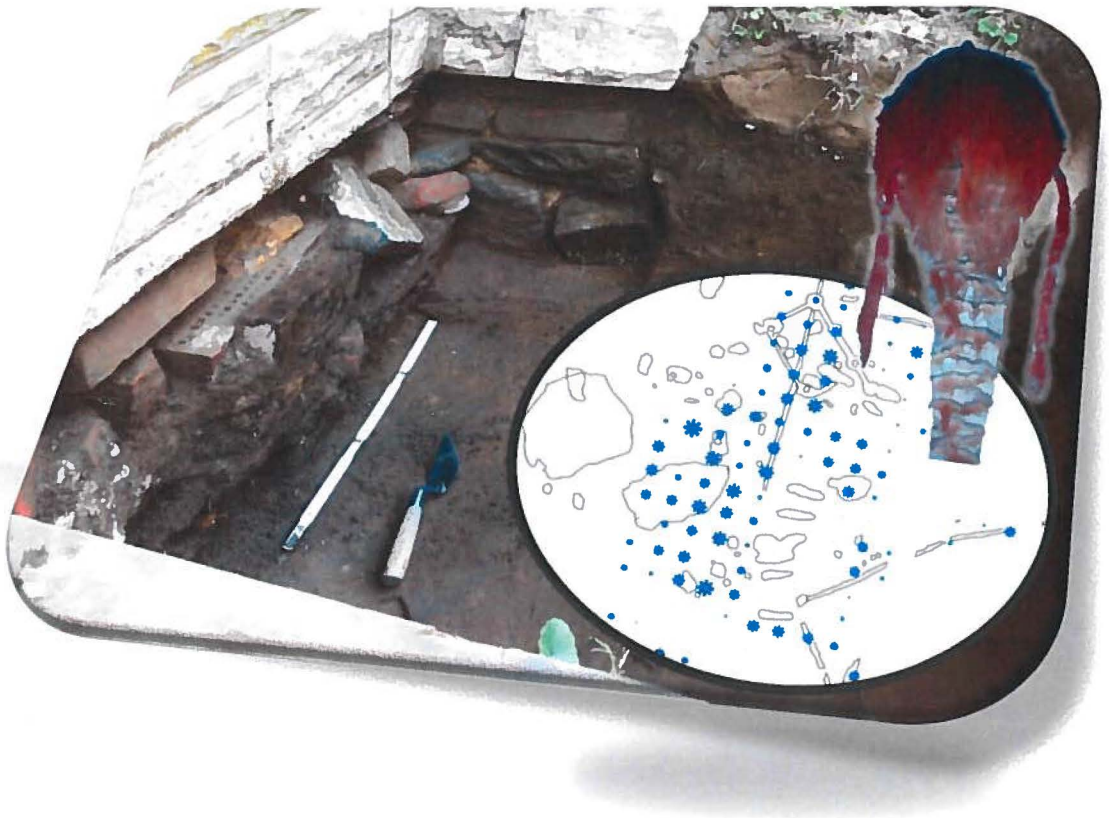
The Bulletin



ASD Archaeological Society of Delaware

Number Fifty-One, New Series

2014

On the Cover: View of Foundation on the East Wall at Wildcat Manor (Cheshaek and Lukezic); White Clay Tobacco Pipe Distribution at Avery's Rest (Crossen); and Headdress Found in Native American Collection at Skokloster Castle in Sweden (Becker).

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FIELD WORK AT WILDCAT MANOR (7K-C-22): SEASON SUMMARY FOR 2016

Dawn Cheshaek and Craig Lukezic
Archaeological Society of Delaware

This year, we are committed to continue and expand the survey program that we started in 2016. Our goal is to identify all the archaeological resources on the remaining historic parcels at Wildcat Manor (7K-C-22), specifically within the front yard of the Wildcat farm house (K00119) and in the wooded areas to the southeast of the dwelling (Figure 1–Figure 3). Dr. Ed Otter and our volunteers started the campaign by reestablishing the old grid and extending it into the areas to be surveyed. Ed solved the discrepancies and mysteries of the old grid, and set up a very accurate extension to the rest of the project area.

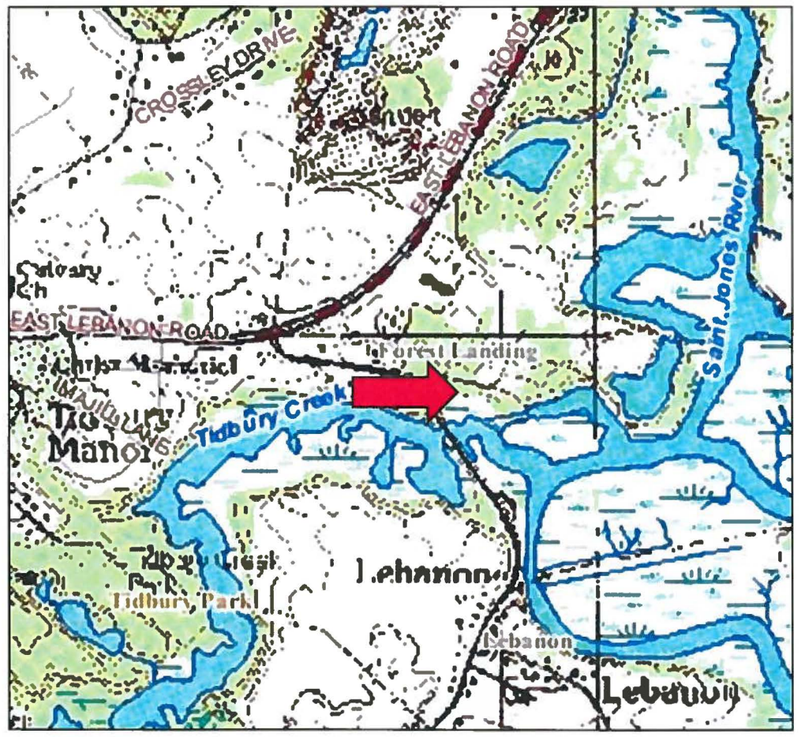

Figure 1: Location of Wildcat Manor, at the Confluence of the Saint Jones River and Tidbury Creek.

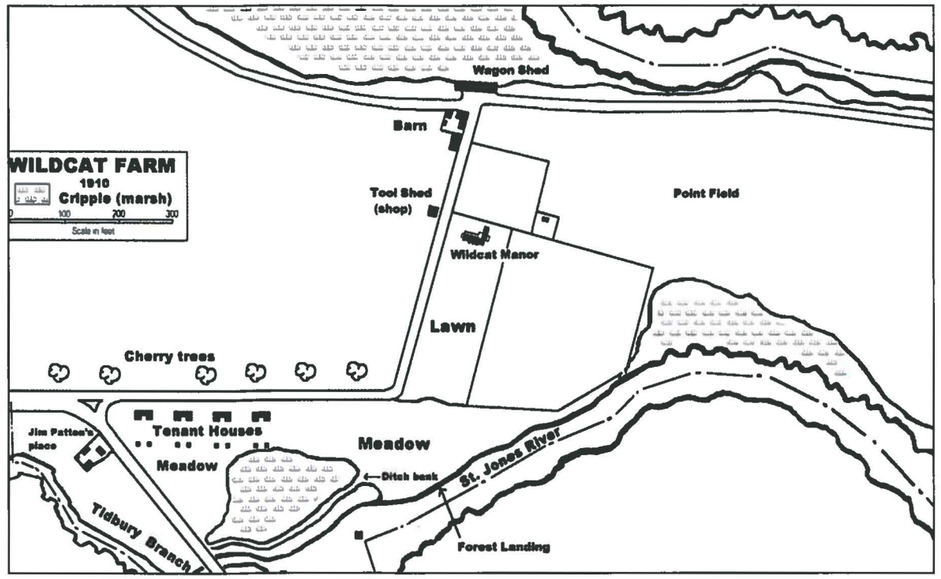

Figure 2: Plan of the Grounds Provided by the Hunn Family.

Figure 3: The Wildcat Manor House. Test Units were excavated against the gable end, near the stoop to the kitchen.

During the fall and winter of 2015, Dawn Cheshaek led a team of tough volunteers and dug 244 shovel test pits (STPs) in the area located on the south and east sides of the house and down to the river (Figure 4–Figure 6). The wooded lot on the eastern side of the house was thoroughly sampled as well. This secondary forest appears to have been clear agricultural land on the 1937 aerial photographs (Figure 7).

Figure 4: What a Stout Crew!

Figure 5: Working on One of Many Shovel Test Pits.

Figure 6: Shovel Testing the Front Lawn Area.

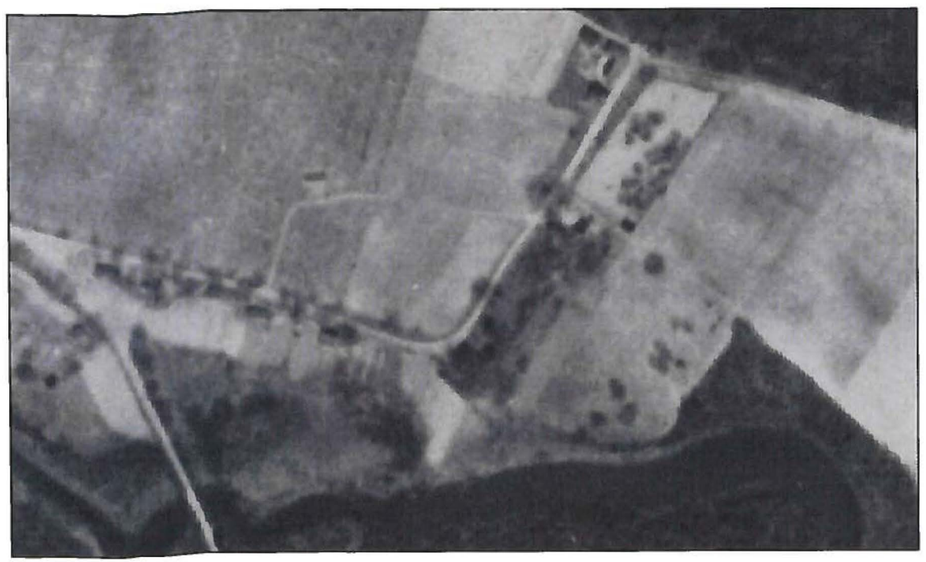

Figure 7: Aerial Photograph, circa 1926.

In all, 12 historic features were identified in the STP program. Of these, five were composed of simple horizontal deposits and two contained oyster shells. In addition, six of the STPs exhibited vertical cuts in the profiles that would suggest a posthole or a steep-sided pit feature. None of those were investigated further at this time. One such shovel test would have been welcome several years ago, when we were searching for the remains of Forest Landing. One deep shovel test terminated on a stone and mortar surface at 3 feet (0.9 m) beneath the surface. Too good to be true! Dawn Cheshaek, Susan Ferenbach, and John Ferenbach expanded the STP by placing adjacent shovel tests to the original study pit to form a narrow trench. From this, we exposed the width and orientation of a wall (Figure 8). While a good view of the soils in the profile was inaccessible due to the small space we had accessible, we could observe the solid foundation had a width of 14 inches (35.6 cm). It looks like we found the remains of the early-eighteenth century warehouse of Forest Landing!

Figure 8: Top of Brick Foundation of Warehouse.

Also of note is the pre-contact component of the site that appeared in the wooded lot. Townsend ceramics in a possible pit feature and a scatter of three triangular points indicates a Late Woodland occupation. However, this should not overshadow the evidence of earlier occupations, suggested by broad spear and stemmed points, Wolf Neck ceramics, a mica-tempered ceramic, and grit-tempered ceramics, some of which was also associated with a possible pit feature. A third possible pit feature contained a fire-cracked rock.

In walking through the Manor house, we find the architectural history an intriguing mystery. Thus inspired, we excavated three test units against the eastern foundation of the house (Figure 9). The test units exposed seven historic features and some shallow foundations. The features consisted of an underground oil tank, a backfilled basement chute, two possible postholes, and remnants of builder's trenches that survive those intrusions.

We placed a unit at the junction of two sections of the house. The test revealed the brick foundation of the older section sits atop a hidden stone foundation (Figure 10). These finding suggest various building episodes to the house over time.

Our field efforts this year have revealed some answers to the questions of Forest Landing and Native American occupation. However, it gives us a new set of mysteries to pursue in the future.

