840†	14	tableware	plates
		7	teaware	teabowls
		5	teaware	saucers
		2	teaware	slop bowls
		<i>Total vessels</i>	28	
Manganese Mottled	1680-1780†	4	tableware	tankards
		1	tableware	mug
		1	tableware	possible bowl
		<i>Total vessels</i>	6	
Nottingham-like Stoneware	1683-1810‡	8	tableware	tankards
		5	tableware	bowls
		1	tableware	possible mug
		1	teaware	teapot
		<i>Total vessels</i>	15	
Rhenish Stoneware	1650-1775+†	3	hygiene	chamber pots
		2	storage	jugs
		<i>Total vessels</i>	5	
Staffordshire Slipware	1660-1770†	13	tableware	mugs
<i>Total vessels</i>		13		
Tin-glazed Earthenware	1600-1788‡	5	hygiene	chamber pots
		3	tableware	punchbowls
		2	tableware	plates
		2	unknown	possible cups
		1	tableware	cup
		1	hygiene	drug jar
		1	teaware	saucer
		<i>Total vessels</i>	15	
White Salt-glazed Stoneware	1720-1790‡	4	tableware	bowls; possible bowls
		3	tableware	tankards
		3	teaware	saucers
		2	tableware	bowls/possible patti pans
		2	teaware	teapots; possible teapots
		1	tableware	porringer
		1	tableware	possible plate
		1	teaware	coffee or chocolate cup
		1	teaware	poss. teabowl
		1	teaware	creamer
		1	teaware	milk pitcher
		1	teaware	coffee pot
		<i>Total vessels</i>	21	
White Slip-dipped Stoneware	1715-1775‡	7	tableware	tankards
		1	teaware	poss. coffee/ chocolate cup or capuchine
<i>Total vessels</i>		8		

Sources: *(Madsen 1995); †(Department of Archaeological Research 2001); ‡(Miller 2000).

ship-shaped" curve. In Deetz's (1967: 27) words: "

The beginning would be narrow, like the ship's stern, and as the popularity... grew, the bars would widen, until the height of popularity would be reached amidships, and then the decline in popularity would carry us forward to the bow, narrow like the stern.

Applying this popularity model to historic ceramics, one could assume that as manufacturing technologies were invented and modified, one ceramic type petered out to the end of its popularity as another replaced it.

I used frequency seriation for this analysis, a technique that "involve[s] determining a sequence of sites or deposits by studying the relative frequencies of certain artifact types they contain" (Sharer and Ashmore 1993: 309). Frequency seriation takes into account percentages of artifacts deposited in certain units. It "relies principally on measuring changes in

the proportional abundance, or frequency, of a ceramic style" (Renfrew and Bahn 1991: 107). The method originated in prehistoric archaeology (Dunnell 1970: 305) where archaeologists attempted to arrange site assemblages in chronological order using the technique of seriation (Willey and Sabloff 1980: 93-100; Sharer and Ashmore 1993: 307-313). Historical archaeologists adopted frequency seriation; Deetz and Dethlefsen's (1967: 28-37) work on colonial cemeteries is the most well known example. Carskadden and Gartley (1990: 55-69) seriated 19th-century marbles. Fraser Neiman (1999) seriated features at Clifts Plantation and is using a form of seriation for the Digital Archaeological Archive of Chesapeake Slavery project (Neiman, Galle, and Wheeler 2003). Pogue and White (1991) used seriation to propose four layers, or periods of deposition, of the House for Families' slave quarter cellar fill at Mount Vernon.

