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THE BEADS OF ST. EUSTATIUS, NETHERLANDS ANTILLES

Karlis Karklins and Norman F. Barka

Archaeological excavations conducted on the Caribbean island of St. Eustatius over a seven-year period produced a wide array of 18th to early 20th-century beads of glass, coral and carnelian. Detailed descriptions of the recovered specimens are supplemented by information concerning their distribution, relative frequencies, color preference, temporal placement, origins, acquisition and use. Comparative site data are also provided.

INTRODUCTION

One of the six Dutch Lesser Antilles, St. Eustatius is located in the northeastern Caribbean about 300 km to the southeast of Puerto Rico (Fig. 1). Statia, as the island is more commonly known, is small in size, only measuring about 8.0 km by 4.5 km (Fig. 2). Its southern end is dominated by "The Quill," a 600-meter-high, extinct volcano, while the northern end is composed of older, eroded volcanic hills. The area in between is a relatively fertile plain but suffers from periods of drought. There are no rivers or streams so that drinking water is obtained by collecting rainwater in cisterns. Approximately 1,700 people currently inhabit Statia, the majority living in Oranjestad, the capital, on the island's west side. The town-proper, called the "Upper Town," is situated atop a cliff about 10 m above the "Lower Town," a narrow tract of land about 2 km long which borders the Caribbean.

HISTORICAL BACKGROUND

Although the French had briefly settled on St. Eustatius in 1629, the first permanent European colony on the island was established in the spring of 1636 by a small group of Zeelanders, Walloons and Flemings. They came under the auspices of the Dutch West India Company which had been founded in 1621 to

increase trade with the Caribbean and South America. The colonists built a fort in what is now the Upper Town and named it Fort Oranje.

The colonists immediately set to cultivating tobacco, followed shortly thereafter by sugar cane and cotton. As the century progressed, Statia gradually developed as a center of trade for goods and slaves, reaching its greatest prosperity in the 18th century when it became known as the "Golden Rock." Although Dutch for most of its existence, Statia changed hands 22 times between the Dutch, French and English during the period from 1629 to 1816 (Hartog 1976: 23). The ruins of a string of military installations around the island reflect its turbulent past.

Throughout its development as a major Caribbean center of both legal and illicit trade between the West Indies and North America, Statia's population increased steadily from around 600 in 1705 to a peak of 8,124 (two-thirds slaves) in 1790 (Hartog 1976: 105; Kandle 1985: 78). Jews, both Sephardic and Ashkenasic, from Europe, Curaçao and the Americas, formed a vibrant part of the populace (Emmanuel and Emmanuel 1985).

Although numerous sugar plantations flourished in the country-side, Statia's extraordinary economic development took place in the Lower Town where great quantities of merchandise were sold to a wide array of buyers. Slaves were an especially significant commodity, with Statia becoming the principal slave market in the West Indies during the 18th century (Attema 1976: 21). One of the few descriptions of the Lower Town in its heyday was penned by Janet Schaw (1921: 137-138), a visitor from Scotland, who wandered among its 600 or so warehouses on January 19, 1775:

The town consists of one street a mile long, but very narrow and most disagreeable, as every

one smokes tobacco, and the whiffs are constantly blown in your face.

But never did I meet with such variety; here was a merch[an]t vending his goods in Dutch, another in French, a third in Spanish, etc. etc. They all wear the habit of their country, and the diversity is really amusing....

From one end of the town of Eustatia to the other is a continued mart, where goods of the most different uses and qualities are displayed before the shop-doors. Here hang rich embroideries, painted silks, flowered Muslins, with all the Manufactures of the Indies. Just by hang Sailor's Jackets, trousers, shoes, hats etc. Next stall contains most exquisite silver plate, the most beautiful indeed I ever saw, and close by these iron-pots, kettles and shovels. Perhaps the next presents you with French and English Millinarywares. But it were endless to enumerate the variety of merchandize in such a place, for in every store you find every thing, be their qualities ever so opposite. I bought a quantity of excellent French gloves for fourteen pence a pair, also English thread-stockings cheaper than I could buy them at home. I was indeed surprised to find that the case with most of the British manufactures....

A good part of Statia's success hinged on its advantageous location in the Caribbean. Surrounded by English, French, Spanish and Danish colonies, each with strong monopolistic trade laws tying it to the mother country, Statian merchants could illegally supply them with a great variety of goods, often at a cheaper rate. During the American Revolution, Statia supplied the American rebels with many of their arms and ammunition (Kandle 1985: 62, 63). During this period, an average of 3,000 ships visited the Golden Rock each year, and even British supplies were available to American merchants.

An event of tremendous significance to Statia's future was Great Britain's declaration of war on Holland in 1780. As an immediate result, Admiral Sir George Brydges Rodney, Commander of the British fleet in the West Indies, seized the island in February of 1781, as it had long disregarded British trade

policies. The attack was also provoked by the fact that on November 16, 1776, St. Eustatius became the first country to recognize the American flag by firing a salute to the American ship *Andrea Dorea* as it sailed into the Oranjestad harbor (Tuchman 1988).

Although Rodney confiscated and sold all the goods stored on St. Eustatius and deported many of the Jewish merchants, he did not destroy the "nest of Vipers, which preyed upon the Vitals of Great Britain" as he had originally intended (Attema 1976: 40). Consequently, the island still enjoyed prosperous times in the late 18th century. However, after changing hands a few more times, severe economic decline set in due to changing world markets. The free trade in slaves was outlawed on Statia in 1784, with the result that the trade was practically defunct by the end of the decade (Attema 1976: 30). Visitors to the Lower Town in the early 19th century were met with empty, collapsing warehouses.

Statia returned to Dutch sovereignty for good in 1816. Five years later, the Netherlands forbade the import of African slaves, and slavery was finally abolished in the Dutch West Indies in 1863 (Attema 1976: 30, 47). Due to the lack of trade, the population steadily decreased. Damage caused by severe storms in the late 19th and 20th centuries helped to speed the exodus. So it was that an island once at the hub of the Caribbean's commerce became the "Historical Gem of the Caribbean" where numerous archaeological sites testify to its past power and glory.

ARCHAEOLOGICAL RESEARCH ON STATIA

Since 1981, personnel of the Department of Anthropology, College of William and Mary, Williamsburg, Virginia, have carried out an active program of archaeological research on the historic sites of St. Eustatius, both terrestrial and underwater. Approximately 400 land sites have been recorded, and a select few have been investigated. Glass beads have been found at practically all of these latter sites which are located in three principal areas: the Lower Town, the Upper Town, and the Cultivation Plain. In addition to the beads recovered archaeologically are several in the van der Sleen collection in Amsterdam.

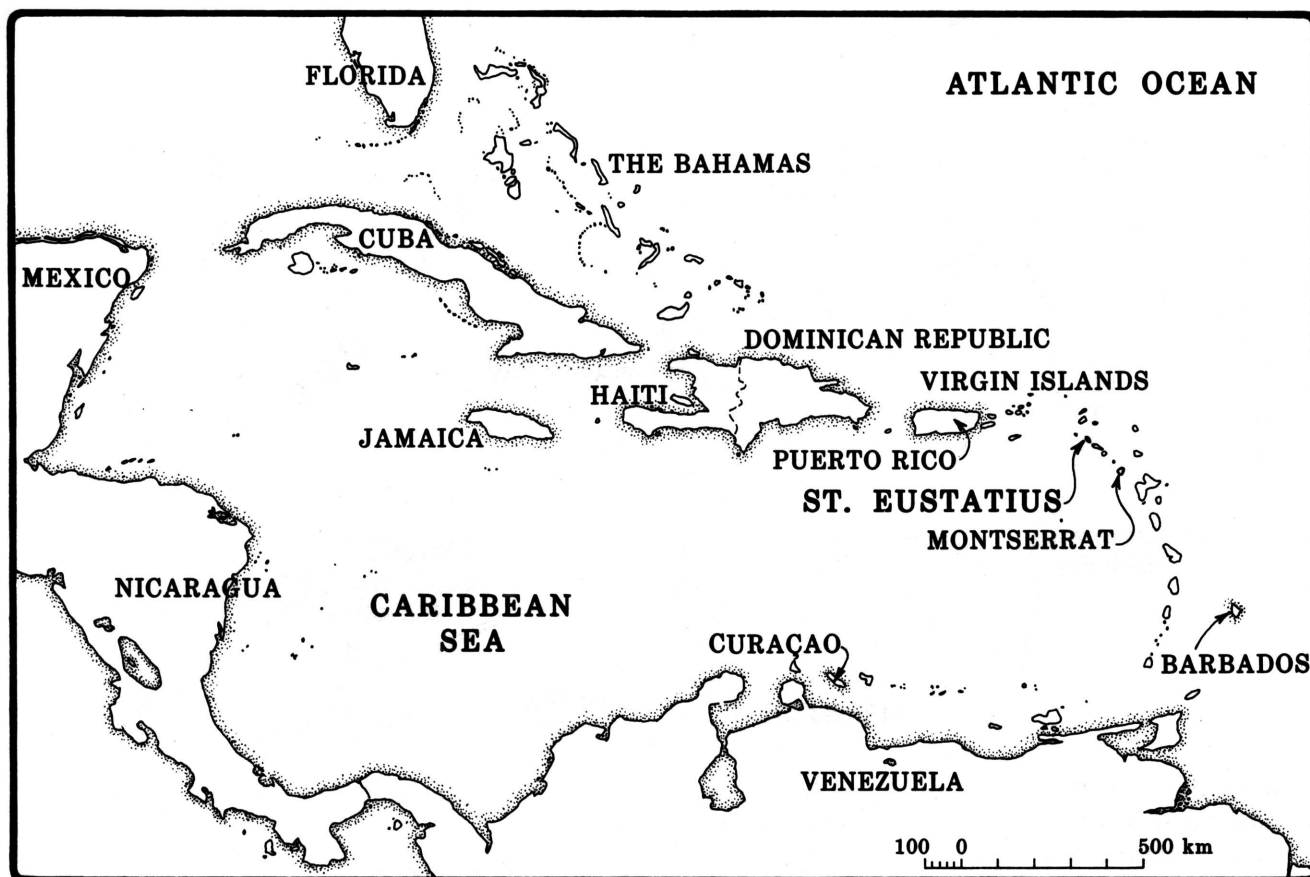


Figure 1. Map of the circum-Caribbean region showing the location of St. Eustatius (drawing by D. Kappler).

The Lower Town

In excess of a hundred visible warehouse ruins, as well as the remains of a probable sugar refinery, have been recorded in the Lower Town area (Barka 1985). Two sites in the warehouse area, and the sugar refinery, popularly known as Crook's Castle, have produced beads.

Crook's Castle (SE 7). This complex site, with some structural walls standing almost intact, is isolated at the extreme southern end of the Lower Town area. The exact nature of the site remains undetermined but a map of about 1780 identifies a turreted structure in this area as a sugar refinery. Such an identification is quite possible given the site's structural characteristics and associated large iron cauldrons.

This site has suffered extensive damage by bead-hunters searching for large blue wound beads locally

known as "slave beads" and "Bluebeards" which have been found here in large numbers. Test excavations at the site revealed six bead varieties associated with 18th-19th-century artifacts.

Trash Deposit (SE 19). A significant deposit of early 19th-century artifacts was uncovered between two warehouses in the approximate center of the Lower Town. Up to 1.9 m thick, the deposit produced large quantities of ceramics, glassware, faunal material and other cultural debris, including 28 glass beads. The high quality of the recovered material suggests that it derived from a wealthy household.

Warehouse (SE 307). Located in the northern portion of the Lower Town, this warehouse was tested and found to be underlain by what appears to have been an 18th-century seawall. Only one bead, mixed with 18th-19th century artifacts, was recovered.