We would like to express our gratitude to the volunteers who made this happen:

Wayne Anderson
Jim and Mary Atkins
John Bansch
Peter Bon
Steve Cox
Kate Crossan
John and sue Ferenbach
Jim Gaskill
Katie Gill
Carol Hastings
Carolyn Hodges
Bill Hutchison
John Kiefer
Max Kichline
Barbara Miller
John Potts
Jill Showell
Barb Silber
Ellen Thompson

Special thanks to Carolyn Hodges for her sponsorship of our work this season.

Figure 9: Looking for a Foundation.

Figure 10: View of Foundation on the East Wall at Wildcat Manor.

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AVERY'S REST PLANTATION: A GIS BASED INTERPRETATION OF PLOWZONE ARTIFACT DISTRIBUTION IN AN EARLY COLONIAL CONTEXT (A SUMMARY)

Kate Crossan
National University of Ireland, Galway/
Archaeological Society of Delaware

Abstract

The following article is a summary of the Master's dissertation entitled *Avery's Rest Plantation: A GIS Based Interpretation of Plowzone Artifact Distribution in an Early Colonial Context,* submitted to the National University of Ireland, Galway in August 2015. The seventeenth century in Delaware is considered a time of exploration and frontier settlement. Historic archaeology has allowed a glimpse into the lives of the brave settlers who navigated their new landscape in the hopes of creating a prosperous life for themselves and their families. When Captain John Avery arrived in the southern part of the state, he was entering a politically contested area, inhabited by a mix of indigenous and European peoples. A unique blending of cultures and ideals produced a trajectory of development in Southern Delaware that is slowly being understood by archaeologists and historians.

In the current study, GIS was used to examine plowzone-derived artifact distributions of the Avery's Rest Plantation homelot (1674–1720). The distributional patterns, combined with historical documents and subsurface feature excavation, allowed for a comprehensive interpretation of the spatial arrangement and utilization of the Avery's Rest Plantation homelot. This study demonstrates the utility of GIS as a tool for data visualization and distributional analysis, as well as the importance of plowzone material studies. Artifact distributions and their correlations with identified subsurface features suggest a homelot that includes a primary dwelling, a kitchen outbuilding, a fenced garden plot, two refuse middens, and a well. At Avery's Rest, traditional practices remained viable while evolving material and social trends were incorporated into daily life, representative of the unique standard of living created in early-Colonial Delaware.

The household is recognized as one of the basic organizing units of culture. Activities which occur at the household level provide information about the way in which a particular society is organized, and how it changes through time. Socially acceptable disposal practices, spatial organization, and activities are negotiated daily by site inhabitants and may be reflected in the archaeological record (Galke 1998:169).

Introduction

The Avery's Rest Plantation, located in present-day Rehoboth Beach, Delaware, is one of the most extensively excavated seventeenth century, Colonial sites in Delaware. The site is part of an 800-acre (323.7-ha) plot that belonged to John Avery, a merchant ship captain and eventual member of the early Colonial government. While archaeological evidence suggests the presence of local Native Americans and possible earlier Europeans on the land, historic records indicate that Avery was the first recorded owner.

The Delaware Division of Historical and Cultural Affairs identified the site in 1976 while carrying out a survey of cultivated fields. No substantial excavations were carried out on the site until 2006 when the location was included in a development plan for the residential housing community, Harmon Bay. The Sussex County chapter of the Archaeological Society of Delaware (ASD) led excavations to recover data from the site prior to disturbance, assisted by archaeologists from the Delaware Division of Historical and Cultural Affairs, cultural resource management firms, and volunteers from the local community. Excavations continued until November 2015 (Dan Griffith, personal communication 2015).

According to the current site director, Dan Griffith, from September 2006 to November 2014, there were 302 controlled surface collection blocks, 31 metal detector survey blocks, 470 shovel tests, 317 5-foot by 5-foot (1.5-m by 1.5-m) plowzone test units, and 189 features investigated (Dan Griffith, personal communication 2015). The excavation of regular interval shovel tests, 5-foot by 5-foot (1.5-m by 1.5-m) plowzone test units, and subsurface features yielded artifacts including, but not limited to, American Indian projectile points, glass, ceramic tobacco pipes, animal bone, shell, beads, brick, ceramics, metal, plaster, seeds, gun flint, and several personal adornment pieces. As of July 2015, no Colonial-era artifacts have pre-dated the mid-seventeenth century or post-dated the first quarter of the eighteenth century.

In the last several decades, historical archaeology, particularly on the American East Coast, has gained increasing popularity as archaeologists and historians strive for deeper understandings of early Colonial life in the Americas. Spatial analysis and comparisons of plantation and homestead layouts, particularly the central nucleus or 'homelot', can provide significant insight into the social norms and practices of the time period. As standing remains of late-seventeenth-century buildings are rare throughout the Mid-Atlantic region, architectural structures are most often identified through excavation and the identification of subsurface features. Material artifacts significantly

aid in identifying specific structures and designated uses of space. By utilizing a basic function of GIS software, artifact distribution maps were created to identify patterns and demonstrate the correlation of material culture recovered in the plowzone and identified subsurface features on the Avery's Rest Plantation homelot.

Avery's Rest Identified Features

Numerous subsurface features were identified throughout the excavation process at Avery's Rest (Figure 1). For the purpose of this study, four features excavated from the 2012 to 2014 field seasons were included, as well as a barrel-lined well identified and excavated at the end of the 2014 and 2015 field seasons. Features, including two wells and a cellar, were identified and excavated in the first several field seasons on site. The data from these years was not included in the current analysis, as it is slightly outside of the proposed homelot nucleus and the data is still undergoing analysis. Eleven graves have also been identified and completely excavated by ASD volunteers and the Smithsonian Institute. The grave features were excluded from the current project as the data has not yet been fully analyzed.

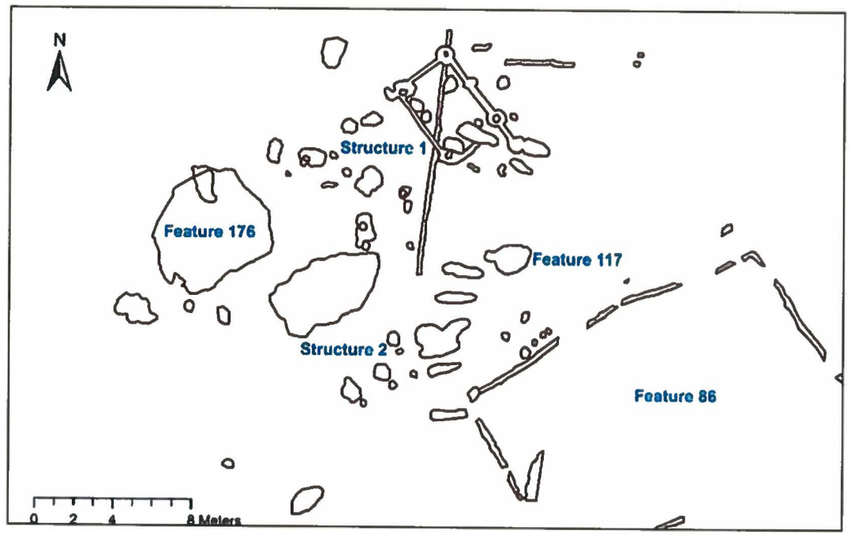


Figure 1: Avery's Rest Identified Features.

Structure 1: An earthfast structure measuring 14 feet (4.3 m) wide by 30 feet (9.1 m) long, set in three bays (Dan Griffith, personal communication 2015). At least 13 features can be confidently associated with this structure, including nine post holes, and puncheon-set trenches between four of the posts. The north bay, measuring 14 feet (4.3 m) by 10 feet (3 m), was unique in its construction, resembling a puncheon or stud-in-ground technique. Structures employing this building technique were simple and quick to erect. Carson et al. (1981) has suggested that these buildings were often

used as temporary structures while a more permanent house was being built (Krofft 2014:3). The remaining two bays are uniform in construction, measuring 10 feet (3 m) wide (Krofft 2014:4).

Structure 2: A single-room earthfast structure measuring 12 feet (3.7 m) wide by 24 feet (7.3 m) long (Dan Griffith, personal communication 2015). Excavations revealed a cellar feature and several post holes associated with this structure, although most evidence of construction technique was lost to ploughing and is not archaeologically visible. It seems likely that Structure 2 was constructed with a ground-laid sill.

Feature 86: A 35-foot by 55-foot (10.7-m by 16.8-m) fenced compound.

Feature 176: A barrel-lined well, excavated in 2014 and 2015, was included in the overall analysis of the homelot as it was likely an essential component of the homelot nucleus, despite an incomplete artifact analysis.

Feature 117: Refuse midden.

Conclusions regarding landscape and spatial designations can be drawn from the analysis of artifact concentrations and patterns, often becoming even more plausible when examined in relation to subsurface features. By utilizing a basic function of GIS software, artifact distribution maps were created to identify patterns and demonstrate the correlation of material culture recovered in the plowzone and identified subsurface features on the Avery's Rest Plantation homelot.

Analysis of Artifacts

To demonstrate the associations between artifacts and the designations of architectural features and defined spaces, this section presents several artifact assemblages whose distributions strongly suggest architecturally and functionally specific areas within the plantation homelot. The following figures are a sampling of 92 maps created for this project. The maps shown represent the distributions of plowzone artifacts recovered from excavated test units and the same distributions shown in relation to identified subsurface features.

Architectural Material

Window glass: One of the most obvious indicators of a primary dwelling is window glass. Plowzone distribution showed a high concentration above the feature identified as Structure 1. The presence of window glass in this confined space would indicate that this structure, rather than Structure 2 (where little window glass was identified), served as the primary living quarter for the family and not as a cook or storage house.

Daub: While daub is often difficult to identify with certainty from plow zone contexts, a concentrated occurrence may indicate the location of a hearth or chimney. Although there is limited architectural or material evidence for a hearth or chimney associated

with Structure 1, a small concentration of daub at the north end of the building was identified. As a hearth would have been a necessary feature of a living quarter, especially in freezing winter months, the presence of daub is at present the most convincing indicator of its location.

Brick: The widespread brick found scattered throughout the site is difficult to accurately date, especially the fragments. While some may be the result of mid-nineteenth century manuring practices, it is also quite likely that bricks were used as a hearth base, simply laid in a sand bed. There was not enough brick recovered to suggest the presence of a brick chimney and additionally, none of the brick in the plowzone or features had mortar adhering (Dan Griffith, personal communication 2015).

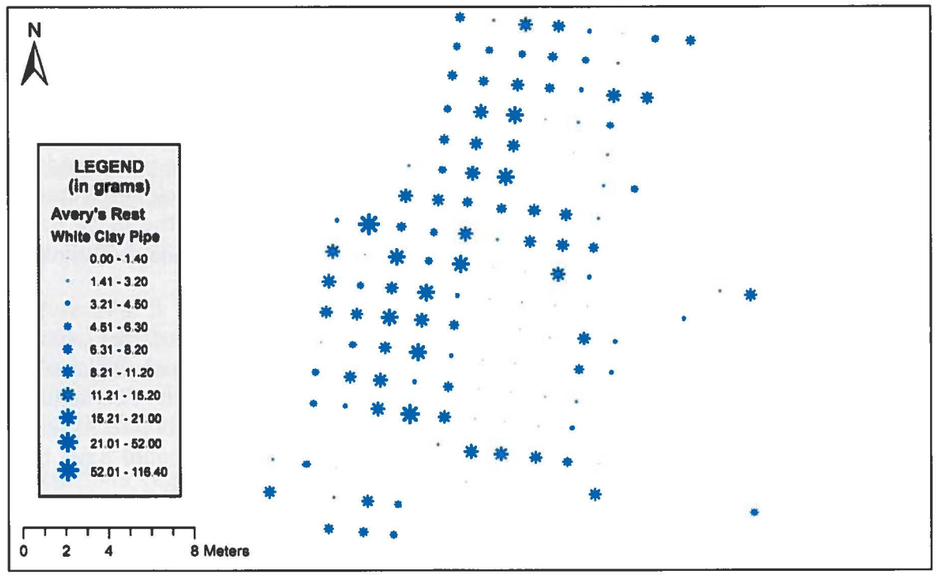
Nails: The presence of nails clearly suggests the existence of constructed wooden structures. Not surprisingly the largest concentrations were found near Structures 1 and 2. Interestingly, there is also a noticeable concentration to the south of Structure 2, near the location suggested to be a refuse midden or demolition debris pile. Although no evidence supports a structure, it is possible a small outbuilding could have been constructed in this area as well.

