GLASS TRADE BEADS FROM AN ELMINA SHIPWRECK:
MORE THAN PRETTY TRINKETS

by

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B.A., Indiana University, 2003

A thesis submitted to the Department of Anthropology
College of Arts and Sciences
The University of West Florida
In partial fulfillment of the requirements for the degree of
Master of Arts

2009
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ACKNOWLEDGMENTS

I am indebted to several people who have helped me with the journey that developed into the thesis presented here. Greg Cook was kind enough to include me in his endeavors in Ghana, where we recovered the artifacts included in this study. The faculty at The Bead Museum in Arizona was particularly helpful by allowing me access to the museum’s library and to the late Peter Francis Jr.’s personal bead research collection. In addition to my patient and facilitating committee members, several bead researchers added immensely to my investigations. Christopher DeCorse, Jamey Allen, Cheryl LaRoche, and Susan Gott have all provided me with words of encouragement and have pointed my studies in the right direction. Karlis Karklins, especially, provided me with invaluable guidance in my work, consulting me on typologies and bead manufacture. Finally, to my family, their encouragement and constant support over the years helped me over all else.
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ABSTRACT

GLASS TRADE BEADS FROM AN ELMINA SHIPWRECK:
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Lisa Eileen Hopwood

Despite the increase in West African archaeology over the past several decades, little is known about West African underwater archaeology. This thesis contributes to the new field by analyzing nineteenth-century glass beads found on a shipwreck in Ghanaian waters. The bead assemblage consists mainly of monochrome seed beads. Several analytical approaches helped uncover data about these beads including a descriptive database, comparative and ethnohistorical research, and analysis of spatial patterns and anomalies in the wreck site. The ethnographic and archaeological analysis revealed that part of the bead cargo was likely destined for the historic West African bead industry as raw material for new beads.
CHAPTER I

INTRODUCTION

This thesis analyzes the glass bead assemblage from a shipwreck off the coast of West Africa that consists mostly of monochrome seed beads. Glass beads are ubiquitous at most historic sites, a circumstance that has led to a problem in the field of archaeology. Researchers often forego research on temporally non-diagnostic beads, especially monochrome seed beads. This thesis proposes that bead assemblages can provide important information when examined in their spatial and cultural contexts. The author uses various analytical tools to research the beads including bead classification, spatial analysis, and document any research. This thesis presents several research tactics, the problems that arose with each, and the conclusions attained from using these methods.

The bead assemblage was collected from a shipwreck located near the town of Elmina, Ghana (Figure 1). Archaeologists from Syracuse University, assisted by Panamerican Consultants Inc., originally recorded the Elmina shipwreck site in 2003 when they conducted the first systematic survey to locate potential cultural remains underwater. In 2005, Syracuse University, in cooperation with the University of West Florida (UWF), received funding from the National Geographic Society and permission from the Ghanaian government and the Ghana Museum and Monuments Board (GMMB) to investigate the Elmina shipwreck site. UWF and Syracuse archaeologists, including several graduate students, recorded visible sections of the wreck and recovered diagnostic artifacts from the surface of the site. Investigators are still working to discover the
Figure 1. Project area location in Ghana.
nationality and age of the shipwreck, but the ceramic artifacts point to a British or Dutch merchantman that sunk between ca. 1830 and 1850 (Cook et al. 2006).

Artifacts from this site consist of several sizes of metal bowls, basins, and other vessels, piles of brass manillas (bracelets that are best known for their use as trade items for slaves), rolls of lead sheathing, various ceramics, glass bottles, and thousands of glass trade beads. Sixteen different types of glass beads comprise the bead assemblage from this site and represent the only adornments found during archaeological investigations of 2005. European accounts describe the use of glass beads, as well as other types of trade goods, as payments for services, mediums for exchange, and gifts to local dignitaries. Beads are a distinct form of material culture that directly and indirectly reflect multiple cultural elements including art, religion, status, and traditional beliefs.

West African cultures have often used glass beads as adornment to symbolize status or tribal and cultural affiliation. Many of the cultures also use beads for various rituals, especially rituals regarding birth, death, and rites of passage for girls. Travelers to West Africa have recorded bead uses as occurring from the Gulf of Guinea to Senegambia. However, this thesis focuses on the Ghanaian coastline, historically known as the Gold Coast, along with a few other areas in West Africa that have links to Ghana’s historic bead market. Archaeologists have come to understand that the West African market for beads predates maritime trade and that many areas had a well-established domestic bead trade. This thesis also presents ethnohistorical research that helped the author find connections to monochrome beads, information that is usually lacking for non-descript beads.
Even though certain beads have been somewhat neglected in the interpretive aspect of archaeological research, there has been a recent push by bead researchers to emphasize the importance of beads to the rest of the archaeological community. Many archaeologists believe that beads can serve as chronological indicators and landmarks much in the same way as ceramic typologies have in the past. No longer can beads be thought of as representing only luxury items of the social elite. Rather, beads can provide insight into archaeological and cultural studies that reflect the traditions of the people using the beads.

For several decades, bead researchers have been trying to create bead typologies, such as the Kidd and Kidd typology (1983) and Karklins’ bead guide (1985) that allow archaeologists to identify and compare bead types more efficiently. The author explores such classification systems, including an attribute-level database system created by DeCorse et al. (2003), in an effort to organize the Elmina shipwreck bead assemblage. Unfortunately, current classification systems still have problems that hinder research and in an attempt to circumvent such problems, this thesis combines bead description techniques.

Using a relational database modified from DeCorse et al. the author attempts to uncover bead attributes common to this particular bead assemblage and explore spatial patterns within the distribution of the beads on the Elmina shipwreck. Eventually, the purpose of using a database is to organize beads in such a way that archaeologists can find regional relationships involving bead color, size, shape, and design. Descriptive details about beads could also help researchers to uncover cross-cultural information involving dates and trade routes, supplementing the current archaeological record.
Chapter One introduces the research problem and different sections of the thesis. Chapter Two provides the historical background necessary to place the Elmina shipwreck into a historical context. It is important to present a brief overview of European activities on the Gold Coast in the nineteenth century in order to establish a historical setting for this site. European endeavors in maritime trade changed the world’s cultural and economic relationships, and this chapter explores relationships between coastal Africans and various European groups. More specifically, this chapter focuses on nineteenth century relationships in order to relate events that would have directly influenced both market traders and buyers at the time of the Elmina wreck. Chapter Two also provides information on previous archaeological work, both terrestrial and underwater, in the area.

Chapter Three covers the archaeological methods used to find the Elmina shipwreck site in 2003 and the recovery efforts of 2005. This chapter also explains how the author organized the Elmina Bead Database, how the database was developed, potential uses for this site, and its significance for the archaeological field. Chapter Four discusses the Elmina Shipwreck and the bead assemblage in detail, describing bead attributes, and the spatial analysis of the bead assemblage.

Chapter Five describes other bead assemblages found in both terrestrial and shipwreck sites. It compares, as accurately as possible, these bead assemblages to the collection found on the Elmina shipwreck site. The chapter then explores why the comparisons are incomplete in order to demonstrate the necessity for better universal classification systems and terminology. It also discusses the difficulties in comparing sites cross-culturally.
Chapter Six discusses the cultural importance of the bead trade in West Africa and the possible purpose of the beads from the Elmina wreck. In general, West Africans have traditionally held glass beads in high esteem and many individuals from cultures along the Gold Coast have traditionally believed these “precious” beads to have supernatural powers (Gott 2002). Chapter Four describes the various types of precious beads and how they led to the creation of the Gold Coast bead market and the West African bead industry. It also explores the uses of glass bead imports, including alterations and reworking the glass materials to make new beads. The chapter also investigates the notion that Europeans geared their glass bead making to supply the profitable market.

Chapter Seven discusses the author’s interpretations and the significance attributed to the Elmina shipwreck bead assemblage. The chapter relates the author’s overall challenges from investigating non-descript beads and reviews the possible solutions. It also discusses the idea of style and how it is important in archaeological interpretations. The chapter explores how the interpretive potential for bead assemblages goes much further than looking at individual beads alone, which reveals only limited information, and how holistic approaches help archaeologists gather more data. The author gained insight through research of the ethnographic traditions and customs of coastal Ghanaians, which provided some explanation and context as to how locals might have historically used the beads recovered from the Elmina shipwreck.

Chapter Eight presents the thesis conclusions. This study was not able to overcome all of the obstacles associated with comparing bead types, but it did comply with newer methodologies and could help researchers to enhance bead analysis. The
chapter also readdresses the importance of analyzing non-descript beads as well as the “fancy” beads. The holistic approach for beads is something not yet realized in all archaeological circles, but this thesis renews the call for better bead research strategies.

The author focuses on improving bead dating techniques and typologies, and discusses efforts that can improve these research tools and can make bead research more productive. These chapters will show how glass beads, as a distinct form of material culture, were an important part of the Atlantic trade system and reflect multiple cultural elements. This thesis also demonstrates how glass trade beads from the Elmina shipwreck can provide insight into global nineteenth-century trade and the dynamic exchange made evident between Europeans and West Africans.
CHAPTER II

THE HISTORY OF ELMINA, GHANA AND GOLD COAST TRADE WITH EUROPEANS

The Elmina shipwreck is located approximately 1.5 miles off the coast of Elmina, Ghana (Cook and Spiers 2004). Therefore, this thesis focuses on the history of Elmina, the people who lived there, and the regional cultural influences. The Elmina shipwreck occurred in the mid-nineteenth century, likely between the 1830s and the 1850s. Chapter Two provides an overview of the Gold Coast’s contact period (late 1400s to late 1800s), focusing particularly on the nineteenth century activities to understand the historical context surrounding the Elmina shipwreck. The author examines European trade with both the coastal peoples of Ghana and the hinterland tribes. Many cultural groups along the Gold Coast had early maritime trade connections with Europeans. All parties involved in the maritime trade often fought to gain the most direct trade access as well as the advantages in power that came with such a position.

The History of Elmina

Historians describe how the lure for adventure and the tales of gold enticed early explorers to West Africa. In the mid 1400s, the Portuguese explorer Antão Gonçalves returned to Lisbon from a voyage to the Guinea Coast with tales of what he called the “River of Gold” (Vogt 1979:5). He brought with him enslaved Africans and the first gold dust from African explorations. Later, King Alfonso V bestowed Fernão Gomes with the
title Da Mina for discovering the wealthy Mina region (Blake 1969:28). Between 1463 and 1481, the Portuguese explored much of West Africa’s coastlines, and in 1470, “Joao de Santarem and Pedro Escobar . . . touched down at a town on the Gold Coast, where they obtained such a quantity of gold that they named it La Mina (Elmina)” (Ellis 1969:16-17 [1893]). The Gold Coast traditionally refers to the approximately 250 miles of coast between the Tano River and the Volta River (Feinburg 1989).

Elmina was the first location in sub-Saharan Africa with a fortified European trade post. Portugal commissioned Diogo d’Azambuja to build this fort in 1482 and named it “São Jorge da Mina,” or St. George of the Mine (now Elmina Castle). The Portuguese built the fort to help them secure a trade in gold, house their trade commodities, and deter interlopers, particularly from the Spanish Castilian fleets (Hair 1994:1, 5; Blake 1969:98). The Spanish interlopers had already traded at the town as early as 1477 and knew that the goods in demand on the coast included conch shells from the Canaries, large quantities of cloth, brass basins, manillas, and glass beads (Vogt 1979:14). The Portuguese built another fort along the Gold Coast at Axim in 1508 in order to continue trading, strengthen their armed forces against interlopers, and increase their political influence along the coast. King John II used the gold revenues from Elmina to continue these ventures and improve Guinea trade (Davies 1967:312).

Early explorers had also raided villages for slaves, causing hostilities against European ships attempting to explore more of the coast. A. B. Ellis claims that the chief of Elmina was originally disinclined to allow the Portuguese to build a settlement because of previous bad conduct (and a superstitious belief that the Portuguese did not have their own country and thus roamed the seas on their ships). Eventually, the chief
conceded after much encouragement and many trade promises and allowed the
Portuguese to build their settlement (Ellis 1969 [1893]; Vogt 1979). The Portuguese built
Elmina Castle on a promontory with the Atlantic on one side and the Benya River on the
other (Anquandah 1999:52; Hair 1994:17; Lawrence 1969). The river provided a safe
passageway inland that allowed the Portuguese to have a prosperous trade network during
the fifteenth and sixteenth centuries (DeCorse 2001:21).

Early enterprises found an already established trade in gold, which likely started
through the northern Saharan trade routes. The northern areas used gold coins, and the
coastal Akan regions used Islamic gold weights, which provided evidence of the gold
connection to the north (da Mota and Hair 1988). Historians note early documentation
that states that Gold Coast locals, especially the elites, used gold as adornment. The area
produced about one ton of gold annually for both the northern trade and for the
Europeans (da Mota and Hair 1988:27). Coastal groups mined the gold in the interior
regions or panned from the local streams and rivers for the alluvial form. Europeans
tapped into this trade and bought gold in raw forms, such as gold dust or nuggets, or as
worked pieces (i.e. jewelry). West Africans also mined copper and iron, but gold was
more abundant. Therefore, they traded the excess gold for more domestically useful
metals such as brass and iron that were not as plentiful in the region (Hair 1994:2-3).

*The Portuguese at Elmina.* Trade was extremely profitable for the Portuguese for
their first fifty years on the coast, and good fortune resulted from several factors. First,
they acquired a Papal bull, a charter signed by Pope Nicholas V, which gave them a
monopoly over the Gold Coast until the mid 1500s (Vogt 1979:10; Blake 1969:20, 67).
Second, the Portuguese were able to fend off other illicit traders, attacking them when they landed to trade. For instance, an attack on a Spanish ship left shipmate Eustache de la Fosse to labor in Elmina before the Portuguese built their fort. De la Fosse later documented the construction of the fort, which is where historians get most of the early details about Elmina Castle (Hair 1994:3). Third, when it came to European trade goods, all of the countries had similar sources; thus, new traders could not hold a monopoly on any specific imported good (da Mota and Hair 1988:27). Lastly, the Portuguese intimidated locals, who in turn traded less frequently with other Europeans for fear of punishment. Vogt explains that small parties of troops conducted “reprisal raids” against villagers for trading with interlopers (1979:109).