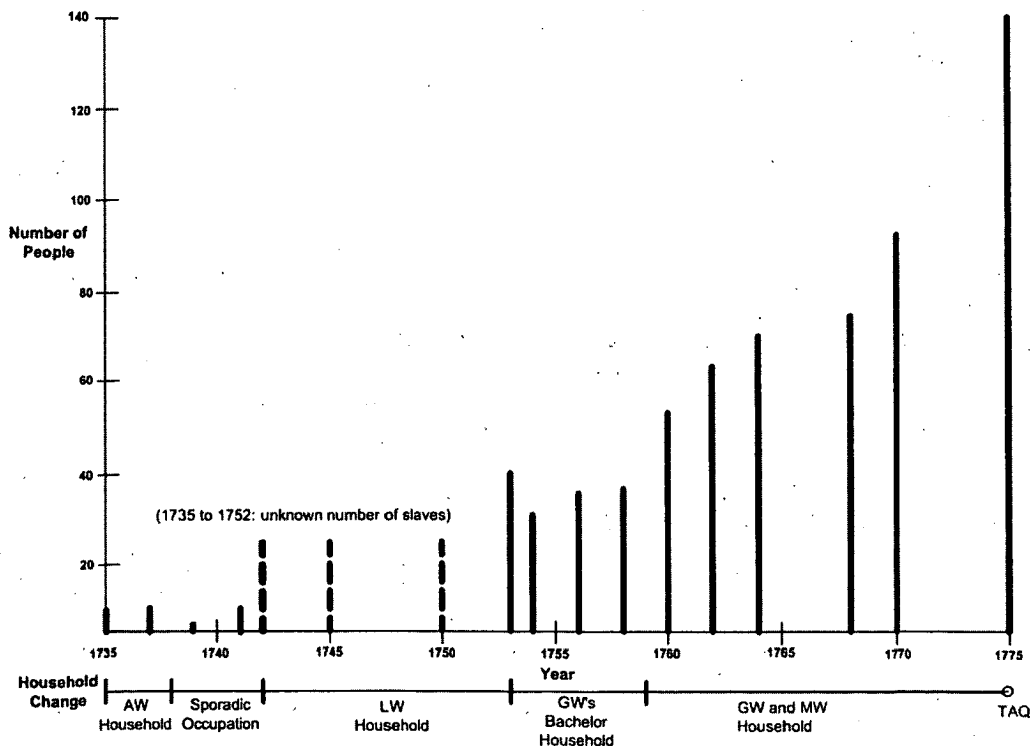


Figure 4. Washington household demographic change by year.

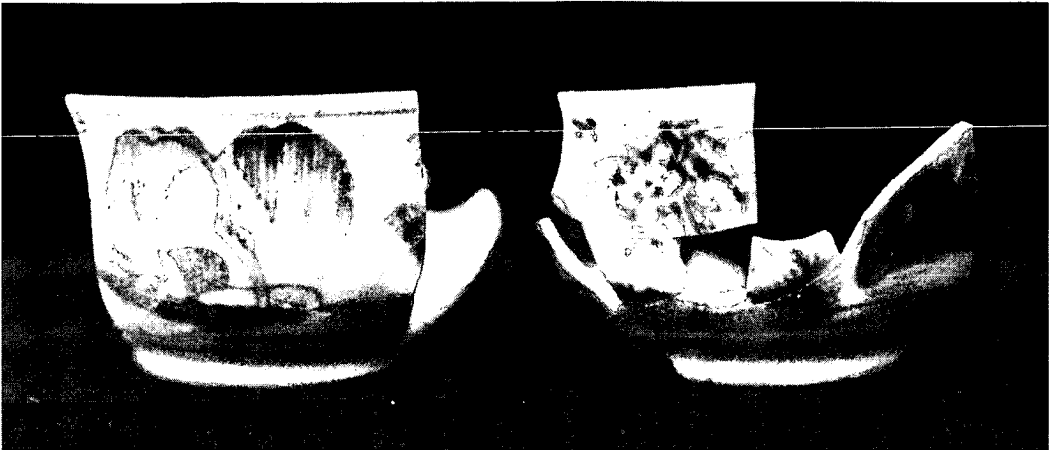


Figure 5. Example of teawares from the South Grove Midden: underglaze blue, landscape motif Chinese export porcelain teabowls.

Initially, archaeologists used seriation on sites where little stratigraphic information exists in order to inform their relative chronologies. As sites are increasingly excavated with focused attention to stratigraphic relationships and soil changes, the purpose and usefulness of seriation is also changing. This paper proposes that seriating different groupings of artifacts, in this case ceramics, where stratigraphic relationships are known is still a viable and important tool for historical archaeologists. Ceramic seriation, for this study, is used as a tool to ascertain the duration of time spanned by the midden deposits and, hence, provides a fine-grained look at household ceramic changes as seen within the South Grove Midden.

The seriation data supports the following conclusion in regards to the depositional history of the South Grove Midden: the deposit built up fairly rapidly (during a span of roughly 30 years), but there are two distinct peaks in sherd deposition that can be tied to changes in ceramic vessel use and discard within this brief period. These conclusions derived from three different stages of seriation: one at the sherd level and two at the vessel level. The first level of seriation focused on sherd frequency within the pre-1775 midden layers in order to determine if there were peaks of ceramic deposition in the layers. The second level of analysis seriated the functional groups of ceramic vessels: teaware and table-

ware. This exercise was done to test the hypothesis that the midden spanned a period of 30 years during which few major changes in ware manufacturing technology occurred; this would be represented by a teaware (FIG. 5) or tableware seriation curve with one collective peak. Finally, the South Grove Midden assemblage was broken down into further refined sub-assemblages in order to determine if changes in ceramic vessel use and discard could be seen in different layers in the midden.