Domestic Artifacts

While architectural debris is often a definitive indicator of structures, domestic artifacts can often distinguish and define areas of use and function within a site.

White clay tobacco pipes: White clay tobacco pipes were one of the most widely recovered artifacts throughout the site (Figure 2). Although the dating of clay pipes is one of the most commonly used temporal indicators archaeologists employ to date sites, they can also distinguish areas of frequent human activity. Not surprisingly, pipe fragments in varying amounts were recovered site wide. The largest assemblages however were found above, and in close proximity to, Structures 1 and 2, suggesting these were areas of frequent and perhaps prolonged human activity. Interestingly, both shovel test pit and test unit excavations revealed high concentrations on the southernmost corner of Structure 2. This marked concentration could indicate the location of a door, where small material considered to be garbage was thrown out. Smaller yet defined clusters can also be seen around both suggested middens as well as the perimeter of the proposed fenced garden.

Marine Shell: In both the shovel test pits and the test units, oyster and clam shells were recovered throughout large sections of the site (Figure 3). Shovel test pit data combines oyster and clam shell, and defines a large concentration to the south of Structure 2, a cluster of smaller deposits in the middle of Structure 1 and Structure 2 to the east, and one to the easternmost section of the property in a cellar, which for the purpose of this investigation is largely ignored. Shovel test pits revealed little to no shell above either structure. Oyster and clam recovered in test units were recorded separately.



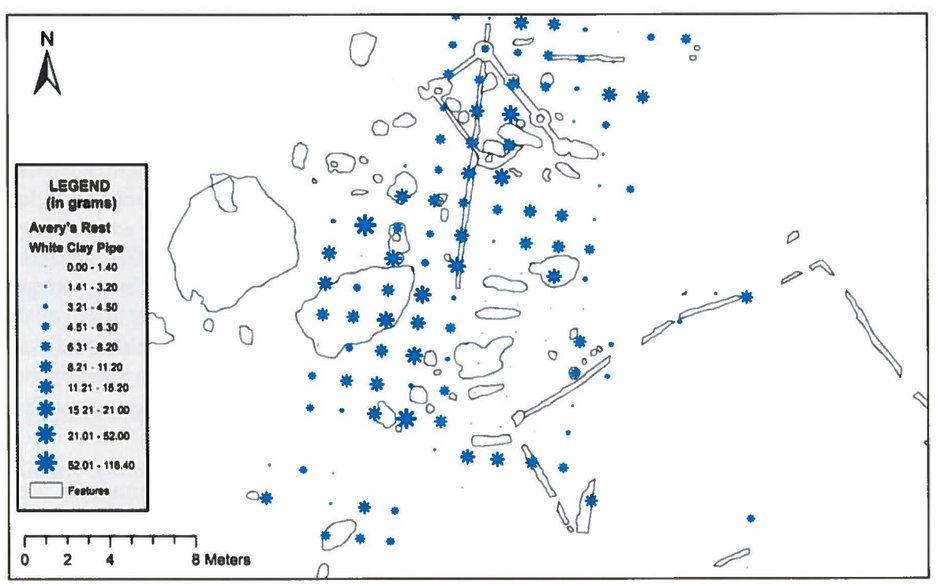
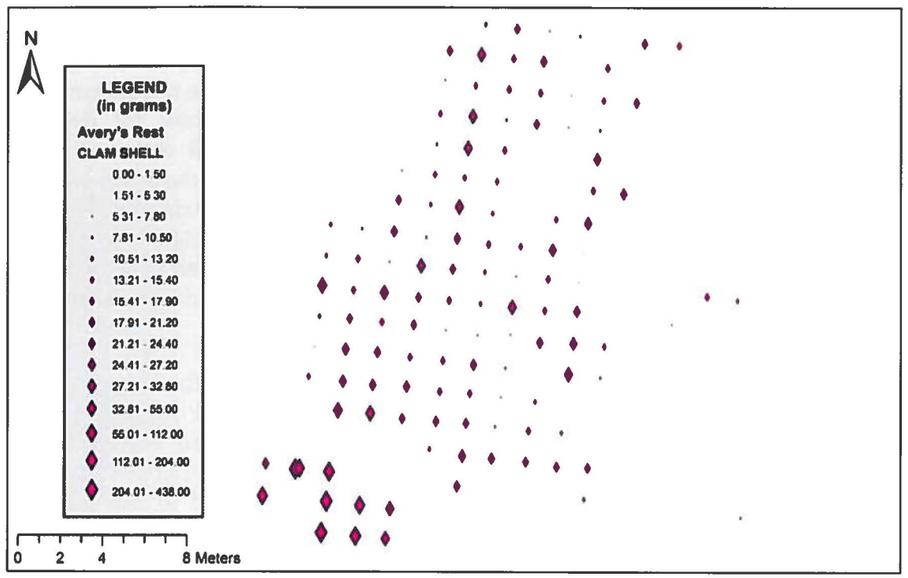


Figure 2: *Top*- White Clay Tobacco Pipe Distribution. *Bottom*- White Clay Tobacco Pipe Distribution in Relation to Subsurface Features (Test Units).



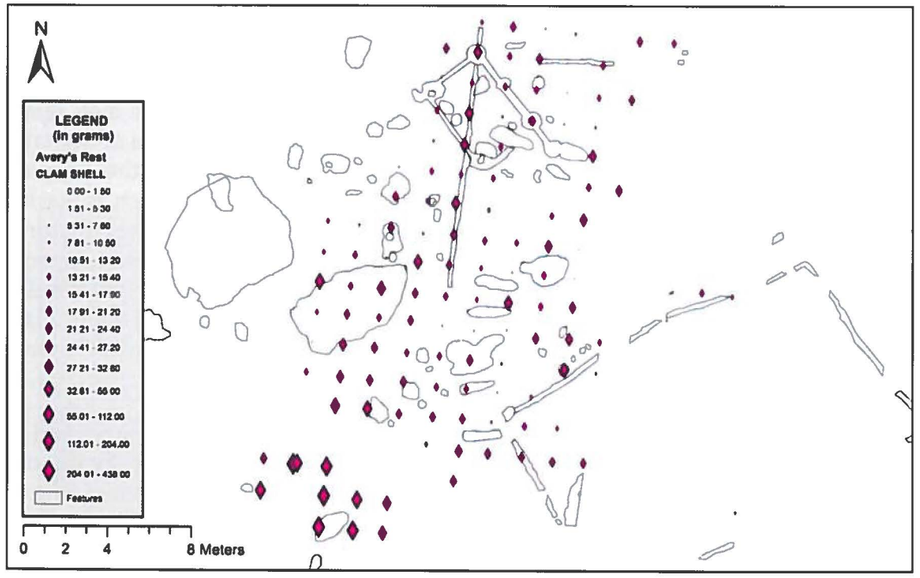


Figure 3: *Top*- Clam Shell Distribution. *Bottom*- Clam Shell Distribution in Relation to Subsurface Features (Test Units).

Clam was recovered in high volumes, up to 15 ounces (438 gr) in certain areas. The concentration to the south of Structure 2 was consistent with the shovel test pit results. This was by far the densest area of clam shells on the site. The area directly above and around Structure 2 yielded additional high densities of clam shell, while the area over Structure 1 was minimal in comparison. This would suggest that the southernmost and eastern concentrations were refuse middens, intentional locations for depositing refuse. The locations of the middens and the presence of shell over and around Structure 2 would also indicate that processing and preparation of the clams was being carried out in Structure 2. This idea is further supported by concentrations of bone and earthenware in the same location as the shell concentration. Curiously, oyster shell concentrations were limited to the suggested eastern midden and the area northeast of Structure 2. These oyster shell concentrations may be associated with a pre-Avery refuse deposit.

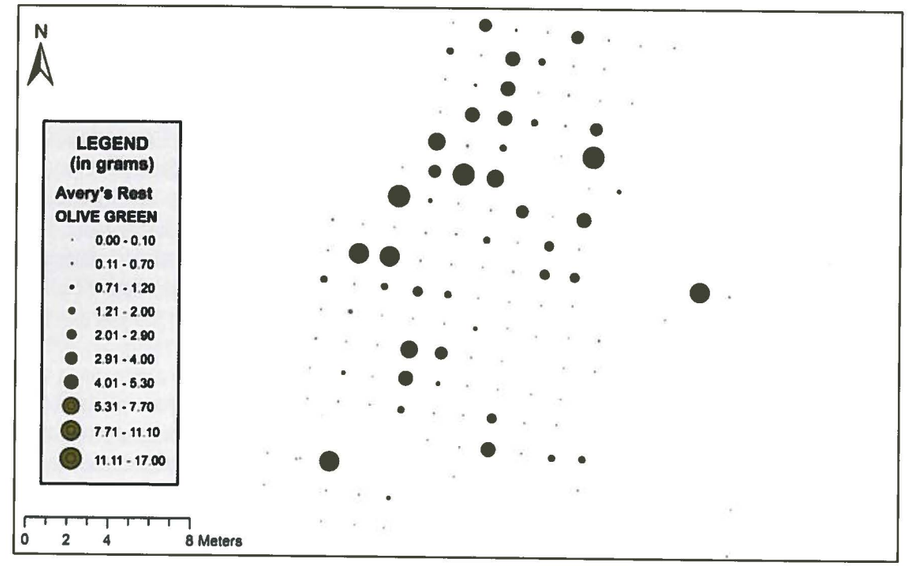
Bone: Animal bone was found scattered throughout the site with the largest amounts recovered on the southeastern portion of the site. Shovel test pit and test unit excavations revealed the largest concentrations in the suggested eastern midden, between Structure 1 and Structure 2. Very low amounts were found above Structure 1 or Structure 2; however, there was a significant scatter located to the immediate northeast of Structure 2, suggesting a processing and preparation area. Butchered and burnt bones were also recovered in the cellar of Structure 2.

Red Earthenware: While red earthenware is difficult to date, we know it served a primarily utilitarian function. Red earthenware was the most widely recovered ceramic type on site, and despite being found in various quantities across the homelot, concentrations are clear above and around Structure 1. This indicates high human domestic activity in this area, as redware was commonly used in the form of utilitarian vessels including basins, bowls, jars, and jugs. This would support the proposed hypothesis that Structure 1 was a domestic residence, where activities such as washing and eating would have employed these particular vessel types. Some level of storage may have also occurred within the house, utilizing redware vessels. This researcher attributes the concentration over Structure 2 to storage-related activities as well as vessels used in the processing and preparation of food. As with shell and bone, a large assemblage of red earthenware was found on the southernmost corner of Structure 2, suggesting the location of a door where garbage was thrown or swept out.

Olive green bottle glass: Both shovel test pit and test unit excavations produced the largest quantities of olive green bottle glass over Structure 1 (Figure 4). As the olive glass was most like case bottles, or medicinal jars or bottles, it makes sense that the majority of the sherds were recovered in the primary dwelling where the family would reside, imbibing in wine or using medicinal tinctures.

Table glass: Table glass was recovered in small amounts from shovel test pits and test units. The largest concentrations were recovered near the proposed eastward midden, as well as over Structures 1 and 2. Again, this finding supports domestic activity within Structure 1, including its use as a defined space for more formal eating and drinking,

and possibly the entertaining of guests. The small amounts near the easterly midden would suggest intentional disposal of broken wares in this area of the homelot, especially given its proximity to Structure 1.



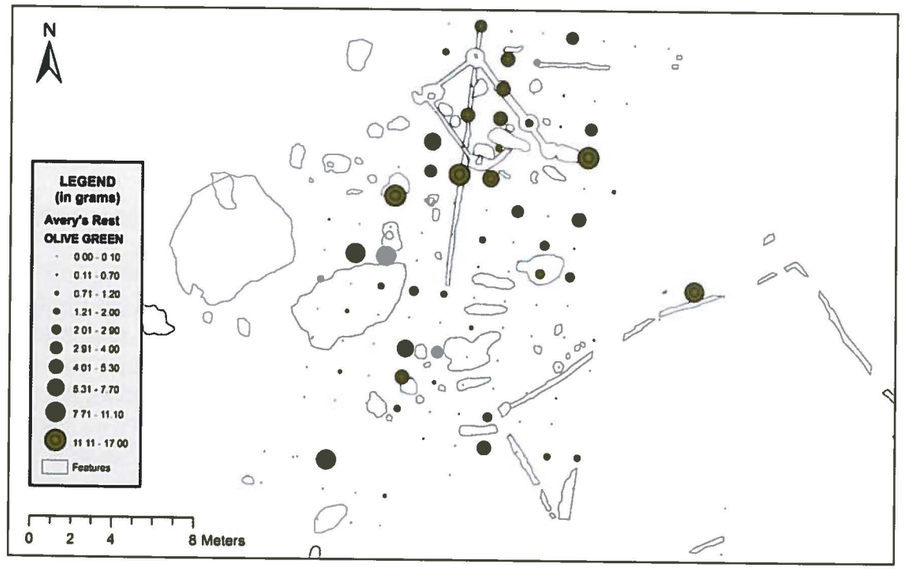


Figure 4: *Top*- Olive Green Bottle Glass Distribution. *Bottom*- Olive Green Bottle Glass Distribution in Relation to Subsurface Features (Test Units).