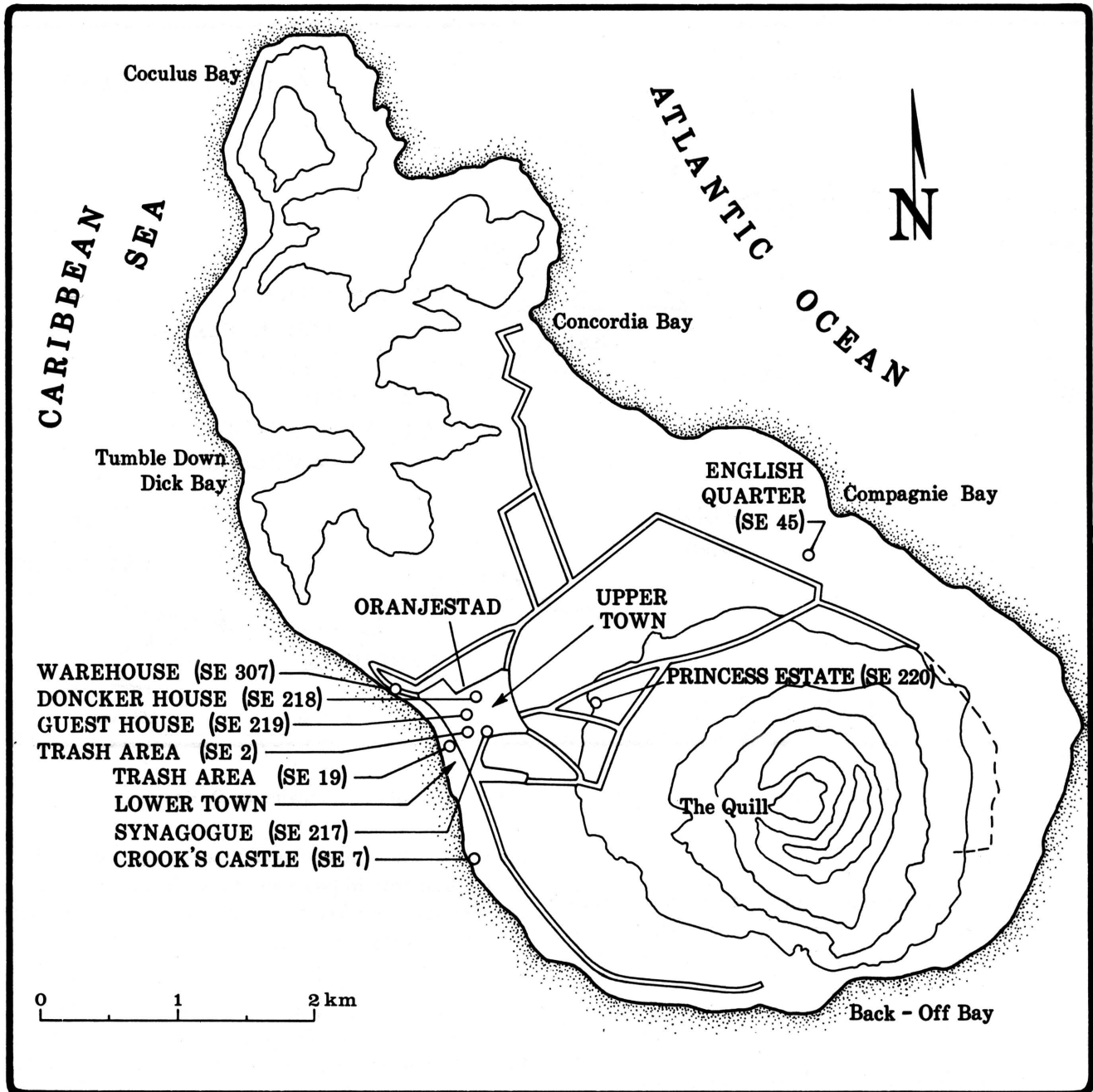


Figure 2. Bead-producing archaeological sites on St. Eustatius (drawing by D. Kappler).

The Upper Town

Several sites have been excavated in the Upper Town to assess life in urban Oranjestad and to obtain a data base for comparison with the Lower Town and sites in the United States and Canada. The following of these have produced beads.

Trash Area (SE 2). An extensive trash deposit was discovered in the area between the ruins of the Dutch Reformed Church and the cliff edge. This is one of the few sites investigated to date that contains undisturbed archaeological material. This dates to the ca. 1750-1775 period.

An unmarked grave, presumably part of a forgotten cemetery, was encountered in the southwestern corner of the site. The individual, apparently an adolescent or juvenile, was oriented in an east-west direction and had beads in association. There was no evidence for a coffin. It may be that this was one of the many victims of the smallpox epidemic of 1776 (Dethlefsen 1982: 78).

Synagogue (SE 217). The *Honen Dalim* synagogue was built in 1739 and used until about 1795. Numerous trash pits, all of which post-date synagogue use, were encountered during excavation (Barka 1988). It appears that the ruins of the brick building were used as a convenient trash disposal area by town dwellers during the early to mid-19th century. One of the pits contained a single bead.

Simon Doncker House (SE 218). Situated on the north side of Oranjestad, the Doncker house was built in the late 17th or early 18th century by a wealthy Dutch merchant. It now serves as a museum. The entire yard was sampled, producing generally mixed 18th-19th-century material, including 46 beads.

Government Guest House (SE 219). This extant 18th-century structure stands in the middle of the old portion of Oranjestad. Three summers have been spent investigating open spaces around the two-storey building whose original purpose remains unknown. Two house foundations, both with 2.6-m-deep cellars, have been uncovered. These have yielded numerous 18th-19th-century artifacts which were in material used to fill the cellars in the first half of the 19th century (Barka 1986). The guest-house excavations produced 171 beads of numerous varieties.

The Cultivation Plain

In addition to an extensive surface survey which yielded data on about 125 sites, several sugar plantations have been more thoroughly researched.

English Quarter Plantation (SE 45). Located on the eastern or Atlantic side of the island, English Quarter was established in the late 18th century but reached its peak of prosperity in the middle of the following century. An extensive complex of ruins, including sugar works and a housing complex, was recorded (France 1984). Limited excavations were

carried out in the probable location of the slave quarters. Two beads were found.

Princess Estate (SE 220). The estate covers an area of 16 hectares in the region to the east of Oranjestad. It was surveyed for archaeological sites in 1987. Two 19th-century sugar industrial complexes were excavated, including one mistakenly thought to have been a Jewish *mikve* (Barka 1987). Four beads are in the collection.

Van der Sleen Collection

Held by the Institute for South-Asian Archaeology at the University of Amsterdam, the collection of beads amassed by W.G.N. van der Sleen contains 12 specimens collected from unspecified locations on St. Eustatius. Five of these do not have counterparts in the archaeological collections (Table 1).

THE BEAD INVENTORY

The archaeological excavations and surface collections conducted on St. Eustatius up to the 1988 field season produced 335 glass beads, as well as three of coral and one of stone. Of drawn (131 specimens/43 varieties), wound (195 specimens/31 varieties), mould-pressed (8 specimens/7 varieties), and Prosser-moulded (1 specimen/ 1 variety) manufacture, the glass specimens are described below using an expanded version (Karklins 1985) of Kenneth and Martha Kidd's (1970) classification system. The latter has found broad acceptance in North America as it greatly facilitates the logical ordering of the recorded varieties and the inter-site comparison of bead assemblages. The description of each bead variety is preceded by the appropriate Kidd code. Varieties which do not appear in the Kidds' lists are marked with an asterisk (*) followed by a sequential letter for ease of reference. Two asterisks (**) indicate a previously unrecorded type.

While the shape nomenclature is mostly either self-explanatory or defined in the variety descriptions that follow, two commonly used terms require some clarification. Beads which are *circular* consist of short sections of tubing with slightly to well-rounded ends. The *round* category includes specimens which are globular, as well as oblate and barrel-shaped.

Colors are designated using the names and codes in the *Color Harmony Manual* (Container Corporation of America 1958). The equivalent color code in the Munsell color notation system (Munsell Color 1976) is also provided for the benefit of researchers who may not be familiar with the *Manual*. Beads with patinated surfaces were moistened to bring out their true color.

Diaphaneity is described using the terms opaque (op.), translucent (tsl.) and transparent (tsp.). Opaque beads are impenetrable to light except on the thinnest edges. Specimens that are translucent transmit light yet diffuse it so that objects (such as a pin in the perforation) viewed through them are indistinct. Objects viewed through transparent beads are clearly visible.

The size categories used refer to bead diameter and have the following numerical values: very small, under 2 mm; small, 2-4 mm; medium, 4-6 mm; large, 6-10 mm; and very large, over 10 mm. However, in that this sizing system provides only a minimum of information, the exact diameter and length range of each bead variety is also provided to increase the comparative value of this report.

Drawn Beads

The beads in this category consist of sections of tubing that were drawn out from a hollow globe of molten glass. Stripes were formed by placing rods or blobs of colored glass on the globe before it was drawn out. The ends of the beads were either left unaltered, or were rounded by subsequent heating and agitation. Their surfaces were also occasionally altered by grinding.

Ia2. Tubular; op. black (p; N 1/0); small size; 1 specimen (Pl. IIC, R.1, #1). Unaltered, broken ends; iridescent patina.

Diameter: 3.8 mm
Length: 4.0 mm

Ia4. Tubular; tsl. oyster white (b; N 8/0); medium size; 2 specimens. Rounded ends; chalky patina.

Diameter: 4.0 - 4.6 mm
Length: 4.5 - 5.6 mm

Ia*(a). Tubular; tsl. sunlight yellow (1-1/2 ga; 5Y 8.5/8); small size; 1 specimen (Pl. IIC, R.1, #2). Slightly rounded ends.

Diameter: 3.1 mm
Length: 9.1 mm

Ia18. Tubular; tsp. ultramarine (13 pa; 6.25PB 3/12); medium size; 1 specimen. Slightly eroded surface.

Diameter: 4.4 mm
Length: 16.3 mm

Ia19. Tubular; tsp. bright navy (13 pg; 7.5PB 2/7); small size; 1 specimen (Pl. IIC, R.1, #3). Rounded ends; the bead is slightly bent from the "tumbling" (heating and agitation) process.

Diameter: 3.3 mm
Length: 15.2 mm

Ic*(a). Tubular, hexagonal; tsp. light gray (c; N 7/0); medium size; 9 specimens (Pl. IIIA, R.1, #1-2). Unaltered to well-rounded ends. Large perforation. Numerous linear bubbles present in most specimens. Light iridescent patina. Some of the specimens may originally have had colored enamel on their perforation surfaces.

Diameter: 3.9 - 4.9 mm
Length: 3.4 - 4.9 mm

If1. Tubular, cornerless-hexagonal; op. black (p; N 1/0); medium size; 1 specimen (Pl. IIIA, R.1, #5). This and the next three varieties consist of six-sided tube segments with an irregular facet ground on each (usually) corner (18 facets total). Uneven, broken ends; iridescent patina.

Diameter: 5.6 mm
Length: 6.1 mm

If2. Tubular, cornerless-hexagonal; tsp. light gray (c; N 7/0); medium to large size; 3 specimens (Pl. IIIA, R.1, #6). Ends composed of relatively flat breaks.

Diameter: 5.1 - 7.7 mm
Length: 4.7 - 6.8 mm

If*(a). Tubular, cornerless-hexagonal; tsp. ultramarine (13 pa; 6.25PB 3/12); medium to large size; 5 specimens (Pl. IIIA, R.1, #3-4). Relatively flat, broken ends.

Diameter: 4.4 - 6.9 mm
Length: 2.5 - 6.4 mm

If*(b). Tubular, cornerless-hexagonal; tsp. bright navy (13 pg; 7.5PB 2/7); medium to large size; 3 specimens (Pl. IIIA, R.3, #1). Unaltered ends.

Diameter: 4.5 - 7.5 mm
Length: 4.8 - 6.6 mm

If*(c). Tubular, cornerless-heptagonal; op. black (p; N 1/10); very large size; 1 specimen (Pl. IIIA, R.1, #7). This and the next three varieties are composed of seven-sided tube sections with a facet ground on each corner (21 facets total). Ends slightly rounded; thick black patina.