The first level of analysis involved tabulating the number of sherds by ware type in each layer of the midden and then dividing this number into the total number of that ware's sherds for all of the strata under consideration, resulting in a percentage frequency curve through all the strata for each ware type. Typically, seriations are presented as curves, but these specific data are best viewed as a line graph. In this graph (FIG. 6), each line represents the percentage of sherds by ware type that occurred in each layer (see TAB. 4). The ware types calculated include Chinese export porcelain, tin-glazed earthenware, Nottingham-like stoneware, Staffordshire slipware, manganese mottled ware, white salt-glazed stoneware, Rhenish stoneware, and white slip-dipped stoneware. A general trend emerges from this sherd level seriation. There are two peaks in ceramic sherd deposition that occur in the midden—towards the top, in layer D (represented by 231 sherds or 21 percent of

Table 4. Ceramic sherd counts broken down by layer.

Ware Type	Layer													
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Chinese Export Porcelain	1	4	19	53	21	25	17	32	9	92	26	0	1	0
Tin-glazed Earthenware	7	5	6	34	41	20	8	10	8	19	9	8	9	2
Staffordshire Slipware	4	0	5	44	19	15	17	16	8	15	12	9	6	0
Nottingham-like Stoneware	0	0	9	52	10	3	6	9	3	28	11	0	0	1
Manganese Mottled Ware	0	3	2	17	16	16	15	18	5	15	13	3	2	0
White Salt-glazed Stoneware	7	2	5	18	7	6	7	5	2	3	8	0	1	4
Rhenish Stoneware	0	0	1	6	8	8	4	8	3	17	5	1	1	0
White Slip-dipped Stoneware	0	0	5	7	11	4	8	5	0	3	0	0	0	0
Sum By Layer	19	14	52	231	133	97	82	103	38	192	84	21	20	7

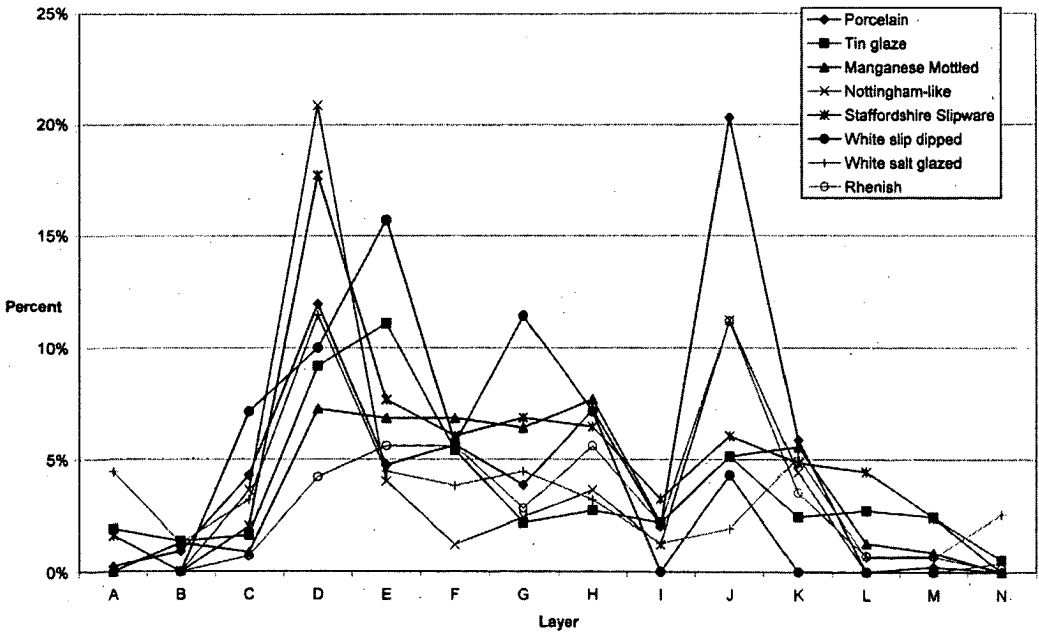


Figure 6. Sherd seriation by ware type from the South Grove Midden.