Low Artifact Concentrations

The lack of artifacts can often be equally as telling as large concentrations. The postholes associated with Structure 1 were virtually void of artifacts, suggesting that this was the first building project in the vicinity.

Excavations identified a fenced area measuring 35 feet (10.7 m) by 55 feet (16.8 m), located in close proximity to the east of Structure 2. Shovel test pit excavations revealed extremely limited artifacts from this area of the site. The artifacts that were recovered were primarily utilitarian. The paucity of artifacts found within the fenced area would suggest limited human activity, or activity of a type not associated with artifact deposition. It is quite plausible that this was a fenced garden compound. There would have been no social activity happening in this area except for maintenance and harvest of the garden. If we consider Structure 2 as a kitchen quarter, the location of this garden plot would be spatially accurate, as it is next to the food preparation and storage area for easy access and convenience.

As demonstrated above, artifact clusters, or lack thereof, can offer a general indication of the spatial layout and activity areas within a site. When this data is compared to subsurface features the site arrangement becomes more refined. Artifacts excavated from subsurface features further support or disprove theories derived from artifact distributions and subsurface feature correlations. In the case of Avery's Rest, analysis of artifacts and identified subsurface features along with historic documentation provides an interpretation of the spatial layout of the homelot which suggests a primary dwelling with a single heat source, a kitchen quarter with one cellar, a fenced garden plot, two possible refuse middens, and a well. A range of activities, from domestic chores to entertaining guests, would have taken place with in these confines carried out by a varied group of individuals including the Avery family, indentured servants, American Indians, African slaves, and likely the neighbors and colleagues of John Avery.

Comparisons to Other Sites

A review of other excavated sites in the region facilitates comparisons to be made between John Avery's homelot (1674–1720) and those of his contemporaries. The sites referenced include the Richard Whitehart Plantation (1681–1701), Powell Plantation (1691–1721), Thompson's Loss and Gain, and the Strickland Plantation (both occupied in 1720 after the abandonment of Avery's Rest), all located in Delaware. Two sites from Maryland, the King's Reach Plantation (1690–1715) and Middle Plantation (1665–1760), were included as well.

Similar features, including earthfast construction, supplementary homelot structures, wells, fence lines, and ceramic assemblages, were identified throughout the compared sites.

Earthfast Construction Techniques

One of the most immediate similarities recognized throughout the reviewed sites was the use of earthfast (post-in-ground or ground-laid sills) construction techniques. The term earthfast refers to the fact that the upright support posts of the building were placed directly into excavated holes in the ground, with no stone, brick, or mortar foundation elements. Soil tamped around the post in the hole secured it, hence the term earthfast (Grettler et al. 1995:38). Gall et al. (2011:40), as reported in Krofft (2014:3) state: "Archaeological and architectural evidence in Delaware and the Mid-Atlantic region shows that earthfast construction is not unique to a particular period of settlement or a specific ethnic group. Instead, earthfast buildings have been identified across the Mid-Atlantic and New England regions dating from the early-seventeenth century through the late-eighteenth century and are associated with English, Dutch, Swede, French, and German settlements". Archaeological excavation confirmed the earthfast construction of two structures on the Avery's Rest site. Despite being a wealthy member of society with secure land grants in both Maryland and Delaware, Avery chose this economical method of construction for his proposed primary dwelling as well as for a second sizeable structure. This choice is possibly due to the lack of available stone in Southern Delaware and the high cost of producing brick. Additionally, this method of construction would have been familiar to Avery, his contemporaries, and the indentured servants that likely participated in the construction (Krofft 2014:3).

While several seventeenth-century earthfast structures have been excavated in Virginia and Maryland, few early structures have been excavated in Delaware, making the Avery's Rest excavation even more informative. Examples of identified seventeenth and eighteenth century earthfast construction in Delaware include the Richard Whitehart, Powell, Thompson's Loss and Gain, Benjamin Wynn, Marsh Grass, Whitten Road, and Strickland sites (Bedell 2001:11; Grettler et al. 1995:169).

Supplementary Homelot Structures

A second point of comparison relates to the supplementary structures and features identified on the homelots. In addition to a proposed primary dwelling, a kitchen quarter with a cellar underneath, a barrel-lined well, refuse middens and fenced garden plot have been identified in the homelot nucleus of Avery's Rest. Similar choices were made during the construction of contemporary sites.

Whitehart Plantation excavations yielded the remains of a primary dwelling, four earthfast outbuildings, a large sheet midden, and five trash deposits. Evidence of a hearth/chimney was found along the South gable end of the primary dwelling, with four shallow storage areas under the hearth. The uses of these buildings are unknown due to the lack of recovered artifacts, particularly domestic remains. Outbuilding 4 has been recognized as a tobacco house or barn, and measured 18 feet by 36 feet (5.5 m by 11 m). It was located furthest from the primary dwelling, 85 feet (25.9 m) away (Grettler et al. 1995:2-49).

The first occupation phase of the Powell site revealed a primary dwelling along with three outbuildings, and possible daub and trash pits, although it is unclear if the pits belong to the first or second occupation (Grettler et al. 1995:90).

Strickland Plantation's homelot consisted of the primary dwelling, a 28 foot by 15 foot (8.5 m by 4.6 m) kitchen quarter, a smoke house, two agricultural buildings, and large trash deposits. A cellar hole was identified under the kitchen/hall of the primary dwelling (Grettler et al. 1995:165).

Thompson's Loss and Gain revealed a primary structure with evidence of a waddle and daub chimney in the kitchen/hall area and a corner brick chimney in the parlor area. The hall contained nine small root cellars and the smaller parlor fireplace had two small, brick-lined cellars near it. A shed that possibly functioned as a buttery was located along the south wall of the house. A large midden was also identified (Grettler et al. 1995:165).

King's Reach excavations produced evidence for the primary dwelling, a 10 foot by 20 foot (3 m by 6.1 m) structure, and a 5 foot by 7 foot (1.5 m by 2.1 m) dairy shed added to the gable end of the kitchen/hall area. Six cellars have been identified, however, this large number was likely the result of continual reconstruction. Evidence for a hearth was found in the kitchen/hall near the dairy shed addition (Grettler et al. 1995:165; Pogue 1988:40).

Middle Plantation consisted of two 20 foot by 13 foot (6.1 m by 4 m) quarters, two large kitchens, a 12 foot by 8 foot (3.7 m by 2.4 m) milk house, and two large tobacco houses, measuring 40 feet by 22 feet (12.2 m by 6.7 m) and 40 feet by 21 feet (12.2 m by 6.4 m) respectively. Nine small roofed cellars were identified throughout the site (Grettler et al. 1995:165).

While there was differentiation between the numbers of outbuildings located on each site, the presence of at least one additional structure is noted on every site. No tobacco house, separate outbuilding for dairying, barn, or distinctively separate servant's quarters have been discovered on the Avery's Rest site. There has been recovered material that supports their possible existence, however excavations have not revealed structural evidence thus far.

Wells

Wells were a consistently identifiable feature in the central homelot landscape. Wells were an important necessity and often the primary source for of water for personal and domestic needs. Many homelots utilized natural springs, or constructed one or more wells. An examination of well location on the sites under review revealed that most were constructed within close proximity to the main dwelling and primary domestic outbuilding. On all four Delaware sites, located on Delaware's lower coastal plain and within 100 yards (91.4 m) of tidal waterways, wells were located between 20 feet (6.1 m) and 60 feet (18.3 m)of the dwellings (Grettler et al. 1995:169). The well at

Strickland was constructed within 25 feet (7.6 m) of the main house, as was the wooden, crib-lined well identified at Thompson's Loss and Gain. The barrel-lined well identified on the Avery's Rest site was likely the principal well used for the main house and quarter. It is presently the most westward feature on the site and is located approximately 20 feet (6.1 m) from the southwest corner of the primary dwelling and 15 feet (4.8 m) from the kitchen structure (Dan Griffith, personal communication 2015). The date of the well is not yet known, however, it has produced a limited number of artifacts perhaps predating John Avery's official occupation of the site, suggesting a construction before 1674 (Dan Griffith, personal communication 2015). No wells were located on the Middle Plantation, located nearly 2 miles (3.2 km) from the nearest brackish water and in close proximity to fresh water springs most likely used as the primary water source (Grettler et al. 1995:169).

Fence Lines

Fence lines and boundaries were identified in some capacity on every site, indicating a clear need to bound or delineate certain areas. It is plausible to attribute a large portion of the fencing to the protection of crops and to keep workspaces free from roaming livestock. Anderson (1994:604) explains that livestock were considered so important to survival that the traditional and legally required practice of confining livestock within a fenced or hedged areas to protect crops, was reversed in the colonies, where people built fences around fields, gardens, and domestic areas to accommodate roaming cattle and pigs. Although he was referring to New England colonists, the same practices were employed on the Middle Atlantic sites. It was not until the early-nineteenth century when population pressure, changing agricultural practices, and changing perceptions of landscape, that landowners began passing laws to restrict the free range of livestock (Grettler et al. 1995:168). The majority of the yard at the Strickland site was enclosed by post and rail and worm fences. Fencing formed an enclosed foreyard at the King's Reach Plantation, while three distinct fence lines were identified at Whitehart (Grettler et al. 1995:165–168). Excavation at the Avery's Rest site has revealed a clearly fence-bound area recognized as a garden compound as well as a north-south running line, although that appears to have been constructed later than the identified structures on site.

Ceramics

The occupants of Whitehart, Avery's Rest, King's Reach, and Powell, Middle Plantations sites all utilized a range of ceramic wares that were commonplace in late-seventeenth and early-eighteenth century homes. Undecorated redwares, slip-decorated redwares, Staffordshire earthenwares, English brown salt-glazed stonewares, and German blue and grey salt-glazed stonewares were recovered from all sites. Redwares were the most commonly recovered ceramic type on all four sites.

While the effectiveness of some artifact types, including ceramic and glass fragments, as temporal indicators is minimal due to lengthy production time spans, the paucity of

certain ceramic types can be temporally informative. "Notably absent from the Whitehart and Powell Plantations were diagnostic second quarter of eighteenth century ceramics including white-salt glazed stoneware, Buckley, manganese-mottled redware, North Devon, and Chinese porcelain. All wares were identified on the nearby Strickland Plantation occupied less than a decade later from 1726–1764" (Grettler et al. 1995:155–157). While small amounts of North Devon wares were recovered from King's Reach, no porcelain was identified. Several sherds of porcelain were found during excavations at Avery's Rest, however, these have been attributed to a vessel dating to the second or third quarter of the eighteenth century. This time frame postdates both occupations of Avery's Rest and the porcelain is associated with a mid-eighteenth century site approximately 500 feet (152.4 m) from the Avery's Rest excavation (Dan Griffith, personal communication 2015). The absence of these ceramics indicates that the sites were abandoned before their manufacture or just as they were beginning to become widely available and utilized.

Cultural and Economic Trends

While similar building techniques, spatial layout patterning, and material culture were chosen and utilized across the sites in consideration, what do these decisions tell us about broader social practices of the time?

Material culture, household refuse, and landscape manipulation all shed light on the cultural trends and economic underpinnings of individuals and societies. Analysis of these materials can offer insight into a particular individual's economic standing compared to his peers, as well as how the individual perceived his place with in his society. Additionally, these materials can be indicators of cultural norms and shifts occurring over time.

The artifacts recovered from the Avery's Rest Plantation provide information on the life of the Avery family while the comparison of this site with contemporaneous settlements allows for a view of regional ideals. This section will use several categories of artifacts as well as the use of space to make some inferences on early colonial life in Southern Delaware.