Diameter: 10.3 mm
Length: 9.0 mm

If*(d). Tubular, cornerless-heptagonal; tsp. light gray (c; N 7/0); large size; 1 specimen (Pl. IIIA, R.2, #1). The ends are composed of relatively flat breaks.

Diameter: 7.5 mm
Length: 6.0 mm

If*(e). Tubular, cornerless-heptagonal; tsp. turquoise green (20 nc; 5BG 4/8); large size; 1 specimen (Pl. IIIA, R.3, #2). Unaltered ends; light patina.

Diameter: 8.0 mm
Length: 6.8 mm

If*(f). Tubular, cornerless-heptagonal; tsp. bright navy (13 pg; 7.5PB 2/7); large size; 1 specimen (Pl. IIIA, R.2, #2). Flat, unaltered ends; iridescent patina.

Diameter: 8.3 mm
Length: 6.9 mm

If*(g). Elongate, multi-faceted; tsp. surf green (22 ie; 5G 5/4); large size; 1 specimen (Pl. IIIA, R.2, #3). This and the next variety consist of seven-sided tube segments which have 21 diamond-shaped facets around the middle (the central seven facets are original tube faces; the others are cut) and seven elongate-pentagonal cut facets around either end (35 facets total).

Diameter: 6.9 mm
Length: 21.0 mm

If*(h). Elongate, multi-faceted; tsp. rose wine (8 le; 10RP 4/6); large size; 1 specimen (Pl. IIIA, R.2, #4). Dull surface.

Diameter: 6.9 mm
Length: 19.7+ mm

IIa6. Round; op. black (p; N 1/0); medium size; 1 specimen (Pl. IIC, R.1, #4). Patinated.

Diameter: 4.8 mm
Length: 3.8 mm

IIa7. Circular; op. black (p; N 1/0); small size; 4 specimens (Pl. IIC, R.2, #1-2). Patinated.

Diameter: 3.0 - 3.9 mm
Length: 1.7 - 2.4 mm

IIa*(a). Circular; tsp. light gray (c; N 7/0); small size; 4 specimens (Pl. IIC, R.2, #3-4). Pearly patina on most examples.

Diameter: 2.9 - 3.1 mm
Length: 1.5 - 2.5 mm

IIa12. Circular; tsl. oyster white (b; N 8/0); small to large size; 30 specimens (Pl. IIC, R.2, #5). Most beads are cased in a very thin layer of clear glass and exhibit a pearly/iridescent patina.

Diameter: 2.8 - 6.2 mm
Length: 1.7 - 4.6 mm

IIa19. Circular; op. amber (3 lc; 10YR 7/8); small size; 1 specimen (Pl. IIC, R.2, #6). Iridescent patina.

Diameter: 3.0 mm
Length: 2.2 mm

IIa27. Circular; tsp. emerald green (21 nc; 10G 5/10); small size; 4 specimens (Pl. IIC, R.2, #7). Ends range from practically unaltered breaks to well-rounded. Chalky/iridescent patina.

Diameter: 2.2 - 3.4 mm
Length: 1.8 - 2.2 mm

IIa*(b). Circular; op. grass green (23 pe; 10GY 5/10); small size; 1 specimen (Pl. IIC, R.2, #8). Eroded surface.

Diameter: 2.8 mm
Length: 1.9 mm

IIa*(c). Barrel-shaped; tsl. medium turquoise blue (17 le; 2.5B 5/5); large size; 2 specimens (Pl. IIC, R.3, #1). Numerous bubbles in glass; eroded and patinated surfaces. This may actually be variety IIa40.

Diameter: 7.6 - 7.7 mm
Length: 8.0 - 9.3 mm

IIa*(d). Circular; tsl. medium turquoise blue (17 le; 2.5B 5/5); small size; 1 specimen (Pl. IIC, R.2, #10). Slightly patinated.

Diameter: 3.6 mm

Length: 2.0 mm

IIa*(e). Circular; tsl. turquoise (17 pa; 10BG 4/8); small size; 3 specimens (Pl. IIC, R.2, #9). Eroded surfaces.

Diameter: 2.2 - 3.0 mm

Length: 1.1 - 1.9 mm

IIa41. Circular; op. robin's egg blue (16 ic; 5B 6/6); small to medium size; 2 specimens (Pl. IIC, R.3, #2). Shiny surface.

Diameter: 2.3 - 5.0 mm

Length: 1.0 - 3.7 mm

IIa*(f). Oval; op. shadow blue (14 ie; 2.5PB 5/4); large size; 1 specimen (Pl. IIC, R.3, #3). Iridescent patina.

Diameter: 6.9 mm

Length: 11.1 mm

IIa55. Barrel-shaped; tsp. bright navy (13 pg; 7.5PB 2/7); large size; 1 specimen (Pl. IIC, R.3, #4). Heavily patinated.

Diameter: 9.7 mm

Length: 9.9 mm

IIa56. Circular; tsp. bright navy (13 pg; 7.5PB 2/7); small to medium size; 13 specimens (Pl. IIC, R.3, #5). Most examples are patinated.

Diameter: 2.7 - 6.0 mm

Length: 1.1 - 4.7 mm

IIb*(a). Round; tsl. bright navy (13 pg; 7.5PB 2/7) body decorated with 22 thin op. white (a; N 9/0) stripes; large size; 1 specimen (Pl. IIC, R.3, #6). Heavily patinated.

Diameter: 9.1 mm

Length: 7.2 mm

IIbb*(a). Oval; op. shadow blue (14 ie; 2.5PB 5/4) body decorated with 3 op. redwood (6 ne; 10R 4/8) on op. white (a; N 9/0) stripes; large size; 1 specimen (Pl. IIC, R.4, #1). Iridescent patina.

Diameter: 8.5 mm

Length: 12.9 mm

IIf*(a). Circular-faceted; op. black (p; N 1/0) with 3-4 irregular, randomly applied cut facets; small to medium size; 4 specimens (Pl. IIIA, R.4, #4). Patinated.

Diameter: 2.7 - 5.5 mm

Length: 1.5 - 4.0 mm

IIf*(b). Circular-faceted; tsp. ultramarine (13 pa; 6.25PB 3/12) body exhibiting 7 irregular, randomly placed cut facets; small size; 1 specimen (Pl. IIIA, R.4, #5). Eroded and patinated surface.

Diameter: 2.9 mm

Length: 1.9 mm

IIIa1. Tubular; thin op. redwood (6 ne; 10R 4/8) exterior; op. black (p; N 1/0) core; small size; 1 specimen (Pl. IIC, R.4, #2). Core shows through in several places. Uneven, broken ends; thin patina.

Diameter: 3.5 mm

Length: 10.2 mm

IIIa3. Tubular; op. redwood (6 ne; 10R 4/8) exterior; tsp. apple green (23 ic; 10GY 6/6) core; medium size; 1 specimen (Pl. IIC, R.4, #3). End slightly rounded; surface is eroded and patinated.

Diameter: 4.5 mm

Length: 14.7 mm

IIIb*(a). Tubular; op. sunlight yellow (1-1/2 ga; 5Y 8.5/8) exterior decorated with 4 op. redwood (6 ne; 10R 4/8) stripes; tsl. oyster white (b; N 8/0) core; large size; 1 specimen (Pl. IIC, R.4, #4). The stripes are embedded in a thin layer of clear glass, most of which has eroded away.

Diameter: 7.6 mm

Length: 9.0+ mm

IIIf2. Tubular, cornerless-hexagonal; tsp. ultramarine (13 pa; 6.25PB 3/12) exterior; tsl. light aqua blue (16 ea; 5B 8/4) core; medium to large size; 7 specimens (Pl. IIIA, R.3, #3-4). This and the next variety have the same form as their If counterparts. Relatively flat breaks comprise the ends.

Diameter: 4.9 - 7.7 mm

Length: 4.5 - 6.1 mm

IIIf*(a). Tubular, cornerless-hexagonal; tsl. copen blue (13-1/2 ic; 5PB 5/7) exterior which exhibits a distinct golden cast; tsl./op. light aqua blue (16 ea; 5B 8/4) core; medium size; 1 specimen.

Diameter: 4.2 mm

Length: 4.7 mm

IIIf*(b). Tubular, cornerless-heptagonal; op. bright Dutch blue (13 la; 7.5PB 4/11) exterior; op. light aqua blue (16 ea; 5B 8/4) core; large size; 2 specimens (Pl. IIIA, R.4, #1-2). This and the next two

varieties have forms identical to their If counterparts. Flat, broken ends; thin white patina.

Diameter: 8.4 - 8.9 mm

Length: 7.0 mm

III f*(c). Tubular, cornerless-heptagonal; tsp. bright navy (13 pg; 7.5PB 2/7) exterior; tsl. light aqua blue (16 ea; 5B 8/4) core; large to very large size; 7 specimens (Pl. IIIA, R.3, #5-6). Relatively flat, broken ends; slightly to heavily patinated.

Diameter: 7.7 - 11.0 mm

Length: 6.5 - 9.2 mm

III f*(d). Tubular, cornerless-heptagonal; tsp. bright navy (13 pg; 7.5PB 2/7) exterior; tsl. light aqua blue (16 ea; 5B 8/4) middle layer; tsp. bright navy core; very large size; 1 specimen (Pl. IIIA, R.4, #3). Broken but relatively flat ends.

Diameter: 10.7 mm

Length: 8.5 mm

IVa5. Round; op. redwood (6 ne; 10R 4/8) exterior; tsp. apple green (23 ic; 10GY 6/6) core; medium to large size; 2 specimens (Pl. IIC, R.4, #5). Eroded and patinated surface.

Diameter: 4.9 - 7.0 mm

Length: 4.6 - 6.6 mm

Wound Beads

These were created by winding a strand of molten glass around a metal mandrel until the desired size and shape were achieved. While the glass was still viscid, molten filaments of contrastingly colored glass could be trailed over the surface to add decorative elements, or the glass could be pressed with small paddles to impart "soft" facets or be otherwise manipulated to produce complex shapes.

WIa1. Cylindrical; tsp. light gray (c; N 7/0); very large size; 1 fragmentary specimen (Pl. IIIB, R.1, #1). Eroded surface.

Diameter: 10.1 mm

Length: 5.9+ mm

Wib*(a). Round; op. black (p; N 1/0); medium to very large size; 5 specimens (Pl. IIIB, R.1, #2). Shiny to dull surfaces.

Diameter: 4.0 - 11.1 mm

Length: 3.3 - 10.0 mm

Wib1. Round; tsl. light gray (c; N 7/0); medium size; 1 specimen (Pl. IIIB, R.1, #3). Heavily patinated.

Diameter: 4.2 mm

Length: 4.9 mm

Wib4. Round; tsp. pale blue (15 ca; 7.5B 8/2) exhibiting an opalescent cast; very large size; 5 specimens (Pl. IIIB, R.1, #4). Chalky patina.

Diameter: 10.5 - 20.0+ mm

Length: 8.0 - 20.0+ mm

Wib11. Round; op. robin's egg blue (16 ic; 5B 6/6); medium to large size; 6 specimens (Pl. IIIB, R.1, #5-6). Slightly patinated.

Diameter: 4.7 - 7.8 mm

Length: 4.3 - 7.3 mm

Wib*(b). Round; op. aqua blue (18 gc; 2.5B 6/4); medium size; 1 specimen. Eroded surface.

Diameter: 5.9 mm

Length: 6.6 mm

Wib16. Round; tsp./tsl./op. bright navy (13 pg; 7.5PB 2/7); large to very large size; 20 specimens (Pl. IIIB, R.2, #1-3). Some examples, especially the larger ones, are practically opaque. Distinct wind marks and a light to heavy patina are visible on most specimens.

Diameter: 8.0 - 22.6 mm

Length: 5.1 - 23.1 mm

Wic3. Oval; tsl. pale blue (15 ca; 7.5B 8/2); very large size; 3 specimens (Pl. IIIB, R.2, #4). Chalky patina.

Diameter: 18.7 - 19.9 mm

Length: 22.6 - 27.2 mm

Wic11. Oval; tsp./tsl. ultramarine (13 pa; 6.25PB 3/12); large to very large size; 3 specimens (Pl. IIIB, R.3, #1). Patinated and eroded.