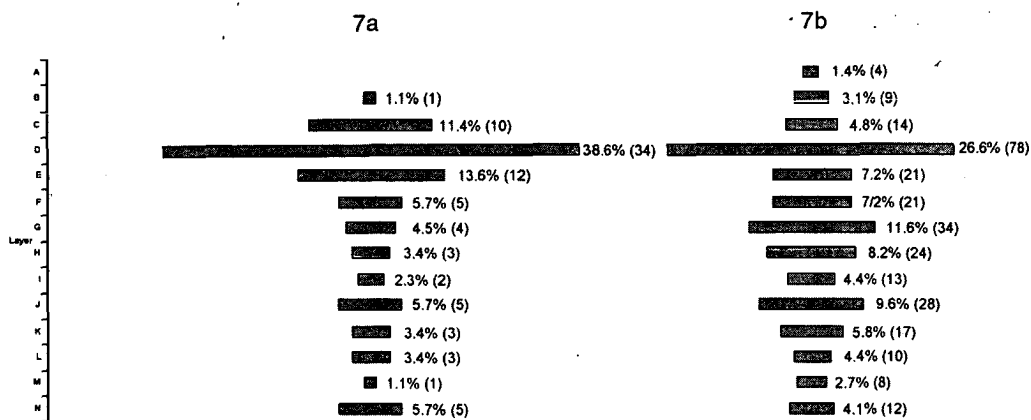


Figure 7. General form seriation: a) 27 teaware and b) 71 tableware vessels. For the following seriation figures, the percentage and sherd counts (in parentheses) are given to the right of each corresponding bar.

the total sherd count), and towards the bottom, in layer J (represented by 192 sherds or 18 percent of the total sherd count).¹ The fact that five stratified layers separate these two peaks suggests that there may have been two distinct events causing the deposition of ceramics separated by an unknown period of time.

The next stage of seriation occurred at the general vessel form level, with the seriation of sherds that comprise unique vessels broken down into the categories of teaware (FIG. 7a) and tableware (FIG. 7b). In this seriation, as with the following one, only vesselized sherds are included. Vesselized sherds refer to those determined to be part of a unique vessel. Otherwise, the method is identical: the number of sherds comprising teaware or tableware vessels for each layer is divided into the total number of sherds in the midden for each vessel category. The percentage derived for each layer is then depicted as a bar—when the bars are stacked in stratigraphic order, a curve is formed.

The hypothesis derived at this stage argues that if the South Grove Midden spanned a sig-

¹Performing a Chi-square test for association between ware type and layer would show, at a high confidence level, that there is systematic evidence for such a relationship. However, the cell counts for a number of the expected frequencies in that calculation are too low by conventional standards to make Chi-square a reliable test in this situation.

nificant number of decades, and therefore changes in manufacturing technologies, the resulting seriation curves of teaware and tableware would display different, multi-peak curves. Instead, as Figure 7 illustrates, the seriation curves are nearly identical and they both have a significant peak in layer D. These data support the hypothesis that the midden formed during a period of relatively little change in ceramic manufacturing technology and, hence, the midden formed over a relatively short period of time. Additionally, the similar, single-peak pattern seems a valid one for the mid-18th century as the ceramic consumer revolution was just taking hold in the colonies. The final level of seriation analysis seeks to answer this question: even if relatively little time is represented by the midden's layers, are changes in ceramic vessel use and discard still evident?

The third stage of seriating the South Grove Midden ceramic assemblage breaks the functional categories of teaware and tableware down into further refined sub-assemblages. The hypothesis is that if specific vessel sub-assemblages are seriated, changes in their use and discard will be recorded in the stratigraphy. Those sub-assemblages that seriate stratigraphically high in the midden include: the porcelain teawares (FIG. 8a); the tin-glazed punch bowls (FIG. 8b); the Staffordshire slipware mugs (FIG. 8c); and one of two sets of