Eating and Drinking Habits

Bottle glass: "Alcohol consumption was ubiquitous in seventeenth-century England, and it is no surprise that colonists brought this practice with them" (Phung et al. 2009:71–72). According to Main (1982) and Pryor (1983): "Most seventeenth century colonists drank liquors made from fruit, producing mildly alcoholic ciders from the abundant apples, peaches, and pears grown in plantation orchards" (Phung et al. 2009:72). Favretti and DeWolf (1971:224), also discuss the prevalence of alcohol consumption in the colonies: "Strong drink was commonly used by the Puritans as by the Churchmen in Virginia and peach brandy would have been as acceptable but it was easier to produce cider, and rum from the West Indies could be had with little trouble."

In addition to brandies and rum, wine was also available to the Chesapeake colonists in the seventeenth and eighteenth centuries. While both beverages were expensive, wine appears to have been consumed mostly by wealthier colonists. "The social significance of wine is suggested by the recovery of wine bottle glass fragments in association with tobacco pipe and fine tableware fragments, although wine bottles were also reused for more quotidian purposes" (Phung et al. 2009:72). Rum, a drink produced in the Caribbean from the by-products of sugar manufacture, was available in the Chesapeake by the second half of the seventeenth century. It probably came from Barbados and was one of the important commodities that helped to shape what archaeologists and historians describe as the emerging Atlantic World (Phung et al. 2009:72). Dark green and olive green bottle glass was recovered from the Avery's Rest site. As a wealthier member of society, Avery would have been able to afford wine and other spirits. His sailing trips to Barbados surely familiarized him with rum, and it is known from court records that Avery imbibed frequently, and often heavily. The olive green bottle glass is very possibly shards of small case bottles (Dan Griffith, personal communication 2015). The reconstruction of two dark green wine bottles was possible, both suggesting dates between 1698 and 1715, which correlate to the second occupation of Avery's Rest by John's daughter and her husband. There is no reason to believe that the tradition of personal and communal drinking would not have taken place throughout the entire occupation of the site. As of yet, no bottle seals have been recovered.

Animal bone: The presence of animal bones is not surprising, as it is often found throughout colonial settlements. Miller (1998) and Manning-Sterling (1994) submit: "Meat formed the bulk of the Chesapeake English diet throughout the seventeenth century, with an increased emphasis on domesticated animals after 1660" (Phung et al. 2009:64). "Careful examination of court, probate, and other records, along with analyses of animal bone assemblages from archaeological deposits confirm that colonists had access to ample food resources that were, collectively, sources of sufficient nutrition" (Phung et al. 2009:63). Probate records and other administrative accounts, for example, often report livestock and foodstuffs available to Chesapeake households at particular points in time, while archaeological deposits yield hundreds, if not thousands, of animal bone fragments representing meals consumed over a period of time. Phung et al. (2009:63) go so far as to argue that: "heavy consumption of meat, alcohol and tobacco-in many ways, the three 'givens' of early colonial life in this region [the Chesapeake]-played an important yet unrecognized role in the nutritional health of the colonists."

Probate records indicate ownership of large numbers of cows and pigs by the Avery family. Excavations yielded faunal remains of butchered cow and pig, some burnt, suggesting that the family was preparing and consuming plenty of animal protein.

Bedell (2001:15) has studied data from 21 Colonial sites in Delaware, representing the period from 1680 to 1810, and concluded that: "in terms of the way bones were butchered and prepared, there was no evidence of any change. Carcasses were hacked with axes and cut with knives, following the traditional European pattern...In terms of

agricultural work. It is quite likely indentured servants or slaves shared living quarters with their owners, however evidence has suggested that many kitchen quarter buildings also functioned as living quarters for servants. Either scenario provides the view that servants and slaves were in close proximity to colonists in the working and domestic spheres.

All sites were comprised of a main dwelling, at least one kitchen quarter, and varying numbers of outbuildings, barns, and gardens. Although there were examples of intentionally defined spaces, including fence boundaries, fenced garden plots, and specific areas for refuse disposal, there is a lack of symmetry or particular alignments in any of the building patterns. While the term 'work yard' can be used to describe the nucleus of the homelot, the notion of defining a space as an ornamental front yard seems non-existent. Plowzone distributions suggest that although certain areas were designated for refuse disposal, trash was often thrown out doors or windows and eventually worked into the ground by human or animal traffic (Bedell 2001:13). The maps created for Avery's Rest support this assessment, especially in the southern corner of Structure 2, where several artifacts were found in concentrations that would suggest possible disposal out of a door or window.

Farming Economy

Tobacco: Perhaps the most salient difference between the plantations of Virginia and Maryland and those of South Delaware was the reliance on tobacco. Maryland and Virginia were both controlled by the boom and bust of the tobacco market. Agriculture was an inseparable part of Colonial life in Sussex County and while tobacco was never the staple crop for Delaware planters, it was grown on a smaller scale. Tobacco was highly valuable and used as currency to purchase items, to settle debts, and as a measurement of value. "A letter by Edward Randolph, Surveyor of Customs for North America, shows the overall scale of the Delaware tobacco trade. Sometime in the 1690s, he wrote that '3,000 hogsheads of tobacco were produced annually in the Lower Counties'. Using an average weight of a filled tobacco hogshead (487 pounds [220.9 kg]), this equates to 1,461,000 pounds [662,698.5 kg] of tobacco produced and shipped in one year" (Lukezic and Griffith 2013:8–9). The probate records of John Avery clearly indicate his participation in the tobacco culture. The inventory listed "10 HHDs of Tobacco, very neat" (Claypool et al. 1683). While this was most likely not an entire crop, the amount demonstrates the large quantities of tobacco being produced on early plantations in Delaware. It also exhibits the high economic value placed on tobacco, as the 10 hogheads listed in the inventory "had a recorded value of 4,307 pounds [1,953.6 kg] of tobacco, nearly one-quarter (22%) of the total value of Avery's moveable estate" (Lukezic and Griffith 2013:8).

While tobacco did play an integral part in early Delaware agriculture, Colonial planters here diversified their crops very early. Inventory records list a variety of grains stored by several estates, as well as collections of tools that would be vital in the production and harvest of grains and not tobacco. "Plows, plow chains, harrows, and horse equipment, such as traces, all essential for grain production and not for raising tobacco,

can be found in these inventories" (Lukezic and Griffith 2013:9). Avery's probate specifically lists "2 plow shares and colters, 1 plow chain, 5 reep hooks," all indicating a diversified crop (Claypool et al. 1683). This shift to wheat production was not largely visible on the Chesapeake plantations until after 1740 when continued price fluctuation and production difficulties affected tobacco harvests (Middleton 2002:199).

Animal husbandry: If one could afford such an enterprise, animal husbandry was a profitable undertaking in Colonial times, and an English tradition that carried on throughout early Colonial Delaware. Again, a combination of historical records and archaeological evidence can confirm this practice. Large quantities of butchered cow, pig, and sheep bones were recovered during excavations at Avery's Rest, most likely a food source for the family as well as a valued market commodity. Pigs and cattle were quite often left to roam free and forage for food. Animals were tagged with identifying marks, as to be correctly identified by their owners. It is likely that John Avery's wife, children, and slaves were responsible for many of the daily operations of the farm, possibly including care of the cattle and hogs.

In addition to livestock raised for food, horses were an integral part of plantation life. Used for transportation, herding, and ploughing, horses were a highly valued asset of any estate. "John Avery's inventory lists eight horses with a total value of 9,500 pounds of tobacco, or nearly half of the value of his personal possessions" (Lukezic and Griffith 2013:9). Although excavations have not revealed evidence for a barn, it is quite possible that the structure was constructed using ground-laid sills that are archaeologically invisible today or that they lay outside of the excavated area (Dan Griffith, personal communication 2015). Recovered artifacts including a horse shoe, horse harness buckles, and other equestrian ornamentation confirm the presence of horses on site. It is likely that the barn and tack room were located east and northeast of the homelot nucleus (Dan Griffith, personal communication 2015).

Butter and cheese production: No evidence suggests that the Avery plantation specialized in the production of butter or cheese, or that these activities provided any substantial income for the family, however, their knowledge of the practices and participation in them on a sustenance level is quite common of seventeenth and eighteenth century homesteads. Spaces designated as dairying houses were identified on several of the sites discussed. Although an outbuilding dedicated specifically to dairying has not been identified on Avery's Rest, a bone cheese tester was found during excavation, providing evidence for cheese making (Dan Griffith, personal communication 2015). Avery's probate also lists several dairying vessels, including, "1 fine creem tub and 4 trays" (Claypool et al. 1683). It is quite possible that dairying activities were performed inside another structure rather than a special purpose building. "Joan Jensen's (1986) research on Colonial Southeastern Pennsylvania and New Castle County has shown that by the middle of the eighteenth century, farm women were making a significant contribution to the income derived through butter, milk, and cheese production..." (Catts et al. 1995:107). While it is unclear how much income, if any, was contributed to the Avery household through dairying activities,

material culture remains indicate that it played a role in the daily activities and functions of the plantation.

Gardens and Orchards: Plenty has been written on the inclusion of garden plots on the homelots of settlers of varying economic levels, from New England to the southernmost colonies. Further research must be carried out to ascertain if the gardens in the Middle Colonies had a purposeful bed arrangement, as was common in the New England colonies by 1700. The varieties of plants, particularly trees, may have varied slightly, however, early gardens would have contained many of the same vegetables, flowers, and herbs, including the 'three sisters': corn, beans, and squash. The seventeenth and early-eighteenth century sites in Delaware and Southern Maryland show evidence of fenced garden plots located near the kitchen quarters, providing easy access to those preparing meals (Leffingwell House Museum n.d.).

Light fraction from site flotation at Avery's Rest has not yet been analyzed, therefore little is known about the plants being grown in the immediate area. Archaeological and architectural evidence supports a fenced garden compound, and additionally, walnut shells, and peach pits have been discovered. The 2015 field season produced recovered branches at the bottom of Figure 176, the barrel-lined well, which are currently being analyzed, however considered to quite possibly be from a peach tree. Research from the Strickland Plantation has revealed evidence for a variety of weeds and grasses in the central homelot, including crab grass, lambs quarter, pig weed, rye-grass, worm weed, tarweed, and purslane. A peach pit, nut, and salmonberry (a type of raspberry) were recovered in flotation, however, no tree seeds or nuts were identified, suggesting little to no presence of tree cover in the yard (Catts et al. 1995:105). Historic documents and archaeological research seem to indicate the presence of peach trees on sites throughout Delaware, Pennsylvania and parts of Maryland, yet a much less common occurrence in the New England colonies.

Of peaches in the New England colonies, we need say but little. Except in favored parts of Connecticut and Massachusetts, this fruit was little grown in these northern colonies. It is not at all probable that New England Indians ever planted peaches and for a generation after the whites came the struggle for the necessities of life kept them from indulging in so great a luxury as a peach-orchard. (Favretti and Dewolf 1971:224)

"William Penn wrote as early as 1683 that there were very good peaches in Pennsylvania; "not an Indian plantation was without them" (Favretti and Dewolf 1971:225). No evidence thus far supports a proper orchard on the Avery's plantation, however it is quite probable that fruit trees were present, even if in a small number.

Middleton (2002:206), reminds us that:

> ...farming was a hard business, dependent on the climate, and precarious too should the breadwinner be injured or fall sick. Hence the farmer always aimed to increase production beyond the mere subsistence level, initially by relying on the labor of his family. If he was fortunate he might secure additional land and employ servants. Only then could he provide for his wife and children in a more dignified, less squalid manner.

The archaeological record indicates that John Avery was more than a subsistence farmer, with access to the labor of slaves and indentured servants; he was a successful planter. His large land grants provided ample area to raise a diverse crop and for livestock to feed. His position in government, and time spent as a mariner provided the economic means for Avery to invest in draft animals, farming equipment and tools, and livestock to raise for personal consumption and for sale on the commercial market.

Conclusion

Although the years 1630 to 1730 have been described as a century of exploration and frontier settlement in Delaware, the first wave of landowners and planters were not without tradition or drive to create some semblance of structure in a frontier landscape. This is reflected in the creation of governing bodies, productive plantations, and varying levels of consumerism. While Southern Delaware may have initially experienced real and lasting settlement slightly later than the New England, Tidewater, and Chesapeake colonies, it was not completely isolated from material trends or societal developments as reflected in the archaeological record.

