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The Afro-Caribbean Ware from the Brimstone Hill Fortress, St. Kitts, West Indies: A Study in Ceramic Production

ABSTRACT

The free and enslaved Africans who lived and worked at the Brimstone Hill Fortress in the 18th and 19th centuries were part of a multiethnic community within the dominant British colonial military culture, which sought to oppress expressions of individuality and cultural identity. The Afro-Caribbean ware from Brimstone Hill is compared to similar wares from nearby islands based on a set of quantitative and qualitative traits. Macroscopic analysis and results from Instrumental Neutron Activation Analysis of a sample of Brimstone Hill Afro-Caribbean ware indicates that the Afro-Caribbean from Brimstone Hill was produced on St. Kitts. The role of pottery production in the strategies employed by free and enslaved Africans to cope with the various risks facing marginalized and disenfranchised populations is discussed.

Introduction

Low-fired, hand-made earthenwares produced and used by free and enslaved Africans throughout the Caribbean, a pottery often called Afro-Caribbean ware, has been found in many different archaeological settings on Jamaica, St. Croix, St. John, St. Thomas, St. Eustatius, Nevis, Antigua, Barbados, Montserrat, and Barbuda (Gartley 1979; Heath 1988; Peterson and Watters 1988; Hauser and Armstrong 1999; Peterson et al. 1999; Hauser 2001; Gilmore 2004). The ware was used by free and enslaved Africans to store foodstuffs and cook and serve meals, and has been seen by archaeologists as a retention of African heritage by those forced into bondage. It is the significance of being an "Africanism" that has made the pottery an important component of plantation archaeology in the Caribbean and one of the most studied artifact types from sites in the region. The ware played a crucial role in the day-to-day lives of many people during the pre- and post-emancipation periods throughout the Caribbean. Its use diminished greatly during the 20th century as metal cooking pans and mass-produced ceramics became more affordable. Today the ware is produced only on a few islands and primarily for tourists who learn little about the ware's history when they visit the islands.

Numerous researchers have examined the question of where Afro-Caribbean wares were produced by studying the similarities and differences in vessel form, temper, and paste (Heath 1988; Peterson and Watters 1988; Hauser and Armstrong 1999; Peterson et al. 1999; Hauser 2001; Gilmore 2004). These studies demonstrate similarities in vessel forms across the region, but indicate that each island has its own distinct variation on the range of forms. By examining temper and paste characteristics, researchers have attempted to identify the possible geographic source of the pottery and have even suggested the inter-island exchange of Afro-Caribbean pottery (Heath 1988; Peterson et al. 1999; Gilmore 2004).

On the island of St. Kitts (Figure 1), Afro-Caribbean ware is found at plantation, urban, and military sites dating from the 17th century to modern times, indicating that the pottery played an important role in the kitchens of the enslaved and post-emancipation African population. Compared to other Caribbean islands where Afro-Caribbean pottery has been studied, the origins and history of the Afro-Caribbean ware from St. Kitts is poorly known. One can still buy pottery manufactured on the nearby island of Nevis that is similar to the pre-modern Afro-Caribbean ware of St. Kitts. For the people living on St. Kitts today, Nevis has always been the place of manufacture for the ware. On St. Kitts there is no direct relationship between the ware and Kittian cultural identity because there is no memory of the ware being made on the island. Instead Kittians remember their mothers and grandmothers buying Nevisian pottery at the market in Basseterre (Figure 2). These Nevisian wares were purchased because of superior quality

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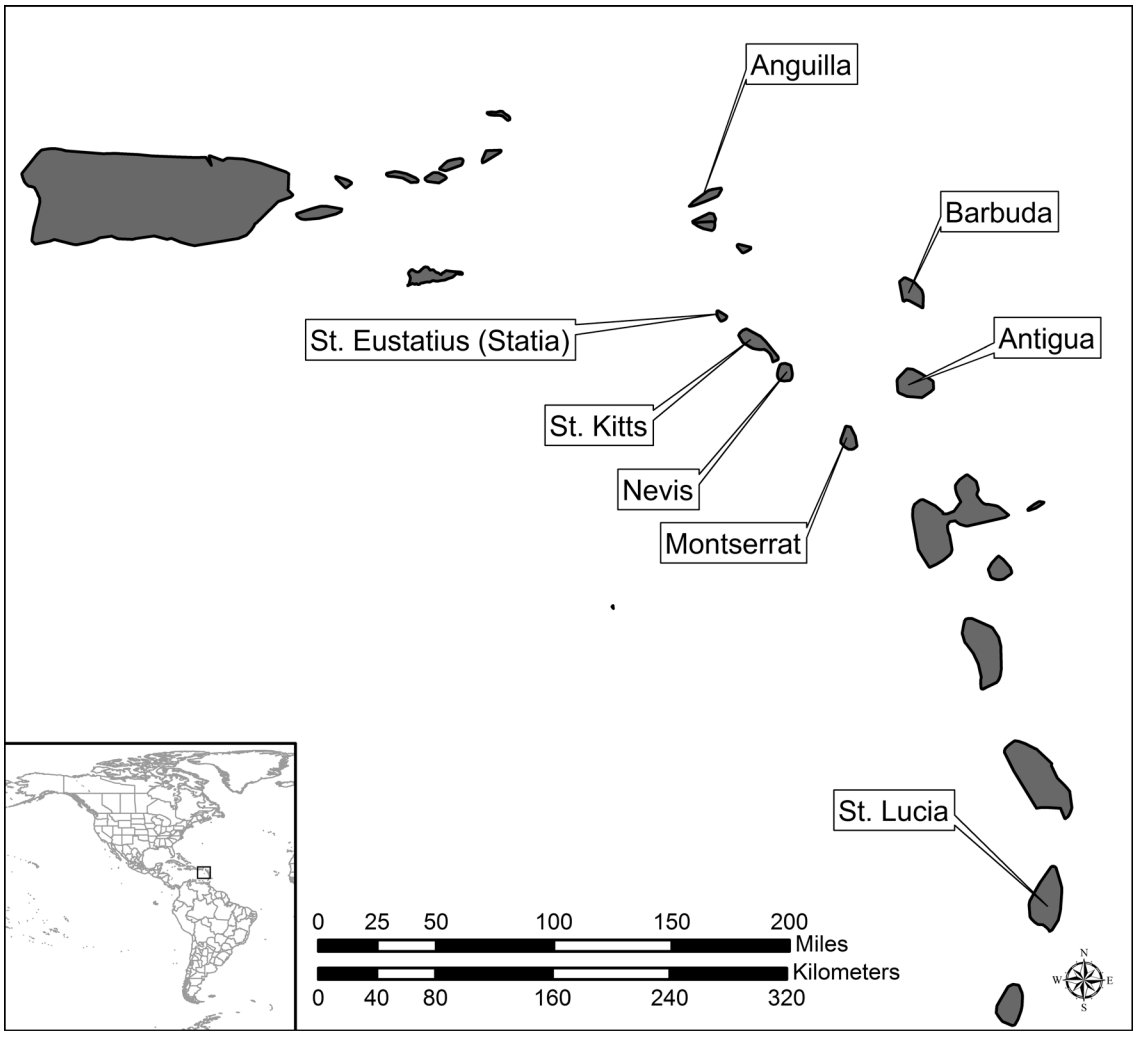


FIGURE 1. Location of St. Kitts.

and durability relative to pottery from other islands. There is a strong historic tradition of interaction between the two islands leading some (Heath 1988; Olwig 1993) to suggest that Nevis, which has a long pottery-making tradition, is the most likely place of manufacture for the Afro-Caribbean ware found on St. Kitts. The use of clay pottery carries a stigma of poverty on St. Kitts; an attitude that is slowly changing as more and more people across the island gain a deeper interest in their past.

This paper presents the analysis of 665 Afro-Caribbean ware sherds recovered during archeological investigations at the Brimstone Hill Fortress National Park (Brimstone Hill) on St. Kitts. Through macroscopic analysis and Instrumental Neutron Activation Analysis (INAA) (Ahlman et al. 2008) of the sherds, it is shown here that the majority of the recovered Brimstone Hill Afro-Caribbean ware sherds were manufactured on St. Kitts. The results of a study identifying clay sources on the island suitable for pottery making are presented in relation to the Brimstone Hill Afro-Caribbean ware. Furthermore, the production of Afro-Caribbean ware by enslaved Africans is placed in a risk minimization context where enslaved Africans made pottery to cope with the severities of slavery by giving them a commodity to trade and create long-term relationships with others.



FIGURE 2. Early 20th century postcard of Nevisian Potters selling pottery on St. Kitts. (Original in possession of author.)