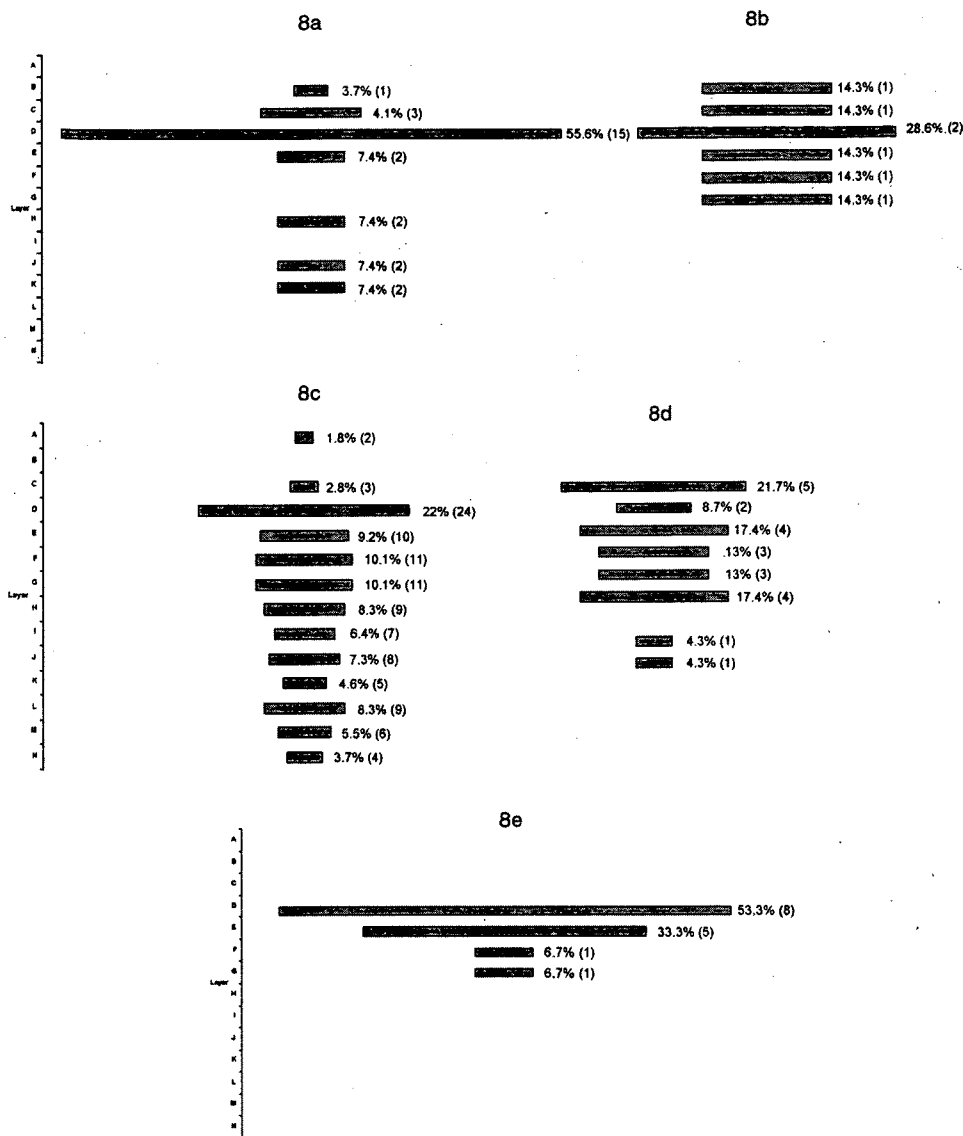


Figure 8. Vessel sub-assemblages with highest frequency of deposition in layer D: a) 14 porcelain teawares; b) 3 tin-glazed punchbowls; c) 13 Staffordshire slipware mugs; d) 5 porcelain plates with central flower basket motif; and e) 3 Rhenish chamber pots.

porcelain plates, with a central flower basket motif (FIG. 8d). Finally, the Rhenish chamber pots also cluster in the upper layers, peaking in D (FIG. 8e). (See FIGS. 9 and 10 for examples of a punch bowl and a mug, respectively.)

The following ceramic types peak lower in the midden, in layer J. Whereas the Rhenish chamber pots peaked in D, the Rhenish jugs

show a distinct peak in J (FIG. 11a). Whereas the porcelain teawares and flower basket plates peak in D, another set of plates, with the grape, bamboo, and squirrel motif (Madsen 1995),² peak in the same layer as the Rhenish jugs (FIG. 11b). Two sub-assemblages do not fit

² An image of the grape and bamboo motif is contained in Miller 2000: 5.

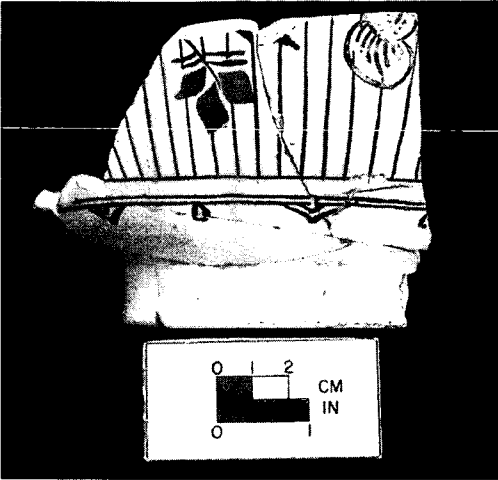


Figure 9. Example of polychrome tin-glazed punch bowl from midden.