In 1486, King John II gave Elmina Castle the privileges and protection afforded to regular cities to keep the Gold Coast trade monopoly growing. Not long after, he created the Guinea Company of Portuguese merchants who had acquired written permission for exclusive trade in West Africa (Ellis 1969:25 [1893]). The Portuguese imported many items including cloths and linens from Morocco, and glass beads and metals from northern Europe (see Alpern 1995 for a detailed list). The most popular metalwares were manillas (brass bracelets), brasswares, and iron bars (da Mota and Hair 1988:27). Vogt explains there were five categories of goods that locals considered basic trade goods during almost all exchanges, and they would stop a trade transaction if even one of these items were missing. The categories were cloth, metal hardware, shells (cowries), beads, and wine (Vogt 1979:66-67; Thornton 1992:45; Blake 1969:45). Eventually, hundreds of different goods came on each ship, and the diversity of the goods increased throughout the contact era (Alpern 1995:6; Daaku 1970:38). Europeans traded the goods in Elmina

By the late 1530s, the Portuguese needed armed galleon guards to protect their trade ships from English and French interlopers (Vogt 1979:96; Blake 1969:78). After the 1540s, the French made a major push to trade along the Gold Coast for about twenty-three years and were a bigger threat than the English at the time (Blake 1969:106). Eventually, the new adventurers were able to impair Portuguese trade by offering wares at cheaper rates (da Mota and Hair 1988; Vogt 1979:139). The Portuguese repeatedly tried to stop the incursions by punishing locals caught trading with other Europeans and by destroying their towns and villages. They also sank many English and French ships, and condemned the crews to lives as galley slaves. The Portuguese even paid locals to kill other European traders by offering “a reward of one hundred crowns . . . for every English or French head” (Ellis 1969:36 [1893]). Such tactics were common among all of the Europeans, and traders continued to use such tactics throughout the battle for West African trade.

Eventually, the price of gold in West Africa dropped when the Spaniards discovered more gold in Mexico, in the early sixteenth century. The Portuguese progressively imported more enslaved Africans from Benin to Elmina to meet the demands for labor in the emerging American gold mines and plantations (da Mota and Hair 1988:30; DeCorse 2001:10). West African gold was still desired by European traders even after the discovery of new gold mines in the Americas, but it could not compete with the Atlantic slave trade, which came to dominate European trade on the Gold Coast from around 1650 to 1850. The slave trade reached its zenith in the late
eighteenth century, transporting 12 to 15.4 million Africans to the Americas (Lovejoy 1989; Inikori 1976). The fall in gold prices, along with an increase in war spending, put the Portuguese in a weakened political position, because of this weakened state, other European countries were quick to take advantage of the Portuguese’s situation.

*The Dutch Invasion.* By 1595, the Dutch had begun to make trading voyages to West Africa, and they surpassed their English and French competitors by 1600 (Vogt 1979:145). One Dutch man, Bernard Erickson, reported the richness of the area to Holland after his successful voyage in 1595. Ventures such as Erickson’s initiated a time of regular Dutch trade to West Africa. One difference between the English and Dutch during these early times is that Gold Coast residents saw the Dutch as more dependable because the Dutch consistently resided in their colonial settlements and politically allied themselves with local groups. The English, on the other hand, often made weak alliances and would then leave the local people to deal with volatile situations on their own (Ellis 1969 [1893]). The Dutch had another especially useful advantage that eventually helped them gain control of Elmina; they came to control many sources of cloth and metal goods, which were the commodities most often demanded along the Gold Coast (Vogt 1979:146). In the 1680s, the Dutch even enjoyed a period where local demand for Dutch guns “forced the English to import guns from Holland, but by 1700 it was the English guns that were readily sold” (Daaku 1970:38).

A change in Portuguese power back in Europe soon altered Elmina’s political influence. Spain overtook Portugal in 1581 and immediately reduced the Portuguese military force, directly affecting Elmina’s relief squadrons. Spain’s concerns were in the
New World, and this focus left the African colonies in a state of neglect. The upkeep of the garrisons became too expensive, and only a few Portuguese ships sailed to Elmina each year (Vogt 1979:127, 130). During which time, the Dutch built their first trading post in 1599 at Mori, an advancement that opened up the way for more fortifications since the locals knew the Dutch would not abandon their trade lodge to the hostile Portuguese. In 1606, the Dutch attempted their first march to both Elmina and Axim with over six hundred men, believing that dwindling activities of the Portuguese was an indication of their political collapse. However, they underestimated the Portuguese forces and were ultimately unable to keep up the siege (Vogt 1979:155-156).

By 1621, Dutch trade had exceeded that of the Portuguese because the Dutch were buying goods cheaper in their homeports (Ellis 1969:41 [1893]). The Dutch rebuilt their first trading lodge in 1624 using trade profits and making it their first fort. That same year, they were able to sign a trade agreement with the Fante nation for exclusive trade rights (not including the Asante allied Elminans), and they attempted to take Elmina Castle several times (Vogt 1979:179). The Dutch finally secured the fort and brought about the official surrender of the Portuguese during an invasion in 1637 (Blake 1969:100). The city became their main headquarters until the British took over in 1872 (Anquandah 1999:55, 59). The Dutch renovated and enlarged Elmina Castle and built Fort Conraadsburgh on the overlooking St. Jago hill in an effort to further protect the castle (Lawrence 1969). In 1640, the Dutch drove out the last of the Portuguese by attacking and capturing Fort St. Anthony at Axim. Portugal relinquished all its Gold Coast possessions to the Dutch, their occupation having lasted a hundred and sixty years (Feinberg 1989:29; Vogt 1979:199).
English Trade. It was not until 1618 that the English established regular trade with the Gold Coast; previous activity had been completed through sporadic and unorganized private ventures (Daaku 1970:9). The English Company (later called the African Company) easily encroached upon Dutch trading in some areas. It was Dutch policy to claim jurisdiction over the towns “within the immediate vicinity of their forts and ‘lodges,’ but nowhere else,” leaving many areas open to competition (Ellis 1969:50 [1893]). After 1647, the Dutch claimed sovereignty to new areas of the coastline to compete with the British. Their defensive attempts were effective for a while because of the civil war in England in 1651. English funding went toward war efforts, allowing the Dutch to maintain their position. The Swedes entered the Gold Coast at this time and were able to build Fort Christiansborg without much consequence. After the English Civil War ended, the English King renewed The African Company (originally the English Company), and trade was again in England’s foresight. Shortly thereafter, in 1657, the Danes drove out the Swedes and built their own fortification near Cape Coast Castle (Daaku 1970; see Rømer 2000 [1760] for a detailed account of the Danes).

The 1660s followed a military trend of the English storming and taking Dutch forts and then the Dutch retaliating and taking them back. Later, England’s trading companies went through several name changes, and in 1672, the Company of Royal Adventurers (once The African Company) became the Royal African Company. England used promotional money for the company to build five new forts, including one in Accra, which increased England’s trade capacity (Daaku 1970:10, 16, 23). In 1682, the Brandenburghers (or Prussians) also started settlements on the Gold Coast by building two forts and a lodge (Ellis 1969:62-63 [1893]). The tendency to establish small
fortifications with limited local control was common practice because coastal Africans leased only small sections of the coastline to Europeans. By the opening of the nineteenth century, Europeans had forty-three fortified stations along the coast, with thirty-one of them being located on the Gold Coast (Crowder 1968:24).

A 1693 narrative by Captain Thomas Phillips stated that in spite of the Dutch Company’s exclusive grant for trade, there were over a dozen interlopers trading along the coast (Churchill 1732). The Dutch often seized intruding ships and confiscated their cargos, sentencing captured crews to dungeons, galleys, or death. The Dutch, like the Portuguese, not only tried to ruin other countries’ commerce (especially the English), but also punished locals involved in such trade. In 1698, after years of illicit trading and semi-steady monopoly shipping companies, English authorities made trade with Africa official, open to all Englishmen, and initiated the Ten Per Cent Act on exported goods. They used the duty to pay for fort maintenance, munitions, and soldier wages at their forts. However, both the trading company and private traders were against the tax. Eventually, the Royal African Company’s trade decreased to a point where they could not support their factories or pay their debts, and in 1688, the Company closed down (Daaku 1970:10).

For the English to stay competitive, they had to find a way to trade to more people and to do it more directly; thus, they ventured into the hinterlands of the Gold Coast. One of the earliest European reports about the inland native states is William Bosman’s 1701 narrative. He says the Ashanti and Akim were two Principal states, but they had no authority over the seacoast, where the Fante were in control (Bosman 1967 [1704]:181). At the time, the Denkera was the most powerful native state in the Gold Coast hinterland.
The English knew this group had weakened the neighboring tribes to feudatory positions. The Ashanti ruled over a small territory around Kumassi and Kwao, and the kingdom was not yet considered important and was likely even tributary to the Denkera (Ellis 1969:85 [1893]; Daaku 1970:69-70).

*Local Political Groups: the Asante and the Fante*

To understand trade relations between the English and local ethnic groups, it is pertinent to review the political relationships of such groups, before and during European contact. There were two main groups of differing origin and language. The Akan, migrated from the west, and the Ga-Adangbe, a mix of two groups, migrated from the east. The Akan peoples speak Twi or a dialect of it, and the Ga-Adangbe peoples speak a Kwa sub-family language originating from the Niger region. The Ewe group is included with the latter language family, and their eastern cultural background plays a significant role in the bead trade, which is discussed in later chapters. The two main cultural groups migrated to the sparsely populated area and soon overtook the smaller Guan-speaking peoples who lived in the region originally (Daaku 1970).

Beginning in the seventeenth century, the Akan kingdoms, such as the Akyem, Denkyira, and Asante, did have some influence on the groups along the coast, but were mostly inland powers. The Fante, also an Akan-speaking group, were living on the coast before the Asante migrated from more westerly locations. Historian Roger Gocking says the Fante had the most influence over earlier non-Akan peoples along the Gold Coast (1999:3). Historian Ivor Wilks suggests that the migrations were likely a result of the availability of new food crops imported from the Americas (1967:207). The Fante, now
decentralized from the larger (and later) Akan migration, were still quite similar in
culture to the Asante. Experts in the field explain that cultural interactions have always
been complex in West Africa and that before colonial rule there was a gradual
“Akanization” of the southern Gold Coast (Gocking 1999:3).

The Asante population grew quickly through enslavement, forcing several
neighboring Akan-speaking groups into submission. Wilks explains that the Asante
merged these communities of domestic slaves into their own society, through absorption
and assimilation, eventually mixing with the Asante commoners over several generations.
After this blending of cultures, whether slave or stranger, either could acquire a new
status and full protection under Asante law (Wilks 1967:229). The process of
acculturation also played a role for the people living in Elmina Castle and led these
Elminans to have a strong alliance with the Asante, eventually opposing the Fante who
lived around the city.

The first Asante conflict on record was in 1701 when the Asante King planned an
entrapment that would shame the Denkyira King and call for an act of revenge. Ellis
explains that romantic sabotage was a common way of starting wars in order to gain
territory. The Asante were still small in number, but they were fierce enough to defeat the
unprepared Denkyiras after only two battles. The subjection of the Denkyira was the first
of many conquests that helped the Asante rise to a position of great power within the
Gold Coast. This battle was historically important as it connected the Asante with the
Dutch in a very direct manner. By conquering the Denkyira kingdom, one result was the
transfer of a Dutch promissory note, which stated that the Dutch paid a monthly sum to
the King of Denkyira for rental of the ground on which the Castle of St. George and Fort Conraadsburgh stood (Ellis 1969:88 [1893]).

The Dutch had originally written the note for Elmina’s chief, but through several wars, it passed to conquering tribes, and eventually to the Asante. The Dutch did not care who received the money, but the act of compliance to the Ashanti amounted to recognition of the Ashanti King’s ownership of the ground for the Dutch forts in Elmina. Later, the Asante similarly captured English, Dutch, and Danish notes from the Akim tribe and obtained rental rights for the forts in Accra and Christiansborg (Daaku 1970:66; Ellis 1969:89 [1893]). The notes mandated that the Asante were to oversee trade within these forts, attributing to the later wars between the residential Fanti and the fort-dwelling Asante.

After a decline in trade in 1720, the Brandenburghers abandoned their only fort, Fort Fredericksburg; the fort was eventually taken over by the Dutch. By the mid-1700s, the Asante were becoming a dominant political power that was stretching to the coastal regions. They had spent the early eighteenth century conquering neighboring regions including the Wassa, Twifo, and Assin peoples (Reynolds 1987:225). In the 1760s, the Asante and Fante became increasingly hostile with one another. The Dutch instigated the disputes as a way to gain more direct trade with the Asante, hoping to cut out the Fante middlemen. Interlopers sold their wares at cheaper rates than the British, and the culmination of being undersold in a hostile trade environment forced the British to create a credit system for Guinea traders so that England’s trade was still productive (Ellis 1969:91, 101 [1893]). Daaku states that Europeans and Africans alike had used credit systems since the early 1700s (1970:42). The Dutch, who were still profiting from local
trade, completed renovations to Elmina Castle in 1774, further increasing their trade and military capabilities.

The Asante wanted to augment their political power in the eighteenth century by gaining control of firearm imports from the coast. Obtaining more weapons would allow the Asante to expand their territory and power. In 1799, they accomplished this feat by conquering the only other large kingdom in the hinterlands, Ghofan. Along with this territorial win, the Asante eventually came to control a large region of the interior and part of the Gold Coast by the early 1800s. At one time, they controlled lands from the northeast regions of Bonduku and Kong (Ivory Coast) to Gonja and along the coast from “Cape Lahu (Ivory Coast) in the west to Little Pogo (Togo) in the East” (Wilks 1967:211). Many of the groups within this designated area paid the Asante for protection and were under the Asante’s political umbrella. The Fante, however, remained independent (Webster et al. 1980:85).

The Fante Government was somewhat similar to a federation and consisted of three kings and several chiefs. The Fanti denied all demands or requests from the opposing Asante, and battles were inevitably fought over territory and trade rights (Ellis 1969:109 [1893]). Feinberg contends that even the Europeans had little control of the Fante and were all but forced to conform “to Fante demands in order to stay in business in the areas under Fante sway” (1989:126). Otherwise, the Fante would close the trade roads with blockades, enforcing their middleman position.

The Asante control over coastal forts, such as those in Elmina and Accra, led to constant fighting with the Fante residents who lived around the forts and who still controlled the town of Cape Coast between Elmina and Accra. Having coastal control
meant direct access to European traders as well as direct trade in guns and ammunitions, providing the retaining group with reigning power (Reynolds 1987:226). The Fante kingdom had grown in a similar manner as that of the Asante, “by threats, promises, and force of arms,” bringing several tribes into subjection, including the Eguafu and the “Acron and Aguna to the east, and those of Fetu and Sabi to the west” (Ellis 1969:108 [1893]; Feinberg 1989:10). The Fante also assisted any Asante tributary states who rebelled against their controllers, which reinforced the Fante’s middleman trading position (Webster et al. 1980:88). Feinburg explains that there were “no fewer than twenty separate political states . . . between the coast and the powerful Asante kingdom” (Feinberg 1989:10).