History of Brimstone Hill

Located approximately 350 kilometers southeast of Puerto Rico in the Leeward Islands (Figure 1), St. Kitts was first settled by the British in 1623, and was jointly occupied by the British and French until 1713. From that time until independence in 1983, the island was a British colony. Like most of the Leewards, St. Kitts' greatest economic value lies in its fertile soils, which have been used to grow sugar cane from the 1640s until today. By the mid-18th century, St. Kitts was considered one of the wealthiest colonies in the British Empire due to the quality and quantity of sugar harvested on the island (Hubbard 2003). Enslaved Africans were the labor source used to plant, cultivate, harvest, and process the sugar cane crop, and by the end of the 18th century, outnumbered Europeans 20 to 1 (Hubbard 2003). St. Kitts' economic value and strategic location made it a frequent battleground between the British and their European adversaries, especially the French.

Brimstone Hill is a former British fortification situated on an approximately 222 meter high volcanic extrusion located along the northwest coast of St. Kitts (Figure 3). The British first armed Brimstone Hill in 1690 in an effort to provide strategic support for Charles Fort, located along the sea below Brimstone Hill, during a French siege (Smith 1994). The most intensive period of construction at the fort occurred after another French siege in 1782 and their subsequent occupation of the fort (Smith 1994, 1995; Hubbard 2003). After the British regained control of the fort, a massive construction and renovation plan was carried out during the 1780s and 1790s, resulting in the configuration of the fort as it stands today. The fort was armed and manned until 1854 when the British abandoned it.

There was a distinctive multiethnic community living at Brimstone Hill throughout its occupation (Schroedl and Ahlman 2002; Schroedl 2005). Not only were British army officers and enlisted men present at the fortress, but archival information indicates that women and children

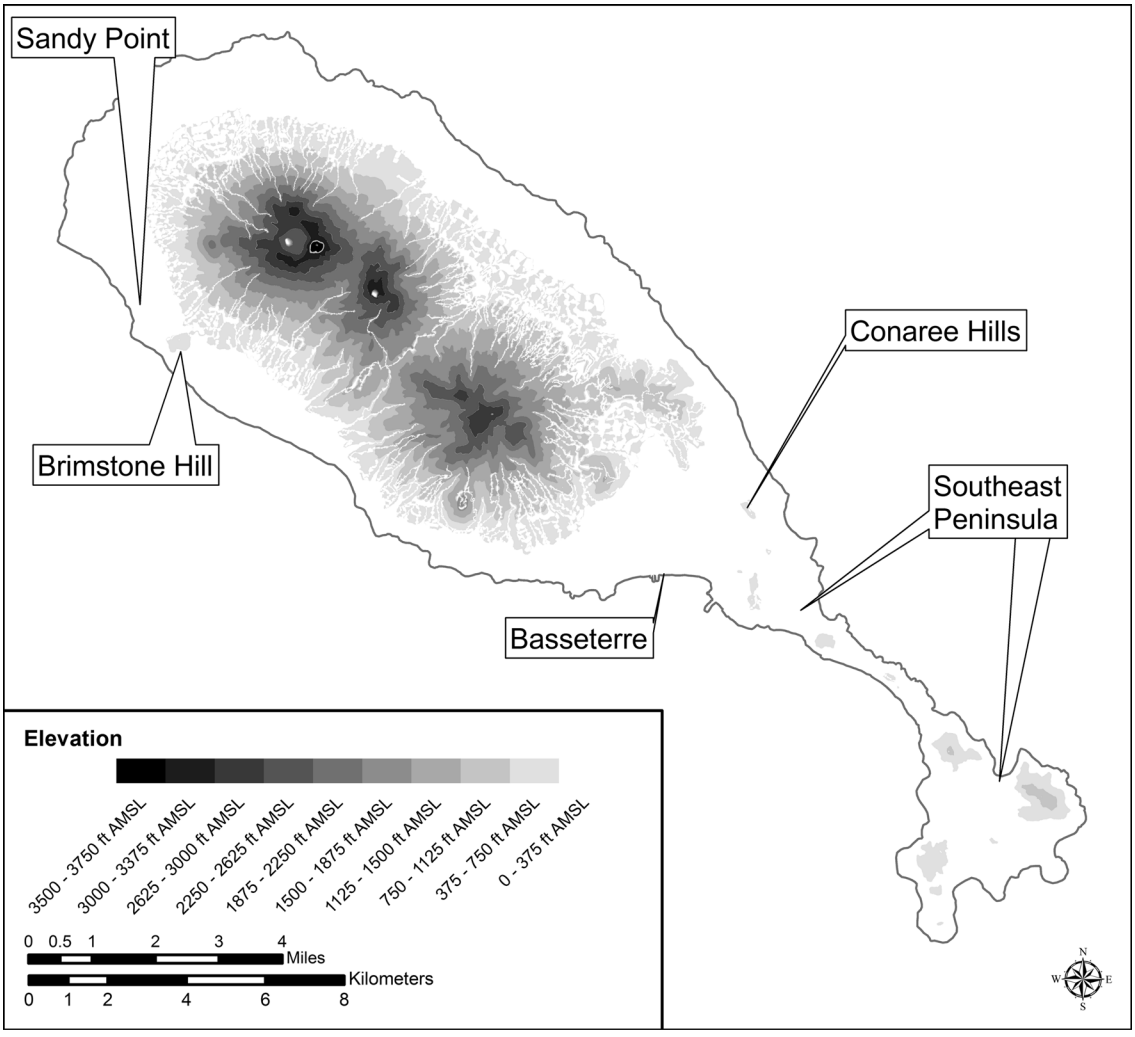


FIGURE 3. Location of Brimstone Hill Fortress National Park.

were also present and that numerous local civilians visited and/or lived at the fortress. In addition to members of the British military and white militia, black military units of the Corps of Embodied Slaves and soldiers of the First, Third, and Fourth West India Regiments also lived there (Schroedl 2005). While British military engineers designed the fortress, enslaved Africans provided the majority of the construction and maintenance labor. These laborers included the Corps of Black Military Artificers and Pioneers, who were enslaved Africans owned by the British military and African laborers from local plantations forced to work at Brimstone Hill as part of levies placed upon slave owners. At any one point between 1790 and 1815, there were 50 to over 200 enslaved Africans living and working at Brimstone Hill.

From its abandonment in 1854 until the 1960s, the fortress fell into disrepair with only minor efforts at restoration and preservation. Since that time, under the direction of the Brimstone Hill Fortress National Park Society, there has been a concerted effort at restoration, preservation, and interpretation. For a long time, the fortress was interpreted as a monument to British military and colonial might; however, recent efforts have been made to reanimate the roles that free and enslaved Africans played in the fortress' construction and maintenance. The objective of recent archaeological investigations