Figure 10. Example of Staffordshire slipware mug from midden.

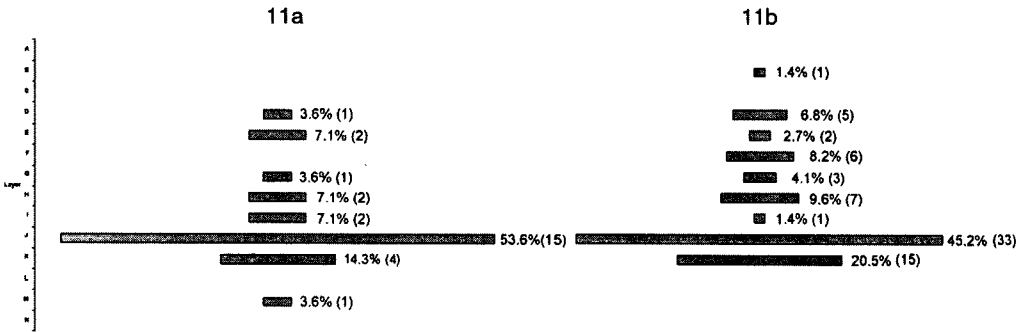


Figure 11. Vessel sub-assemblages with highest frequency of deposition in layer J: a) 2 Rhenish jugs and b) 7 porcelain plates with grape, bamboo, and squirrel motif.

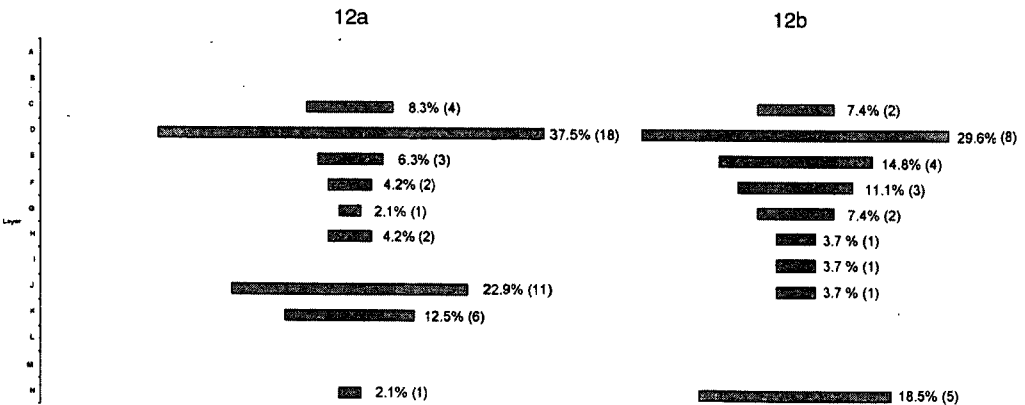


Figure 12. Vessel sub-assemblages with anomalous peaks: a) 8 Nottingham-like tankards and b) 10 white salt-glazed teawares.

either pattern. The Nottingham-like tankards display a double peak in frequency of deposition, with a larger peak in D and a smaller peak in J (FIG. 12a). The white salt-glazed teaware also has a double peak (FIG. 12b). The larger peak is in D, but there also appears a significant peak in the lowest layer of the midden, N.

Discussion

Seriation shows that: 1) there were two distinct depositional episodes within the midden causing two peaks in ceramic discard; 2) the similar single-peak curves of teaware and tableware vessels suggest that a relatively short time period is spanned by the midden; and 3) despite this short time period, variable use and discard of ceramic vessels is recorded in the stratified deposit. These data support Miller's (1991) argument that ceramics should not be treated as undifferentiated assemblages, apart from their stratigraphic associations. An inductive seriation approach can also help identify changes in vessel use and discard patterns. This paper employed seriation as a way to transcend the traditional feature studies,

such as TPQ analysis, and to explore the more specific stratigraphic changes in ceramic deposition. The initial TPQ studies arrived at a 30-year time span for the South Grove Midden, which takes the feature analysis to a certain point, but seriation further explores the depositional history teasing out data that otherwise would have been overlooked. Without this seriation analysis, the two peaks within the midden's layers would have gone unnoticed. Without the seriation analysis, the vessels peaking in J would have been lumped with those different vessels peaking in D.