The Asante’s military forces made it to the coast by 1806 and made a major push to take full control. They destroyed several small towns and overtook the Dutch fort and town of Cormantine. On hearing about the attack, the English’s African Company of Merchants opened negotiations with the Asante in an effort to protect their towns and forts. Eventually, even the Fante forces could not keep fighting against the larger group and suffered a major defeat in 1807 (Reynolds 1987). After this defeat, the Fante resorted to guerilla warfare, and in 1809, the Asante tried for peace with the Fante, who refused. The Fante were still upset by past wrong doings of the Elminans, whom they accused of selling many Fante refugees as slaves at Elmina Castle (Ellis 1969:111, 120 [1893]).

In rebuttal, the Fantis formed a confederation with several local groups, including the Wassaws and people of Cape Coast. They proceeded to blockade and attack Elmina several times, but the guns of Fort Conraadsburgh on the overlooking hill protected the town. The blockade lasted until 1811 when it broke up because of a lack of political
results. The Fante refusal for peace with the Asante reflects the Fante’s unwillingness to
give up their lucrative areas of the coast or their middleman position with European
traders. At the time, fighting disrupted trade, and the cultural groups in the area entirely
disregarded Dutch and English authority. Realistically, the Dutch and English had limited
control beyond the settlements around their forts as it was (Ellis 1969:122 [1893];
Gocking 1999:3).

*Nineteenth Century Trade*

By the early nineteenth century, the coastal cities were economically important to
the Asante because the cities “had come to rival in importance the larger centralized
states of the interior” (Gocking 1999:3). The total population of Elmina had grown from
a few hundred at the introduction of maritime trade to about 4,000 in the seventeenth
century and almost 15,000 people in the eighteenth century. By the mid-nineteenth
century, the population reached nearly 20,000 people, revealing how well coastal trading
centers, which had became the hub of trading instead of long-established trans-Saharan
routes, had increased the coast’s economy (Anquandah 1999:59; DeCorse 2001:9).

British abolishment of the slave trade in 1807, however, changed economic
demands, especially since the slave trade accounted for 90 percent of export trade at the
time (Reynolds 1987:226). Earlier, England had explored trade opportunities in the
hinterlands using the African Association created in 1788. There had been no great need
for direct hinterland trading as of yet. Since the trade in slaves was no longer an option
for the British, new trade ventures were needed. The British used the information
gathered from the African Association to promote legitimate commerce on the coast and in the hinterland (Crowder 1968:24-25).

First, however, the British needed to halt the Asante raids and resume trading. They contracted several peace treaties, two of which were successful, one in 1817 and another in 1831. These treaties helped resolve conflicts, and for a time trade continued. The last treaty gave the English some control through the acquisition of land notes for their forts, giving England ownership of the grounds its forts were on for the first time. In 1844, another treaty was signed, one which extended the territory under British jurisdiction. By the late 1840s, there was peace in the region, and the export of enslaved Africans had ended. The Dutch and British both abandoned several forts that were no longer financially viable. Following suit, Denmark sold all of its possessions on the Gold Coast to the British in 1850 (Ellis 1969:216 [1893]; Gocking 1999:35; Renyolds 1987:229).

During this time of trade, customs duties caused new discontent between coastal Africans, and the Dutch and the British. The Dutch attempted to undermine the English with nominal duties. Their efforts seriously affected British revenue, especially in locations where each nation had a fort. To avoid the higher English duties, coastal Africans traded more with the Dutch or avoided them altogether by smuggling goods. To resolve the duty problem, the governments traded forts in 1868. The Dutch ceded all their assets to the east of the Sweet River in exchange for all the British possessions to the west (Ellis 1969:243 [1893]). The exchange resulted in unified European regions that supported individual tax collection practices (Renyolds 1987:230).
Local groups were not happy with the new arrangement because the Europeans did not consult them at all. Furthermore, the people living in the western areas had historically been enemies with other inhabitants in the area. The Kommendas, Denkyiras, and Wassaws considered the Elminans “deadly foes” because they were still Asante subjects. Most groups in this area wanted no alliance with the Asante, and the Dutch were unable to physically protect those tribes further inland that might succumb to Asante invasions. After the transaction, the Asante instigated many raids between 1863 and 1870, and the towns of Cape Coast and Elmina continued to fight. The Elminans had long been Asante subjects by native law and custom and considered themselves integral to the Asante kingdom because the Asante had received ground rent for Elmina for over 160 years (Ellis 1969:245, 268 [1893]).

In spite of initial Dutch economic growth, the Dutch lost political power after the abolition movement, a loss of power that caused the decline of the Dutch West India Company (for more details on the Dutch West India Company see Feinberg 1989). In 1872, the Dutch ceded all of their Gold Coast possessions to the British (Anquandah 1999:61). Elmina’s people still allied themselves with the Asante after the cessation and continued to supply them with munitions until the British proclaimed martial law. The Elminans did not surrender until the British bombarded the town from both the castle and their ships on June 12, 1873, effectively burning the town to the ground (DeCorse 2001:7; Ellis 1969:294 [1893]).

In 1873, the British advanced on the Asante capital, Kumasi (Kumase), even as the Asante continued to fight neighbors, upset trade, and refuse new peace treaties. The timing of the invasion was key because the Asante had just lost half its army to disease
during regional warfare, and the British destroyed the city without much resistance. Eventually, the Asante signed a peace treaty with the British called the Treaty of Fomana. In the 1874 treaty, the Asante king agreed to pay England’s queen for the costs of war, renounced his rights for tributes from neighboring tribes, and renounced ownership of Elmina, allowing free trade between the Asante and the Coast (Ellis 1969:310, 339, 344 [1893]). The capture of Kumasi allowed the British to establish the Gold Coast as a colony in 1874.

The transformation of the Gold Coast into a Crown colony was economically essential for England. The abolishment of the Atlantic slave trade happened because of both economic and evangelical changes in Britain. By 1850, the abolition movement changed West African trade into a “legitimate trade” in natural resources including gold, palm oil, ivory, gum/rubber, and peanut oil. The industrial revolution replaced the need for slave labor and fueled a necessity for large amounts of oil to lubricate factory machines. Webster et al. (1980:55-60) believe that without the African oil trade, the industrial revolution could not have happened because the industries were deeply dependent on such oils. Thus, England’s control of Gold Coast resources was essential to their economy. Ironically, the new economic demands in the area led to an increase in domestic slavery in West Africa, which, in turn, led to an increase in tribal wars. Europeans became more politically involved to ensure that trade, especially in palm oil, continued uninterrupted (Webster et al. 1980:61).

Historian Michael Crowder (1968:27-28) further contends that England’s commercial interest in the area, aside from finding new outlets for manufactured goods and securing the palm-oil trade, was to suppress the entire Atlantic slave trade not only
for humanitarian reasons but also to help their West Indian colonists. England was
cunning and understood that depriving all New World islands of slave labor would allow
British island colonies to still compete economically with their neighbors. The British
also wanted control over the Gold Coast trade profits. The control had been with the
Asante and the coastal forts under their occupation. They dominated British traders and
European goods, setting their own prices for imports and exports. The British wanted
direct trade into the Gold Coast interior without a middleman, thereby increasing their

The British also knew that peace, whether enforced or not, brought prosperity.
They had evidence of such prosperity during the time of acting administrator George
Maclean, who negotiated the aforementioned 1831 peace treaty with the Asante. The
treaty gave southern tributary states their independence from the Asante, and in return,
the Asante had direct access to European forts (Webster et al. 1980; Reynolds 1987:229-
230). Peace lasted throughout the 1830s and 1840s with the inevitable result that trade
activities flourished. Webster et al. wrote that, “The value of exports in Cape Coast
increased from £90,000 in 1830 to £325,000 in 1840 and that of imports from £131,000
to £422,000” (1980:155). These numbers indicate that the peace treaty allowed trade to
prosper unhindered, and the British used such monetary motivations to justify crowning
Ghana as a British colony in 1874. England continued its reign until 1957 when Ghana
gained its independence.
Previous West African Archaeology

Previous terrestrial and maritime archeological investigations in the West African region provide information to establish the Elmina shipwreck’s historical context. Researchers have been conducting terrestrial archaeology of the Gold Coast for several decades and in Elmina for the last twenty years. Coastal towns and hinterland sites have received attention from many archaeologists. For example, Davies (1967) and Bellis (1987) completed archaeological digs on prehistoric sites. Lawrence (1969), Varley (1952), and Wood (1967) documented European trading posts in West Africa, while Bech and Hyland (1978) discuss existing colonial buildings. Additionally, there are more archaeological excavations by Posnansky and Van Dantzing (1976) at Fort Ruychaver, by Calvocoressi (1969; 1975; 1977) at the Bantam Dutch redoubt and Komenda, and by Kelly (1997) at the capital of Savi in Wydah, Benin. Ghanaian archaeology was completed by such archaeologists as Stahl (1999) and Bredwa-Mensah (1999). For historic resources, see Anquandah’s works (1982, 1985, and 1999).

The most pertinent archaeological work to this thesis was in the town of Elmina, where Christopher DeCorse started excavations in 1986 while he was a guest lecturer at the University of Ghana. The Ghana Museums and Monuments Board, Earthwatch, and the Foundation for Field Research assisted in later archaeological investigations. DeCorse’s research represents the first systematic archaeological and survey project in Elmina. The town was a major trade center for hundreds of years, and its movement inland preserved the older sections of the town extremely well, especially when compared to other African trading hubs still in use today (DeCorse 2001).
Archaeologists gathered data near Elmina Castle where the earliest and most populated areas of town were located. These areas provided information on merchants and trade materials dating from the fifteenth to the nineteenth centuries. In 1873, the British destroyed this section of the town leading to its subsequent abandonment. The excavation of buildings around Elmina Castle revealed that Elminans who traded with Europeans became the town’s elite members. The data revealed that the coastal Akan inhabited the area immediately west of Elmina Castle for about 1,000 years, with some expansion after the seventeenth century further along the Benya Lagoon, further demonstrating how the town’s expansion correlated to the prosperity of Atlantic trade. DeCorse focused on elucidating the archaeological record at Elmina, illuminating both cultural changes and continuity. Life styles along the Gold Coast showed both adaptation to new material goods and manipulation of goods to mimic traditional items (DeCorse 2001).

Previous Maritime Research

Recorded wrecks in the waters of Africa all have vast archaeological potential to reveal information about European trade with African ports. J. Bas Kist writes that “Since 1965, about 50 wrecks of Dutch East Indiamen have been localized and excavated in Europe, Africa, and Asia” (1982:40). Bruno Werz (1999) wrote Diving up the Human Past, a book that covers all of South Africa’s maritime archaeology up to 1996. Werz’s shows that between the three main capes of South Africa at least 683 ships foundered from the 1550s to the 1980s. DeCorse et al. (1997) contend that South Africa leads the field in African maritime archaeology, even though salvers and sport divers exploited
most of the historical shipwrecks found in that region. The few ships that have been 
arqueologically investigated in the area are the *Santo Antonio de Tanna*, the *Mauritius*, 
the *Oosterland*, and the *Witte Leeuw*.

One of the main ideas that the author wants to emphasize is that the cargos on all 
of these shipwrecks will vary according to the original mission of the vessels. To clarify, 
an inbound European merchant ship should have a very different cargo than an outbound 
European merchant ship. Further, a slave ship or even a pirate ship should all have 
differing cargos that reflect the purpose of the ships’ ventures. Many ships wrecked 
before arriving at their destinations and such shipwrecks can provide interesting 
examples of departing trade ventures and comparative European cargos.

Other ships represent political events within the history of the Atlantic trade near 
Africa. In 1697, the *Tanna* (or *Santo Antonio de Tanna*) was a Portuguese flagship that 
wrecked after an Arab attack in Mombasa Harbor near the Fort named “Jesus of 
Mombasa.” The frigate’s cargo included mostly logs of dyewoods along with a large 
amount of wine bottles, porcelain, coarse earthenware and normal ship items such as 
armament, compasses, and rigging (Sassoon 1978; Piercy 1977). The *Medusa* was a 
French flagship in an expedition headed to Senegal in 1816 to repossess the colony from 
England. It wrecked on the Arguin sandbank near the Senegal coast with a full load of 
soldiers and colonists (Miles 2007). Archaeologists also located two other shipwrecks 
near Gorée Island, Senegal. One was an English ship, as yet undated, and one was a 
nineteenth-century ship of unknown nationality (Guérout 1996:113, 118). Many of these 
ships were involved in the Dutch East India trade that traveled through African waters 
and ports during trade ventures.
Dutch East India Company (*Vereenigde Oost-Indische Compagnie* or VOC) ships, set sail to South Asia via a route that passed through the waters of southern Europe, the west and south coasts of Africa, and then through the Indian Ocean. The *Amsterdam*, an eighteenth-century ship from the Dutch East India Company, left in 1749 and headed for the Dutch trade fortress in Batavia, Java, with a load of soldiers, but the ship never made it past British waters and wrecked off the coast of England. Most of the artifacts recovered from the shipwreck are typical for passenger/military ship reserves: armaments, barrel containers for food and water, silverware, glassware, ceramic jugs, cups and saucers, smoking pipes, and personal effects (Marsden 1974). The *Oosterland* had the same mission as the *Amsterdam*, but it was on the *Oosterland*’s homeward travels that it sank in Table Bay, South Africa, after delivering new recruits to Batavia. Archaeologists recovered porcelain, figurines, cowry shells, peppercorn, and amber (Werz 1999).

The *De Liefde* is another VOC ship that was homebound from Batavia, but on a trading mission, not a military venture. It wrecked near Scotland in 1711 because of faulty navigation. The cargo included hundreds of thousands of silver coins, over 3,000 newly minted, along with trade items from the East Indies, personal items, and over 300 glass beads (Bax and Martin 1974; Muckelroy 1998a). Both ships provide further historical knowledge of cargos leaving and entering Holland in the eighteenth century. The *De Liefde* bead assemblage is discussed in Chapter Five, and the single glass bead found on the *Amsterdam* was a faceted milky-white glass bead associated with items belonging to one of the three women on board (Marsden 1974:182). Even though the previously mentioned shipwrecks date to the seventeenth and eighteenth centuries,
researchers can gather the same type of trade activity information from the nineteenth-century Elmina shipwreck. Further, if the Elmina shipwreck is a Dutch ship (highly possible as the Dutch were the prominent traders at Elmina during this time), then the Elmina shipwreck would represent an outgoing Dutch cargo from the nineteenth century.

_Ships Involved in the Atlantic Trade_

Many ships and shipwrecks related to the Atlantic trade included trade beads as part of their cargo. The earliest North American shipwreck reported to contain glass trade beads is the Molasses Reef wreck, which was an early sixteenth-century Iberian vessel that wrecked near the Turks and Caicos Islands (Keith 1996). Another shipwreck that contained over a million glass seed beads was _La Belle_, captained by Sieur de La Salle. This French vessel was in route to colonize the Gulf Coast in North America and wrecked in 1686 in Matagorda Bay, Texas (Bruseth and Turner 2005; Weddle 2001). Among other things, this ship contained wooden cargo boxes, and one box alone held over 575,000 seed beads. This bead assemblage is discussed further in Chapter Five.