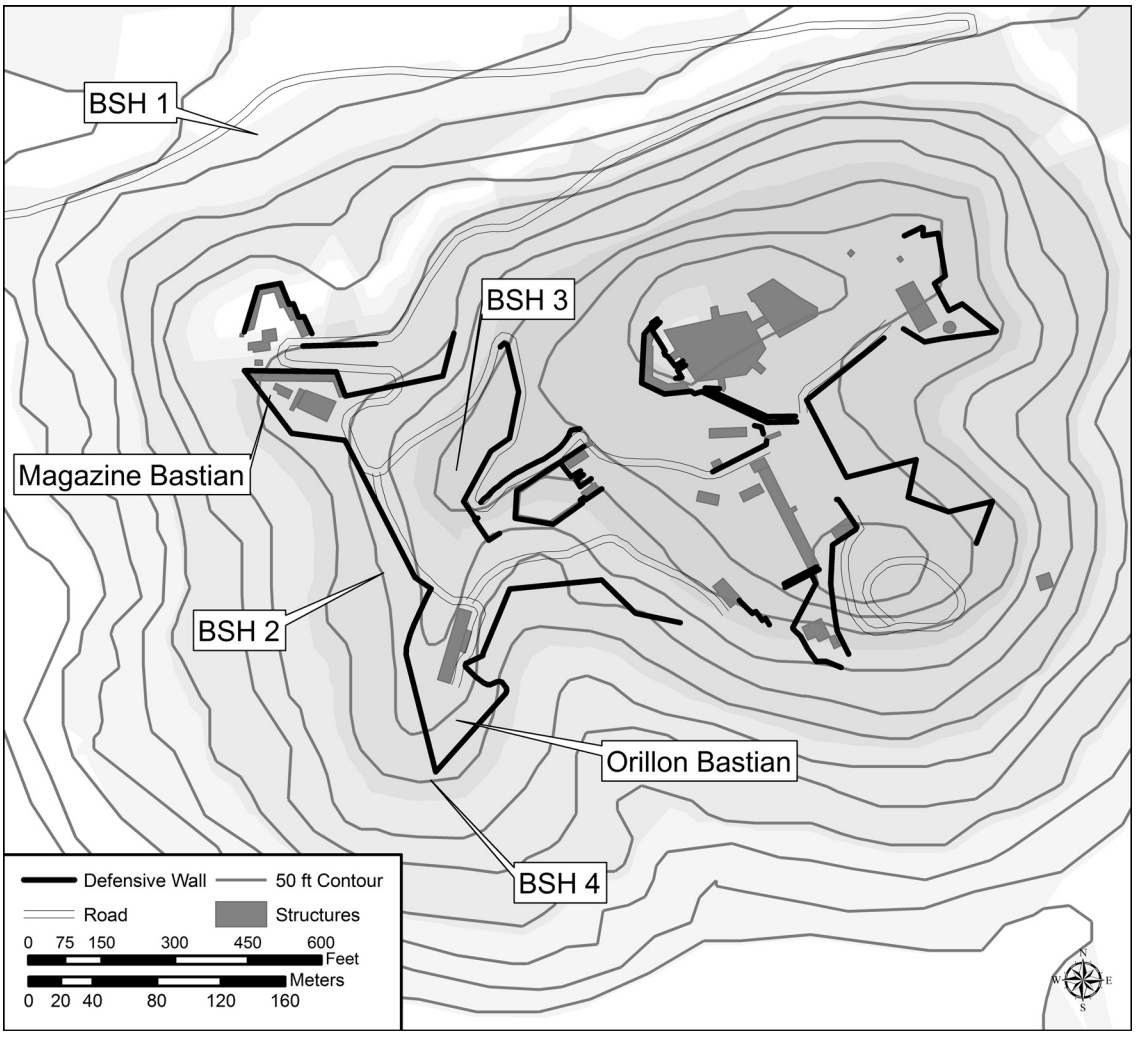


FIGURE 4. Location of archaeological investigations undertaken at the Brimstone Hill Fortress National Park.

at Brimstone Hill, therefore, was to document the role that enslaved Africans played in the fort's construction and maintenance (Schroedl 1997, 1998, 1999, 2000).

Archaeological Investigations of Brimstone Hill

Through 2004, archaeological investigations have occurred in four areas of the fortress (Figure 4) and each of these areas has been given an individual site designation. The archaeological excavations have been primarily guided by a 1791 map for the fortress (Figure 5), which depicts locations where enslaved Africans lived and worked, and a circa 1795 watercolor of the fortress attributed to Lt. James Lees (Figure 6). The investigated areas include: the lime kiln area at the base of the hill where several buildings are shown being used by artificers and pioneers (Site BSH 1); below the defensive wall between the Orillon and Magazine bastions where four structures (workshop, two hospitals, and kitchen) are depicted as used and occupied by enslaved Africans (Site BSH 2); the Royal Engineers' quarters area that includes a building occupied by enslaved Africans (Site BSH 3); and below the defensive wall at the salient of the Orillon Bastion (Site BSH 4).

Through 2004, nearly 150,000 artifacts have been recovered during the excavations. The assemblage consists primarily of European-



FIGURE 5. 1791 British Royal Engineers' map of Brimstone Hill with close up of locations where archaeological investigations have been undertaken. (Courtesy of the National Archives, Federation of St. Kitts and Nevis, West Indies)

made glass and ceramics (Ahlman et al. 1997; Schroedl 2000; Gomez and Ahlman 2005). The majority of the recovered artifacts date to the late-18th and early-19th centuries when the British were undertaking massive construction and renovation of the fortress. Of particular note are the 665 low-fired, hand-made earthenware sherds (Figure 7) that have been found throughout the fortress. These sherds are comparable in form and decoration to the Afro-Caribbean ware found throughout the West Indies as reported by Heath (1988), Hauser and Armstrong (1999), and Peterson et al. (1999) and are one of the most distinctive artifacts representing the African presence at the fortress.

Macroscopic Analysis

The first step in the analytical process of the Brimstone Hill Afro-Caribbean ware was an in-depth macroscopic analysis using a set of 19 attributes (Table 1) that is similar to those used by Heath (1988), Peterson and Watters (1988), and Peterson et al. (1999). The analysis presented here was designed to facilitate intra- and inter-island comparisons of the ware (Heath 1988, 1999; Peterson and Watters 1988; Peterson et al. 1999), to allow determination of the ware's place of production, and to foster discussion of the ware's cultural meaning. This analysis also focuses on the identified vessel forms and inclusions in order to address where the ware was made.

Vessel form was identified by visually inspecting each sherd and assigning it to predefined categories based on morphology. The vessel form definitions used here are similar to those developed by Heath (1988, 1999) and Peterson et al. (1999) (Table 2). The recovered sherds represent 12 different vessel form classes (Table 3).



FIGURE 6. Circa 1795 painting of Brimstone Hill attributed to Lt. James Lees. (Courtesy of the Brimstone Hill Fortress National Park Society, St. Kitts, West Indies)

The addition of non-plastic additives (temper) improves workability of the clays and increases the vessel's ability to withstand cracking from shrinking during drying and firing. In some cases, however, the inclusions are naturally occurring minerals rather than intentionally added materials. The inclusions in most of the Brimstone Hill Afro-Caribbean ware appear to be naturally occurring rather than intentionally added; therefore, the non-plastic materials in

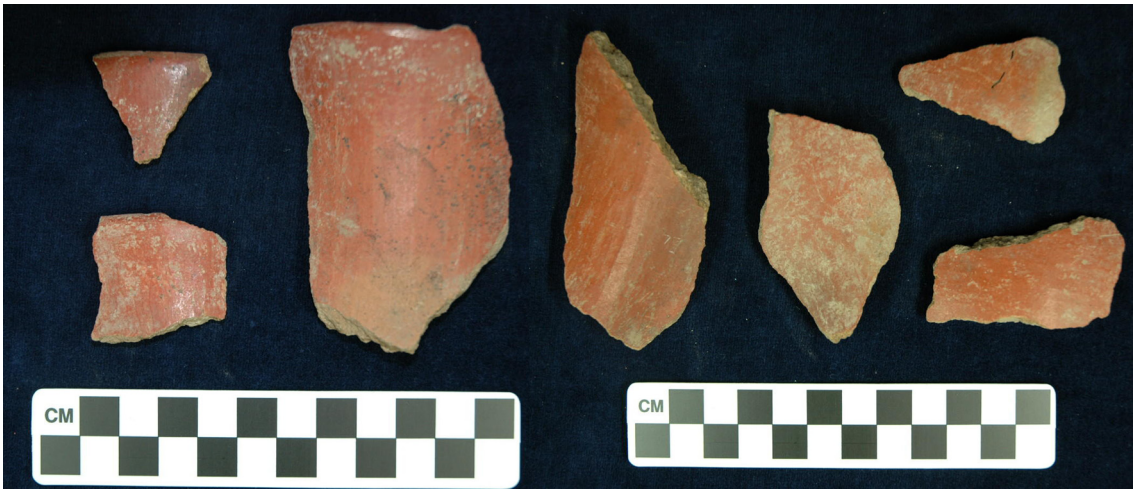


FIGURE 7. Afro-Caribbean ware from the archaeological investigations at the Brimstone Hill Fortress National Park. (Photo by author)

TABLE 1
ANALYSIS ATTRIBUTES

Size	Primary Temper
Maximum Thickness	Primary Temper Percent
Minimum Thickness	Primary Temper Size
Vessel Portion	Primary Temper Form
Vessel Form	Secondary Temper
Primary Exterior Color	Secondary Temper Percent
Secondary Exterior Color	Secondary Temper Size
Exterior Treatment	Secondary Temper Form
Interior Color	Firing Core
Interior Treatment	

TABLE 2
VESSEL FORM DESCRIPTIONS

Form Name	Description	Use
Three-legged pot	These vessels are represented by either everted rims with bulbous bodies (as noted in Heath 1988) or versions with straight sides and rims. The bottoms of the vessels are rounded with tri-podal feet. Can either have lug or loop handles. Heath (1988:77) notes that in the late 1980s, the Nevisian potters called these vessels "iron pots."	Typically used for cooking over a fire.
Bowl	This vessel form has a rounded bottom with a straight or everted rim.	Cooking and serving food. Depending on the size, may be used directly for eating.
Coal Pot	These vessels have a "cylindrical base, in the side of which a square opening is cut. Attached to the base is a shallow, handled dish. [A] clay grate [is] . . . incorporated into the body of the coal pot, and on top of this grate, burning coals [are] set into the dish" (Heath 1988:79-81).	Cooking and heating foods.
Cooking Pot	A vessel with rounded sides and either inverted or everted rim. These sherds are typically sooted.	Cooking.
Dry Storage Pot	A vessel with rounded sides and either inverted or everted rim. These sherds are typically not sooted.	Storage.
Griddle	A flat-bottomed roasting pan or dish that has shallow sides. The vessel has a bottom that is wider than it is high.	Roasting or frying food.
Hollowware	A catch-all category that represents a vessel that has rounded sides and is open necked.	Either cooking or storage.
Jar	A straight sided vessel with straight rim and neck.	Storage.
Water jug **	A cylindrical bodied vessel with a constricted neck, a strap handle, and a spout. Often with a convex lid that has a finial.	Cooling and storing water.
Pitcher	These vessels have a bulbous body with a constricted neck and flaring rim. There is a strap handle on the side.	For storing and serving beverages.
Storage	A vessel with rounded sides and inverted rim. These sherds are typically not sooted.	Storage.
Yabba	A bulbous-sided vessel with a rounded bottom and rims that are inverted. Vessels can have lug handles and a flattened lid.	Typically used for cooking over a fire.