Diameter: 9.2 - 17.0 mm

Length: 11.2 - 24.5 mm

Wic*(a). Oval; tsp./tsl. bright navy (13 pa; 7.5PB 2/7); very large size; 6 specimens (Pl. IIIB, R.3, #2-3). Most specimens are patinated, some to the point of near devitrification.

Diameter: 10.0 - 18.1 mm

Length: 13.6 - 27.9 mm

Wid*(a). Doughnut-shaped; op. black (p; N 1/0); large size; 1 specimen (Pl. IIIB, R.4, #1). This and the

next five varieties have oblate bodies with comparatively large perforations. Slightly patinated.

Diameter: 8.0 mm
Length: 3.2 mm

WId*(b). Doughnut-shaped; tsp. light gray (c; N 7/0); medium size; 1 specimen (Pl. IIIB, R.4, #3). Heavily patinated.

Diameter: 4.7 mm
Length: 2.2 mm

WId1. Doughnut-shaped; tsp. amber (3 lc; 10YR 7/8); large size; 1 specimen (Pl. IIIB, R.4, #4). Thick white patina.

Diameter: 7.4 mm
Length: 4.8 mm

WId*(c). Doughnut-shaped; tsp. reddish amber (5 pe; 2.5YR 4/10); very large size; 1 specimen (Pl. IIIB, R.4, #5). Chalky patina.

Diameter: 10.9 mm
Length: 4.7 mm

WId*(d). Doughnut-shaped; tsp. ruby (8 pc; 2.5R 3/10); medium size; 1 specimen (Pl. IIIB, R.4, #2). Thick chalky patina.

Diameter: 4.8 mm
Length: 2.3 mm

WId*(e). Doughnut-shaped; tsp. bright navy (13 pg; 7.5PB 2/7); large to very large size; 3 specimens (Pl. IIIB, R.4, #6-7). Patinated.

Diameter: 7.0 - 10.1 mm
Length: 3.4 - 5.3 mm

WIib*(a). Flattened-round; tsp. bright navy (13 pg; 7.5PB 2/7); large to very large size; 17 specimens (Pl. IIIC, R.1, #1-2). These are round beads that were pressed flat parallel to the perforation while the glass was still soft. Most specimens exhibit a chalky to iridescent patina.

Width: 9.7 - 14.9 mm
Length: 7.2 - 13.1 mm
Thickness: 5.4 - 8.3 mm

WIic2. Pentagonal-faceted; tsp. light gray (c; N 7/0); very large size; 2 specimens (Pl. IIIC, R.1, #3). This and the next two varieties have semi-globular bodies that exhibit eight pressed pentagonal facets; the ends are square. Eroded surfaces.

Diameter: 10.3 - 10.4 mm
Length: 8.1 - 8.7 mm

WIic3. Pentagonal-faceted; tsp. pale blue (15 ca; 7.5B 8/2) with an opalescent cast; very large size; 1 specimen (Pl. IIIC, R.1, #4). Chalky patina.

Diameter: 11.6 mm
Length: 10.6 mm

WIic12. Pentagonal-faceted; tsp. bright navy (13 pg; 7.5PB 2/7); large size; 1 specimen (Pl. IIIC, R.1, #5). Iridescent patina.

Diameter: 9.2 mm
Length: 7.5 mm

WIif*(a). Ridged tube (pentagonal cross-section); tsl. pale blue (15 ca; 7.5B 8/2) with a distinct golden cast; very large size; 1 specimen. This and the following five varieties exhibit quadrilateral pressed facets that extend the entire length of each bead.

Diameter: 10.7 mm
Length: 12.2 mm

WIif*(b). Ridged tube (pentagonal cross-section); tsp. ultramarine (13 pa; 6.25PB 3/12); very large size; 1 specimen. Eroded surface.

Diameter: 10.4 mm
Length: 12.4 mm

WIif*(c). Ridged tube (square cross-section); tsp./tsl. bright navy (13 pg; 7.5PB 2/7); very large size; 1 specimen (Pl. IIIC, R.3, #1). White patina.

Diameter: 10.7 mm
Length: 10.6 mm

WIif*(d). Ridged tube (pentagonal cross-section); tsp./tsl./op. bright navy (13 pg; 7.5PB 2/7); large to very large size; 85 specimens (Pl. IIIC, R.2, #1-4). These come in a short (#2), standard (#3) and long (#4) form (Beck 1928: Pl. 2 and 3). The glass was usually much eroded and heavily patinated. One specimen was practically devitrified.

Diameter: 9.9 - 16.9 mm
Length: 6.3 - 19.8 mm

WIif*(e). Ridged tube (hexagonal cross-section); tsl./op. bright navy (13 pg; 7.5PB 2/7); very large size; 1 specimen (Pl. IIIC, R.3, #2). Slightly eroded surface exhibiting spots of white patina.

Diameter: 14.3 mm
Length: 16.5 mm

WIiq*(a). Standard square bicone (Beck [1928] type IX.C.2.e.); op. white (a; N 9/0); medium size; 1 speci-

men (Pl. IIIC, R.3, #3). The bead has a square cross-section and tapers toward either end.

Diameter: 5.0 mm

Length: 5.5 mm

WII(a).** Faceted ring; tsp. bright navy (13 pg; 7.5PB 2/7); very large size; 1 specimen (Pl. IIIC, R.3, #4). This bead consists of a thin glass ring with an alternating series of pressed triangular facets on its surface. The perforation is quite large. The surface is eroded and patinated.

Diameter: 10.5 mm

Length: 4.3 mm

WIIIa*(a). Cylindrical; tsp. ruby (8 pc; 2.5R 3/10) exterior; op. white (a; N 9/0) core; large size; 1 specimen (Pl. IIIC, R.3, #5). Thick pinkish-brown patina.

Diameter: 6.3 mm

Length: 10.5 mm

WIIIa*(b). Round; tsp. ruby (8 pc; 2.5R 3/10) exterior; op. white (a; N 9/0) core; large size; 18 specimens (Pl. IIIC, R.4, #1). A thick light brown patina covers most specimens.

Diameter: 6.3 - 8.5 mm

Length: 5.5 - 8.5 mm

WIIIb*(a). Round; op. black (p; N 1/0) body decorated with a lattice-work composed of three meandering and intersecting op. white (a; N 9/0) or light gold (2 ic; 2.5Y 7/8) stripes; very large size; 2 specimens (Pl. IIIC, R.4, #3-4). Shiny surfaces.

Diameter: 11.5 - 12.6 mm

Length: 8.2 - 10.1 mm

WIIIb*(b). Oval (olive-pit-shaped); op. white (a; N 9/0) body decorated with a tsp. scarlet (7 pa; 7.5R 4/14) wreath or floral spray about the middle; large size; 3 specimens (Pl. IIIC, R.4, #2). Earthy dark brown patina.

Diameter: 6.0 - 6.5 mm

Length: 9.8 - 10.2+ mm

Mould-Pressed Beads

Two basic methods were used to manufacture mould-pressed beads. In the first, a glob of viscid glass was pressed in a two-piece mould which had a moveable pin that formed the perforation. In the second method, two pieces of molten glass, one in either

half of a two-piece mould, were pressed together to fuse them. Again, a moveable pin created the perforation. In a variation (termed "mandrel-pressed") of the second method, a conical pin protruding from the center of one of the mould halves produced the perforation. As the pin did not extend all the way to the other side of the closed mould, the glass filling the narrow end of the tapered perforation had to be punched through leaving a concave scar in this area.

MPI(a).** Oblong "toggle" bead; op. scarlet (7 pa; 7.5R 4/14); small size; 1 specimen (Pl. IIID, R.1, #1). A mould mark encircles the long axis of the bead. The parallel-sided perforation is small, and passes through the center of the bead perpendicular to the axis of the mould mark. Shiny surface.

Width: 8.7 mm

Length: 3.9 mm

Thickness: 3.7 mm

MPIIa*(a). Round-faceted ("mandrel-pressed"); op. black (p; N 1/0); medium size; 1 specimen (Pl. IIID, R.1, #2). The surface exhibits approximately seven irregular facets; the original curved bead surface is visible in several places. The ends are unaltered. A distinct mould mark encircles the equator. The perforation tapers noticeably. Shiny surface.

Diameter: 5.7 mm

Length: 5.0 mm

MPIIa*(b). Round-faceted ("mandrel pressed"); tsp. bright navy (13 pg; 7.5PB 2/7); large size; 2 specimens (Pl. IIID, R.1, #3). Approximately 26 irregular cut facets cover the surface. The ends are ground flat. A mould seam encircles the middle. The perforation has a distinct taper. An iridescent patina covers the surface.

Diameter: 6.5+ - 8.4 mm

Length: 7.0 mm

MPIIa*(c). Round-faceted ("mandrel-pressed"); tsp. rose wine (8 le; 10RP 4/6); medium size; 1 specimen (Pl. IIID, R.1, #4). The surface exhibits around seven irregular cut facets, as well as several sections of the original curved bead surface. The ends are unaltered. A distinct mould seam encircles the equator. The perforation tapers noticeably. Patinated.

Diameter: 5.0 mm

Length: 4.4 mm

MPII(a).** Oblong-faceted ("mandrel-pressed"); tsp. ruby (8 pc; 2.5R 3/10); small size; 1 specimen (Pl. IIID, R.2, #1). Twenty irregular quadrilateral cut facets cover the shiny surface, ten on either side of the middle. The shape most closely approximates Beck's (1928) "long truncated convex polygonal bicone" (XV.D.1.f.). No mould seam is visible. The perforation tapers slightly.

Diameter: 3.3 mm
Length: 5.0 mm

MPII(b).** Oval-faceted; tsp. light gray (c; N 7/0); large size; 1 specimen (Pl. IIID, R.2, #2). The surface is covered with 24 cut facets: 6 pentagonal around either end and 12 interconnected diamond-shaped ones around the middle. The ends exhibit unaltered curved surfaces. The perforation is small and parallel-sided. Light whitish patina.

Diameter: 7.4 mm
Length: 10.7 mm

MPII(c).** Oval-faceted; tsp./tsl. ruby (8 pc; 2.5R 3/10); large size; 1 specimen (Pl. IIID, R.2, #3). There are 28 cut facets: 6 elongate pentagonal about either end and 16 diamond-shaped around the middle. The slightly tapered perforation is very small. Slight iridescent patina.

Diameter: 6.2 mm
Length: 9.2 mm

Prosser-Moulded Beads

These were made by pressing a finely-powered mixture of clay, feldspar and flint into moulds to achieve the desired form and then baking them in an oven until the material fused. A colored glaze could then be applied, if desired.

PM(a).** Cylindrical; tsl./op. emerald green (21 nc; 10G 5/10); medium size; 1 specimen (Pl. IIID, R.3, #1). One end of the bead is rounded and smooth; the other is rough.

Diameter: 4.1 mm
Length: 4.4 mm

Coral Beads

Barrel-shaped; op. coral (6 lc; 10R 5/10); small to medium size; 3 specimens (Pl. IIID, R.3, #2-3). The

specimens have smooth surfaces, flat to concave and irregular ends, and parallel-sided perforations.

Diameter: 3.6 - 5.5 mm
Length: 3.2 - 4.5 mm

Carnelian Bead

Round; tsp./tsl. banded reddish orange (6 lc; 10R 5/10); large size; 1 specimen (Pl. IIID, R.3, #4). Drilled from either end, the perforation consists of two misaligned segments that barely touch in the middle. Shiny, polished surface.

Diameter: 7.5 mm
Length: 6.8 mm

BEAD DISTRIBUTION

During the 1981-87 field seasons, the archaeologists from William and Mary recovered 325 beads of glass, coral and stone. Of these, over half (53%) came from the Government Guest House area (SE 219). The Doncker House yard (SE 218) and Dutch Reformed Church trash area (SE 2) each yielded 14% of the total, while Crook's Castle (SE 7) and the Lower Town trash deposit (SE 19) shared another 16% about equally. The English Quarter complex (SE 45), synagogue (SE 217), Princess Estate (SE 220) and Lower Town warehouse (SE 307) were practically bereft of beads, sharing the remaining 3% of the bead collection.