Another vessel trading in the New World was the Monte Cristi Pipe Wreck, a mid-seventeenth-century European merchant ship that wrecked off the coast of the Dominican Republic after catching on fire. It contained a melted bead cluster, which held over 700 black beads (Kidd Type IIa6 and IIa7) that likely originated from the Dutch bead industry (Hall 1996, 2005). While the Spanish dominated Atlantic waters early on, the Dutch West India Company became the prevailing trader in the mid-seventeenth century. The Monte Cristi Pipe Wreck seems to be English-built, but the contents of the shipwreck’s cargo indicates that the ship was likely part of the Dutch trade. It is highly
possible that the Dutch commandeered the ship, which was common practice at that time (Carroll 1997; Hall 1996). While shipwrecks such as the Monte Cristi Pipe Wreck, the Molasses Reef Wreck, and La Belle have examples of glass trade beads as cargo, they unfortunately have no links to the West African market. However, these wrecks are important in understanding West African wrecks. Future studies can compare bead assemblages from the wrecks to gain cross-cultural knowledge about commercial bead shipments and possibly information on how the bead trade affected the historic trade in the Atlantic.

One example of a shipwreck directly involved in the West African trade is the Henrietta Marie, a seventeenth-century English merchant ship identified as a slave trading ship that sank in 1700 off the coast of Florida. Trade items discovered on this ship include iron, pewter, weapons, and glass beads. The Royal African Company, located in London, recorded the Henrietta Marie as having loaded over 2,000 pounds of “Great Bugles” (the term bugles was a popular reference for tube beads). The ship also had 33 tons of iron, 1,200 copper bars, pewter, linen, felts, and 70 half cases of spirits. The ship sailed to Guinea, traded its cargo for 190 slaves, and then sailed to Jamaica. After unloading in the Caribbean, the ship sank sometime between June and November (Cottman 1999). Chapter Five discusses this shipwreck’s cargo in more detail, comparing the bead assemblage with the Elmina shipwreck.

Another ship involved with the West African trade was the slave ship Fredensborg, a Danish ship that traveled from Copenhagen to the Gold Coast, and then to the Danish West Indies (a route also known as the triangular trade). Upon its return in 1786, bad weather caused the ship to wreck off Norway’s coast. The cargo for the Guinea
trade included spirits, gunpowder, “40 cases of muskets, 32,000 gun-flints, iron bars, cartridge paper, shoes, textiles and chests of West Indian coral necklaces” (Svalesen 2000:43). These necklaces must have been actual reef coral, and not glass, since after they landed at Fort Christianborg the captain of the ship reported that some of the corals within the chests had spoiled and were not suitable for trade. Coral beads were often included as part of the assortment of trade goods accepted for the slave trade. A price list from Fort Christianborg in 1749 includes one cabes of coral in a list of goods comprised mostly of muskets, textiles, and metal goods; all of these materials together were equal to the value of one slave (Svalesen 2000:93). Beads were common commodities for the West African slave trade, and Chapter Six presents several examples of transactions involving glass beads.

Another possible slaver is the Saint-Quay-Portrieux wreck located in the waters off the Saint-Quay islands of France. It contained over a hundred African elephant tusks (similar to the cargo of the Fredensborg), along with 40 glass trade beads and a single brass manilla, all of which indicate African trading. The beads are called rassade, the French word for Indian pearl, and most were white with the exception of four blue pentagonal shaped beads, called “Saint-Eustache,” and two striped black beads. The beads are similar to some found on the Manilla wreck, described in Chapter Five, and are thought to be of Dutch origin. It is unknown at this time if the unknown ship’s cargo was part of a legitimate direct trade with Africa, the so-called triangular trade, or was part of the Atlantic slave trade (Herry 2004; Scherr Dubin 1987).

Both the Henrietta Marie and the Fredensborg were slave ships that wrecked after their visits to the Gold Coast and their respective colonies in the New World. Thus,
their artifact assemblages are vastly different from the artifacts found on the Elmina shipwreck. The differences result from two main factors: first, the previously mentioned ships were on the inbound leg of their journeys, and second, they were slave ships and not merchant ships. There is no evidence to date that suggests the Elmina shipwreck was involved in the slave trade. Therefore, the cargo shipments should be different because they reflect different trade objectives.

Currently, the Elmina shipwreck represents the first shipwreck investigated in the area known as the Gold Coast. It also represents an inbound vessel carrying European trade goods, all of which likely reflect trade after the abolition of slavery. The differences mentioned here are not suggesting that the abolition movement changed the type of cargos traded, but that the cargos reflect a vessel’s trade objectives, and also whether the vessel held cargo from an inbound journey or an outbound trip. The abolition movement may or may not have influenced ship cargos between the eighteenth and the nineteenth centuries, but such a study is not within the scope of the research presented here. A comparative study of the European trade goods from each ship’s outbound cargo would create an interesting reference for goods shipped to the Gold Coast over a 150-year period, perhaps reflecting the state of the Atlantic slave trade as it changed after the abolition movement.

Pirate Shipwrecks

Another interesting group of shipwrecks with indirect links to West Africa at their time of sinking include ships involved in pirate activities. The Queen Anne’s Revenge and the Whydah were both pirate ships that had originally been slavers. In 1717, English
pirates led by the notorious Blackbeard captured a French slaver called La Concorde, which was on its way to Martinique in the West Indies. The ship was carrying slaves and gold dust from the West African port of Judah (also known as Ouidah or Whydah). The pirates converted the French ship into their flagship, renaming it the Queen Anne's Revenge. In 1718, they grounded the ship in Beaufort Inlet off the North Carolina coast (Wilde-Ramsing 2006). The Queen Anne's Revenge held many beads, but most are inside concretions and only visible through x-rays. Chapter Three covers the few beads that researchers have analyzed so far.

The Whydah has a similar story as a British slaver that sailed to both Ghana and Benin and then to Jamaica. In 1717, the galley ship headed back to England with a load of sugar, indigo, quinine (medication for malaria), and a large sum of gold and silver from the slave trade. Along the way, the pirate Samuel Bellamy captured the ship and its cargo, but the ship sank in a Cape Cod storm later that year. The Whydah’s cargo at the time of its sinking consisted of a collection of cargos from several merchant ships the pirates had attacked near North America and the Caribbean during 1717. Excavators recovered gold and silver coins, pewterware, smoking pipes, pistols, and cut pieces of gold jewelry likely from the Gold Coast (Hamilton 2006).

One pirate ship that sank in African waters is the Fiery Dragon, captained by Christopher Condent. This ship was originally a Dutch East India Company ship loaded with 40 guns and 20 brass swivel guns, making it a formidable pirate ship after Condent captured it in 1719. He plundered several other ships, taking what is today’s equivalent of $375 million dollars, and then the captain took a pardon agreement, retiring to Bourbon Island (now Reunion Island). Part of the agreement was that he must destroy his ship,
which he did in 1721 in the harbor of Saint Mary’s Island, another popular pirate location near Madagascar. Excavations revealed a large porcelain assemblage and gold coins from several countries and dates. The diverse variety of gold coin types and porcelain patterns is more typical of artifact classes found on pirate ships than of commercial ship cargos. The wreck also contained large quantities of cowry shells and a few spices and seeds. The large amount and expense of the cargo may seem odd for a purposely-abandoned ship, but researchers found documentation suggesting the crew prematurely burned the ship in retaliation for the captain’s retiring (de Bry 2006).

The cargos from these shipwrecks are also quite different from the Elmina shipwreck. Again, pirate objectives were not the same as those of slaver ships or merchant ships, and the cargo reflects that fact. Beads do not seem to have been a major part of pirate cargos, but the Queen Anne’s Revenge archeologists did uncover some beads in the hull of that shipwreck. In the future, more information will likely surface about these ships through their ongoing excavations, with the hope of discerning whether or not beads were an important cargo for pirates.

Conclusion

The first part of the chapter discussed the history of the Gold Coast and how it was filled with cultural interactions between Akan, non-Akan speaking peoples, and Europeans. The complex relationships continuously shaped and reshaped the life styles of the people who lived on the Gold Coast. Several processes such as cultural absorption, acculturation, and material adaptation over hundreds of years built today’s West African cultural identity. It is important to remember that the African people regulated trade along
the Gold Coast through their market demands more so than the European traders or their small settlements. Only after the defeat of the Asante did Europeans gain such power over trade.

The last section of the chapter discussed some of the archaeological endeavors in West Africa, including Elmina, Ghana. It also described various underwater archaeological activities involving shipwrecks in African and Atlantic waters. The author highlighted the differences that one might find when comparing shipwreck artifact assemblages and the influences that might affect the contents of a ship’s cargo. The Elmina shipwreck sank during a time of peace treaties, uninhibited trade, and dramatic change in local export from a trade in slaves to a trade in natural resources. The next chapter will review the shipwreck site and the variety of glass trade beads held within the wreck. The author believes that the historic context of the Elmina shipwreck will help researchers to better understand the uses of glass trade beads in Ghana during the mid nineteenth century.
CHAPTER III
METHODOLOGY

The author used several approaches to compile the information presented in this thesis. Chapter Three describes the archaeological methods used in the discovery of the Elmina shipwreck site and the subsequent investigation techniques used in 2005. In addition, this chapter also presents the methods used to gather information about the Elmina bead assemblage.

Elmina Shipwreck Site Description

Initially, Syracuse archaeologists attempted a magnetometer survey of Elmina’s coastal waters. This survey technique uses the earth’s natural magnetic signature to locate magnetic anomalies caused by such cultural material as an iron-sided ship, fasteners, anchors, or cannons. Surveyors used the 866 proton magnetometer from EG&G GeoMetrics, Inc., but the iron content of the local rock and sediment proved to be too high, and interfered with the equipment. Researchers switched to an alternative survey method and used the Marine Sonics 600 kHz side-scan sonar instead to find possible cultural targets. The acoustic signals bounce off the seabed or any objects on the seabed, resulting in a sonar image of the sea floor (Babits and Van Tilburg 1998; Baker 1982). Archaeologists found 52 sonar anomalies within a four square kilometer area, and used a Global Positioning System or GPS to record the data and location of each target.
Researchers investigated two of the sonar anomalies during the 2003 survey and identified the second anomaly as the Elmina shipwreck (Cook and Spiers 2004).

The Elmina shipwreck is located 1.15 mi (1.85 km) ESE of Elmina Castle. It is at a depth of around 32 ft (9.75 m) and lies at a NNW orientation on a seabed of silt and sand. The exposed section of the shipwreck measures fifty-five feet long, but unexposed sections may reach as far as sixty-five to seventy feet. The ocean waters of the area have strong surges and currents, environmental factors that create poor visibility on the site. Currently, the placement of the artifacts within the wreck suggests that the ship may have settled, at least partially intact, on an even keel. However, no timbers were located during the 2005 or 2007 excavations (Greg Cook, personal communication 2008). The larger artifacts, such as basins and plates, were stacked in like groups, and smaller artifacts, such as manillas, still held the shape of their original casks (Cook et al. 2006).

The armament of the ship provides more clues to the settling of the ship. The large cannons face outward and are located on top of the cargo, suggesting that they were originally on the gun deck above the cargo hold, and as the decking deteriorated, they came to rest on top of items in the ship’s hold. If the cannon were off to one side or the other of the cargo, then one could assume the ship came to rest on the corresponding side. If the cannons were not in use at the time of sinking, they likely would have been stored below the cargo in an attempt to prevent any damage to the cargo (Cook et al. 2006; Muckelroy 1998b).

The amount of European cargo still on the ship suggests that the vessel had not yet conducted extensive trade on the coast. Metal artifacts comprise the majority of the
artifacts visible on the site and include various brass basins, pewterwares, lead sheathing, brass pins, manillas, and iron concretions. Glass artifacts were also numerous and include glass bottles (onion bottles, case bottles, wine bottles, and a cologne bottle) and a large volume of trade beads, mostly seed beads. There was a variety of ceramics (stoneware jugs, a late style olive jar, hand-painted and transfer-print bowl fragments, and even some African ceramics) as well as many types of organic material (cattle bones, cowry shells, seeds, and charcoal). Archaeologists recovered most of the small artifacts during lab analysis and conservation. The smaller objects such as seeds, brass pins, and beads were found inside bottles and jugs or concreted to an assortment of other artifacts (Cook et al. 2006).

Keith Muckelroy discusses wrecking processes in *The Archaeology of Shipwrecks*, and he explains which actions could produce remains such as those seen with the Elmina shipwreck. His example is the *Wasa*, a Swedish war ship that sank in a squall because her gunports were open; she simply took on too much water and sank (Muckelroy 1998b:278). If there is hull damage made by rocks or the like, then the resulting hole will cause a similar sinking pattern as that of the Elmina shipwreck. A burning ship, while not mentioned in his article, would seemingly follow this same pattern. The notion of a fire is included because investigators did find charcoal/charred wood within the artifacts recovered from the site (Cook et al. 2006). Some of the artifacts may also show evidence of discoloration from high heat instead of post-depositional staining from the decay of organic material.
Archaeological Methods

Archaeologists employed local fishermen to provide canoe transportation to the site and to help deploy equipment. As mentioned above, the dynamics of the coastal waters kept the site especially active and thus, visibility underwater was at or near blackout conditions on most days. GPS coordinates from the previous archaeological survey led divers to the shipwreck site, which was buoyed with a fishing net and styrofoam float after re-identification. Using an “Airline” C360 hookah system, or surface-supplied air, divers established a perimeter by probing near the exposed remains of the shipwreck. They then drove in nine pieces of five-foot long rebar at the edges of the site, as the boundary datums (measurement reference points), and numbered them using a system of tags and zip-ties that were recognizable by feel. Researchers connected a knotted line to the datums, creating the site boundary. Divers mapped the site relative to the datums and the knotted guideline, which had a knot every foot. Eventually, after removing old fishing nets that had snagged on the site, investigators were able to put lines over the center of the wreck. Using these methods, they were able to create a site plan of the shipwreck’s boundaries and overall features within the wreck (Cook et al. 2006).

Because of poor visibility and the occasional violent surge, divers supplemented measuring tapes with simple and creative ways of recording such as measuring by using one’s hands and arms as the measuring instruments. Artifact samples were hand collected from and around main features of artifacts (cannons, basin stacks, manilla assemblages, etc.), and researchers noted the measurements as divers surfaced from the site.
Investigators logged and photographed each artifact and recorded artifact locations on a site map.