This investigation clearly demonstrates that the decisions of John Avery and his contemporaries were largely traditional, yet their lives were not void of material amenities and trends of the time. While the rise of the Georgian culture may have influenced ideals on neighboring plantations that functioned throughout the 1700s, traditional practices remained evident in many areas. The plantation homelot of Avery's Rest is indicative of traditional settlement patterns in the area, including earthfast construction techniques, a lack of brick as a primary architectural element, and an informal spatial arrangement of structures. There is a noticeable lack of symmetry between the primary dwelling and subsequent outbuildings, as well as an absence of any indications of formal gardens or intentional divisions of yard space into formal versus work areas. Traditional practices also remained in the realms of cooking and eating, as evidenced by crude seventeenth century butchering practices, traditional redware vessels, and Old World serving vessels.

Adaptations to life in the American colonies are witnessed in the prevalent use of fencing to protect gardens, crops, and domestic areas from free-roaming livestock. Archaeological excavations at Avery's Rest have revealed a 35 foot by 55 foot (10.7 m by 16.8 m) fenced garden plot that was likely the family's kitchen garden, providing vegetables and herbs to supplement the pork and beef that comprised a large part of the Colonial diet. Delaware settlers, in particular, took advantage of the good soils found in the southern part of the state to engage in diverse agriculture that included tobacco but also corn and traditional English grains. While tobacco was used a form of currency and as a means of settling debts, the diverse variety of crops proved valuable market commodities and protected Middle Colony planters from the volatile tobacco market. Historic court documents revealed several cases of debt in which John Avery

was involved in the transfer of tobacco as settlement. In November 1681 he acted as the legal representation in a case involving a debt of 1,000 pounds (453.6 kg) of tobacco. In June 1684 Avery was accused of being indebted 1,790 pounds (811.9 kg) of tobacco and 195 pounds (88.5 kg) of pork to the Estate of Halmanus Wiltbank (Sellers 1898). His probate lists 20 barrels of corn as well as 10 hogsheads of tobacco and it is probable that the family stored smaller amounts of various grains as well.

These earliest examples of permanent colonial settlement in Delaware may demonstrate strong ties to traditional English lifestyles and a degree of informality and crudeness that is commonly attributed to frontier settlements, however, much of the material culture recovered from the sites suggests the availability of material conveniences and participation in the modern commodity trade by early settlers. Artifacts recovered in the Avery's Rest excavations, including window glass for example, demonstrate that these products were available to John Avery, and more importantly he possessed sufficient economic resources to purchase them. While many of the material remains reflect basic utilitarian functions and lack the formality and luxury associated with Georgian style, notions of comfort, wealth, and formality were witnessed throughout the archaeological and historic records of the site. The occupants of Avery's Rest enjoyed crystal table wares, and utensils, suggesting a recognized notion of ritual and decorum surrounding eating and drinking. Furniture, candlestick holders, guns, and books are all listed in John Avery's probate, suggesting a conscious effort to create a comfortable and safe environment.

Many of the conclusions drawn from the assessment of Avery's Rest and the other sites discussed here were made possible by the analysis of plowzone-derived material. The plowzone at Avery's Rest generated a substantial collection of architectural and domestic material that significantly aided in the temporal classification of the site as well as in assigning structural and functional roles to features. Nails, daub, brick, and window glass were included in the architectural remains indicative of permanent structures and heat sources (hearths). Domestic artifacts, including tobacco pipes, bottle glass, utilitarian redware, stonewares and other ceramics, demonstrated areas of human activity and in some instances indicate the types of activity taking place in the area such as eating or drinking, or the function of space, including storage or a primary dwelling. Shell and animal bone concentrations in the plowzone indicate areas of food storage, preparation, and possible areas intended specifically for refuse disposal. In the current study the inclusion of plowzone material was not only beneficial but an essential element in the spatial analysis of the Avery homelot and the combination of plowzone material and subsurface feature artifacts created a more holistic view of life at Avery's Rest in the late seventeenth and early eighteenth centuries.

ArcGIS programming provided a means of data organization and manipulation that enabled the Avery's Rest database to be visually and spatially represented. The creation of four unique sets of artifact distribution maps facilitated the spatial analysis of material recovered in shovel test pits and test units, independently and in relation to identified subsurface features throughout the site. The concentrations or lack of certain artifact types and their correlations with subsurface features, aided in

confidently assigning a spatial and functional organization to the plantation homelot. Again, some of the most observable concentrations were those of architectural materials, suggesting permanent construction features, assemblages of animal bone, shell, and utilitarian ceramic, suggesting areas of food preparation, storage, and refuse disposal, and finely refined ceramics, as well as table and bottle glass, and tobacco pipes indicating areas of eating, drinking, and entertaining. All of these groupings were clearly visible when plotted on the GIS maps and appropriately corresponded to subsurface features.

The organization of the Avery's Rest data set and the maps produced within this project are a testament to the dedication of the ASD volunteers that have meticulously excavated the site since 2006 and continue to unearth the artifacts that allow us to expand our understanding of Colonial living in Southern Delaware. The vulnerable landscape of seventeenth century Delaware is disappearing rapidly. The work at Avery's Rest in the field, the laboratory, and academic settings has already expanded our knowledge considerably. As the work progresses, Avery's Rest will no doubt continue to play an important role in understanding Delaware's Colonial past.

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A SEED IN SKOKLOSTER CASTLE, SWEDEN: SEARCHING FOR THE ORIGINS OF EIGHT SUSQUEHANNOCK ARTIFACTS

Marshall Joseph Becker
West Chester University

Abstract

A group of eight Native American artifacts held at Skokloster Castle in Sweden for more than 300 years had long been presumed to be Lenape in origin. A seed that clung to one of these items was studied in order to see if it might confirm the specific area of origin for this group of artifacts. While the seed proved to be so common as to be useless for a focused geographical identification, the years of research related to these objects has identified them as Susquehannock in origin. The route by which they reached Sweden still remains uncertain.

Introduction

A comprehensive study of eight pieces of Susquehannock material culture that had been collected in the early-seventeenth century was conducted during August of 1980 (see Becker 2012, also 1990a, 1990b). This small collection found its way to Skokloster Castle in Sweden, where they remain together to this day. Prior to the 1980s, this set of objects had been presumed, on no direct evidence, to have been collected by Johan Printz when he was Swedish Governor in the Delaware Valley colony and given to his friend Karl Gustav Wrangle as a gift (Becker 1979). The goal of the 1980 study, therefore, was to collect information on what had been presumed to be early Lenape material culture.

Material Culture Studies

Studies of material culture have advanced significantly since 1897, when Lucien Carr's description of the dress and ornaments of a considerable number of Native American cultures filled a mere 76 pages (Carr 1897). Our recent progress in distinguishing among the material products of various groups has improved our ability to trace cultural history. The identification of specific cultural boundaries (e.g., Becker 1983) has been followed by a concern for determining if it may be possible to recognize design or other patterns specific to each such culture from the artifacts they made. If this is possible, as we suspect, the cognitive components of each culture may be reflected in patterns of design and construction. Maslowski (1984) and others now recognize that perishable artifacts have much greater diagnostic value than lithic artifacts in determining prehistoric and/or ethnohistoric cultural boundaries.

Few, if any, early ethnographic pieces that can be conclusively attributed to any specific Native peoples of the Northeast survive. Of the few that are known, none are as well documented as the impressive piece from Virginia known as Powhatan's mantle, which has a long history and has been subjected to studies for nearly 100 years (Macgregor 1983; Tylor 1888). When examining artifacts believed to be Lenape in origin, the most problematic area of concern is the confusion resulting from the use of the term "Delaware" to indicate any member of the several cultural groups that occupied territories along the Delaware River Valley—or even to all the people of the entire Algonquian linguistic zone (i.e, Becker 1992 misidentified some artifacts of the Mi'kmaq or more northerly people because they were classified as "Delaware"). But the problem of placing all the people of the Delaware Valley into a single unit called "Delaware" (Goddard 1978) has primarily been resolved (Becker 2015a, 2015b). Recent studies demonstrate the integrity of each of these cultures at contact (Becker 1983). Any differences in their material culture have yet to be demonstrated.

Origin of the Skokloster Collection of Artifacts

The collection of eight Native American artifacts preserved in the armorial collections of Skokloster Museum in Sweden (Rangström et al. 1980:57–61; also Lindeström 1979) was believed to have been collected in the lower Delaware River Valley. These early-seventeenth century items were recognized as significant to Native American studies as early as 1906 when Amandus Johnson (1917:279) first reported them among the objects in this outstanding Swedish location. By tradition these eight artifacts were believed to have come from New Sweden on the Delaware (1638–1655). Since Johan Printz, governor of New Sweden from 1643 until 1653, was a friend of Carl Gustav Wrangel, who inherited the Skokloster estate in 1643, the belief that these items were a gift brought home from the New World appears logical. Certainly Printz' return during the height of Wrangel's collecting activity and during the building of his big castle, provided a good possibility that Printz had been part of the route for these items reaching Sweden. Yet every effort to confirm this supposition failed.

The first written record noting these eight ethnographic pieces appears in the Skokloster Castle inventory of 1710 in which they are simply described as Indian artifacts. No place or date of origin appears, nor is there a reference to their source. This would appear unusual if the pieces were a gift from a friend or known to derive from that most distant part of the seventeenth-century Swedish empire, situated along the Delaware River. While we might wish to accept the *idea* that Printz, a military man and provincial governor, had returned with these curiosities as examples of the kind of work done by the local natives, we have no supporting evidence. Printz himself had noted the skill of local Natives in crafting items of stone, wood, and metals on at least two occasions. One of these was in a letter to his Queen in 1644 that accompanied a series of Native-made artifacts sent to her as a gift. The gifted items included a wampum belt and other items accompanied by a descriptive list (e.g., Johnson 1930:166–167). Printz's role as a collector of Native artifacts is also documented from the archaeological evidence found during the excavation of his residence on the Delaware River. A Native stone tool (hatchet head) was recovered from the burned

materials resulting from a devastating fire in 1644 (Becker 1999:17–18). However, no document or written reference exists to confirm that Printz secured ethnographic examples to take back to Sweden, nor that he ever transmitted any examples to Wrangel. Perhaps a study of the later years of Printz' life might provide evidence that some portion of his collections or possessions were later acquired by Wrangel, but to this date no evidence has been found.

The earliest of the Skokloster Castle inventories dates from 1652, but no mention of these eight items appears therein (an English edition of this list is in process)—nor do they appear on the 1672 inventory, which was not a complete account but might be expected to have listed these items. Bengt Kylsberg (personal communication) suggests that they may have arrived at Skokloster by 1676 during a period when many other holdings joined the original collections. Perhaps they came from Johan Printz's estate, the records of which might provide useful clues to the origins of these and possibly other New World artifacts.

Two other possible sources for these eight ethnographic pieces have been brought forth since 1980. Wrangel was a great collector, as attested by the present Skokloster Castle holdings—all of which he amassed and documented in extreme detail. A great deal of the material purchased by Wrangel came from the Netherlands, as is extensively documented in the Skokloster archives. Quite possibly, these eight ethnographic pieces were purchased in a group in the Netherlands, having come from the Dutch Colonial area of North America. The Dutch, in fact, had a trading station on the Delaware River by the 1620's and had been trading in that area for many years before. Most of the ships used by the Swedish company traveling to New Sweden employed Dutch officers and crew familiar with the routes and area through previous voyages to the region. Any of these people could have brought back material from the lower Delaware River. Furthermore, and more important to this discussion, the Dutch colony at New Amsterdam had extensive interactions with a series of Native American cultures, any one of which could have produced these artifacts.

We know so little about perishable goods from North America from the seventeenth century that we cannot easily assign origins to any of these pieces. Ball-headed clubs are perhaps the best known category of artifact from this region (see Feest 1983), but the two at Skokloster Castle could have been made and used by the Lenape as well as by several other nations in contact with the Dutch. These include the Esopus (Becker 1983, 2015), living to the west of New Amsterdam in what is now northern New Jersey, as well as many other groups whose specific identities are only now becoming understood. Various groups along the waterways near New Amsterdam and up the Hudson River also interacted with the Dutch. Many, like the Esopus, were involved in a series of wars with the colonists, and a cluster of artifacts from any of these groups could have been taken during a raid on their settlements. Dutch trade with the Five Nations (Iroquois) became the primary source of financial reward in New York, and those people also produced and used clubs, perhaps like those at Skokloster.

Any of these Native American groups could have made this collection of artifacts at Skokloster. The items could have been taken to the Netherlands by Dutch traders or travelers, where they were then purchased by Karl Gustav Wrangel. Arguing against this scenario, though, is the extensive documentation of all purchases found in the Skokloster archives. Arne Losman (personal communication) indicates that he has reviewed up to 50,000 letters and documents concerning the life of Wrangel and in particular the acquisition of the vast collections now at Skokloster. No mention of these eight Native items has been identified.