The relatively large number of beads in the guest-house excavations looks significant but is simply due to the fact that, of all the sites, this one has been the most extensively excavated. The low percentage of beads at the English Quarter slave quarters is probably a reflection of the limited amount of work that has been conducted there. What is significant about the distribution of the beads is the fact that many of them were found in domestic contexts indicating that they were used by the local population rather than just stored on Statia for re-export to other markets (Table 1).

RELATIVE BEAD FREQUENCIES

Although 84 different bead varieties are represented in the archaeological and van der Sleen collections, just six of them account for over half the collec-

tion (Table 2). While three of the varieties (IIa12, IIa56, WIb16) are very common and widely distributed in the Western Hemisphere, the remaining three, especially the WIIf*(d) variety, are not, suggesting that the latter were either especially popular with the local population or that Statia was a major distribution point for them.

Faceted beads formed a substantial part of the bead collection, comprising 50% of it. Although 35 varieties representing three manufacturing types were enumerated, over half the faceted specimens were of one variety: WIIf*(d), the bright navy, pentagonal ridged tube. Cornerless-hexagonal and heptagonal beads (If and IIIf), represented by 15 varieties, were also relatively common, forming 21% of the faceted bead group. Of the non-faceted beads, two types predominated: IIa, monochrome drawn circular (14 varieties; 68 specimens/20%), and WIb, wound round (6 varieties; 38 specimens/11%).

COLOR PREFERENCE

Blue beads predominated (62%) on St. Eustatius with white/gray beads a distant second (17%). Red/pink beads (9%) and black ones (6%) were much less common, while green (2%), yellow/amber (2%), purple (1%) and decorated (2%) beads were found in only minor quantities. A decided preference for blue beads was also noted at the other Caribbean sites surveyed in Table 3. No other pattern could be discerned except that green, purple and decorated beads were always in a decided minority. Blue beads are seemingly near-universal in popularity in the Western Hemisphere, being frequently encountered on both plantation and Indian sites in the United States, as well as on sundry sites in Europe and Africa. The scarcity of decorated beads on the Caribbean islands is interesting as at Elimina, Ghana, and Bunce Island, Sierra Leone, they are quite common. Whether this scarcity reflects a general disdain for decorated beads in the Caribbean, their unavailability in the local markets, or some other factor (price?) will have to be resolved by further research.

COMPARATIVE SITE DATA

Comparing the 84 Statian bead varieties to those recovered from 15 sites in the Caribbean, North and

South America, West Africa and Europe (Table 3), the highest number of correlatives is with the Amsterdam sites (36 correlatives or 43%), the logical point of origin for much of the material shipped to St. Eustatius, especially during the periods of Dutch rule. Next, with 32 correlatives, is Elmina, a major Dutch trading fort on the West African Gold Coast from 1637 to 1872. These sites are followed by four Indian sites or site-groups and two trading posts in the United States. The presence of a high rate of correlatives on four of these sites (Trudeau, Guebert, Rock Island and Fort Michilimackinac) is probably due to the fact that these primarily 18th-century sites were all supplied by the French who are known to have obtained at least some of their beads from Holland during the 18th century (Brain 1979: 299). Comparable correlatives at the contemporary Susquehannock sites, primarily supplied by the British and Americans, reveal that the latter also had ready access to the same beads as the Dutch and French. The sixth site, Fort Vancouver, also English/American, is the latest one in the group and its high rate of correlatives shows that the beads shipped to Statia in the 19th century were much the same as those that found their way to other parts of the world.

Interestingly, there are comparatively few correlatives with the three Caribbean sites. It may be noteworthy that all three were English colonies, which also holds true for low-correlative Bunce Island in West Africa. However, whether the low correlative rate is due to different suppliers or simply reflects different local tastes or the unavailability of specific varieties on these islands can only be speculated on at this time. These factors may also explain the few correlatives at the First Hermitage and St. Augustine. The apparent scarcity of correlatives at the Vila Velha cemetery is misleading. The site only produced eight bead varieties, so with seven matches, the relative number of correlatives is actually very high.

CHRONOLOGICAL DATA

While most of the recovered beads were found in mixed 18th-19th-century contexts, it is possible to assign the majority of the more distinctive types and varieties to one of three general time periods (Table 4). Based on comparisons with beads from well-dated

Table 1. Distribution of the St. Eustatius Bead Varieties.

	SE 2	SE 7	SE 19	SE45	SE 217	SE 218	SE 219	SE 220	SE 307	Sleen	Total
Ia2						1					1
Ia5		2									2
Ia*(a)						1					1
Ia18										1	1
Ia19						1					1
Ic*(a)						8	1				9
If1						1					1
If2						1	2				3
If*(a)							5				5
If*(b)							1	1		1	3
If*(c)						1					1
If*(d)							1				1
If*(e)							1				1
If*(f)							1				1
If*(g)						1					1
If*(h)							1				1
IIa6						1					1
IIa7	4										4
IIa*(a)						1	3				4
IIa12	13	5	1			3	8				30
IIa19	1										1
IIa27							4				4
IIa*(b)							1				1
IIa*(c)	1						1				2
IIa*(d)							1				1
IIa*(e)							3				3
IIa41							2				2
IIa*(f)						1					1
IIa55							1				1
IIa56	10					1	2				13
IIb*(a)	1										1
IIbb*(a)				1							1
IIf*(a)						3	1				4
IIf*(b)						1					1
IIIa1						1					1
IIIa3	1										1
IIIb*(a)	1										1
IIIf2							7				7
IIIf*(a)										1	1
IIIf*(b)							2				2
IIIf*(c)						2	5				7
IIIf*(d)						1					1
Sub-total	32	7	1	1	0	30	54	1	0	3	129

Table 1. Continued.

	SE 2	SE 7	SE 19	SE45	SE 217	SE 218	SE 219	SE 220	SE 307	Sleen	Total
IVa5	2										2
WIa1			1								1
WIb*(a)	1					1	1	2			5
WIb1							1				1
WIb4						1	4				5
WIb11						2	4				6
WIb*(b)										1	1
WIb16	2	1	3				12			2	20
WIc3	1		1				1				3
WIc11	1					1				1	3
WIc*(a)			1			1	4				6
WIId*(a)							1				1
WIId*(b)							1				1
WIId1							1				1
WIId*(c)							1				1
WIId*(d)							1				1
WIId*(e)		1		1		1					3
WIIf*(a)		6	2			1	7			1	17
WIIfc2							2				2
WIIfc3			1								1
WIIfc12						1					1
WIIf*(b)										1	1
WIIf*(c)							1				1
WIIf*(d)	3	12	18			3	43	1	1	4	85
WIIf*(e)							1				1
WIIfq*(a)							1				1
WIIf**(a)							1				1
WIIfa*(a)							1				1
WIIfa*(b)						2	16				18
WIIfb*(a)	2										2
WIIfb*(b)	1						2				3
WIIf**(a)							1				1
WIIfa*(a)						1					1
WIIfa*(b)						1					1
WIIfa*(c)						1					1
WIIf**(a)							1				1
WIIf**(b)							1				1
WIIf**(c)							1				1
WIIf**(a)							1				1
Coral						1	2				3
Carnelian							1				1
Sub-total	13	20	27	1	1	16	117	3	1	11	210
Total	45	27	28	2	1	46	171	4	1	14	339

Table 2. The Six Most Common Bead Varieties from St. Eustatius.

Variety	Description	Quantity	Percent
WIIIf*(d)	Ridged tube (pentagonal), tsp. op. bright navy	85	25
Ila12	Circular, tsl. oyster white	30	9
WIb16	Round, tsp. op. bright navy	20	6
WIIIIa*(b)	Round, tsp. ruby on op. white	18	5
WIIb*(a)	Flattened-round, tsp. bright navy	17	5
Ila56	Circular, tsp. bright navy	<u>13</u>	<u>4</u>
	Total	183	54

sites and bead sample cards and books in North America, Europe and West Africa, Period I dates from around 1700 to 1800, Period II extends from about 1800 to 1880, while Period III covers the years from ca. 1880 to 1935 or so. Periods I and II generally correspond to Quimby's (1966) Middle and Late Historic periods, respectively, but with expanded date ranges that reflect more recent chronological information. It is noteworthy that no significant temporal differences were noted between the bead varieties and types found on sites in the Caribbean and those in Holland, coastal West Africa, and the eastern United States. Consequently, those studying beads from Circum-Caribbean sites can avail themselves (with obvious caution!) of the wealth of comparative data from North American sites that appears in the two bibliographies prepared by Karklins and Sprague (1980, 1987).

A good number of the beads listed in Table 4 have long temporal ranges (WIb16 and WId1 are good examples) or fall on the dividing line between periods as does variety WIIb*(b). Each bead type or variety was, therefore, assigned to a specific period on the basis of its modal and core dates. Thus, it is possible that not every WIb16 or WId1 bead was deposited during the 18th century, but the likelihood is that most of them were.

ORIGINS

The majority of the Period I beads have counterparts at various 18th-century archaeological sites in

Amsterdam and it is almost certain that the bulk of them were shipped to Statia from this important Dutch seaport. It has long been accepted that the very large, wound, monochromatic varieties were manufactured in Holland (Sleen 1967: 108-109), but there is no historical or archaeological proof for this. Numerous wound beads have been found in and around Amsterdam, but never in association with identifiable manufacturing wasters such as glass rods and malformed beads, or discarded mandrels or moulds. Thus, there is the possibility that the wound beads were not made in Amsterdam but merely stored there for shipment abroad. A lack of contemporary comparative data from other bead-producing centers in Europe does little to alleviate the situation. It is hoped that future research will resolve this problem once and for all.

While the bulk of the Period I beads were almost certainly supplied and perhaps even made by the Dutch, the presence of these beads at an archaeological site does not automatically indicate either Dutch contact or presence as many of these same beads have been found on sites occupied or supplied by the French, English, Spanish and Portuguese (*see* Table 3), as well as the Danes (Hansen 1979). It is known that Holland supplied the French and English with beads during the 18th century (Karklins 1983: 113), and it would be no surprise to learn that Spain, Portugal and Denmark were also on the list. So, while an 18th-century "Dutch bead assemblage" can be identified on Statia (all the Period I beads excluding WI-IIb*[b] and the three drawn varieties), it is one that can also be expected in those parts of the world where

**Key to Table 3 (Site name and location;
site function; probable principal ethnic affiliation; date range; references cited):**

- 1) **Newton Cemetery, Barbados.**
Slave cemetery; English; ca. 1660-ca. 1775 (Handler and Lange 1978).
- 2) **New Montpelier Estate, Jamaica.**
Worker's village; English; 1770-1910, mostly 19th century (Karklins 1988).
- 3) **Galways Plantation, Montserrat.**
Slave village; English; ca. 1790-ca. 1850 (Karklins: personal observation).
- 4) **Vila Velha Cemetery, Amapá, Brazil.**
Indian cemetery; Portuguese/Dutch(?); prob. late 17th-18th century (Meggers and Evans 1957).
- 5) **St. Augustine, Florida.**
Spanish town site; Spanish/English; 1700-1821 (Deagan 1974; 1987; Martinez and Ruple 1972; Young 1975).
- 6) **Trudeau Site, Louisiana.**
Tunica Indian village; French; 1731-1764 (Brain 1979).
- 7) **First Hermitage, Tennessee.**
Slave plantation; American; 1804-1856 (Good 1976).
- 8) **Susquehannock Sites, Pennsylvania.**
Indian villages/cemeteries; English; 1575-1760s (Kent 1984).
- 9) **Fort Michilimackinac, Michigan.**
Military establishment/major trading post; French/English; 1715-1781 (Stone 1974).
- 10) **Guebert Site, Illinois.**
Kaskaskia Indian village; French/American; 1719-1833 (Good 1972).
- 11) **Rock Island, Wisconsin.**
Indian villages; French; ca. 1640-1770 (Mason 1986).
- 12) **Fort Vancouver, Washington.**
Major Hudson's Bay Company post; English/American; 1829-1860 (Ross 1976).
- 13) **Bunce Island, Sierra Leone.**
Trading fort/slaving station; English; 1672-1807 (Karklins 1989).
- 14) **Elmina, Ghana.**
African settlement; Portuguese/Dutch/English; 1482-1873/Dutch: 1637-1872 (Karklins: personal observation).
- 15) **Amsterdam Sites, The Netherlands.**
Major European commercial center; Dutch; 1650-1800 (Karklins: personal observation).