**General Bead Assemblage Description**

There were numerous artifacts within the shipwreck, and divers collected samples of each artifact class that was visible on the surface of the site. Many artifacts show evidence of heavy erosion resulting from the dynamics of the site where environmental factors cause water to constantly sweep sand across the area, scouring the surfaces of many artifacts. It also kept many small loose items, like beads, in what Muckelroy calls “a state of semisuspension” and divers could see and feel sand and other objects floating back and forth with the surge just above the sea floor (1998b:284).

Within the surface collection, researchers found an estimated 35,256 beads either concreted together or loose. The majority of the assemblage is contained in four large concretions. The author estimated bead counts by breaking off a small section of one of the bead concretions, removing the beads from the sediment, and counting the number of beads contained within that section of concretion. The section weighed 35 grams and contained 605 beads; therefore, the bead count per gram is 17.3 beads. That number was then multiplied by the weight of each large concretion to find the total estimate of beads. A fifth small bead concretion contained 191 beads (hand-counted); thus, the total estimate of beads found within these concretions is 31,471.

There are 16 identifiable types of beads in the Elmina shipwreck assemblage. However, there is only one bead type visible within each of the above-mentioned concretions, and out of the five bead concretions found three have all yellow seed beads
(26,349), one has all blue (4,931), and one has all striped (191) seed beads. The evidence suggests that these beads were concreted in situ. Beads that were not from the concretions are termed “loose beads” and were hand-counted, totaling 3,785 beads. Researchers recovered loose beads from either inside other artifacts or from the encrustation covering such artifacts.

Bead Research Methodology

Stanley South (1977) stresses the importance of using quantitative analysis to detect patterns within archaeological deposits. This thesis attempts such analysis by using a relational database (Paradox) to explore the quantitative aspects of the Elmina bead assemblage. Previous bead typologies helped to structure the Elmina bead assemblage database. The previous typologies include the Kidd and Kidd (1983) descriptive classification, which arranges beads by manufacture technique and physical attributes; Karlis Karklins’ (1985) expanded guide to bead classification; and the Systematic Bead Description System (SBDS), a Microsoft Access relational database designed by DeCorse et al. (2003) to record bead attributes.

The typologies stem from eighty years of previous research in bead nomenclature and classification. Early bead classifications, notably by Horace Beck in 1928, attempted to organize beads by shape (Beck 1928). Unfortunately, relying on shape alone leaves out many other important bead attributes, such as bead manufacture. In the 1960’s, van der Sleen (1973) created a classification system that includes bead-manufacturing techniques. Van der Sleen stated that he did not agree with Beck’s method of classifying by shape because sorting in that manner could not lead to any conclusions about time and space.
Instead, van der Sleen wanted to answer two major questions when he examined large bead collections. First, he wanted to know where the beads came from and, second, when they had reached their destination (van der Sleen 1973:51).

Van der Sleen wanted to find a way for a bead collection to reveal the answers to these questions. He started by using Beck’s bead terminology for 23 “standard” bead shapes and then added 25 “special” shapes and provided descriptions of 30 types of “ornamented” beads (1973:34, 38, 44). Van der Sleen’s additions to the nomenclature also include some manufacture processes, particularly for special shapes. However, his classification organizes beads geographically. He was trying to create regional assemblages so that investigators could extract better information, such as distribution through trade routes. Unfortunately, his classifications still did not use “systematic criteria” to classify beads because he did not specifically organize beads by manufacturing processes (DeCorse et al. 2003:86).

The latest typologies have had the most success in bead nomenclature and have incorporated even more features. Kidd and Kidd (1983), for example, completed their final typology publication in the 1980s. These bead researchers organized their typology by using bead manufacture and physical attributes, assigning each bead an alphanumeric label designed to allow easier comparisons. As other researchers find beads different from the ones presented by the Kidds, each new bead should receive a new type designation. An example is Kidd designation IIa7, which is understood as class II, type IIa, and variety IIa7. Following Karklins’ 1985 guide, bead “varieties which do not appear in the Kidds’ list are marked by an asterisk (*)” and “two asterisks (**) denote a
previously unrecorded type” (1991:33). I believe the single asterisk denotation includes variety differences to the Kidds’ listed beads that pertain to diaphaneity, luster, or color. To further clarify, the Kidd example given here, IIa7, is opaque black. If one finds a bead that is also type IIa but is translucent or transparent black, then the bead is a different variety of IIa than the Kidd Type variety IIa7 and should receive an asterisk (IIa*).

The Organization of the Elmina Bead Assemblage

In order to analyze the Elmina shipwreck bead assemblage, the author recorded bead attributes and entered the data into the Elmina Bead Database presented in Appendix A. The Elmina database is a modification of DeCorse et al.’s (2003) SBDS. The author also chose to use the Kidd and Kidd (1983) alphanumeric designations and the asterisk system devised in Karklins’ (1985) classification guide. Even though the author has found errors in the use of the Kidds’ alphanumeric designations, most bead researchers have used the Kidd classifications for over twenty-five years. The author believes that by including the Kidds’ system into the Elmina Bead Database; the bead assemblage will be more comparable to other bead assemblages. Therefore, according to the Kidd and Kidd typology, there are 16 bead types found in the Elmina bead assemblage. The Elmina shipwreck bead types fit well into the Kidds’ classification system because they are all drawn beads, like the bead assemblage the Kidds used to create their bead classification system.

However, DeCorse et al. (2003) noted that they did not use the Kidd classification system because it tends to cause a lumping of bead attributes. Therefore, the Elmina Bead Database will likely also lump attributes and this issue should be discussed further. The
Elmina bead assemblage consists of beads straight from manufacturers, which is different from most terrestrial sites, except for production centers. Splitting subtle attributes may be of more help when identifying site-specific bead categories from terrestrial sites. If splitting attributes of beads is a researcher’s goal, then using DeCorse et al.’s SBDS as they presented it in their article is appropriate.

However, as stated above, drawn beads made before 1860 have a wide range of variation caused by non-standardized manufacturing techniques and glass technology. As such, these variations likely have no specific cultural links relevant to the research at hand. Alternatively, they may have manufacturing links. While attribute variations may reflect cultural influences, this author is attributing the manufacturing variations such as subtle shape and color differences to inaccuracies in machinery and technology and not to active choice by the beadmakers.

On the other hand, some small differences in size are distinguishable and do reflect industrial choices. Arthur Woodward provided an example of beadmakers distinguishing size when he mentioned an article written by “JPB” in Scientific American in 1856. JPB said that workers cut off the ends of glass tubes in accordance with a gauged size, after which the workers polished and sifted the beads into sizes (Woodward 1965:7). Beadmakers accomplished this process by hand; thus, the sizes were not standardized. However, because beads were sifted in the factory before shipping there is the possibility that size clustering could be found among beads recovered from archaeological sites (Spector 1976:22). Karlis Karklins saw the potential for size clustering from a shipwreck
site and suggested that measuring beads individually could reveal “a hank or container of one size of bead” [personnel communication 2008].

The Elmina shipwreck bead assemblage and other pre-industrial shipwreck bead assemblages would be good candidates for such a study. The bead database provided in Appendix A contains the size ranges of each bead type and the individual areas or the artifacts where archaeologists recovered the bead groups. However, the amount of glass deterioration from post-depositional forces (surges, currents, and storms) and conservation efforts (removing the beads from iron concretions using acid baths) will likely hinder such efforts for the Elmina shipwreck bead assemblage, at least to some effect. While a study of historic bead sizes was not within the scope of this thesis, if a researcher wanted to identify historic size clustering, then access to databases such as the one provided here would be very useful. Such a study could yield interesting insights to mid-nineteenth century bead measuring systems.

Another interesting aspect of bead sizes is whether there are culturally distinct size patterns reflected regionally. Pendleton et al. attempted to uncover any “natural (intrinsic) size breaks within the St. Catherines bead assemblage” by creating a size histogram (2009:36, 37, Figure 4.1). They compared their findings to the Kidd and Kidd arbitrary size designations (bead diameter) of < 2mm very small, 2-4mm small, 4-6mm medium, 6-10mm large, and >10mm very large (1983:234). Pendleton et al. found that they had six size ranges within their sample, “<2.60mm, 2.60-3.50mm, 3.51-4.75mm, 4.76-7.99mm, 8.00-14.99, and >15.00mm,” which they incorporated into their individual type descriptions (2009:36). The histogram also includes length measurements and
overall the histogram shows size peaks within the sample of beads. The majority of beads were less than 4mm in diameter and there were two common length sizes; the largest group peaked at around 1.4mm and the second group peaked at around 3mm in length (Pendleton et al. 2009:37, Figure 4.1). The histogram could further overall bead knowledge about historic bead sizes or size preferences for particular areas.

To create a site-specific typology for the Elmina shipwreck bead assemblage, this author wanted to keep the idea of mass production in the forefront of its organization. Thus, the Elmina typology includes a Kidd designation field, Munsell color code field, and uses a simplified shape field. All of these changes will likely encourage subtle attribute lumping and will not split the beads into type variations where the only differences are the direct effect of non-standardized technology. For example, the Elmina typology lumps attributes of shape. DeCorse et al. (2003:88) uses the term short when a bead’s length is equal to or shorter than its diameter. This author chose to use the term seed bead instead. The more general shape category encompasses those believed to be closest to DeCorse et al.’s designation of small beads with “short globular” or possibly “short oblate” shapes (2003:91-102). DeCorse et al. do state that they are still revising their categories for simplicity and replicability. For more details on seed bead identification and history see Francis (1997; 2009a:59-64).

The Elmina bead database has other variables besides the Kidd and Kidd typology and those provided by DeCorse et al.’s descriptive system. The database includes fields that are specific to the Elmina site, creating the ability for spatial analysis and allowing researchers to identify post-depositional bead associations to other artifacts. The database
includes the following data variables (with the new fields in italics): Type Number, *Artifact Number, Subletter, Area, Kidd Type*, Count, Material, Manufacture, Structure, Secondary Modification, Shape, Length (mm), Diameter (mm), Luster, Diaphaneity, *Munsell Color*, Decoration, Origin, Age, and Notes.

The new fields not only allow spatial analysis, but also provide Munsell color codes and the Kidd and Kidd Type variety equivalents. Some of these fields, such as luster and diameter, will not be as applicable with underwater sites because of the deteriorated condition of the beads. The age field is also unique as it is determined by the estimated period of the shipwreck’s sinking. Nevertheless, these fields are important to all typologies because other sites (especially terrestrial sites) will tend to have beads in better condition and with variable ages. The saltwater environment, along with the dynamic nature of the site, caused a great deal of damage to the beads in this assemblage. Therefore, the original luster of the beads is unknown and is recorded in the database as indeterminate. Other researchers can make accurate comparisons more efficiently if everyone records data in all descriptive fields consistently.

The data field definitions are as follows:

1. **Elmina Type** – numbers given to individual beads for each assemblage. In this case, numbers 1-16.

2. **Artifact Number** – the number assigned to artifacts by researchers in the field.

3. **Subletter** – an additional letter assigned to artifacts recovered during lab conservation. Many artifacts, such as beads, seeds, threads, etc., were associated with encrusted artifacts. Conservators often found them on, in, or between other
artifacts such as metalwares and ceramic or glass containers. For example, artifact number 350, an encrusted stack of brass basins, was separated in the lab, and conservators assigned letters to both the individual basins and objects trapped within the concretion. Thus, if the basins are designated 350 A-F, the next artifact will be 350G. The lettering assists future researchers in reviewing conservation notes, associating artifacts, or examining concretion processes.

(4) **Area** – Sections within the shipwreck, with arbitrary boundaries, that encompass where surface collecting took place, designated areas A-G.

(5) **Kidd Designation** – the alphanumerical designation according to Kidd and Kidd typology with the use of asterisks as explained by Karklins’ (1985) guide.

(6) **Count** – the number of beads within each Elmina type, which also has an associated artifact number and subletter. For example, artifact 350G has 48 Elmina Type 5 beads associated with it.

(7) **Material** – the material composition of the beads. The beads in this analysis are all glass beads. DeCorse et al. (2003) denote (G) for glass, (CE) for ceramic, (ST) for stone, (SH) for shell, (CR) for carnelian, (P) for plastic, and (I) for indeterminate. Additional categories can be defined and added as needed.

(8) **Manufacture** – the manufacture method used to create the beads. This category is most useful for glass beads. However, researchers can create designations for other bead material. Designated glass manufacture methods are wound (W), lamp-wound (LW), [hand] drawn (HD), molded (M), Prosser-molded (PM), fired glass (F), and indeterminate (I). Note: fired glass is the method of using ground glass,
placed in a clay mold, which is then heated in a low temperature furnace. This process is often used for glass beads currently made in West Africa.

(9) **Structure** – the structural elements of the beads. Designated as simple (S) for single layer of glass, also referred to as monochrome, compound (CPD) for more than one layer of glass, complex (CPX) for one layer of glass with the addition of various glass designs, and composite (CPE) for more than one layer of glass with the addition of various glass designs.

(10) **Secondary Modification** – the “intentional modification of a bead after its initial manufacture. It may refer to reheating, tumbling, grinding, etching, [segmenting], or other modifications undertaken by the manufacturer” or by persons importing beads (DeCorse et. al. 2003:88). Most of the beads in this assemblage were heat-rounded (HR); however, some beads have unexplained protrusions that are noted in the Remarks section.

(11) **Shape** – Various terms are used to describe a bead’s shape, including Doughnut, Disk, Oblate, Short oblate, Short globular, Spherical, Cylindrical, Tubular, Short barrel, Ellipsoidal, Conical, Biconical, Trapezoid, Pentagonal, Hexagonal, Heptagonal, Octagonal, Decagonal, Irregular, and Indeterminate. I have added the term Seed Bead for beads that could be either “short globular” or “short oblate” and are size small, 2-4mm in diameter, or smaller.

(12) **Length** – the measurement, in millimeters, parallel to the perforation. Researchers may provide size ranges in case of multiple beads.
(13) **Diameter** – the measurement, in millimeters, equal to the width of the bead. Researchers may provide size ranges in case of multiple beads.

(14) **Luster** – designated (D) for dull or (S) for shiny. For this analysis, the author added the letter (I) to designate indeterminate luster due to patinization, erosion from being in an underwater site, or from conservation processes (these beads were all consolidated with Krylon 1301, giving them a shiny appearance).

(15) **Diaphaneity** – the level of light transmission through glass. Designated as (OP) for opaque, (TL) for translucent, (TP) for transparent, and (I) for indeterminate. Compound beads will mostly be of an opaque or semi-translucent nature since the addition of layers interferes with light transmission.

(16) **Munsell Color** – Munsell reference codes (example: 10GY6/7).

(17) **Decoration** – this category describes decorative elements of the beads, including stripes, additional glass elements, paint, etc.

(18) **Origin** – where the bead was manufactured or likely manufactured.