** Local people call these vessels monkey jugs.

TABLE 3
VESSEL FORMS AND VESSEL PORTION

Vessel Form	Vessel Portion																		
	Base	Body	Finial	Lug Handle	Strap Handle	Lip	Neck	Rim	Rim-Everted	Rim-Inverted	Rim-Straight	Rim/Shoulder	Rim/Shoulder-Everted	Rim/Shoulder-Inverted	Shoulder	Shoulder-Everted	Shoulder-Inverted	Spout Lip	Total
3-Legged pot	–	–	–	–	–	–	–	1	6	–	–	–	4	–	–	1	–	–	12
Bowl	–	4	–	–	–	–	–	2	–	3	3	–	–	1	–	–	–	–	13
Coal Pot	–	27	–	2	–	–	1	1	1	–	–	–	–	–	4	–	–	–	36
Cooking Pot	–	1	–	–	–	–	–	1	14	–	–	1	2	–	11	4	–	–	34
Dry Storage Pot	–	1	–	–	–	–	–	4	8	–	2	–	–	–	3	2	–	–	20
Griddle	7	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9
Hollowware	–	479	–	–	–	–	–	2	1	–	1	–	–	–	4	1	–	–	488
Jar	–	3	–	–	–	–	–	–	–	–	–	–	–	–	3	–	–	–	6
Water Jug	1	1	–	–	4	–	–	2	–	–	–	–	–	–	–	–	2	1	11
Water Jug Lid	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Pitcher	–	1	–	–	7	–	–	3	–	–	–	–	–	–	3	–	–	–	14
Storage	–	–	–	–	–	–	–	1	–	–	3	–	–	–	–	–	–	–	4
Yabba	1	3	–	–	–	1	–	7	1	1	–	–	–	–	–	–	–	–	14
Total																			665

the sherds are considered inclusions rather than temper.

The inclusions were examined by viewing the edge and surface of the sherd with a 10x magnification hand lens. A few sherds were also examined with a 40-100x magnification binocular microscope to further assess and confirm identified features at the lower magnification level. During this process, it was noted that most sherds had more than one inclusion, so some inclusions were grouped into classes based on their perceived similarities. When a particular inclusion class made up more than 50 percent of all inclusions, it was considered to be the primary inclusion class. The secondary inclusion classes always made up less than 50 percent of all inclusions identified on a particular sherd.

Macroscopic Analysis Results

Vessel Form Class

Because of the relatively small size of the sherds and the infrequency of mends between the sherds, the most commonly identified vessel form was a generic hollowware shape (N=488) (Table 3). Of these sherds, a large number are sooted, suggesting that they were likely part of a cooking vessel. Among specific cooking forms, sherds from coal pots (N=36), cooking pots

(N=34), yabbas (N=14), griddles (N=9), and three-legged pots (N=12) were recorded. Sherds from other form classes included: dry storage vessels (N=20), pitchers (N=14), jars (N=6), and water jugs (N=12). In total, 12 different vessel forms were identified showing a wide range of uses for Afro-Caribbean ware.

The range of identified vessel forms found at Brimstone Hill is greater than that from St. John (Hauser and Armstrong 1999), Jamaica (Armstrong 1990), and St. Croix (Gartley 1979) but similar to that from Statia (Heath 1988), Montserrat (Peterson et al. 1999), Antigua (Heath 1988; Peterson et al. 1999), Anguilla (Peterson et al. 1999), Barbuda (Peterson et al. 1999), and St. Lucia (Heath 1988). In their study of Afro-Caribbean ware from Montserrat, Antigua, Anguilla, and Barbuda, Petersen et al. (1999) identified a greater proportion of restricted jars without handles that they equate to small cooking pots rather than to other forms not associated with cooking. Heath (1988) indicates a greater proportion of storage vessels than cooking vessels in her study of Afro-Caribbean from St. Eustatius. The Brimstone Hill data are more in line with Petersen and colleague's study, where cooking vessels outnumbered storage vessels. There are similarities in vessel forms with cooking pots and yabbas, three-legged pots, griddles, coal-pots, and water jugs in all the samples.

Inclusion Classes and Paste Characteristics

The most commonly occurring primary inclusion classes in the Brimstone Hill Afro-Caribbean ware are a black and opaque (or white and occasionally clear) sands (N=588) that are likely a combination of volcanic rocks and quartz, followed by grog (previously fired clay or pottery) (N=49), and black sand particles (N=10) (Table 4). Most of the black and opaque sand and black sand inclusions are small (less than 2 mm in size) and sub-angular. The grog inclusions are typically larger than the sand (2 to 6 mm in size) and are sub-rounded and rounded.

TABLE 4
TEMPERING AGENT OCCURRENCE

Primary Inclusion Class	Secondary Inclusion Class													Total
	None	Basalt	Black and Opaque Sand	Black Sand	Grog	Grog/ Hematite	Grog/ Limestone	Hematite	Hematite/ Limestone	Limestone	Mica	Quartz	Quartz/ Limestone	
Black and Opaque Sand	139	2	–	–	321	5	10	7	4	83	–	16	1	588
Black Sand	3	–	–	–	5	–	–	2	–	–	–	–	–	10
Grog	2	–	46	1	–	–	–	–	–	–	–	–	–	49
Grog/ Limestone	–	–	1	–	–	–	–	–	–	–	–	–	–	1
Limestone	1	–	–	6	–	–	–	–	–	–	–	–	–	7
Quartz	6	–	1	–	1	–	–	–	–	–	–	–	–	8
Schist	–	–	–	–	–	–	–	–	–	–	1	–	–	1
Shell	1	–	–	–	–	–	–	–	–	–	–	–	–	1
Total	152	2	48	7	327	5	10	9	4	83	1	16	1	665

The grog that occurs as a secondary inclusion is generally smaller (less than 4 mm in size) and more rounded than as a primary inclusion. One sherd has crushed micaeous basalt inclusions that appear to have been intentionally added to the paste as a tempering agent.

The most commonly occurring combination of inclusion classes are black and opaque sand with grog (N=291). Black and opaque sand is the most frequently occurring secondary inclusion class for those sherds with grog as the primary inclusion class (N=39). There are four inclusion classes that occur only as secondary inclusion classes: basalt, hematite, limestone, and quartz. Limestone is the most frequent (N=26) followed by quartz (N=12), while the other combinations occur in less than six sherds. The basalt, limestone, and most of the quartz inclusion classes are larger (greater than 4 mm in size) than sand inclusions.

Eight different ceramic types were derived based on the macroscopic commonalities in inclusion classes (Table 5). The inclusion classes were used to delineate the types in this analysis because inclusions or tempering agents seems to be the most common attribute in developing typologies for the region (Heath 1988; Petersen et al. 1999). The Brimstone Hill Type 1 has only black and opaque sand inclusions while Types 2-4 have black and opaque sand as the primary inclusion class with grog, basalt, hematite, limestone, or quartz as the secondary inclusion classes. Type 2 is the most frequently occurring type and is differentiated from Type 3 by a lower frequency of secondary inclusions. Type 4 has quartz as a secondary inclusion class. Type 5 has only angular black sand as an inclusion and is represented by two sherds. Type 6 has grog, hematite, and limestone as the primary inclusion with black and opaque sand as the secondary inclusion. Type 7 has crushed angular micaeous basalt as an inclusion class. Type 8 has quartz as the primary inclusion class with two sherds having a secondary inclusion class of black and opaque sand or grog.