Table 3. The St. Eustatius Beads: Comparative Sites.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ia2								x	x	x	x	x	x	x	x
Ia4	x					x		x	x	x	x	x		x	x
Ia*(a)						x			x			?	x	x	
Ia18					?				x		x				
Ia19						x		x	x	x	x		x	x	x
Ic*(a)															
If1							x			x		x		x	
If2							x			x		x			
If*(a)		x								?					
If*(b)							x	x		x		x		x	
If*(c)												x			
If*(d)			x												
If*(e)										?		x			
If*(f)		x										x			
If*(g)												x			
If*(h)															
IIa6	x					x		x	x	x	x		x		x
IIa7	x		x		?	x		x	x	x	x	x		x	x
IIa*(a)	x			?		x			x		x	x			x
IIa12					x	x	x	x	x	x	x	x		x	x
IIa19						x						x			
IIa27						x		x			x				
IIa*(b)											?	x			
IIa*(c)	?					x			x	x				x	
IIa*(d)	x					x			x	x		x			
IIa*(e)									x						
IIa41						x		x	x	x				x	
IIa*(f)									x	x				x	x
IIa55	x			x		x		x		x	x			x	x
IIa56	x					x		x	x	x	x	x		x	x
IIb*(a)												x	x		
IIbb*(a)						x		x			x				x
IIf*(a)												x			
IIf*(b)															
IIIa1								x						x	x
IIIa3			x		x	x		x	x	x	x		x		x
IIIb*(a)															
IIIf2		x	x		x		x			x		x		x	x
IIIf*(a)															
IIIf*(b)			x									x		x	
IIIf*(c)		x					x					x			
IIIf*(d)		x												x	
IVa5	x				x	x		x	x	x	x		x	x	x

Table 3. Continued.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WIa1															
Wib*(a)	x	x	x		x	x	x	x		x			x	x	x
Wib1		x	?		?	x		x	x	x	x				x
Wib4	x		x	x	x	x		x	x	x	x			x	x
Wib11			x		x				x			x			x
Wib*(b)															
Wib16		x	x	x	x	x	x	x		x		x	x	x	x
Wic3				x	x	x		x	x	x	x		x		x
Wic11					x									x	x
Wic*(a)				x		x									x
Wid*(a)							x								x
Wid*(b)							x		x		x			x	
Wid1	x					x		x	x	x					x
Wid*(c)					x				x			x		x	x
Wid*(d)															
Wid*(e)						x			x		x	x			x
Wii*(a)					x					x	x			x	
Wii2	x			x	x	x		x	x	x	x		x	x	x
Wii3			x			x		x	x		?				x
Wii12	x			x	x	x		x	x	x	x				x
Wii*(a)						x									x
Wii*(b)					x									x	x
Wii*(c)															
Wii*(d)								x		x			x		x
Wii*(e)														x	
Wiiq*(a)															
Wii**(a)															
Wii*(a)														x	
Wii*(b)			x							x				x	
Wii*(a)						x							x	x	x
Wii*(b)									x						
MPI**(a)															
MPI*(a)			x									x		x	
MPI*(b)												x			
MPI*(c)			x							?					
MPI**(a)															
MPI**(b)															
MPI**(c)															
PM**(a)															
Coral															
Carnelian		x			x	x									
Total	13	9	13	7	16	31	10	25	29	29	22	27	13	32	36

Table 4. Temporal Ranges of the Diagnostic St. Eustatius Beads.

Bead code	Site date range	Core dates ¹	Mode	Site sample
Period I				
I Ib *(a)	1717-1860	1722-1752	1738	5
I Ibb *(a)	1640-1836	1700-1740	1700	20
I IIb *(a)	1672-1807	---	---	1
W Ib 4	1660-1894	1700-1775	1730	28
W Ib 16	1672-1910	1720-1780	1735	20
W Ib *(a)	1630-1910	1700-1805	1738	26
W Ic -all	1670-1869	1700-1805	1740	29
W I d1	1660-1900	1700-1775	1735	14
W I d*(a,c,e)	1670-1900	1700-1780	1750	10
W IIb *(a)	1670-1833	1719-1730	1725	2
W IIc , W II **	1650-1833	1700-1760	1730	42
W II f-all	1700-1845	1715-1830	1750	10
W IIIb *(a)	1672-1807	1700-1780	1730	12
W IIIb *(b)	1715-1821	1790-1800	1795	4
Coral	1545-1800	1625-1675	1662	18
Carnelian	1700-1910	1700-1820	1748	5
Period II				
I f , I III f	1680-1910	1805-1860	1830	36
W Ib 11	1700-1910	1715-1885	1860	7
W IIq *(a)	1787-1898	1803-1820	1812	4
W IIIa *(a,b)	1719-1875	1820-1870	1852	5
M PIIa	1803-1911	1825-1865	1845	6
M PII **	post-1825	---	---	0
Period III				
I c *(a)	1834-1930	1870-1915	1900	5
M PI ***(a)	1918-1933	---	1925	2
P M ***(a)	1840-pres.	---	---	0

¹The optimal period of bead utilization based on the relative frequency of sites producing each bead type or variety over time.

Dutch merchants never even set foot (if there is such a place!).

The Period I glass beads excluded from the "Dutch" assemblage were almost certainly produced in Venice. The coral specimens may have been produced in Amsterdam as evidence for such an industry has been found there (personal observation). The carnelian bead most likely originated in Cambay or some other Indian beadmaking center (Francis 1982), al-

though the famous gem-cutting towns of Idar-Oberstein are also a possibility (Trebbin 1985).

The beads that represent Periods II and III were produced in several European beadmaking centers. The wound specimens — W**Ib**11, W**IIq***(a) and W**IIIa***(a,b) — most likely originated in Venice, while the I**c** and M**P** varieties were undoubtedly manufactured in Bohemia (Ross 1989a; 1989b). The drawn-faceted types (I**f**, I**III**f) are known to have been

fabricated in both Venice and Bohemia (Francis 1979a: 11; 1979b: 13). The Prosser-Moulded bead, PM**(a), may also have been made in Bohemia, but France is also a strong possibility (Sprague 1983).

BEAD ACQUISITION

Beads could have come into the hands of the slaves living on St. Eustatius in a number of ways. Beads were probably already in the possession of some slaves at the time of their capture and simply accompanied them to the New World, as seems to have been the case with an Obeah (folk doctor) necklace found at the Newton Cemetery on Barbados (Handler, Lange and Orser 1979:6). It also appears to have been common practice (at least during the late 18th and early 19th centuries) for slave-ship captains to furnish beads to their female captives "for the purpose of affording them some amusement" (Dow 1969: 145, 185; Handler and Lange 1978: 147). "But," adds one 18th-century observer, "this end is generally defeated by the squabbles which are occasioned in consequence of their stealing from each other" (Dow 1969: 145).

Once on a plantation, slaves might receive presents of money, as well as clothing and comestibles, on holidays and other festive occasions and this could have been used to purchase beads and other baubles from local merchants (Lewis 1834: 125, 238, 343). Slaves who were "tolerably industrious" were also able to earn a respectable income selling garden produce, poultry, pigs and even cattle which they grew and bred during their free time (Handler 1974: 35; Lewis 1834: 110, 112, 201-202). Such individuals could easily afford whatever ornaments they wanted.

Freed slaves and those born after the abolition of the plantation system would normally have had to purchase their beads, although some may have been acquired through inheritance.

BEAD USE ON STATIA

Information concerning bead use by the local population is practically non-existent, being restricted to 23 small circular drawn beads found in the neck region of an adolescent or juvenile human burial

of unknown sex or race that was encountered in an unmarked cemetery near the Dutch Reformed Church in Upper Town. The burial may have been interred during the smallpox epidemic of 1776 (Dethlefsen 1982: 78). Of four varieties — IIa7 (3), IIa12 (13), IIa19 (1) and IIa56 (6) — the beads compose just under five linear centimeters when strung. Consequently, it is not clear if they were worn thus as a brief necklet, strung in a necklace with organic components such as thin-walled seeds that have subsequently rotted away, or utilized in some other, altogether different manner.

Fortunately, there is a relative wealth of historical and archaeological data from some of the other Caribbean islands that indicates how beads may have been utilized on Statia during the late 17th through early 19th centuries. Information concerning bead use during the rest of the 19th century and the early 20th century is currently lacking. Among the earliest evidence is a necklace found with an adult burial interred at the Newton Cemetery on Barbados during the latter part of the 17th century. The ornament was composed of 54 drawn and wound beads of medium and large size, as well as a single, very large, oblong-faceted bead of carnelian. The glass beads were mostly blue in color with black, white/clear and decorated (black with a white lattice-work) specimens interspersed (Handler, Lange and Orser 1979: 16, Fig. 2).

A few decades later, Griffith Hughes (1750: 16) observed:

Our Slaves, in their Mirth and Diversions, differ according to the several Customs of so many Nations intermixed: However, all agree in this one universal Custom of adorning their Bodies, by wearing Strings of Beads of various Colours, intermixed sometimes by the richer sort of House Negroes with Pieces of Money. These Beads are in great Numbers twined round their Arms, Necks, and Legs.

When glass beads could not be obtained, the seeds of the "moabite" or "mangrove-beard tree" and Job's Tears were "strung upon silk" to serve as bracelets, while the nut of the "palm-oil tree," "being bored and emptied of its Kernel, is much worn by several Nations of Negroes, by way of Ornament, about their Necks" (Hughes 1750: 111, 193, 250).

Viewing newly arrived slaves at Carlisle Bay, Barbados, in 1796, General William Dyott noted that "the females had all a number of different-coloured glass beads hung round their necks" (Jeffery 1907: 93). At the same location five years later, the ship carrying Lady Nugent, wife of Sir George Nugent, Lieutenant Governor of Jamaica, was "immediately surrounded by boats, with naked men and women covered with beads..." (Cundall 1939: 10). In January of 1816, Matthew G. Lewis (1834: 74) commented that the holiday clothes of both his male and female slaves at Cornwall, Jamaica, "were chiefly white; only that the women were decked out with a profusion of beads and corals, and gold ornaments of all descriptions."

Illustrations depicting slave women at about this time show very large oblate/round beads being worn in bracelets, as well as choker-fashion, usually one strand, occasionally two, at a time (Cundall 1939: Fig. opp. p. 162; Dow 1969: Fig. opp. p. 118). Further investigation should resolve how much of this reflects reality and not the whims of the artist or engraver.

While the statement made by Lady Nugent in 1801 suggests that both men and women adorned themselves with beads, the general impression is that females were the principal users. It will be interesting to see if further research bears this out.

Beads not only served for adornment but were also incorporated into the regalia of Obeah-men, best described as physician-conjurors or folk doctors. One such item in use on Jamaica in 1818 is described by Lewis (1834: 356) as "a string of beads of various sizes, shapes, and colours, arranged in a form peculiar to the performance of the Obeah-man in the Myal dance." An actual example of such a strand was found at the Newton Cemetery, Barbados, in association with burial 72, that of an elderly male who the excavators suspect was an Obeah practitioner during the latter part of the 17th century (Handler, Lange and Orser 1979: 16). Worn as a necklace, the strand comprised 5 fish vertebrae, 7 cowrie shells, 21 dog canines, an oblong octagonal-sectioned carnelian bead, a round light gold drawn bead (IIa17), and three varieties of pentagonal-faceted wound beads: WIIc2 - light gray (9), WIIc4 - pale blue (1) and WIIc12 - bright navy (2) (Handler, Lange and Orser 1979: 16). The investigators believe that the necklace and a num-

ber of the other grave goods found with burial 72 originated in Africa (Handler and Lange 1978: 131).