(19) **Age** – year or period of manufacture or archaeological site. In this case, it is the period of sinking, or from the 1830s to the 1850s (not included in Appendix A).

(20) **Remarks** – may include any extra information not included elsewhere. Here, the section includes notes about whether clear coats or protrusions were present.

*Problems with Classification Systems*

The Kidd system became the most useful typology available and serves as the basis for many other typologies. However, the reason this system is not universally used stems from several problems. First, researchers often needed to revise the original Kidd
typology because of its organization. For example, Kidd and Kidd’s typology consists of
historic American collections that are mostly beads of a drawn manufacture technique.
Therefore, many eras, countries, and manufacturing methods are missing from the
typology, which makes it difficult for other researchers to categorize beads. The only
guideline for beads not in the Kidd typology is Karklins’ expanded guide that suggests
using two asterisks. Another problem researchers found was that instead of identifying all
the bead variations, the typology lumped subtle differences into a few categories, which
did not allow site-specific distinctions to be recognized (DeCorse et. al. 2003:86).

Researchers continue to expand bead nomenclature and adjust temporal ranges in
an attempt to figure out the context for their individual bead assemblages. Unfortunately,
these efforts fail to support a universally accepted classification system. Since researchers
have not yet been able to create a comprehensive system, investigators continue to make
site-specific typologies. One attempt to circumvent the problem was made by DeCorse et
al. (2003). They presented the SBDS, which uses the hierarchical database program
Microsoft Access to record a variety of bead characteristics.

The four main goals of the SBDS are

To provide a framework for systematically identifying and recording bead
attributes; to provide a clear and flexible way of presenting and summarizing data;
to ensure the easy comparison of assemblages from different sites and; to provide
a structure that facilitates the examination of individual research questions
[DeCorse et. al. 2003:87].
Thus, a researcher should focus on recording attributes, clearly presenting a summary of the findings, and provide the data in a format with which other researchers can compare their beads. Comparisons are made on the basis of physical description and not by previously designated codes. Additionally, the data entry into the SBDS can be modified as needed for each site, a process that allows researchers to address research questions with more success because they can manipulate the database to locate or emphasize specific information.

As with the other classification systems, the SBDS uses bead manufacture to classify and organize its typology, and it follows both the Kidds’ and Karklins’ descriptions of bead attributes. The main difference is that DeCorse et al. (2003) do not rely on alphanumeric designations, assigning instead the number of different bead types found within the assemblage. For example, they found 108 beads types within their assemblage and thus numbered them 1-108. Therefore, each site should have its own database with the bead types always starting at the number one. The Elmina shipwreck bead database has types 1-16.

DeCorse et al. organized their database in this manner to present individual bead attributes more clearly, without the influence of the sometimes-confusing alphanumeric designations (2003:88). As noted above, using Kidd and Kidd designations can cause the lumping of attributes, mostly in the realm of shape, diaphaneity, and color. By using the SBDS, a researcher can theoretically split the bead attributes into several more categories than are available in the Kidd and Kidd typology.
Karklins’ expanded guide on the Kidd’s typology uses an asterisk to represent varieties not found within the Kidd’s original assemblage. In theory, using an asterisk should also help prevent the clustering of bead attributes. However, in practice, the archaeological world abounds with problems relating to these systems. The biggest problem is that inexperienced bead researchers only read the Kidd and Kidd report on classifying beads and then take their own approach to beads that do not fit in that typology. The instructions are not clear on how to continue classifications not presented by the Kidds, leaving new designations up to individual interpretation. In response to these problems, both Karklins (1985) and DeCorse et al. (2003) produced their reports in an attempt to help other researchers.

Color Description Problems

Another problem hindering analysis is that there is no universal color system to use when classifying a bead assemblage. For instance, take the color plates provided in the Kidd and Kidd (1983) article. If a person only looks at these plates, they can be misled because reprints and age can alter the original colors. Furthermore, some archaeological reports, especially older ones, only provide photos of bead artifacts in black and white, if they include any at all. Unfortunately, even color photo reprints will vary with individual printers and are therefore inconsistent for establishing colors.

Additionally, the Kidds used the Color Harmony Manual (containing color chips) to identify the colors of their beads and the Descriptive Color Names Dictionary to find the matching color names (Jacobson 1948; Ostwald et al. 1950). The name dictionary is now out of print, but it can still be obtained through library circulation. On the other
hand, the manual with the color chips is also no longer in print and it is non-circulating, with a limited availability at about fifty university libraries in the U.S. Because the manual is non-circulating it represents outdated, but useful information that is now unavailable to much of the public, hindering research and making archaeologists “colorblind” in their research.

Karlis Karklins attempted to transcend the problem by making a color chart of beads from the Levin catalogue (nineteenth-century sample cards). The chart included three references: the Color Harmony name, Color Harmony code, and the Munsell Color code equivalent (Karklins 1985:12). Karklins’ equivalency charts were especially helpful in the present analysis. For example, the “dark green” color name has the Harmony code 22 pi, which is equivalent to Munsell 2.5G 3/6. Using this chart, the author now knows that the Elmina bead Type 4 is nearly the same color or Munsell 2.5G 4/6 (one color chip difference on the same hue page). Therefore, the Elmina bead type is also a shade of “dark green.” The chart also includes the Munsell color 5YR 6/12, which he shows is equivalent to the Harmony code 4 nc or russet orange. The Munsell code is the same for Elmina Type 1; thus, it is also russet orange.

Another of Karklins’ color equivalent charts was also helpful to the author’s analysis. His chart compares the Color Harmony Manual codes, Munsell color codes, and ISCC-NBS Centroid Color Chart codes. It also includes some of the Harmony color names recorded by the Kidds (Karklins 1989). Karklins’ chart helped the author uncover an error during a bead comparison of the Elmina shipwreck bead assemblage to the Queen Anne’s Revenge bead assemblage. The error was the result of both authors using
the same term to describe beads that were actually very different in color. The issue is described in more detail in Chapter Five.

Additionally, there are problems with trying to duplicate comparative color charts. Karklins (1989) explained that he compared color chart chips in natural daylight to gather his findings, which seems to be the best method of comparing charts since indoor lighting varies and can change a person’s perception of colors. Unfortunately, Karklins noted that the ISCC-NBS Centroid Color Charts were discontinued some years ago (1995:98). Further, copies of the Color Harmony Manual are also not in print or circulating. Munsell manufacturers confirmed they do not make any equivalency charts comparing their system codes to other color system codes (but might consider making one if there was enough public interest in such a product). Ultimately, the author’s attempt to create an equivalency chart for the Elmina shipwreck bead assemblage was unsuccessful.

Karklins’ (1985) work on the Levin Catalogue created an equivalent color chart for that specific assemblage; however, individual researchers would still need to create a similar color chart to demonstrate how the color names or codes from their bead assemblage compare to other bead assemblages that use different color names or codes. Even DeCorse et al.’s 2003 SBDS has this problem because DeCorse et al. independently defined color names using the Munsell Book of Colors (1976); however, he did not publish the color codes that match his color names, so the author was unable to accurately compare bead colors from that article to the Elmina shipwreck bead assemblage.

Karklins tried to avoid errors in classifying beads by suggesting the use of asterisks for beads not included in the Kidd and Kidd typology. His approach is useful if
one cannot determine whether or not a bead’s color is equivalent to the colors present in
the Kidds’ typology. However, Karklins also makes a good point about colors

Bead colors within a batch are variable. The color codes I list are mean values. In
the Color Harmony charts, the chip with the exact code is the mean but all the
chips that encircle it are also the same value/color for all intents and purposes. To
split beads into color groups on the basis of subtle differences in value and hue is
meaningless [Karlis Karklins, personal communication 2008].

As discussed elsewhere, bead shapes, colors, and sizes were not standardized until
after the 1860s and into the early 1900s, so Karklins statement is well taken. On another
pertinent note, even if the Color Harmony Manual had been available, the color chips
should be considered outdated. Even the currently published Munsell Book of Color has
color chips with a minimum shelf life of two to four years (Munsell® Color Services by
X-Rite Incorporated, personal communication 2009).

On the other hand, there are alternatives to using Munsell color chips. There are
other, cheaper, color systems such as the PANTONE Professional Color System, which
would be more financially feasible for individuals (Karklins 1995). Further, if there
arose a need for determining subtle color differences, or if alternative color systems that
are unaffected by fading, lighting, or human perception are preferred, then there is the
Commission Internationale de l'Eclairage (CIE) 1931. A color space model that is
mathematically derived and measures and displays color in a controlled environment
(Landa and Fairchild 2005). The color parameters of the CIE system “are based on
Spectral Power Distributions (SPD) of the light emitted from a given object, which can
be measured with a spectroradiometer and then displayed on a CIE chromaticity

diagram” (Leedjia Svec, personal communication 2009).

The CIE system has superceded the Munsell system in some uses, especially with
computer software. However, it currently seems that the simplest method for describing
bead colors is to use a system like the one created by Munsell® Color Services. Munsell
colors in particular would make sense for bead analysis because archaeologists already
use that system to determine soil colors at archaeological sites. The problems presented
here should shed light on the necessity of using a universal color system and that
researchers need to become less dependent on outdated publications.

Summary

Chapter Three presents the archaeological methods used to find the Elmina
shipwreck and to recover artifacts from the site. The author also introduces the bead
assemblage in more detail and explains how the Elmina Bead Database was designed and
organized. This chapter also presents specific issues that can hamper research when
investigators use bead typologies and the author provided some suggestions for changes
and alternative methods to circumvent such problems. Chapter Four will use the bead
attribute descriptions to analyze the bead assemblage, find possible diagnostic elements,
and describe how a relational database can be a useful tool in spatial analysis. Chapter
Five will put the descriptive information to use by comparing multiple bead assemblages
to the Elmina shipwreck bead assemblage, illuminating exactly how methodologies can
help or hinder research efforts.
CHAPTER IV

THE ELMINA BEAD ASSEMBLAGE

Chapter Four provides a description of the Elmina shipwreck bead assemblage and the use of a relational database to uncover spatial information about the bead assemblage, including bead distributions on the site. The author investigated whether or not the glass trade beads were stored in a central location in the shipwreck and whether or not it was possible to identify a storage area based on distribution data. The author reveals how database tools can help researchers by uncovering spatial clues to possible holding areas, probable means of storage, and popularity of specific types of beads.

The Elmina Shipwreck Bead Assemblage

As discussed in Chapter Three, the author classified the beads according to the Kidd and Kidd 1983 typology and the asterisk system established in Karklins’ 1985 guide to denote beads not found in the Kidd’s typology. Sixteen types were identified (Table 1 and Figure 2). The bead types consisted of four forms of construction: 2,384 are simple (one layer of glass with no designs), 1,030 are compound (more than one layer of glass with no designs), nine are complex (one layer of glass with designs), and 396 are composite (more than one layer of glass with designs). The majority of the beads are considered small 2-4 mm in diameter (Kidd and Kidd 1983).
### Table 1. Elmina Bead Assemblage

<table>
<thead>
<tr>
<th>Elmina Types</th>
<th>Kidd Type</th>
<th>Count†</th>
<th>Diaphaneity</th>
<th>General Color</th>
<th>Munsell Color</th>
<th>Shape</th>
<th>Manufacture (Drawn)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ila*</td>
<td>51</td>
<td>Translucent</td>
<td>Orange</td>
<td>5YR6/12</td>
<td>Seed Bead</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>92</td>
<td>Translucent</td>
<td>Yellow</td>
<td>5Y 7/8</td>
<td>Seed Bead</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>14</td>
<td>Opaque</td>
<td>Yellow</td>
<td>5Y 8/6</td>
<td>Seed Bead</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>57</td>
<td>Translucent</td>
<td>Dark Green</td>
<td>2.5G 4/6</td>
<td>Seed Bead</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>60</td>
<td>Opaque</td>
<td>Light Green</td>
<td>10Y 7/8</td>
<td>Seed Bead</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>1,985</td>
<td>Transparent</td>
<td>Blue</td>
<td>10B3/10</td>
<td>Seed Bead</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>71</td>
<td>Opaque</td>
<td>Light Blue</td>
<td>5PB 5/8</td>
<td>Seed Bead</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila13</td>
<td>3</td>
<td>Opaque</td>
<td>White</td>
<td>N 9.5</td>
<td>Round</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila15</td>
<td>1</td>
<td>Opaque</td>
<td>White</td>
<td>N 9.5</td>
<td>Ellipsoidal</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>4</td>
<td>Opaque</td>
<td>Dusty Yellow</td>
<td>2.5Y 7/8</td>
<td>Barrel</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>8</td>
<td>Opaque</td>
<td>Yellow</td>
<td>2.5Y/8/12</td>
<td>Seed Bead</td>
<td>Complex</td>
</tr>
<tr>
<td></td>
<td>Ila*</td>
<td>38</td>
<td>Opaque</td>
<td>Yellow Blue</td>
<td>10B 3/10</td>
<td>Cylindrical</td>
<td>Compound</td>
</tr>
<tr>
<td></td>
<td>IVa6</td>
<td>71</td>
<td>Transparent</td>
<td>Red Green</td>
<td>7.5R4/10</td>
<td>Seed Bead</td>
<td>Compound</td>
</tr>
<tr>
<td></td>
<td>IVa11</td>
<td>921</td>
<td>Opaque</td>
<td>Bright White</td>
<td>N 9</td>
<td>Seed Bead</td>
<td>Compound</td>
</tr>
<tr>
<td></td>
<td>IVb16</td>
<td>199</td>
<td>Stripes</td>
<td>Stripes Red</td>
<td>10B 5/10</td>
<td>Seed Bead</td>
<td>Composite</td>
</tr>
</tbody>
</table>

Note: † = loose bead count only, I = Indeterminate, * = Karklins (1985)
The assemblage contains Elmina Types 1-7; small monochrome drawn seed beads that average 2-3 mm in diameter and 1.5-2.5 mm in length (see Appendix A for more measurements). Elmina Types 1-7 are equivalent to Kidd Types IIa and are as follows: translucent orange beads; translucent yellow beads; opaque yellow beads, translucent dark green beads, opaque light green beads, transparent blue beads, and opaque light blue beads. These beads are all varieties of Kidd Type IIa and are thus designated as varieties IIa* according to Karlis Karklins (1985) expanded classification. Elmina Type 1 is similar to Kidd Type variety IIa19, and Elmina Type 6 is similar to Kidd Type variety IIa41; however, the author was unable to create a color equivalency chart and exact comparisons cannot be made.
Elmina Types 8-10 are small (2-4 mm) to medium (4-6 mm) monochrome drawn beads, differing in the shape and size category from the aforementioned seed beads. Type 8 is opaque white and round, and it is equivalent to Kidd Type variety IIa13. Type 9 is opaque white and ellipsoid, and it is equivalent to Kidd Type variety IIa15. Type 10 is opaque white and short tubular or barrel shaped, and it is considered a Kidd Type IIa*. These three types make up the group of simple, non-seed beads in the Elmina shipwreck assemblage.