TABLE 5
SUMMARY OF THE TYPE CHARACTERISTICS

Type	# Sherds	Primary Inclusion Class	Secondary Inclusion Class
1	140	Black and Opaque sand	
2	363	Black and Opaque sand	Grog, hematite, limestone
3	111	Black and Opaque sand	Grog, hematite, limestone
4	19	Black and Opaque sand	quartz
5	2	Black sand	
6	21	Grog, hematite, limestone	Black and opaque sand
7	1	Mica and Schist	
8	8	Quartz	

The delineation of types facilitates the comparison of the Brimstone Hill Afro-Caribbean ware to pottery from other islands. Petersen et al. (1999) identified two general types in their study of Afro-Caribbean ware from Montserrat, Antigua, Anguilla, and Barbuda. Their Category 1 has volcanic tuff inclusions typical of "tuff-rich" geological environments that occur on islands like Antigua, and their Category 2 has black mineral inclusions derived from volcanic materials most likely from the islands of St. Eustatius, St. Kitts, Nevis, and Montserrat. Given these parameters, all the Afro-Caribbean ware recovered from the Brimstone Hill are similar to the Category 2 sherds from Montserrat and Anguilla. In addition, the Brimstone Hill material is also comparable to the material that Petersen and Watters (1988) analyzed from the Harney Cemetery on Montserrat.

Heath's (1988) and Gilmore's (2004) analyses of Afro-Caribbean ware from nearby St. Eustatius (Statia) provide additional comparative studies for the Brimstone Hill Afro-Caribbean ware. Heath identified six types based on temper and one type based on surface treatment. The Brimstone Hill Afro-Caribbean ware is most comparable to Heath's Type 1, which had black and clear mineral inclusions. The majority of her other types are based on the predominance of clear, white, and pink minerals, which do not occur in the Brimstone Hill sample. Quite possibly, Heath's Type 5, with small, medium, and large roughly rectangular black inclusions, is similar to the sherds that comprise Type 5 in the Brimstone Hill sample. Gilmore (2004) has recently conducted petrographic analysis of sherds from Statia, St. Croix, Nevis, St. Lucia, and Antigua. He found similarities among many

of the sherds from Statia, St. Croix, Nevis, and Antigua, suggesting trade of the wares between these islands; however, none of the Statian sherds were similar to the St. Lucian sherds. Based on Gilmore's descriptions, the Brimstone Hill material is similar to the Statian sherds except that some of the Brimstone Hill material contains limestone, which Gilmore did not identify in any of the sherds he examined.

Heath identified two Afro-Caribbean ware types with mineral inclusions that she believed were inconsistent with the volcanic geology of Statia: Type 2A contained sedimentary rock inclusions and Type 4 had micas and shist inclusions. Sedimentary rocks are present in the soils on St. Kitts, but not on Statia, suggesting that St. Kitts may be the source of Statia Type 2a sherds. Mica is present in the paste of several sherds from Brimstone Hill; however, this mica appears to be naturally occurring rather than added to the paste, which contrasts with Heath's observation of the Statian material (1988:174). In the Statia material Heath notes that there is an abundance of schist and mica suggesting they were intentionally added to the paste. In addition, Petersen et al. (1999) identified a sherd from Montserrat with mica in the paste and also concluded that this pottery was intrusive to the Montserratian assemblage. Based on these descriptions by Heath (1988) and Peterson and colleagues (1999), the inclusions in the Brimstone Hill Type 8 are very similar to the wares from Statia and Montserrat and quite possibly originate from the same, as of yet unidentified, source.

Clay Sourcing

There are many clays on St. Kitts, but not all are necessarily suitable for making pottery; therefore, a pilot study was undertaken to locate clay sources that are suitable for pottery production. According to the soil survey of the island, there are at least four classified soil types across the island having a clay component (Figure 8) potentially suitable for pottery making (Lang and Carroll 1966). In addition, geologic coring of the Basseterre Valley encountered clay in the majority of the tests (Christmas 1977), suggesting that clay maybe more widespread than indicated in the soil survey.

Cursory pedestrian surveys for suitable clay sources focused on the Conaree Hills area and the southeastern peninsula where the soil survey suggests clays are most likely found. Six clay sources have been found, one near the Conaree Hills and five on the southeastern peninsula around the salt ponds (Figure 8). The Conaree Hills clay came from a bed of clay recently exposed by a housing development. This clay would not have been available without extensive digging. In their raw form, the Conaree Hills clays are poorly sorted with naturally occurring volcanic mineral inclusions, some organic material, and larger pieces of andesite and limestone (greater than 6-8 mm in size). The clay from the Conaree Hills source was processed by drying, crushing, and sifting through window screen. The clay from this source was formed into both pots and tiles and fired. It is interesting to note that conaree is also a term used on Barbados to describe a lidless earthenware cooking vessel that is glazed on the inside (Edwards and de Verton 2004:6), but on St. Kitts the Conaree Hills are named for the estate owner, who was likely French, rather than an association with making earthenware pottery.

Four clay samples from the southeast peninsula came from around the salt ponds where it is available on the surface, and one sample came from an 18th-century road cut approximately 20 cm below the ground surface. The clay includes naturally occurring black and opaque mineral inclusions that are between 1 and 5 mm in size as well as some organic materials. Macroscopically, these inclusions appear similar to the inclusions in most of the Brimstone Hill Afro-Caribbean ware. The clay was formed into small bricks and fired successfully. A local potter made several pots from this clay and noted that its workability is superior to the clay he uses from nearby Nevis.

This pilot study shows that there are clay sources on the island that can be used successfully to make pottery. At the initiation of this study, many people on St. Kitts assumed that no suitable pottery clays occurred on the island and this was the reason people has always purchased pottery made on Nevis. This research demonstrates that clay is available on St. Kitts and can be used to manufacture pottery.

INAA Analysis

Ahlman et al. (2008) have recently undertaken a study of the Brimstone Hill Afro-Caribbean

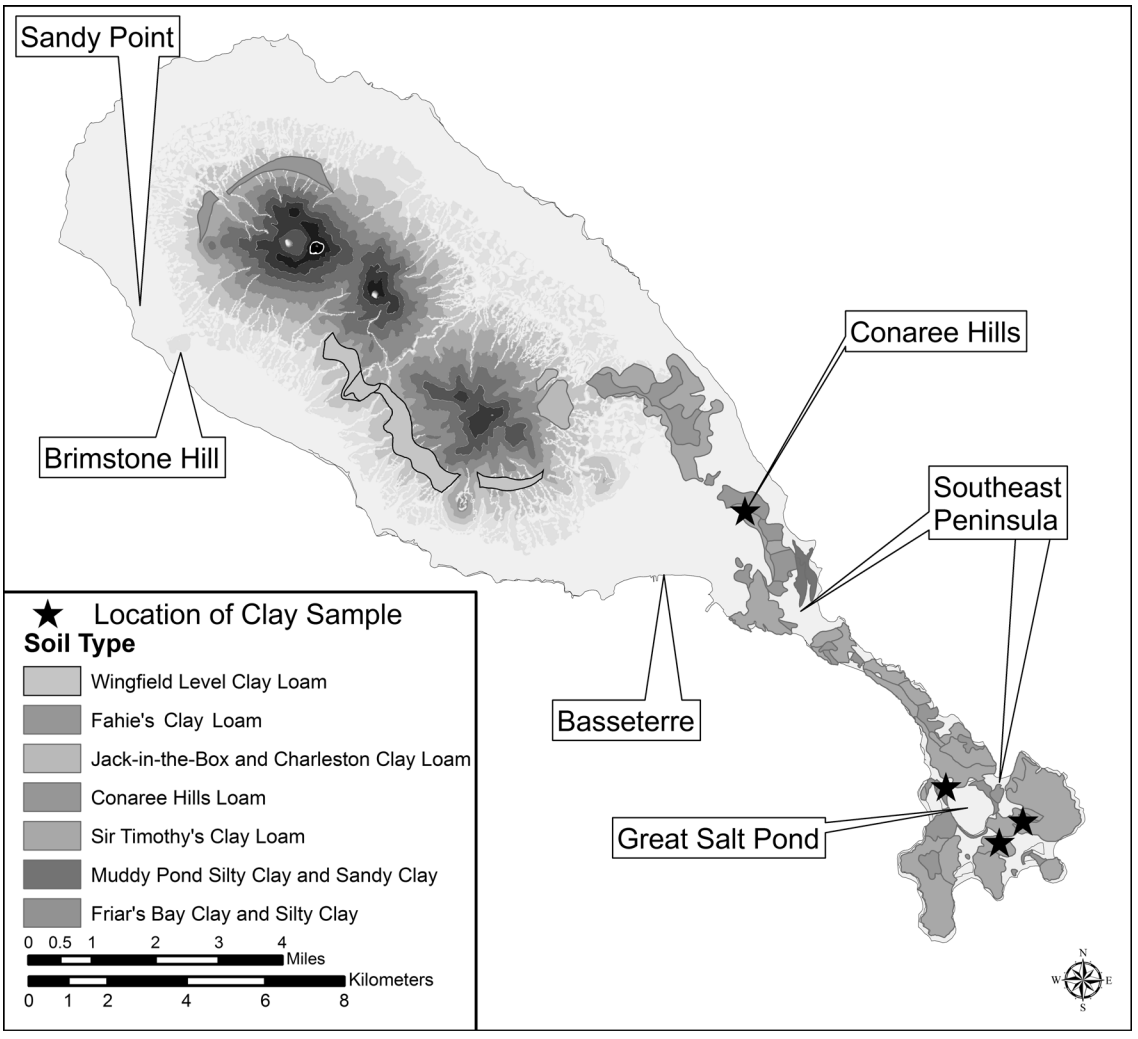


FIGURE 8. Location of classified soil types containing clay and sources where clay samples have been found. (Adapted from Lang and Carroll 1966)

ware and clay samples using Instrumental Neutron Activation Analysis (INAA) to assess chemical similarities among some Brimstone Hill sherds and to compare these to St. Kitts clay samples. In this study, the chemical signature of 40 Afro-Caribbean ware sherds from Brimstone Hill and the 5 clay samples was examined. The 40 Afro-Caribbean ware sherds came from three areas of the fort (BSH2, BSH3, and BSH4) and included materials from all of the Afro-Caribbean ware types defined here except Type 5 (Table 5). The clay samples included one from Conaree Hills and four from the southeast peninsula: three from around the salt ponds and one from the road cut as described above.