From the patterns suggested by seriation analysis, the question can be posed: how do these peaks in deposition and changes in vessel use and discard relate to the activities occurring in the Washington household from ca. 1735 to 1765? How can seriation data be linked to cycles occurring in the historical households? By merging historical and archaeological data, relationships between household and depositional events can be set forth.

Figure 13 represents the layers of the midden overlain by TPQ data and general household history. When the peaks identified

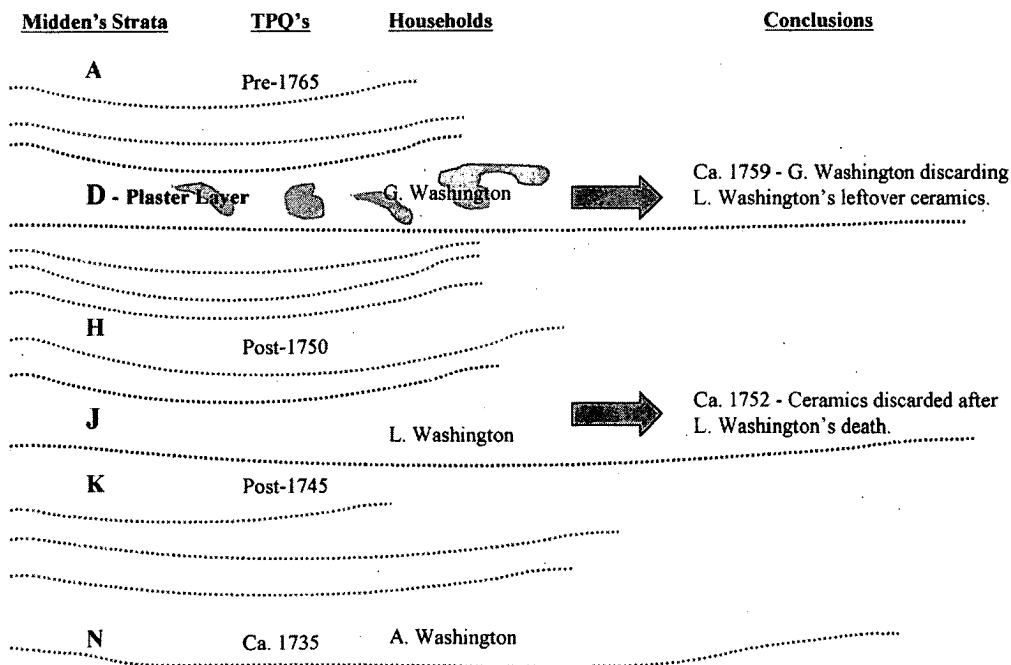


Figure 13. Linking the strata of the South Grove Midden with the Washington households.

through seriation are considered, layers D and J represent the main ceramic depositional episodes. Layer D is known to date sometime after 1750 and was characterized as the "plaster layer" due to the high concentration of plaster, evidence of building renovation. In terms of interior renovations that took place between 1750 and 1765, only one is known—the "Phase I" expansion of the Mount Vernon Mansion completed by George Washington in 1759. This remodeling campaign entailed "raising the building a full two stories, putting on a new roof, constructing garret stairs, reinforcing foundations, and plastering the upstairs room." Of most relevance to this study is the removal of plastering from the house as documented in a letter dated June 1758 that states, "'pulling Down the old works' and 'puling Down the old plastering and [laths] out of the rooms'" (Mesick, Cohen, Waite Architects 1993: 6–17). This household remodeling, in addition to George Washington's marriage and first documented orders of ceramics at the same time, could account for the large plaster and ceramic deposit in layer D. I hypothesize that George Washington and the other occupants of the bachelor household, from 1754 to 1758, used the leftover household goods from Lawrence Washington's occupation and then disposed of them as newer, more fashionable ceramics entered the home. The dates of the ceramic assemblage suggest that it is possible that the Lawrence Washington household initially owned most of the ceramics excavated from the midden. The ceramic dating evidence is further supported by the absence of sherds of ceramics known to have been used in the household after 1758, including famille-rose porcelain and dot, diaper, and basket molded white salt-glazed stoneware.