Observations made by visitors to West Africa during the late 18th and 19th centuries provide additional clues concerning potential bead use on St. Eustatius. Necklaces were a popular form of adornment among the women who wore them in various forms and quantities. At Quappa Ebo in 1795, Joseph Hawkins (1797: 89) noted that "the women wear beads of glass and metal, with little plates, and other figures suspended from their necks in successive strings falling over their breasts."

An unidentified Englishwoman living in Sierra Leone in 1841 was quite taken with the lavish adornments of a local woman:

This woman was a Maroon,... with a passion for ornaments I never saw equalled. A necklace of large rough pieces of coral, another of smaller beads of the same bright substance, one of oval lumps of amber nearly as large as a hen's egg, and sundry strings of variously-coloured glass beads, appeared by turns round the kerchiefless and wrinkled neck, and were exhibited no doubt as a mark of riches (Norton 1849: 32-33).

The ornaments encountered in Dahomey in 1849-50 were summarized as follows by Frederick E. Forbes (1966: 28):

According to rank and wealth, anklets and armlets of all metals, and necklaces of glass, coral, and Popoe beads, are worn by both sexes. The Popoe bead is of glass, about half an inch long, and perforated. It is dug up in a country inland of Popoe, and cannot be imitated: all attempts hitherto have been detected.

At the end of the century, Richard A. Freeman (1898: 396, 399) found that, among women on the Guinea Coast,

Necklaces are universal and their variety is infinite. In the more civilized districts they are generally composed of beads, in the stringing and arrangement of which remarkable taste is often exhibited, and the necklaces so produced are in many cases extremely elegant, especially when the handsome Venetian beads are used. Sometimes the necklace consists of a piece of string on which two or three valuable beads are

strung, or in some cases the string carries a single Aggri bead which is secured by a knot.

Other beaded ornaments encountered by Freeman (1898: 406, 407) included finger rings "produced by threading minute beads on cotton" which were especially favored by children; ear ornaments composed of "strings of beads;" and leg ornaments consisting of "a string carrying a single bead" which "encircles one leg, usually the right, just below the knee."

Hair was also adorned with beads by some African tribes as recorded by T.E. Bowdich (1819: 438) in Gabon:

The whiskers of the men, and the side locks both of them and the women, hang down in narrow braids, sometimes below their shoulders, the ends commonly tipped with small beads, and the front locks are generally braided to project like horns.

At Sierra Leone in 1786, John Matthews (1788: 107-108) found that girls wore "a belt or girdle of beads, or loose strings of them tied round their waist." However, as these items were worn in combination with a *tuntungeé*, a sort of loincloth that was their sole covering, it is unlikely that they would have been utilised in the Caribbean where the slaves were usually made to wear European-style garments.

Beads also served to decorate various objects such as drums (Hawkins 1797: 100) and gourd rattles (Bowdich 1819: 364). It is not known if objects continued to be decorated in this way once the Africans arrived in the Caribbean.

The beads that were excavated on St. Eustatius were not all necessarily used or intended for use by slaves and Free Blacks. Members of the minority white population probably also utilized them to some degree. Examples of potential applications appear in the diary kept by Lady Nugent. On February 1, 1802, she mentions "stringing beads, which is now one of my occupations" (Cundall 1939: 76). Unfortunately, her ladyship does not elaborate on this activity, merely adding that she occasionally set visiting ladies and gentlemen to this task when unable or uninspired to entertain guests (Cundall 1936: 76, 87).

Lady Nugent's young children apparently wore beads native-fashion while on Jamaica as "their ankles, arms, and necks, were covered with beads" upon

their arrival in England in September of 1805 (Cundall 1939: 321). Such use may have been prompted by a Black nanny who employed beads in the same way.

CONCLUSION

The beads excavated on St. Eustatius provide insight concerning the beads imported into the Caribbean during the 18th through early 20th centuries. Most of these were probably supplied by the Dutch and it will be interesting to see how the Statia assemblage compares to those from contemporary Dutch colonies in other parts of the world.

Information concerning bead use on Statia is very limited. Excavation of the unmarked cemetery near the Dutch Reformed Church would help to rectify this situation.

Precise archaeological dating of the Statian beads is presently lacking because most of the specimens were found in mixed 18th- and 19th-century contexts. Careful analysis of the ceramics and other associated artifacts from the different bead-producing layers should permit the refinement of the temporal chart presented in Table 4. It is also hoped that it will be possible to excavate more undisturbed 18th-century sites, such as the Waterfort with its "slave house," to further refine the Statian bead time chart.

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REFERENCES CITED

Attema, Ypie

1976 *St. Eustatius: A Short History of the Island and its Monuments*. De Walburg Pers, Zutphen, Holland.

Barka, Norman F.

1985 Archaeology of St. Eustatius, Netherlands Antilles: An Interim Report on the 1981-1984 Seasons. *St. Eustatius Archaeological Research Series 1*. Department of Anthropology, College of William and Mary, Williamsburg, VA.

1986 Archaeology of the Government Guest House: An Interim Report. *St. Eustatius Archaeological Research Series 2*. Department of Anthropology, College of William and Mary, Williamsburg, VA.

1987 Archaeological Investigation of the Princess Estate, St. Eustatius, Netherlands Antilles: An Interim Report on the Supposed Jewish Mikve. *St. Eustatius Archaeological Research Series 3*. Department of Anthropology, College of William and Mary, Williamsburg, VA.

1988 Archaeology of the Jewish Synagogue Honen Dalim, St. Eustatius, Netherlands Antilles, An Interim Report. *St. Eustatius Archaeological Research Series 4*. Department of Anthropology, College of William and Mary, Williamsburg, VA.

1989 A Progress Report on the Structural Aspects of the Government Guest House Complex, St. Eustatius, Netherlands Antilles. *St. Eustatius Archaeological Research Series 5*. Department of Anthropology, College of William and Mary, Williamsburg, VA.

Bowdich, T.E.

1819 *Mission from Cape Coast Castle to Ashantee*. John Murray, London.

Brain, Jeffrey P.

1979 Tunica Treasure. *Harvard University, Papers of the Peabody Museum of Archaeology and Ethnology 71*.

Container Corporation of America

1958 *Color Harmony Manual*, 4th ed. Chicago.

Cundall, Frank (ed.)

1939 *Lady Nugent's Journal*. The West India Committee, London.

Deagan, Kathleen A.

1974 Sex, Status and Role in the *Mestizaje* of Spanish Colonial Florida. Unpublished Ph.D. dissertation. University of Florida, Gainesville.

1987 *Artifacts of the Spanish Colonies of Florida and the Caribbean. Vol. 1: Ceramics, Glassware, and Beads*. Smithsonian Institution Press, Washington.

Dethlefsen, Edwin

1982 The Historical Archaeology of St. Eustatius. *Journal of New World Archaeology 5*(2):73-86.

Dow, George F.

1969 *Slave Ships and Slaving*. Kennikat Press, Port Washington, N.Y.

Emmanuel, Isaac S. and Suzanne A. Emmanuel

1970 *History of the Jews of the Netherlands Antilles*. American Jewish Archives, Cincinnati.

Forbes, Frederick E.

1966 *Dahomey and the Dahomans*. Vol. 1. Frank Cass, London.

France, Linda G.

1984 Sugar Manufacturing in the West Indies: A Study of Innovation and Variation. Unpublished Master's thesis. Department of Anthropology, College of William and Mary, Williamsburg, VA.

Francis, Peter, Jr.

1979a The Czech Bead Story. *World of Beads Monograph Series 2*.

1979b The Story of Venetian Beads. *World of Beads Monograph Series 1*.

1982 Indian Agate Beads. *World of Beads Monograph Series 6*.

Freeman, Richard A.

1898 *Travels and Life in Ashanti and Jaman*. Archibald Constable, Westminster.

Good, Mary Elizabeth

1972 Guebert Site: An 18th Century, Historic Kaskaskia Indian Village in Randolph County, Illinois. *Central States Archaeological Societies, Memoir 2*.

- 1976 Glass Beads from the First Hermitage. In "An Archaeological and Historical Assessment of the First Hermitage," edited by Samuel D. Smith. *Tennessee Department of Conservation, Division of Archaeology, Research Series 2*:237-248.
- Handler, Jerome S.**
1974 *The Unappropriated People: Freedom in the Slave Society of Barbados*. Johns Hopkins University Press, Baltimore.
- Handler, Jerome S. and Frederick W. Lange**
1978 *Plantation Slavery in Barbados: An Archaeological and Historical Investigation*. Harvard University Press, Cambridge.
- Handler, J.S., F.W. Lange, and C.E. Orser**
1979 Carnelian Beads in Necklaces from a Slave Cemetery in Barbados, West Indies. *Ornament 4*(2):15-18.
- Hansen, Keld**
1979 *Perler i Grønland*. Nationalmuseet, Copenhagen.
- Hartog, J.**
1976 *History of St. Eustatius*. VAD, Aruba.
- Hawkins, Joseph**
1797 *A History of a Voyage to the Coast of Africa*. Luther Pratt, Troy.
- Hughes, Griffith**
1750 *The Natural History of Barbados*. For the author, London. Reprinted 1972 by Arno Press, New York.
- Jeffery, Reginald W. (ed.)**
1907 *Dyott's Diary, 1781-1845*. Vol. 1. Archibald Constable, London.
- Kandle, Patricia L.**
1985 St. Eustatius: Acculturation in a Dutch Caribbean Colony. Unpublished Master's thesis. Department of Anthropology, College of William and Mary, Williamsburg, VA.
- Karklins, Karlis**
1983 Dutch Trade Beads in North America. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records 16*:111-126.
1985 Guide to the Description and Classification of Glass Beads. In *Glass Beads*, 2nd ed., pp. 85-118. Parks Canada, Studies in Archaeology, Architecture and History, Ottawa.
1988 Inventory of the Beads Recovered from the New Montpelier Village Site, Jamaica. Unpublished manuscript. Department of History, The University of the West Indies, Kingston, Jamaica.
- n.d. Eighteenth-Century Glass Trade Beads from Bunce Island, Sierra Leone, West Africa. Manuscript in preparation.
- Karklins, Karlis and Roderick Sprague**
1980 *A Bibliography of Glass Trade Beads in North America*. South Fork Press, Moscow, Idaho.
1987 *A Bibliography of Glass Trade Beads in North America -- First Supplement*. Promontory Press, Ottawa.
- Kent, Barry C.**
1984 Susquehanna's Indians. *Pennsylvania Historical and Museum Commission, Anthropological Series 6*.
- Kidd, Kenneth E. and Martha A. Kidd.**
1970 A Classification System for Glass Beads for the Use of Field Archaeologists. *Canadian Historic Sites: Occasional Papers in Archaeology and History 1*:45-89.
- Lewis, Matthew G.**
1834 *Journal of a West India Proprietor*. John Murray, London.
- Martinez, Carlos and Steven Ruple**
1972 Thirty-five Beads from Colonial to Recent St. Augustine, Florida. Unpublished manuscript. Department of Anthropology, University of Florida, Gainesville.
- Mason, Ronald J.**
1986 Rock Island: Historical Indian Archaeology in the Northern Lake Michigan Basin. *Midcontinental Journal of Archaeology Special Papers 6*.
- Matthews, John**
1788 *A Voyage to the River Sierra-Leone, on the Coast of Africa*. B. White, London.
- Meggers, Betty J. and Clifford Evans**
1957 Archeological Investigations at the Mouth of the Amazon. *Bureau of American Ethnology, Bulletin 167*.
- Munsell Color**
1976 *Munsell Book of Color, Glossy Finish Collection*. Macbeth Division, Kollmorgen Corporation, Baltimore.
- Norton, The Hon. Mrs.**
1849 *A Residence at Sierra Leone*. John Murray, London.
- Quimby, George I.**
1966 *Indian Culture and European Trade Goods*. University of Wisconsin Press, Madison.
- Ross, Lester A.**
1976 Fort Vancouver, 1829-1860: A Historical Archeological Investigation of the Goods Imported and

Manufactured by the Hudson's Bay Company. Unpublished manuscript. Fort Vancouver National Historic Site, Vancouver, Washington.