The INAA results (Ahlman et al. 2008) indicate that the Brimstone Hill Afro-Caribbean ware falls into four groups based on elemental similarities (Tables 6 and 7, Figure 9). Group 1 includes 12 Afro-Caribbean ware sherds from BSH 3 and BSH 4 and 3 clay samples from the salt ponds. This group includes sherds assigned to Types 1 and 3. Group 2 includes 22 Afro-Caribbean ware sherds from BSH 2 and BSH 3 and the clay sample from the road cut. This group includes sherds assigned to Types 1, 2, 3, and 6. The Conaree Hills clay sample was not comparable with any elemental properties of the Afro-Caribbean ware. Groups 3 and 4 are elementally dissimilar to Groups 1 and 2 (see Figure 9). Group 3 includes

a Type 1 sherd and a Type 4 sherd from BSH 3 and BSH 4. Group 4 includes one Type 7 sherd and one Type 8 sherd, both from BSH 3. Groups 3 and 4 likely represent pottery made with non-local clay and is strong evidence for inter-island exchange of pottery.

The INAA results (Ahlman et al. 2008) demonstrate that most of the Brimstone Hill Afro-Caribbean was made with St. Kitts clay because the majority of the assemblage is comprised of types that fall within Groups 1 and 2. Ahlman et al. (2008) posit that some of the pottery was brought by slaves from across the island who were forced to work at the fortress, indicating that the locally-made pottery was common across the island. It is also suggested that the occurrence of non-local pottery at BSH 3, where government-owned slaves lived year round, implies a difference in purchasing power between government-owned slaves who could likely afford to buy the more expensive non-local pottery than plantation slaves.

TABLE 6
CROSS-TABULATION OF INAA COMPOSITION GROUPS AND BRIMSTONE HILL SITE CONTEXTS

	Site			Clay	
Group	2	3	4	Sample	Total
1	–	11	1	3	15
2	17	5	–	1	23
3	–	1	1	–	2
4	–	2	–	–	2
Unassigned	3	–	–	1	4
Total	20	20	5	5	40

Pottery Manufacture

While the majority of the Brimstone Hill Afro-Caribbean was manufactured on St. Kitts, it is unknown how the pottery made its way to the fort. It is likely that the British government's enslaved Africans bought the pottery at a market or were given an allotment as part of their provisions. Plantation slaves forced to work at the fort purchased or traded for the pottery at a local market and brought it with them to cook and eat from while they lived and worked at Brimstone Hill. Regardless of how enslaved Africans acquired the pottery, it is clear that the enslaved Africans that lived and worked at Brimstone Hill had access to pottery that was made on St. Kitts.

The pottery found at Brimstone Hill, like that from other islands across the Caribbean, was probably made in small batches by potters who undertook pottery production as a part-time venture. On St. Kitts and across the Caribbean there were surely numerous potters and it is conceivable that there were at least one or two per plantation; however, only a few potters probably had the time and access to the necessary materials to consistently produce enough materials that they could trade beyond the plantation. Certain

TABLE 7
CROSS-TABULATION OF INAA GROUPS BY PETROGRAPHIC 'TYPE' GROUPS

	Type								Clay	
Group	1	2	3	4	5	6	7	8	Sample	Total
1	5	6	1	–	–	–	–	–	3	15
2	2	14	4	–	–	2	–	–	1	23
3	1	–	–	1	–	–	–	–	–	2
4	–	–	–	–	–	–	1	1	–	2
Unassigned	1	–	–	–	–	–	–	–	1	3*
Total	9	20	5	1	–	2	1	1	5	40*

* = includes the sherd unassigned to a specific type

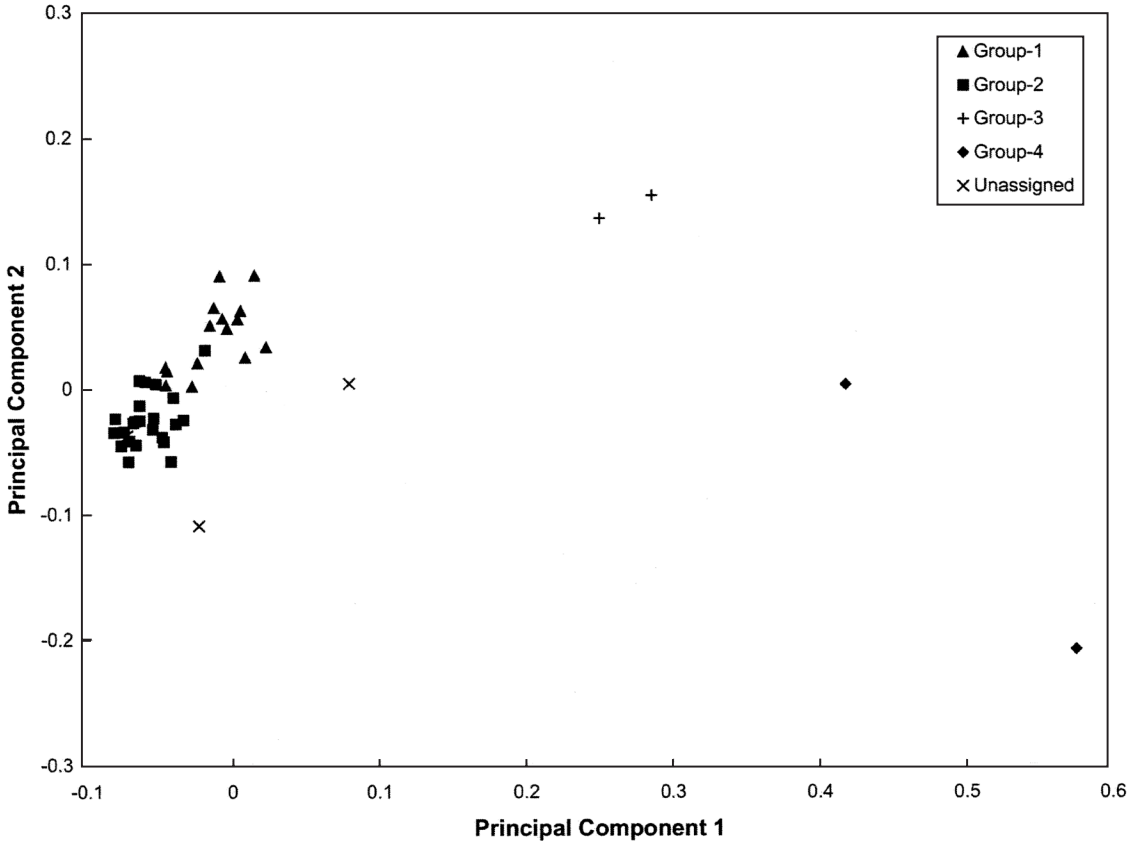


FIGURE 9. Biplot of the first two principal components from the INAA showing distribution of the compositional groups. The first two principal components account for more than 75% of the cumulative variance. (Adapted from Ahlman et al. 2008:Figure 6)

potters were likely held in greater esteem than others based on their ability and their wares may have been sought by others.

Ethnographic research shows that pottery producers are often economically marginalized and make and sell pottery as a hedge against economic shortfalls such as poor agricultural production (Arnold 1985). Arnold's research, however, focused on communities capable of large-scale pottery production. The pottery makers on St. Kitts lived on agriculturally marginal land, but did not have the time or facilities for community-wide specialization in pottery production because their time and effort was focused on the production of sugar cane. Slave villages on St. Kitts were usually located along erosional ghauts (gulleys) or on relatively steep slopes as the most productive soils were under/involved in sugar cane cultivation. On an island of fertile soils, these locations are highly eroded, susceptible to flooding, and not particularly productive. On the southeast peninsula, where the clay used to make most of the Brimstone Hill Afro-Caribbean ware is located, historic maps and archaeological survey indicate that the slave villages were located at the edge of the semi-fertile valleys in extremely dry and rocky locales.