Elmina Types 11 and 12 are small striped drawn seed beads that are in deteriorated states, and both are varieties of Kidd Type IIbb. Type 11 is a bead that is opaque yellow with an inlay of three stripe sets of yellow/NA/yellow; the middle stripes and other glass sections are missing. Beadmakers usually marver (shape by pressing the glass against a marble or metal platform) the decorated beads to smooth out the surface before the glass is drawn, leaving beads with an even surface. The Type 11 specimen has stripes raised above the surface; a characteristic that indicates that there is missing glass (Karlis Karklins, personal communication 2008). The bead core and visible stripes are the same color. Type 12 consists of beads with an opaque green core and a similar triad decoration of one opaque red stripe in between two yellow stripes (i.e. red on yellow). The surface between the triad of stripes has a discolored black or dark grey appearance, and only where the patina has flaked off is the interior identifiable as opaque green.

The Elmina shipwreck assemblage includes the following compound (or multi-layered) beads that have three layers of blue/white/blue. Elmina Type 13 is cylindrical (tube shape) equivalent to Kidd Type variety IIIa10 and make up the majority of non-seed beads in the assemblage. Elmina Type 14 and 15 are also compound, but are seed
beads equivalent to Kidd Type varieties IVa6 and IVa11. Type 14 beads are opaque red on transparent green. Type 15 beads are opaque white/opaque bright white/opaque white. Lastly, the assemblage contains one variety of a composite (layered and striped) seed bead, Elmina Type 16, and it is equivalent to Kidd Type variety IVb16. Type 16 beads are opaque white on transparent blue with a design of alternating stripes, three blue and three red. The collection also includes 209 indeterminate beads.

Most of the assemblage (99 percent) consists of drawn monochrome seed beads with gauged sizes ranging from 7/10 to 10/10, or about 1 to 4 millimeters in diameter. The author determined the gauged sizes from a visual reference at The Bead Museum in Arizona (see Francis 1997 and 2009a for a discussion on bead sizing). The bead types from this assemblage are most likely Venetian or Bohemian. Karlis Karklins explains that shipwrecks postdating 1700 will not contain drawn beads of Dutch manufacture because at end of the seventeenth century the Dutch drawn bead industry died out (1974:66). The beads come in several colors including blue, green, yellow, orange, and white. The assemblage also contains polychrome seed beads, a type commonly called “green hearts” (often confused with Cornaline d’Aleppo) and several types of striped seed beads. The investigator also found a few non-seed beads, which consist of white beads about the size of pony beads (4-6mm), which are round, tapered, or barrel shaped. There are also tube beads (bugle beads) with a blue/white/blue layering.

It seems appropriate to take a moment and discuss the confusion of “green hearts” and Cornaline d’Aleppo beads. Jamey Allen explains how this confusion came into being. He says that
In the 1950s and early '60s, when bead study was . . . simplistic, it was known that red-over-white beads were called "cornaline d' Aleppo beads." (The name appears on sample cards, and Venetian informants confirmed the name.) An American archaeologist, who discussed white-heart beads and called them "cornaline d' Aleppo," in an effort to be helpful and make a valid generalization wrote something to the effect that, "the older variety [of drawn layered beads] are opaque brick-red over green glass." He DID NOT call the beads "cornaline d' Aleppo beads." However, because he called the white-heart beads "cornaline d' Aleppo beads," later authors put these two things together, and began to say "the older cornaline d' Aleppo beads of red glass with a green core . . .," and phrases like that [Jamey Allen, personal communication 2007]. Thus, one can see how the confusion began, and it is with high hopes that this small explanation helps other bead researchers to avoid the mistake of calling green hearts Cornaline d’Aleppo.

Jamey Allen (personal communication 2007) says that the seed beads were “finished en masse (via the a ferrazza method).” This is a different method from the a speo method, which is accomplished by putting beads larger than 4mm in diameter on a multi-pronged spit or tine and then heating the tine in the furnace, rotating the beads so they would not sag (Karklins 1993). The a ferrazza (or a ferraccia) method rounded the ends of beads by placing them in a copper pan held over a heat source; sand and ash were used to fill the perforations to prevent collapse and also to keep the beads from sticking to each other (Sciana and Eicher 1998; Francis 1988a). Oddly, some of the beads in the
Elmina shipwreck assemblage have distinct protruding ends (Figures 3-8 were taken by the author through the lens of a microscope, set between 20x to 25x magnification).

Figure 3. Type 16 with protruding ends.

Figure 4. Type 16 with protruding ends.

Figure 5. Type 16 with protruding ends.

Figure 6. Type 14 with protruding ends.
Karklins suggests two possible reasons for the protruding ends. First, he notes that the striped beads (Figures 3-5) were likely eroded by salt water, leaving the more dense inner blue core to protrude. Second, he contends that overheating beads during the heat-rounding process can make the ends pucker outward (Karlis Karklins, personal communication 2008). The author presents a third possibility; the beads reflect the use of tool segmentation where glass canes were rolled across a horizontal mold that segmented the cane into beads. Maud Spaer (1993) explains this process and presents several photos of small beads that appear similar to the beads in Figures 6-8. She asserts that even though bead makers finished beads by heat rounding, the finishing process “does not exclude the use of some tool for dividing the tube into beads” (Spaer 1993:10).

Therefore, the author believes that some of the beads within this assemblage retain tool marks possibly from stone molds that were not removed by the heat-rounding process. Karlis Karklins argues that a glass manufacturing house would not likely use two different finishing techniques, especially individual companies competing during the nineteenth century for bead business among other commercial European beadmakers (personal communication 2008). Therefore, if these beads were made in the same place,
they would all be finished in the same manner, even though their ends look different. The difference may only mean that not all the beads made it into the pan for heat rounding or the beads were not heated for very long. Beads with segmentation marks should not be confused with “collared” beads or “hot-pinched” beads, both of which have distinct appearances that are different from beads presented above. Collared beads were segmented with a triple-groove stone mold, resulting in large and rounded sections on each end that are the same diameter as the bead itself (Spaer 1993:16). Hot-pinched beads have a squished look to either end where tongs were used to individually separate beads.

Unfortunately, there is one substantial problem with this hypothesis. Segmenting beads with stone molds is an old technique and believed to be outdated and unused in the later centuries of beadmaking. The technique started in Egypt in the second or third century B.C. and lasted until the thirteenth century in Eastern Europe. It was most popular with gold-glass beads; beads with two glass layers and metal foil in between the layers (Spaer 1993). Francis explains that evidence for segmented beads and gold-glass beads was not seen again until segmented beads were uncovered in early Spanish contact sites. St. Catherine’s Island contained several colors of thin-walled glass beads that show signs of segmentation, as do other Spanish colonial sites dating into the seventeenth century (Francis 2009b:94). Archaeologists recovered seven types of segmented “hollow” glass beads numbering in the hundreds. Francis contends that the “evidence from St. Catherine’s Island extends the use of the [segmentation] process by half a millennium” (2009b:95).

The St. Catherine’s Island bead assemblage contains a seed-bead size segmented bead that has protruding ends shaped very similar to the Elmina shipwreck beads,
particularly Figures 5-7. The similar bead is Type 117, 28.1/4068.0117 and there were seven total beads of this type (Blair et al. 2009:298, Plate 10-J). However, Type 117 is different from the Elmina Type 14 and 16 (Kidd IVa6 and IVb16) because Type 117 is a thin-walled “hollow” bead type and Type 14 and 16 have two glass layers. The only other multi-layered beads with segmentation marks the author found reference to was the gold-glass beads presented by Spaer (1993). The beads she presented also have two glass layers, and she confirms that segmentation of compound beads was a normal practice up until the thirteenth century. Therefore, the Elmina bead assemblage could possibly hold evidence, similar to Francis’s findings, which moves the known date of use for this ancient technique much later, but only further research will tell.

Another interesting bead attribute, several beads within Elmina Types 14 and 15 (Figures 9 and 10) have evidence of a very thin layer of clear glass coating the outside of the bead that Karlis Karklins (personal communication 2008) termed “flashing,” and Francis (1997:8) simply called “clear coat.” In contradiction to Karklins use of the term “flashing,” Francis uses the term “flash” for molded bead seams that are created when glass seeps between the mold halves (2009b:93). Karklins notes that the clear layer is not considered a layer for classification purposes. He explains that the clear coat was likely used to prevent oxidation and discoloration of other layers during the heat-rounding process and thereafter, and possibly as a means of increasing the bead’s brilliancy (Karlis Karklins, personal communication 2008). Francis (1997:8) asserts that white seed beads with clear coats were no longer produced after the late 1860s, providing a tentative terminus ante quem for the Elmina shipwreck, which is estimated to have sunk between 1830s and 1850s.
Bead Analysis

When analyzing the spatial distribution of the bead assemblage, it was determined the concreted beads, an estimated 31,280 beads, likely indicated a potential stowing area for the monochrome blue and yellow bead types, and possibly the striped beads. Since the beads were concreted together in large quantities of like colors, it is probable that these beads were in situ in their original holding containers. The loose beads were most likely from holding containers too, but as the wood broke down in the seawater, the violent surge of the water swept the beads across the site. In addition, bead factories would often string beads before shipping. The author x-rayed the concretions and the x-rays showed only beads. Some concretions contained beads lined up in a manner resembling strung beads, but these beads were few in number. Therefore, the author cannot conclude if there were strung beads within the Elmina shipwreck assemblage.

As mentioned before, yellow seed beads were the predominate color of the four bead concretions, but when looking just at the loose beads the color blue predominates, making up 54 percent of the loose bead assemblage. Another significant bead color was
white at 25 percent. Other colors drop significantly in number with striped at 5 percent, green and yellow each at 3 percent, and green hearts at 2 percent (Table 2). The total count of all loose beads is 3,785, and unless stated otherwise, statistics are from this count.

Table 2. Colors of Concreted Beads and Loose Beads.

<table>
<thead>
<tr>
<th>Bead Color</th>
<th>Estimated Concretion Count</th>
<th>Percent</th>
<th>Loose bead Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>26,349</td>
<td>84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>4,931</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Striped</td>
<td>191</td>
<td>&gt;1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>2,056</td>
<td>54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>929</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Striped</td>
<td>199</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>117</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>106</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Hearts</td>
<td>71</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Other Colors</td>
<td>307</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>31,471</td>
<td>100</td>
<td>3,785</td>
<td>100</td>
</tr>
</tbody>
</table>

To see if any spatial patterns emerged, the author hypothesized that the majority of loose beads would be located in the same area as the concreted beads, which are thought to be *in situ*. If this hypothesis was correct, and holding other variables constant, the surge would have distributed the loose beads in a pattern where the number of beads would decrease as one went farther away from the original source. Referencing the Elmina shipwreck site map will help in this discussion (Figure 11). For example, if Area E was the central holding location (where the large bead concretions were located), then
Figure 11. Site map with recovery areas.
Area’s C, D, F and G (with the closest proximity to Area E) would contain the next highest level of beads, and the areas farthest away from Area E would have the least amount of loose beads.

Interestingly, Area C does follow this pattern by containing 861 beads (or 23 percent), and Area D did contain the small bead concretion of 191 striped beads, plus 72 other beads. However, about 2,620 beads, or 69 percent of the loose beads were actually located in Area A (Table 3), the northern most area where divers recovered artifacts. The bead concretion area, Area E, had only 3 percent of the loose beads. If Area A was considered a second holding area and if the hypothesis of even distribution by the surge were true, then one would expect the nearby Areas B and C to contain the next highest amount of loose beads. As mentioned above, Area C does but Area B does not, a difference that may indicate clues about the local currents and surge.

Table 3. Loose Bead Calculations by Area and Shape

<table>
<thead>
<tr>
<th>Bead Shape</th>
<th>Area A</th>
<th>Area B</th>
<th>Area C</th>
<th>Area D</th>
<th>Area E</th>
<th>Area F</th>
<th>Area G</th>
<th>Shape Count</th>
<th>Shape Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrel</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Cylindrical</td>
<td>25</td>
<td>12</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>38</td>
<td>1</td>
</tr>
<tr>
<td>Ellipsoidal</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Round</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Seed Bead</td>
<td>2598</td>
<td>11</td>
<td>848</td>
<td>72</td>
<td>109</td>
<td>81</td>
<td>24</td>
<td>3733</td>
<td>98</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area Count</th>
<th>Area Percent</th>
<th>Shape Count</th>
<th>Shape Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2620</td>
<td>69</td>
<td>3779*</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: *count does not include six beads from unknown locations.
More likely, the discrepancy points to another cause such as uneven sampling of Areas B and C during early investigations. Divers recovered only one artifact or feature from those two areas, a glass bottle in Area B (bead count of 11) and one large brass feature with several basins concreted together in Area C (bead count of 861). Area G also had only brass basin features, but only 24 beads were found with these artifacts, therefore basin features by themselves do not indicate the likelihood of associated beads.

Another interesting spatial pattern, all but two of the Elmina bead types were present in Area A. Therefore, that area had the widest diversity of beads of any location. The predominante bead shape was the seed bead, making up 98 percent of the whole assemblage, while the other four shapes present made up about two percent of the assemblage combined. Additionally, most of the non-seed beads, 32 out of 46 (or 70 percent), were also located in Area A, while Area C had 13 non-seed beads, and Area F had one bead (Table 3). Because Area A contained the highest number of non-seed beads, the distribution suggests a separate storage location for the non-seed bead shapes. Unfortunately, researchers would need more information to make that statement conclusively.

Lastly, the author examined other factors that might affect bead distributions such as the ability of associated artifacts to “collect” and retain beads, in other words, some associated artifacts became locations where beads tended to gather and settle. Artifacts such as small-necked objects (ceramic containers or glass bottles) might seem a logical conclusion to link to which associated artifacts “collect” beads. However, the distribution of beads on this site suggest that associated artifacts “collected” beads through post-depositional factors such as the natural process of electrolysis that actually attaches
minerals in the water, along with small debris or artifacts, to metal objects. It seems that “features” (i.e. multiple concreted artifacts) of iron and brass collected the highest percentage of beads, 46.3 percent and 37.3 percent respectively (Table 4).

Table 4. Loose Bead Calculations Associated with Artifact Groups.

<table>
<thead>
<tr>
<th>Artifact Class</th>
<th>Association Occurrences</th>
<th>Bead Count</th>
<th>Bead Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brass Features</td>
<td>5</td>
<td>1413</td>
<td>37.3</td>
</tr>
<tr>
<td>Bone Features</td>
<td>1</td>
<td>18</td>
<td>0.5</td>
</tr>
<tr>
<td>Ceramics</td>
<td>7</td>
<td>273</td>
<td>7.3</td>
</tr>
<tr>
<td>Glass</td>
<td>7</td>
<td>89</td>
<td>2.4</td>
</tr>
<tr>
<td>Iron Concretions</td>
<td>6</td>
<td>1752</td>
<td>46.3</td>
</tr>
<tr>
<td>Pewter Features</td>
<td>2</td>
<td>234</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>28</strong></td>
<td><strong>3779</strong>*</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Note: *count does not include six beads from unknown locations.