- 1989a Bohemian Faceted, Spherical, Mould-Pressed Glass Beads: Temporal Markers for 19th- and 20th-Century North American Archaeological Sites. Submitted for publication.
- 1989b Bohemian Glass Beadmaking: Translation and Discussion of a 1913 German Technical Article. *Beads* 1 (this issue).

Schaw, Janet

- 1921 *Journal of a Lady of Quality, Being the Narrative of a Journey from Scotland to the West Indies, North Carolina, and Portugal, in the Years 1774 to 1776*. Yale University Press, New Haven.

Sleen, W.G.N. van der

- 1967 *A Handbook on Beads*. Musée du Verre, Liège.

Sprague, Roderick

- 1983 Tile Bead Manufacturing. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records* 16:167-172.

Stone, Lyle M.

- 1974 Fort Michilimackinac, 1715-1781: An Archaeological Perspective on the Revolutionary Frontier. *Pub-*

lications of the Museum, Michigan State University, Anthropological Series 2.

Trebbin, Cornelius

- 1985 Achate, geschliffen in Idar-Oberstein - Amulette, Schmuck und Zahlungsmittel in Afrika. *Museum Idar-Oberstein Publication* 6.

Tuchman, Barbara

- 1988 *The First Salute*. Alfred Knopf, New York.

Young, Debra

- 1975 The Study of 52 Beads at SA-7-4, St. Augustine, Florida. Unpublished manuscript. Historic St. Augustine Preservation Board, St. Augustine.

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COLOR PLATE CAPTIONS

- Pl. IA. *Diakhité*: Beads of stone, shell and metal. **R.1**: rock crystal (quartz). **R.2-3**: carnelian. **R.4**: carnelian and amber. **R.5**: shell. **R.6**: metal (all *Diakhité* photos by H. Opper).
- Pl. IB. *Diakhité*: Glass beads. **R.1-2**: drawn chevron. **R.3-4**: decorated wound. **R.5**: decorated drawn and wound. **R.6**: faceted and striped drawn. **R.7**: multi-faceted drawn and decorated wound. **R.8**: ruby-colored wound. **R.9**: assorted wound and drawn. **R.10**: drawn multi-layered. **R.11**: drawn "seed" beads.
- Pl. IC. *Diakhité*: Glass beads and metal ornaments. **R.1-5**: assorted monochrome wound beads. **R.6**: metal ornaments.
- Pl. ID. *Fustat (Old Cairo)*: Medieval and modern beads donated to the Islamic Museum, Cairo, around 1920 by Fouad, the penultimate monarch of Egypt and father of Farouk. The large bead at the upper left is stone; the other beads at the top are medieval glass. The first strand is of Fustat Fused Rod beads, with green jasper cornerless cubes and a heart pendant in the center. The second strand is composed mostly of Venetian lamp beads, but the mosaic beads are Early Islamic. The third strand is mostly Early Islamic, but the translucent red beads are Venetian (photo by P. Francis).
- Pl. IIA. *Fustat (Old Cairo)*: Drawn polychrome and mosaic wasters in the Islamic Museum, donated by Dr. Fouqi. Two fused mosaic cane beads are in the center (photo by P. Francis).
- Pl. IIB. *Elmina*: Diagnostic glass beads: **R.1-2**; **R.3**, #1,2: 19th-century wound beads. **R.3**, #3-8: 19th-century mandrel-pressed beads. **R.4**, #1,2: 19th-century moulded beads. **R.4**, #3-7: pre-19th-century bead varieties. **R.5**: imported beads and glass shards modified locally. **R.6**, #1-4: beads manufactured from glass chips. **R.6**, #5-7; **R.7**, #1,2: powdered-glass beads with glass-chip and trailed-glass decoration. **R.7**, #3,4: 19th-century non-European wound beads. **R.7**, #5-8: 20th-century powdered-glass beads (this and the following photos by R. Chan and K. Karklins).
- Pl. IIC. *St. Eustatius*: Drawn beads. **R.1**: 1, Ia2; 2, Ia*(a); 3, Ia19; 4, IIA6. **R.2**: 1-2, IIA7; 3-4, IIA*(a); 5, IIA12; 6, IIA19; 7, IIA27; 8, IIA*(b); 9, IIA*(e); 10, IIA*(d). **R.3**: 1, IIA*(c); 2, IIA41; 3, IIA*(f); 4, IIA55; 5, IIA56; 6, IIB*(a). **R.4**: 1, IIBb*(a); 2, IIIa1; 3, IIIa3; 4, IIB*(a); 5, IVA5.
- Pl. IIIA. *St. Eustatius*: Drawn faceted beads. **R.1**: 1-2, Ic*(a); 3-4, If*(a); 5, If1; 6, If2; 7, If*(c). **R.2**: 1, If*(d); 2, If*(f); 3, If*(g); 4, If*(h). **R.3**: 1, If*(b); 2, If*(e); 3-4, IIIf2; 5-6, IIIf*(c). **R.4**: 1-2, IIIf*(b); 3, IIIf*(d); 4, IIf*(a); 5, IIf*(b).
- Pl. IIIB. *St. Eustatius*: Wound glass beads of simple shapes. **R.1**: 1, WIa1; 2, WIb*(a); 3, WIb1; 4, WIb4; 5-6, WIb11. **R.2**: 1-3, WIb16; 4, WIC3. **R.3**: 1, WIC11; 2-3, WIC*(a). **R.4**: 1, WId*(a); 2, WId*(d); 3, WId*(b); 4, WId1; 5, WId*(c); 6-7, WId*(e).
- Pl. IIIC. *St. Eustatius*: Wound glass beads with complex shapes, multiple layers or decorated surfaces. **R.1**: 1-2, WIIB*(a); 3, WIIC2; 4, WIIC3; 5, WIIC12. **R.2**: 1-4, WIIf*(d). **R.3**: 1, WIIf*(c); 2, WIIf*(e); 3, WIIf*(a); 4, WIIf*(a); 5, WIIf*(a). **R.4**: 1, WIIf*(b); 2, WIIf*(b); 3-4, WIIf*(a).
- Pl. IIID. *St. Eustatius*: Mould-pressed and Prosser-moulded glass beads, and beads of coral and carnelian. **R.1**: 1, MPII*(a); 2, MPIIa*(a); 3, MPIIa*(b); 4, MPIIa*(c). **R.2**: 1, MPII*(a); 2, MPII*(b); 3, MPII*(c). **R.3**: 1, PM*(a); 2-3, coral; 4, carnelian.



Plate IIC. *St. Eustatius*: Drawn beads.



Plate IIIA. *St. Eustatius*: Drawn faceted beads. **R.1:** 1-2, Ic*(a); 3-4, If*(a); 5, If1; 6, If2; 7, If*(c). **R.2:** 1, If*(d); 2, If*(f); 3, If*(g); 4, If*(h). **R.3:** 1, If*(b); 2, If*(e); 3-4, IIIf2; 5-6, IIIf*(c). **R.4:** 1-2, IIIf*(b); 3, IIIf*(d); 4, IIIf*(a); 5, IIIf*(b).

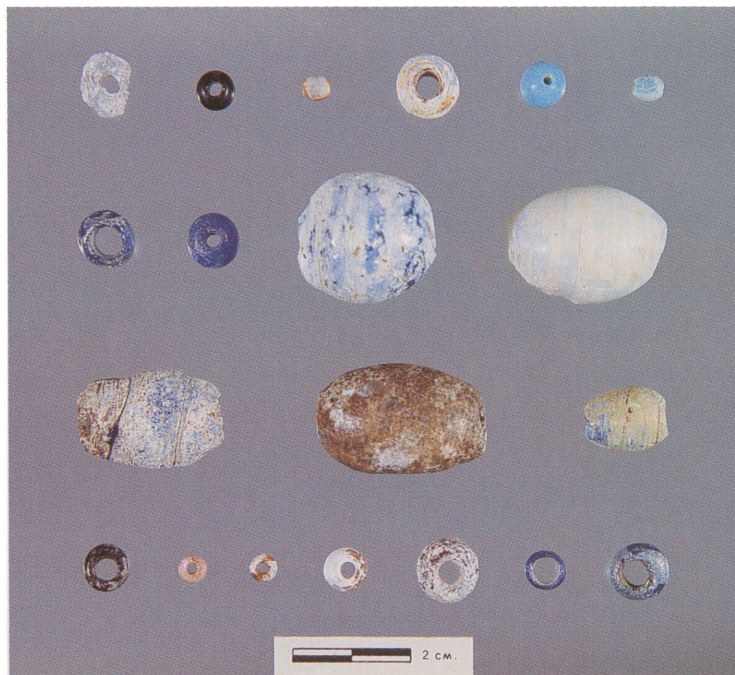


Plate IIIB. *St. Eustatius*: Wound glass beads of simple shapes. **R.1:** 1, WIa1; 2, WIb*(a); 3, WIb1; 4, WIb4; 5-6, WIb11. **R.2:** 1-3, WIb16; 4, WId3. **R.3:** 1, WId11; 2-3, WId*(a). **R.4:** 1, WId*(a); 2, WId*(d); 3, WId*(b); 4, WId1; 5, WId*(c); 6-7, WId*(e).

Plate IIIC. *St. Eustatius*: Wound glass beads with complex shapes, multiple layers or decorated surfaces. **R.1:** 1-2, WIIf*(a); 3, WIIf2; 4, WIIf3; 5, WIIf12. **R.2:** 1-4, WIIf*(d). **R.3:** 1, WIIf*(c); 2, WIIf*(e); 3, WIIf*(a); 4, WIIf*(a); 5, WIIf*(a). **R.4:** 1, WIIf*(b); 2, WIIf*(b); 3-4, WIIf*(a).

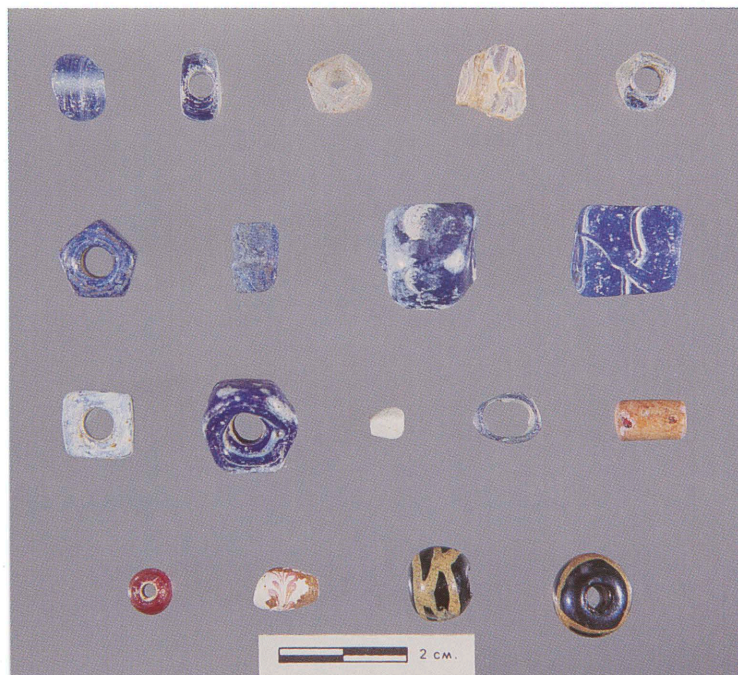


Plate IIID. *St. Eustatius*: Mould-pressed and Prosser-moulded glass beads, and beads of coral and carnelian. **R.1:** 1, MPII*(a); 2, MPII*(a); 3, MPII*(b); 4, MPII*(c). **R.2:** 1, MPII*(a); 2, MPII*(b); 3, MPII*(c). **R.3:** 1, PM*(a); 2-3, coral; 4, carnelian.