On St. Kitts, the manufacture and selling or trading of pottery may have been a buffering mechanism (Hegmon 1989) used by households or extended families to minimize the risks inherent to an enslaved (or free but marginalized) population (see Young 1995, 1997, 2004) that had to adjust for the variation in production from small plot farming and provisions given to them by the plantation owner or overseer. Young (1997, 2004) notes that enslaved African Americans in the Upland South of the United States constantly faced a variety of threats such

as disease, starvation or malnutrition, death, beatings, rape, lack of necessary goods such as clothing and shelter, and being sold to another plantation, many of which were imposed upon them by the planter. Enslaved African Americans employed a range of risk management strategies to avoid or minimize the effects of these threats including exchange, storage, pooling or sharing of resources, and theft (Winterhalder et al. 1999). For enslaved Africans at Brimstone Hill and across St. Kitts, the threats faced were much like those experienced by slaves in the Southern United States including beatings, disease, death, and being sold to another plantation or island, and were based on their social relationships with the oppressive military and/or planter class. For enslaved Africans, inadequate food to eat to meet their dietary and nutritional requirements often overshadowed many of the other threats to their well being.

Across the Caribbean, enslaved Africans were given food allowances by planters, but these allowances were highly variable in quantity and typically included marginally nutritious foods, such as salted beef, pork, and fish and corn meal, that seldom met the dietary requirements (Tobin 1999; Browne 2002) of individuals who worked long, hard hours in the cane fields. To aid in meeting their nutritional needs, planters in the British West Indies often provided plots of land for enslaved Africans to grow provisions. The actions of the planters were likely less altruistic in nature than a way for them to reduce their financial burden toward their slaves' needs. The provision grounds usually included a small garden near the kitchen as well as a large plot some distance from the slave village. On St. Kitts these plots were often in the mountains or along erosional ghauts in land that was deemed not suitable for sugar cane cultivation because they are marginally fertile and susceptible to erosion and flooding. Given a rigorous work schedule that ran from sun-up to sun-down six days a week, enslaved Africans typically had few hours during the week and on Sundays to work within their provision grounds or at other activities such as pottery making.

In their provision grounds, enslaved Africans typically controlled what they planted and grew a variety of foodstuffs including fruits, vegetables, grains, plantains, pigeon peas, yams (or sweet potatoes depending on the source), potatoes, cassava, peanuts, okra, citrus fruits, mangoes, bananas, breadfruit, and corn (Pulsipher 1994; Tobin 1999; Heath and Bennett 2000). They may have also raised fowl, sheep, goats, and pigs within the plot or allowed them to run freely, harvesting them when needed or wanted.

Many of the farmers across the Caribbean were able to produce a surplus that they sold and traded at local markets to other slaves as well as white planters and overseers. During various times of the year, these gardens probably supplied the bulk of the foods eaten by enslaved Africans on the Caribbean islands. For most, small plot farming is very unpredictable because of uncertainties or catastrophes brought about by drought, hurricanes, floods, pestilence, and garden-destroying animals (monkeys, donkeys, and hogs). These threats could easily wipe out one's garden while another's plot might go untouched, resulting in variable harvests from one producer to another and from one year to the next. Enslaved Africans also used the local fisheries and many were accomplished fishermen. The presence of a multitude of locally caught fish at Brimstone Hill suggests that fish may have been a large part of the diet of enslaved Africans on St. Kitts. Even with knowledge and effort, these strategies did not always produce enough food to support a family contributing to nutritional shortfalls.

Given inadequate foodstuffs provided by the planter and the uncertainties of small plot farming, enslaved Africans likely diversified their economic activities to buffer against shortfalls by turning to other commodities that they could use for exchange, and pottery was one such commodity out of many. Pottery production, however, meant that the producers had to enter a fairly labor intensive operation with its own set of difficulties that involved obtaining and preparing the clay, making the pottery, and firing the pots while maintaining their normal presence on the plantation. Many of the steps could be undertaken within the producer's house and yard during the early morning or evening, but some steps had to occur outside of the plantation, such as collecting clay, that may have involved overnight trips. Regardless of the intensity of the labor involved in pottery production, this commodity could be traded or sold for needed necessities.

Pottery production may also have allowed for the forging of reliable relationships among the producers as well as between the producers and consumers that went beyond a simple seller and client relationship. For the producers, there were likely different contributors to the various stages of pottery manufacture as one person or group of people may have collected the clay, while another processed it, while yet another made and fired it. This meant that no one individual spent an inordinate amount of time at pottery making at the expense of working in the fields. It also meant that the various costs and benefits of making pottery were shared across a family or several households.

The relationships built between producer and consumer may have became strong personal bonds outside of the plantation sphere that could be relied upon in times of need or stress for sharing of resources or delayed reciprocity. By creating these relationships, enslaved Africans could hedge against the threats inherent to their status and possibly reduce the long-term effects. Similar strategies can still be seen today when one travels around St. Kitts and elsewhere in the Caribbean and sees people selling items at roadside stands or visits the local market. Oftentimes consumers have specific sellers they will buy from because of long-term relationships they may have with the seller, bypassing others who may have cheaper or better products. The same may occur with sellers who will hold back certain items for their preferred customers rather than sell on a first-come, first-served basis. In this respect, these strategies may have been implemented to not only meet nutritional needs but to create a consistent market among a reliable clientele and friendship base.

The archaeological evidence for the inter-island trade of the pottery by enslaved or free Africans is becoming clearer and shows that there was a vibrant trade network that often reached between islands over 50 miles apart (Gilmore 2004; Hauser and Armstrong 1999; Peterson et al. 1999). Gilmore's (2004) analysis and works by Hauser and Armstrong (1999) and Petersen et al. (1999) support the notion that there was well established and long distance trade of pottery among enslaved Africans, despite the laws forbidding this trade. The INAA results reported by Ahlman et al. (2008) and discussed here show the presence of non-local pottery at Brimstone Hill. While the inter-island trade of pottery by enslaved or free Africans was likely an illicit trade forbidden or strongly discouraged by local governments, plantation owners, and overseers, it appears to have not been totally outlawed and may have been secretly sanctioned by plantation owners who saw the economic benefits of allowing their slaves to participate in this trade network. For the planter, it lessened pressures to provide needed foodstuffs for a portion of the slave population and also meant that he did not have to purchase costly European ceramics and iron pots for cooking, storage, and serving. In addition, he may have taken a share of the proceeds from the pottery sale much like a tax, thereby decreasing his expenditures as well as gaining an income. Much like the relationships forged by intra-island exchange, inter-island trade was likely first aimed at creating economic stability but also worked to create strong ties among enslaved Africans that went beyond producer and client.

Conclusions

The Afro-Caribbean ware sherds recovered during archaeological investigations at the Brimstone Hill Fortress National Park represent one of the most tangible records of enslaved Africans living and working at the fort. The macroscopic analysis of the 665 sherds demonstrates their resemblances to other Afro-Caribbean ware found throughout the Caribbean. The preponderance of volcanic materials as the primary inclusion makes the Brimstone Hill pottery comparable to pottery from Statia, Nevis, and Montserrat, which all have similar volcanic environments. As the INAA data show (Ahlman et al. 2008) the majority of the Brimstone Hill Afro-Caribbean ware was made with clay from the island's southeast peninsula. The presence of pottery that was non-locally produced shows that enslaved Africans on the island were active participants in the inter-island trade of the pottery. This study demonstrates that rather than obtaining pottery from Nevis, enslaved and free Africans on St. Kitts made and actively traded earthenware pottery. For the archaeological community and Kittians alike, this finding represents a discovery of a lost cultural tradition, demonstrating that the pottery played an important role outside and inside peoples' kitchens.

It is argued here that the production of pottery represented a risk minimization strategy by enslaved populations to buffer against the variety of risks inherent to such a population. Through its production and exchange, enslaved Africans attempted to create a mechanism that coped not only with the severities of slavery but addressed issues regarding variability in nutrition throughout the year and likely created long-term relationships beyond the family. Pottery production, however, was just one of many such mechanisms implemented by enslaved Africans to cope with variation in nutrition and the severities of slavery. There was probably no way to fully address the complete range of stresses and risks that faced enslaved populations but pottery production was likely one mechanism that was used.