A third likely source of these interesting pieces leads us to an equally problematic sequence of events. Considerable quantities of goods came to Skokloster as war booty from various parts of the Swedish empire, which had reached its zenith in the early 1600s. For example, many of the fine silver pieces in the church at Skokloster Castle came as booty from Poland, and the Codex Gigas came to Sweden as booty from the area of the present Czech Republic. Of concern to the Lenape problem is the fact that looting in Denmark provided a great deal of the material at Skokloster, some during the Danish wars in the 1640s. Possibly other items were acquired during the occupation of Zealand, Denmark (1658–1660). For reasons as yet unknown Danish ethnographic collections include an impressive number of pieces from the early contact period in the New World. The ball-headed club in the Copenhagen National Museum (Catalogue No. EGb 153), however, is one of at least two early European copies of the Skokloster club (6901); the other copy is one of the two ball-headed clubs in the Etnografiska Museet in Stockholm (Becker 1990b). If these pieces at Skokloster had come from Denmark the relationships between these pieces and clues to their origins might be sought in Danish archives.

How these many ball-headed clubs came to be in these various European locations is critical to determining their exact origins (cf. Becker 1980). Information from the clubs would bear on the actual source for the eight Native pieces at Skokloster, but despite what we know about such items, specific origins cannot be determined. Other New World artifacts without provenance appear in the Skokloster collections including a kayak and paddle, an anorak in the textiles department, and a hammock. None are related to the eight items of the 1980 study. The possibility that these eight objects in question derive from the Delaware River and were brought back by Johan Printz is quite good, but far from conclusive.

Cultural Identification

Ideally we would be able to identify the place of manufacture and time of origin for these Native American pieces at Skokloster, and to note the people (cultural group) who made them. Even if we could identify Johan Printz as the individual who gave these pieces to Carl Gustav Wrangel, we still would not be able to specify the original makers due to the complexity of the political history of New Sweden during the seventeenth century.

The earliest known European accounts from along the Delaware River (1620's) indicate that the Susquehannock had intruded into this region and disrupted and displaced the Native people, the Lenape. Amandus Johnson, who first reported the value of this collection at Skokloster, made two extremely important observations regarding the economic and political realities of life in the Swedish colony. First, Johnson's (1917:279) study of the Colonial documents clearly indicated that '"the River Indians were poor and had nothing but maize to sell."' Johnson realized that the Lenape of the period around 1650 were poor in peltry, but that their sales of maize, as well as venison, beans, fish, and even hops, were important to the economy of the impoverished Swedish outpost (Becker 2014b, also 1995, 1999). Second, Johnson (1917:278) recognized that the Susquehannock and other Native American people of 1655 were as threatened by the English as were the Swedes and the Dutch. This led the leaders of the White Minquas (Susquehannock) "and their united nations, The Tehaque, the Skonedidehoga, the Serasquacke, the true Minquas and the Lower Quarter of the Minquas..." (all resident in the area around the central Susquehanna River drainage) to offer a large tract of land to the Swedes and inducements to become allies. The Susquehannock hoped to use the Swedes as a buffer in their wars with the Five Nations, but the Swedish colony was not to last the year, and the Dutch and Susquehannock power were not to survive another two decades.

Artifacts collected along the Delaware River before 1710 could have been produced by any of the three Delawarean groups, although the "Munsee" were less likely to be represented along the lower reaches of this waterway (Becker 2015). However, the Susquehannock (Minquas) were the militarily dominant people on the west side of the river during the first half of the seventeenth century, and also the principal suppliers of peltry to Europeans (Kent 1984). Although Lenape bands native to the Lower Delaware remained in that area during this period, Susquehannock interactions with the Swedish traders may have been at a level greater than those of the local Lenape. This early interaction led me to consider the probability that the Skokloster Castle artifacts were made and used by the Susquehannock of that period.

Ethnographic Evidence

Although the English had been trading for pelts in Scandinavia since the 1550s, the potential supply in North America was an attraction, especially since the French were profiting from this trade. Susquehannock trade from Native areas up the Potomac to the Spanish down the Potomac may have been strong even prior to 1540 (Becker 1987). Since the mid-sixteenth century the Susquehannock were trading pelts to the French at locations along the St. Lawrence. The Susquehannock may also have been trading on the Delaware River by that time, passing goods to Dutch explorers coasting along the shores of the Northeast. Dutch random trade with the Native peoples in that period led to the establishment of New Amsterdam, as well as trading stations along the Connecticut and Delaware Rivers. These Dutch explorer-traders could have secured the pieces now at Skokloster. Linné (1958, also 1955) notes that some of the artifacts in Wrangel's collection may have come from Dutch contacts (Manville and Sturtevant 1966:220)

The Susquehannock of the sixteenth and seventeenth centuries are well known from archaeological research (Kent 1984), but only limited aspects of their material culture are available for comparison. Care also should be given to Captain John Smith's account of his voyage of exploration up the Susquehanna River during the summer of 1608, and to the figure of a Susquehannock elder depicted on the 1612 John Smith map of Virginia (Smith 1910:Frontis; Cumming et al. 1972:Figures 316, 311). Early in the trip, Smith sent a message up river to the Susquehannock people, well known as the most powerful and richest group involved in the pelt trade. By 1608, Smith (1910:122) had reached the Tockwhoghs, noting that they had gotten their trade goods, such as iron tools and beads, from the Susquehannock who lived to their north.

Smith and his party continued up the river after this meeting, but little additional data of use to our study is provided. The targets (shields) used by the Massawomek are briefly described (Smith 1910:425), but that is the only information about material culture of direct interest in this study. Of indirect interest, but perhaps more significant, is the note that each group gathered up the arrows shot at them for reuse (Smith 1910:127). This shifting of arrows between groups suggests that the identification of a "culture of origin" for this ethnographic item (at least) would be unlikely (Becker 1981). The account of this short voyage provides some of the most significant evidence about local populations at that time and some useful clues to the functions of ethnographic pieces.

Smith only traveled as far as the area of the Nansemunds and Chisapeacks (Smith 1910: 432). Three or four days after their arrival, a contingent of 60 Susquehannock came down the river bearing considerable gifts for Smith and his party. These presents included 3-foot (0.9-m) long tobacco pipes, probably the kind later called "calumet" or peace pipe, and tobacco bags (Smith 1910:29, 423). The Susquehannock covered Captain Smith "with a great painted Beares skin" in addition to presenting him with many other lavish gifts (Smith 1910:423). This "painted Beares skin" may have been a dyed fur, or a hide from which the hair had been removed and the bare surface painted with designs and/or symbols.

Smith certainly observed at that time that these people were notably taller than any of the other tribal groups he had contacted. The caption to the large inset of his 1612 map, depicting a Susquehannock in full costume, reads: "The Sasques=ahanougs are a Gyant like peop=ple & thus a=tyred" (Becker 2012:67). On September 7, 1608, Smith returned to the English colony. Smith's observation regarding the impressive stature of the Susquehannock has been the subject of some discussion over past century, but has been confirmed by studies of Susquehannock skeletal remains (Becker 1987, 1991) as well as by independent observations of these people made early in the eighteenth century. Study of the eight artifacts at Skokloster Castle suggests that the very items seen by Smith in 1608 came as a group from this voyage.

Perhaps the most important single piece of evidence concerning material culture in this area derives from the illustrative figure of a Susquehannock "warrior" that appears on the John Smith map of this region (Figure 1). This person (illustrated in Smith 1910:

frontispiece) holds a long bow and vaguely depicted costume including a fringed skirt. Of considerable importance to the study of the Skokloster material is the decorative pendant and neckpiece worn by the "Gyant like" Susquehannock depicted in the cartoon on the John Smith map. He wears a close-fitting "shirt" behind which decorative paws (?) depend. His loins are girded by a fringed and bead trimmed skirt, and a canid-like animal hangs behind his waist. This is almost certainly the same type of pouch or quiver that is now in the Skokloster collections (Becker 1990a).

Equally important in this drawing is a wolf's head pendant suspended from a fur-wrapped, twisted cord around his neck. This kind of necklace is also represented by one of the eight items now at Skokloster (Inventory No. 6909; see Becker 2012:70, figure 2). The animal's head hangs at the level of the base of the Native's sternum, and the depiction of the "cord"' as twisted reflects a spiral hair cord such as that found on four of the eight Skokloster pieces (Figure 2).

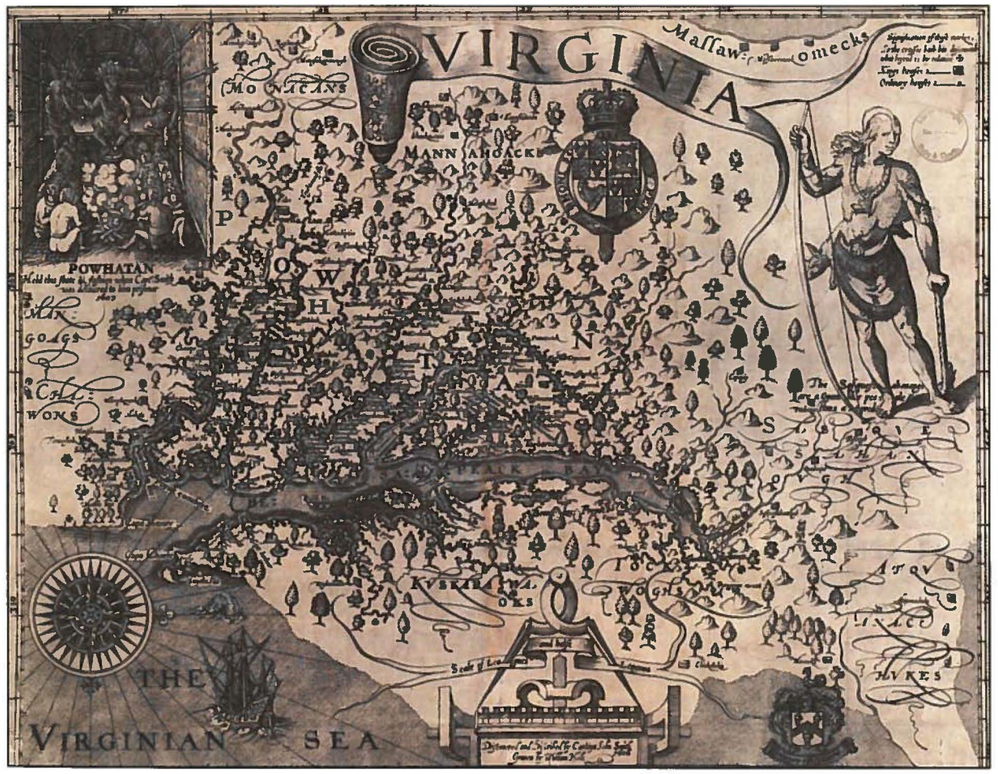

Figure 1: Smith Map of 1612. Note the inset in the upper right corner showing a Susquehannock "warrior with all of these artifacts.

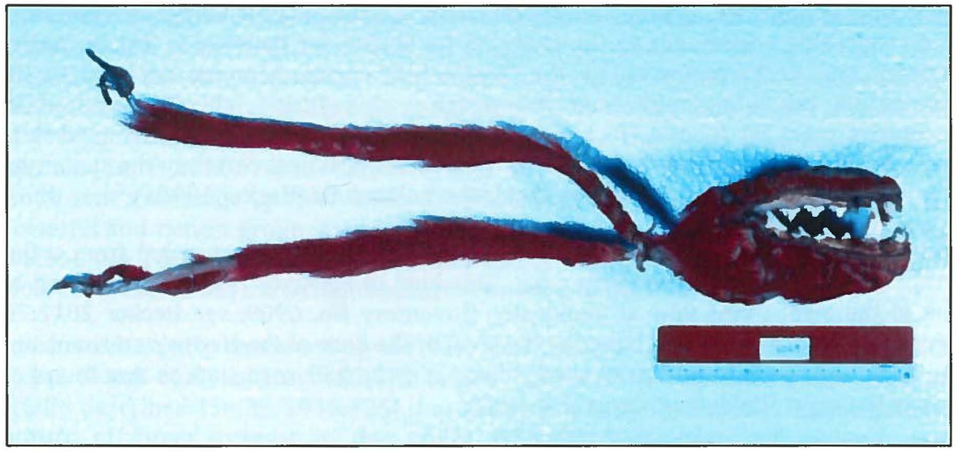

Figure 2: Pendant Wolf Head (Item 6909), as Worn Around the Neck on Map Insert.