The other major household change to take place between ca. 1740 and 1759 was Lawrence Washington's death and the lease of the property to George Washington. This suggests that the lower deposit, layer J, could be related to this major household change in ca. 1752. The data suggest that the ceramic frequency peak in layer J could relate to the transition between

the Lawrence and George Washington household that took place in the early 1750s. One other major household change took place in 1743 when Augustine Washington died and Lawrence inherited the property. This event is discounted as the source of the ceramics in layer J because of the post-1745 TPQ in layer K. What external processes, then, account for the deposits in layers L through N? The ceramic TPQ data from the very bottom layers of the midden support the argument that this deposit could contain evidence of the first household occupation at Mount Vernon. None of these hypotheses could have been made without the development of the historical context and the detailed investigation into the depositional history of the South Grove Midden.

Conclusion

The household archaeology model presented by Mary Beaudry (1999: 123) intimates that the behaviors of, and changes in, historical households can be understood through extensive feature and artifact examinations:

Deciphering site formation processes has been shown to be critical to the archaeology of households... In essence, the archaeology of historical households has found its way back to the analysis of middens and feature systems as well as of the artifacts so critical to examining families and households in the past.

The archaeological analysis of the South Grove Midden supports Beaudry's (1999: 122) statement, "that delineating the life history of a site is the first step towards interpretation and is vital for understanding households and their transformations." Conclusions as to how the South Grove Midden formed in the context of the changing households at Mount Vernon result from the fully contextual application of household archaeology as the interpretive framework.

This systematic study of evidence contained in the layers of trash and soil that comprise the South Grove Midden tells the story of household cycles and social aspirations of the Washington family from ca. 1735 through 1765

bounded by the constraints of the mid-18th century economy. The earliest layers of the midden reflect the short-lived and archaeologically sparse occupation of the Augustine Washington household. Soon thereafter, Lawrence Washington inherits his father's home and builds upon it to an unknown extent, symbolizing his fortuitous marriage to Anne Fairfax, of one of the wealthiest families in Virginia at the time, and movement upwards in the colonial social hierarchy. Because it seems that the Lawrence Washington household owned and used the majority of the ceramics discarded in the midden, his ceramic tastes certainly reflect that of aspiring gentry (for example, the two sets of Chinese porcelain plates and teawares). When Lawrence Washington dies, most of the vessels discarded are Chinese export porcelain plates and outmoded Rhenish jugs, as represented in layer J. This more targeted discard of household ceramics, especially compared to the discard event in layer D, does not suggest a wholesale turnover of vessels from the kitchen cupboard. When George Washington rents Mount Vernon, it seems likely that he and his relatives used the goods contained in the house.

From 1754 through 1758, the bachelor George Washington sporadically resided at Mount Vernon in between his assignments in the French and Indian War. His relatives oversaw the workings of the plantation, and not until his return from war does George Washington take specific actions in the hopes of placing himself among Virginia's well-to-do planter class. These aspirations are directly reflected in the archaeological record as we see large amounts of plaster resulting from the impressive expansion of the house, and a wide variety of ceramic ware types and vessel forms thrown away to allow for the introduction of newly imported, fashionable stonewares received in 1757 (Detweiler 1982: 23). This quantity and variety of ceramics represented in layer D, as opposed to layer J, reflects not only the increase in availability of ceramics during this time period, but also the strides George Washington made to increase his family's social stature. As seen in the seriation

of teawares and tablewares, and in the spike in sherd deposition in layer D of Table 4, the largest deposition of ceramics comes when George Washington makes changes to his house, increases his lands, slaves and, thereby, his tobacco growing potential, and marries above his social position. Finally, the upper three layers of the midden (A-C) contain low frequencies of ceramics, both in the types examined for this study and the entire assemblage as well. Dating to the early 1760s, this archaeological evidence, in fact, suggests that the transformation in use of the South Grove Midden from utilitarian space to formal grove may have taken place earlier than the documents indicate.

The results and conclusions of this research argue for the analysis of features at the stratigraphic level where subtle changes among sub-assemblages are sought and then integrated into the relevant historical context. Household archaeology studies are most successful when distinct strands of data—artifact analyses, soil stratigraphy reconstructions, landscape treatments, and household cycle histories—are interwoven into a fully contextual archaeological interpretation. Household archaeology, as a segment of historical archaeology, has matured in theoretical and methodological ways, and through a new sophisticated attention to artifacts, soils, and context, archaeologists will continue to develop creative ways to study the materially represented household.

Acknowledgements

I am grateful to the following people for their contributions at every stage: Dennis Pogue, Esther White, Steve Mrozowski, and David Landon. I must thank my on-call math consultant, Dr. Denis Breen (my dad), for his help on the statistical requirements of this study. My thanks also go to the anonymous scholars who reviewed this paper.

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