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References Cited

Ahlman, Todd M., Gerald F. Schroedl, Eric Howard, Ashley McKeown
1997 Artifact Inventory from the July 1996 Archaeological Investigations at the Brimstone Hill Fortress National Park, St. Kitts, West Indies. Brimstone Hill Archaeological Project Report No. 4. Report to The Brimstone Hill Fortress National Park Society, St. Kitts, West Indies, the Center for Field Research (Earthwatch), Watertown, Massachusetts, and the Graduate School, The University of Tennessee, Knoxville, from The University of Tennessee, Department of Anthropology, Knoxville, TN.

Ahlman, Todd M., Gerald F. Schroedl, Ashley H. McKeown, Robert J. Speakman, Michael D. Glascock
2008 Ceramic Production and Exchange among Enslaved Africans on St. Kitts, West Indies. Journal of Caribbean Archaeology. Special Publication No. 2.

Armstrong, Douglas V.
1990 *The Old Village and the Great House: An Archaeological and Historical Examination of Drax Hall Plantation, St. Ann's Bay, Jamaica.* University of Illinois Press, Urbana, IL.

Arnold, Dean
1985 *Ceramic Theory and Cultural Process.* Cambridge University Press, Cambridge.

Browne, Katherine E.
2002 Creole Economics and the Débrouillard: From Slave-Based Adaptations to the Informal Economy in Martinique. *Ethnohistory* 49(2):373-403.

Christmas, J.
1977 Hydrogeology of an Unconfined Coastal Aquifer System, Basseterre Valley, St. Kitts. Doctoral Dissertation, University of the West Indies, Trinidad.

Edwards, Jay D. and Nicolas Kariouk Pecquet du Bellay de Verton
2004 *A Creole Lexicon: Architecture, Landscape, and People.* Louisiana State University Press, Baton Rouge.

Gartley, Richard T.
1979 Afro-Cruzan Pottery: A New Style of Colonial Earthenware from St. Croix. *Journal of the Virgin Islands Archaeological Society* 8:47-61.

Gilmore, R. Grant, III
2004 The Archaeology of New World Slave Societies: A Comparative Analysis with Particular Reference to St. Eustatius, Netherland Antilles. Doctoral dissertation, Institute of Archaeology, University College London, London, England.

Gomez, Greta and Todd M. Ahlman
2005 Glassware from Brimstone Hill Fortress National Park, St. Kitts, West Indies. Paper presented at the Society for Post-Medieval Archaeology annual meeting, Nevis, West Indies.

Hauser, Mark W.
2001 *Peddling Pots: Determining the Extent of Market Exchange in Eighteenth-Century Jamaica Through the Analysis of Local Coarse Earthenware.* Doctoral Dissertation, Department of Anthropology, Syracuse University, Syracuse, New York. University Microfilms International, Ann Arbor, MI.

Hauser, Mark W. and Douglas Armstrong
1999 Embedded Identities: Piecing Together Relationships Through Compositional Analysis of Low-Fired Earthenware. In *African Sites Archaeology in the Caribbean,* Jay B. Haviser, editor, pp. 65-93. Markus Wiener Publishers, Princeton, NJ.

Heath, Barbara J.
1988 *Afro-Caribbean Ware: A Study of Ethnicity on St. Eustatius*. Doctoral Dissertation, Department of American Civilization, University of Pennsylvania, Philadelphia. University Microfilms International, Ann Arbor, MI.

1999 Yabbas, Monkeys, Jugs, and Jars: An Historical Context for African-Caribbean Pottery on St. Eustatius. In *African Sites Archaeology in the Caribbean,* Jay B. Haviser, editor, pp. 196-220. Markus Wiener Publishers, Princeton, NJ.

Heath, Barbara J. and Amber Bennett
2000 "The little Spots allow'd them": The Archaeological Study of African-American Yards. *Historical Archaeology* 34(2):38-55.

Hegmon, Michelle
1989 Risk Reduction and Variation in Agricultural Economies: A Computer Simulation of Hopi Agriculture. *Research in Economic Anthropology* 11:89-121.

Hubbard, Vincent
2003 *A History of St. Kitts: The Sweet Trade.* MacMillan Caribbean, Oxford.

Lang, D.M. and D.M. Carroll
1966 *Soil and Land-Use Surveys No. 16: St. Kitts and Nevis.* Soils and Land-Use Section of The Regional Research Centre, Imperial College of Tropical Agriculture, University of the West Indies, Trinidad.

Olwig, Karen Fog
1993 *Global Culture, Island Identity: Continuity and Change in the Afro-Caribbean Community on Nevis.* Harwood Academic Publishers, Amsterdam, The Netherlands.

Peterson, James B. and David R. Watters
1988 *Afro-Montserratian Ceramics from the Harney Site Cemetery, Montserrat, West Indies.* Annals of Carnegie Museum 57:167-187.

Peterson, James B., David R. Watters, and Desmond V. Nicholson
1999 Continuity and Syncretism in Afro-Caribbean Ceramics from the Norther Lesser Antilles. In *African Sites Archaeology in the Caribbean,* Jay B. Haviser, editor, pp. 157- 195. Markus Wiener Publishers, Princeton, NJ.

Pulsipher, Lydia M.
1994 The Landscapes and Ideational Roles of Caribbean Slave Gardens. In *The Archaeology of Garden and Field,* edited by Naomi Miller and Kathryn Gleason, pp. 202–221. University of Pennsylvania Press, Philadelphia.

Schroedl, Gerald F.
1997 A Report on the 1996 Archaeological Investigations at the Brimstone Hill Fortress National Park, St. Kitts, West Indies. Brimstone Hill Archaeological Project Report No. 1. Report to The Brimstone Hill Fortress National Park Society, St. Kitts, West Indies, the Center for Field Research (Earthwatch), Watertown, Massachusetts, and the Graduate School, The University of Tennessee, Knoxville, from The University of Tennessee, Department of Anthropology, Knoxville, TN.
1998 A Report on the 1997 Archaeological Investigations at the Brimstone Hill Fortress National Park, St. Kitts, West Indies. Brimstone Hill Archaeological Project Report No. 7. Report to The Brimstone Hill Fortress National Park Society, St. Kitts, West Indies, the Center for Field Research (Earthwatch), Watertown, Massachusetts, and the Graduate School, The University of Tennessee, Knoxville, from The University of Tennessee, Department of Anthropology, Knoxville.
1999 A Report on the 1998 Archaeological Investigations at the Brimstone Hill Fortress National Park, St. Kitts, West Indies. Brimstone Hill Archaeological Project Report No. 12. Report to The Brimstone Hill Fortress National Park Society, St. Kitts, West Indies, from The University of Tennessee, Department of Anthropology, Knoxville.
2000 A Report on the 1999 Archaeological Investigations at the Brimstone Hill Fortress National Park, St. Kitts, West Indies. Brimstone Hill Archaeological Project Report No. 17. Report to The Brimstone Hill Fortress National Park Society, St. Kitts, West Indies, from The University of Tennessee, Department of Anthropology, Knoxville.
2005 Enslaved at the Brimstone Hill Fortress, St. Kitts, West Indies. Paper presented at the Society for Post Medieval Archaeology Annual Meeting, Nevis, West Indies.

Schroedl, Gerald F. and Todd M. Ahlman
2002 The Maintenance of Cultural and Personal Identities of Enslaved Africans and British Soldiers at the Brimstone Hill Fortress, St. Kitts, West Indies. *Historical Archaeology* 36(4):38-49.

Smith, Victor T.C.
1994 Brimstone Hill Fortress, St. Kitts, West Indies. Part One: History. *Post-Medieval Archaeology* 28:73-109.
1995 Brimstone Hill Fortress, St. Kitts, West Indies. Part Two: Description. *Post-Medieval Archaeology* 29:77-106.

Tobin, Beth Fowkes
1999 "And there raise yams": Slaves' Gardens in the Writings of West Indian Plantocrats. *Eighteenth-Century Life* 23:164-176.

Winterhalter, Bruce, Flora Lu, and Bram Tucker
1999 Risk-Sensitive Adaptive Tactics: Models and Evidence from Subsistence Studies in Biology and Anthropology. *Journal of Archaeological Research* 7:301-348.

Young, Amy L.
1995 *Risk and Material Conditions of African American Slaves at Locust Grove: An Archaeological Perspective.* Doctoral Dissertation, Department of Anthropology, University of Tennessee, Knoxville. University Microfilms International, Ann Arbor, MI.

1997 Risk Management Strategies among African American Slaves at Locust Grove Plantation. *International Journal of Historical Archaeology* 1:5-37.

2004 Risk and Women's Roles in the Slave Family: Data from Oxmoor and Locust Grove Plantations in Kentucky. *In Engendering African American Archaeology: A Southern Perspective,* Jillian E. Galle and Amy L. Young, editors, pp. 133-150. University of Tennessee Press, Knoxville, TN.

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