The cordage found in the two burden straps at Skokloster, as well as in the "hair-strings" and other parts of the four "furred" objects, all have been made with a z-twist (Figure 3). Maslowski (1984:51), in a study of cordage in archaeological contexts, suggests that specific spin and twist patterns can be demonstrated to have "occurred and persisted in definable cultural areas." Most of Maslowski's evidence derives from studies of pottery that has been decorated by texturing the surface with a cord-wrapped paddle or similar technique. This puts the imprint of the perishable cord into the more durable ceramic, and the reverse impression can be studied. James Herbstritt (personal communication) believes that s-twist cordage is common to the glaciated plateau area of Pennsylvania, while z-twist cordage is found among the Monongahela people of western Pennsylvania and in Shenks Ferry and Susquehannock pottery. While the z-twist cordage of the Skokloster pieces also might have been made by the Lenape, as yet no cordage data for these people has been compiled. The Susquehannock, therefore, became the primary candidate for the origin of these objects.

The Inventory Records

The earliest inventories of the Wrangel armory date from 1653 and 1655, both undertaken by Anna Marguereta Wrangel. During those years, when Carl Gustaf Wrangel was beginning to gather his impressive collection, the objects were kept in the old convent buildings. The present castle was still being developed. These armory items were not moved to the castle until after 1670, the year of completion of the three rooms in which they are now found. No evidence of these American pieces can be found on Wrangel's early inventories. Quite probably the American artifacts were not part of the collection as early as 1655, but came later. A collection of weapons and curiosities such as this would have made an ideal gift. Many of the other weapons in the collection were presented to Wrangel as gifts by guests at his elaborate dinner

parties. His enjoyment of such items, and the development of the collection, fostered this kind of giving. Wrangel and his guests certainly enjoyed the collections, which include numbers of Polish (and Turkish?) bows and elaborate quivers. The arrow points in the ceiling of the round room (Room 4H) at the castle reflect the testing of these weapons in the places where they were kept. Most peculiar is the absence of any bows, quivers or arrows that could be from North America.

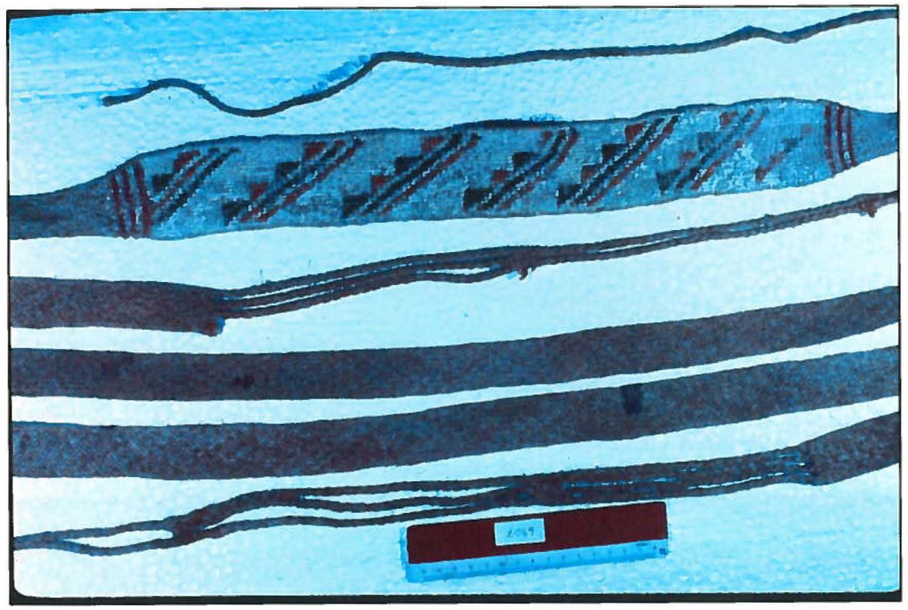

Figure 3: Burden Strap (Item 6907).

A Well-Traveled Seed

The seed in question was found embedded in an artifact identified as a "headdress" in the Skokloster Museum collections (Catalogue No. 6911; see Becker 2012: 71, figure 4). This is a leather construction that was covered with "fake fur"—a long string of leather into which was woven animal (deer?) hair that had been stained or dyed a bright red (Figure 4 and Figure 5). The seed itself was embedded in a fold of the leather material on which the "fur" was attached to form a uniform covering.

The Skokloster seed is assumed to have become attached to the "headdress" at some point during the useful life of this piece, and before it came into the hands of the European who carried it to Europe, possibly directly to Sweden. We assume that the seed already was attached when this set of artifacts was sent on loan to the National Museum (Smithsonian) in Washington, DC where they were photographed, but not studied. After an interesting delay, these artifacts (and the seed) were returned to Skokloster Castle where I examined them during August of 1980.

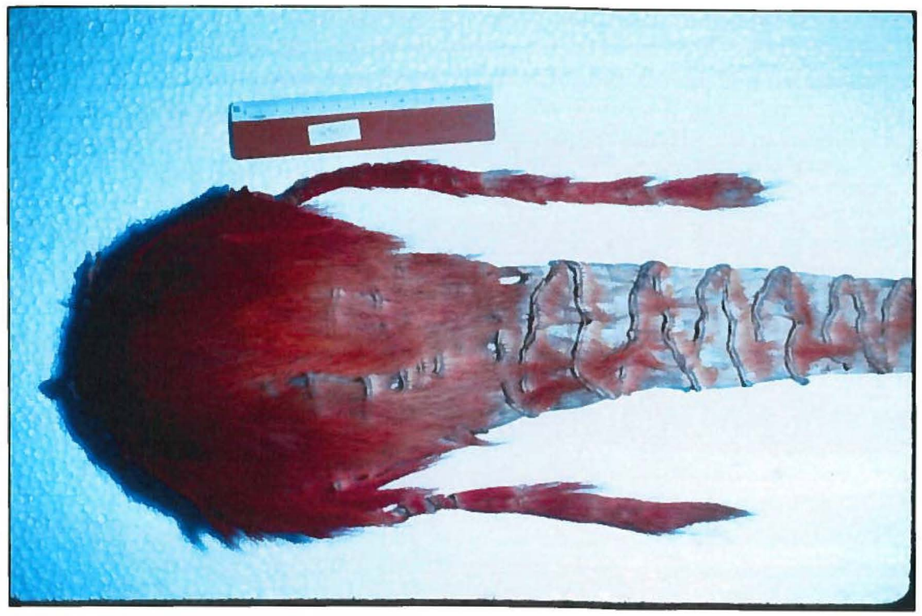

Figure 4: Headdress (Item 6911), One of the Items Found Amongst the Collection. The seed in question was embedded in the "hair." This is a form of fake fur covering the headdress.

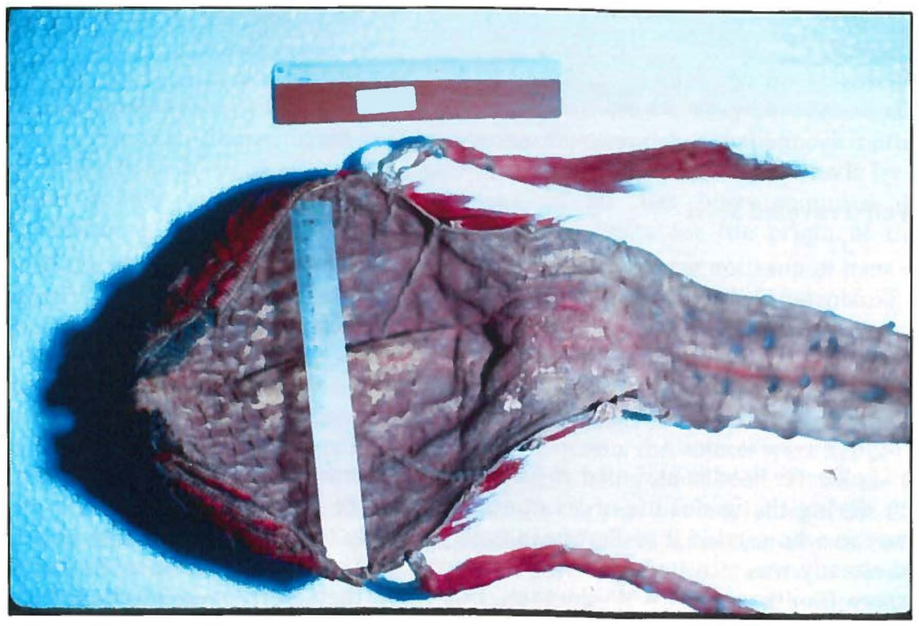

Figure 5: Inner Surface of Headdress (Item 6911).

With the kind permission of Arne Losman, the seed was extracted for study and again crossed the Atlantic. In 1987 the seed was carried to England where I was in residence at Cambridge University. Dr. Jane M. Renfrew (Lucy Cavendish College) had kindly offered to attempt an identification. The seed was delivered on May 19, 1987, but the usual pressures of research precluded an examination during the remaining period of my stay. The seed again crossed the Atlantic, where it was examined by Dee Ann Wymer. She identified it as a Ranunculus (Family *Ranunculaceae*) using Martin and Barkley (1961:158, figures 109–111; 97, plates 647–652), although noted that it seems similar to *Lepidium vig* (Family *Crucifera;*, see Eaton and Wright 1840:27).

The un-germinated seed was not carbonized or altered in any way. The length is 0.6 inches (4 mm) long and 0.11 inches (2.8 mm) wide, with a papery wall that appears to have a slight pattern on the surface (or coarsely wrinkling). The perennial herb *Ranunculus bulbosa* (St. Anthony's turnip, bulbous buttercup, crowfoot), a common meadow and wetlands plant widely distributed throughout the eastern United States. The bright yellow flowers are vivid in May when early flowering reflects the hearty root system. The plant commonly grows to a height of 4–12 inches (10–30 cm). The toxic and acrid chemicals throughout the plant lead to its use as a blistering agent, and modern homeopathic uses are extensive. While *Ranunculus* may be native to North America, it is widespread in England and could be an import despite a lack of burrs or fibers suited to attachment to animals or people. Ranunculus does have a significant curved "hook" that allows for attachment, as is demonstrated by this specimen (Figure 6) (Martin and Barkley 1961:158). The rapid spread of exotics via seeds attached to Europeans is a continent wide phenomenon (cf. Kaiser 2002:1635).

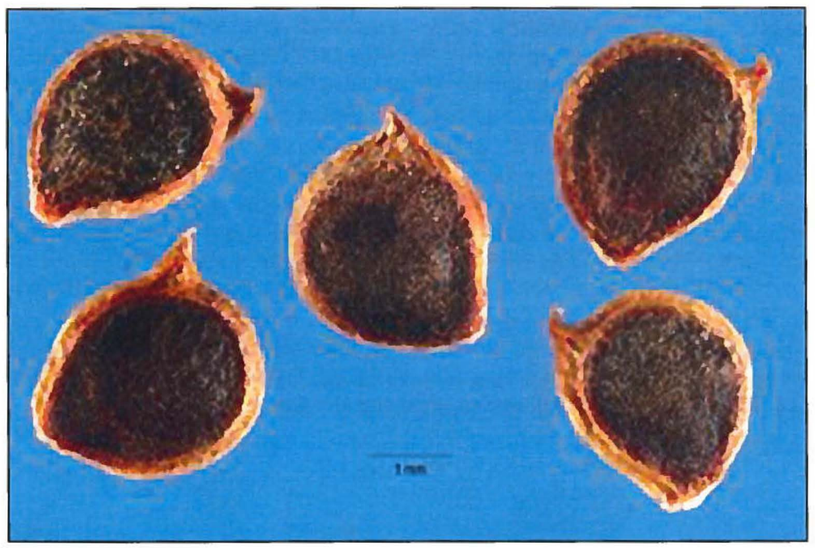

Figure 6: Seeds of *Ranunculus bulbosa*.

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Table of Contents

Field Work at Wildcat Manor (7K-C-22): Season Summary for 2016 by Dawn Cheshaek and Craig Lukezic 1

Avery's Rest Plantation: A GIS Based Interpretation of Plowzone Artifact Distribution in an Early Colonial Context (A Summary) by Kate Crossan 9

A Seed in Skokloster Castle, Sweden: Searching for the Origins of Eight Susquehannock Artifacts by Marshall Joseph Becker 35

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