**Conclusion**

Chapter Four provided a description of the Elmina shipwreck bead assemblage and the author’s analysis of the beads through the use of a relational database. The Paradox software allowed the author to organize the bead assemblage and then query different questions about the beads. Because the author set up the database to include spatial relationships, the author was able to calculate bead counts by color, shape, associated artifacts, and recovery locations. The database was an invaluable research tool that helped the author to complete her analysis.

One key factor for the author was to present the various types of information that a researcher can investigate when analyzing a bead assemblage. The work presented here likely reveals facts about site formation processes for the Elmina shipwreck; although the author acknowledges that the current results could easily change following additional site
excavations. The bead distributions found on the Elmina shipwreck seem to indicate the mode by which traders shipped the beads, loose in barrels. However, the author cannot discount that the beads might have been strung in the barrels or held in smaller strung bunches. If the beads had been strung in smaller numbers, then the beads could easily have been stored in a different location from the barrels and therefore create the bead distribution that the author found. However, one must acknowledge that other causes, such as the wrecking of the ship or post-depositional events, could also cause these distributions.

The author also attempted to find a glass-bead storage location to show how a researcher could use bead distributions to calculate other bead locations. Such information could assist other archaeologists during future excavations, including whether or not to search for specific bead types or to search in new areas to find beads with possibly more diagnostic values. While the author hypothesized about the spatial patterns found on the Elmina shipwreck, only future excavations will provide explanations that are more concrete.
CHAPTER V

BEAD ASSEMBLAGES FROM OTHER RELEVANT ARCHAEOLOGICAL SITES

This chapter will discuss some archaeological bead findings from Ghana, North America, the Caribbean, and other shipwrecks. The purpose of this chapter is to compare other bead contexts to the distinct trade context of the Elmina shipwreck. This section also concentrates on several problems researchers encounter such as inaccurate bead classification or lack of data, both of which can leave artifact assemblages incomparable. The author also addresses the problems with broad geographical and temporal comparisons. Overall, this chapter will illustrate several reasons why comprehensive bead descriptions are needed and demonstrate how past and even current practices in recording bead attributes can inhibit practical bead assemblage comparisons.

A Mound at Dawu, Akuapim, Ghana

An early Africanist pioneer, Thurstan Shaw excavated sites from 1959 to 1964 in both Ghana and Nigeria. One of the Ghanaian sites is a mound northeast of Accra in Dawu, Akuapim. Shaw dated the site using smoking pipes, and the earliest date for pipe use in that area started at 1580-1600. The top two horizons in the mound date from 1590-1840. The Guan people utilized the earliest section of the mound until 1600 when the Akwamu invaded the area. Later, the Twi-speaking Ntafo migrated to the area after the Akwamu downfall in 1734 (Shaw 1961:85-88). Excavators found glass beads in levels below the pipes, which Shaw expected, since glass beads arrived 50 to 100 years before
the introduction of European pipes. Shaw recovered almost one hundred beads and classified them using an early bead typology by H.C. Beck. He identified six glass bead types, six bone/shell bead types, and four stone bead types (Shaw 1961:72-73).

Glass bead Type I consists of beads mostly circular in section and shape and one short barrel bead. Type I beads are all the same blue colored glass (#1-11). Type II beads are short, cylindrical, and blue, with one possible faience bead (#12-14). Type III beads are disc beads of green (#15 and 16), blue (#17), and yellow with green and red streaks (#18). Type IV beads are compound beads with blue foundations and decorated with white and red stripes. There are also cylinder disc, short cylinder, and long cylinder beads within this type category (#1-18). Type V is a short barrel bead of grayish-white opaque glass with inlaid black and red stripes (6 each) (#19). In addition, there are standard barrel beads of yellow-brown with red, white, and blue stripes (#20), and some are black with eight yellow stripes (#21 and 22). The last variation within this type is a square tube bead with an eye motif of blue with brown/red and white. Type VI consists of a short barrel bead black with white inlays (#24), some standard barrel beads of bluish-gray with yellow inlays (#25 and 26), and a standard spherical bead of pale jade green with concentric grooved circles (#27) (Shaw 1961:72-73).

Shaw asked several bead experts at the time to help in the analysis of his assemblage. Dr. A. J. Arkell, from the University College in London, identified number 11 as a Venetian “seed bead,” but because it was devitrified, he could make no other comment. John Bradford, from the Pitt-Rivers Museum, claims that Type I beads are consistent with sixteenth- to eighteenth-century trade beads that some scholars refer to as “Early Blue,” which were typically associated with North American grave sites dating
before 1600. The Early Blue beads, which were common in cemetery sites, were mostly pre-1580 and comprised up to one third of the total beads found at such sites. After 1620, the “Early Blue” numbers drop significantly (Shaw 1961:76). Type IV beads were likely Venetian trade beads and cane beads, and they were the most common glass beads from Dawu. Type V beads dated from 1600-1650 and were similar to “The Venetian Type” that archaeologists found in American Indian graves. Type VI is a bead that seems to be an imitation bead. It resembles Jeypore agate, a black stone with white stripes (Shaw 1961:77-78).

Shaw explains that a local bead maker identified Type V, b and c (or #21-23) as aheneapa beads, also known as Aggry. Shaw claims that the term Aggry is “scarcely used by illiterate Africans in talking about beads; in Akan the distinguishing term for such valuable, ancient beads, as opposed to modern importations, is ‘ahenepa’—meaning simply ‘good bead,’ i.e. ‘genuine, valuable bead’” (1961:75). He continues by explaining how the nineteenth-century term became loosely applied to any bead of value that had an ancient appearance. Brigid Sackey had similar findings in her 1983 field work, but used the term “ahondze pa” (1985:183).

Overall, the Dawu assemblage has a larger diversity of bead shapes and sizes than that of the Elmina shipwreck site. Terrestrial sites, especially multiple occupation sites, usually have such bead diversity. Most of the Dawu monochrome beads are bigger than the Elmina beads, but there is one blue seed bead or “short barrel bead” that he deemed a Venetian seed bead (#11) (Shaw 1961). The bead could be similar to the Elmina Type Ila blue seed beads, but without a definite color and diaphaneity, this author cannot know for sure. There are also some long cylinder beads, or bugle beads, that resemble the Elmina
cylindrical beads in size and shape, but not in decoration. Shaw’s Type IV cylindrical beads have longitudinal stripes, while the Elmina beads Type IIIa are compound beads with layers, not stripes. The Dawu bead assemblage seems to have a fair number of blue beads, but with such a small sample, Shaw made no inferences about color preferences.

The Dawu assemblage is a good example of the application of Beck’s typology, based on bead shapes. Shaw (1961) provides the basic shapes, sizes, and general colors, but the typology, while the only one available at the time, does not allow for a direct comparison of Shaw’s bead assemblage to the Elmina assemblage. As with most early archaeological reports, there are not enough details (i.e. type frequencies, manufacture, diaphaneity, specific colors, etc.) to accurately compare Shaw’s collection with the Elmina assemblage. Nevertheless, his work is a good example of the need for researchers to go back to early archaeological assemblages and reclassify beads according to newer typologies.

Temporally, Shaw (1961) dates the top nine feet of the mound from 1590-1840; thus, his bead assemblage would be a good candidate to add to a regional seriation study. Contextually, the mound at Dawu was not a ceremonial site, but a long-standing residential midden; therefore, it has a domestic context. The small sample of a hundred beads seems to agree with the idea that beads were too precious to throw away even if they were broken (an idea that is developed more in the next chapter).

Fort Veerche Schanns, Bantama

David Calvocoressi (1977) excavated several areas in Ghana during the 1970s. One of these sites was Fort Veerche Schanns, a nineteenth-century Dutch fortification
that was the western defense for historic Elmina. Locals leveled the site in recent times (1960s), but Calvocoressi was able to locate 30 structures in 1977, two of which were focal points (locus B and E) of fifteenth- to nineteenth-century artifacts, beads included. Most structures were Dutch, from 1637-1872, and the extensive range of trade goods contrasts with the smaller amounts found at hinterland sites. The chronological implications of such a site are quite significant. In addition, there were burials located within houses, a common practice at this site and in other Ghanaian archaeological sites such as Elmina (Calvocoressi 1977; DeCorse 1989, 1992a:23-27). Some of these burials contained large numbers of glass beads.

Calvocoressi’s 1977 report provides details of the excavation and states that archaeologists recovered 5,238 beads. Of these, 5,199 beads were associated with skeletons (#7 and #13) in trench Eiii. Specifically, 1,518 beads were in grave #7, and 3,681 beads were in grave #13 (1977:130). Locally made beads accounted for thirty-one of the beads, and the rest were imported. They also found five stone beads, twenty-three shell beads, one fired-clay bead, and two metal beads (gold). Of the glass beads, eight were not associated with the skeletons. Calvocoressi states there were three basic bead groups that differed only by their color. Seed beads comprised over 80 percent of the assemblage, and he stated that archaeologists recently uncovered similar beads in Christiansborg Castle, Accra, and that the beads were probably late eighteenth-century. The bulk of the assemblage contained opaque greenish-yellow beads, the same as at Bantama, and white beads with four longitudinal blue stripes. The greenish-yellow beads comprised over 90 percent of an almost 3000-bead collection (Calvocoressi 1977:132).
Bead Details: types 1 – 3 (red/black, orangish-yellow, and greenish-yellow) appear in different frequencies between the two skeletons. Out of the three seed bead types, Calvocoressi found type 1 and 3 in both graves and type 2 only in burial 13. The other 19 percent of beads are comprised of 24 different types, three of which archaeologists found in both graves, and only six types have higher quantities than one percent. Calvocoressi believes that the difference between these two graves and their beads is most likely personal preferences of the owners, especially since both grave locations were in relatively the same depth. Excavators found all of the beads around the neck areas of the skeletons; thus, it is likely that these beads were from necklaces, and each bead type made up a separate necklace. Ceramic dating puts trench Eiii in the middle of the nineteenth century, and the three importing countries were Holland, Germany, and England (Calvocoressi 1977:132).

This site is different from Dawu because Calvocoressi found all of the beads in two graves, giving this bead assemblage a ceremonial context. Like the Dawu site, though, Bantama also has about a 240-year range, around the same period, 1637-1872. Unfortunately, it seems likely that a seriation study would be of little assistance here since the beads were almost all associated with the two graves. However, if the dates of the graves could be determined, then the beads could definitely supplement seriation studies completed for other sites. One likeness to the Elmina shipwreck bead assemblage is that the grave beads are also a collection from a specific date and could also provide a time marker for comparisons. As noted above, Calvocoressi did date trench Eiii to the mid-eighteen hundreds. As for the graves themselves, Calvocoressi states that, “Skeleton 13 is slightly deeper than skeleton 7 and may therefore be slightly older” (1977:132).
Another similarity to the Elmina shipwreck assemblage is that the Bantama bead assemblage consisted of 80 percent seed beads. There were only three types of seed beads, two were simple monochrome beads (or Kidd type IIa), and one was compound manufacture of red on black, similar to the “green-hearts” (red on green, Kidd type IVa6) found on the Elmina shipwreck. It would be interesting to see if Calvocoressi’s greenish-yellow seed beads matched the Elmina shipwreck’s greenish-yellow seed beads. Unfortunately, there is no way to compare the beads at this time.

**Gonja, Ghana: Excavations at Daboya**

Daboya, near White Volta River, is one of the oldest, continuously occupied sites in West Africa and was a well-established trade site along routes that connected southern Akan areas to middle regions of the Niger River. While thousands of years old, its later occupation is of interest here. The early Kintampo culture from the Volta Basin, Gbanya, settled the site during the middle of the seventeenth century (Shinnie and Kense 1989:231-235). During the time of excavation, archaeologists noted that the groups living in the area were quite diverse. They observed that “a smaller proportion of the inhabitants are Ewe, from the southeastern area of Ghana, who work as fishermen, along with Hanga, Dyula, Wala, and Akan” (Shinnie and Kense 1989:245).

As one would expect from a trade town, archaeologists found that all of the glass artifacts from the site were imported, including sixty-three glass beads from four areas. Forty of the beads, or 65 percent, came from just one of the four areas, and the researchers stated that, “it is only possible to describe the beads from Daboya and make a preliminary distinction between the main types” and not to use them as chronological
indicators. There were three main types of glass beads: a cylindrical and short bead, a spherical or barrel-shaped bead, and an elongated bead. They all have various colors and finishes, some multi-faceted and polychrome, and some drawn. The cylindrical beads, on the other hand, were not faceted and had a uniform color. The archaeologists used tobacco pipes to help create their chronology. The pipes date the site to the seventeenth century, and the pipes precede the beads at this site (Shinnie and Kense 1989:194, 196 and 245).

Unfortunately, the authors did not use any specific typology to describe the glass beads, but they did use catalogue numbers, size, shape, and general color to describe their bead assemblage. From the photo plates and the bead drawings, there do not seem to be any similarities between the Elmina shipwreck bead assemblage and the Gonja bead collection. However, Shinnie and Kense explain that this is not surprising because even though there was strong Asante influence in the Gonja region during the eighteenth and nineteenth centuries, archaeologists did not find any evidence of connections to the Akan areas to the south (1989:246).

_Elmina, Ghana: Bead Assemblage and Other West African Sites_

In the city of Elmina, archaeologists completed 15 years of archaeological research, including excavations of midden deposits, fill layers, burials, and house floors. During excavations, project director Christopher DeCorse recovered over 400 types of beads from various sites within the city (1989:49). In his preliminary report, DeCorse states that there were more than 30,000 beads recovered from Elmina, including both European and local styles (1989:45). Many of the beads were comparable to those found
on historic bead sample cards. Specifically, the Levin Catalogue, the Venetian Bead book, the Giacomuzzi bead sample book, and bead cards from the Museum of Cultural History all had comparable bead assemblages with similar origins and dates to the Elmina beads recovered from nineteenth century-contexts (See Karklins 1984 and Francis 1988b).

The excavations at Elmina are significant for bead research because archaeologists recovered an extensive assemblage of European trade materials. DeCorse believes the artifacts will provide “more precise dating than is usually possible on African sites of the last 500 years” (1989:45). Many of the associated ceramic and glass artifacts have known dates that provide reliable chronological indicators. Furthermore, close chronological control can provide a way to determine temporal distributions of different bead varieties and help to evaluate their value as chronological indicators. DeCorse’s comprehensive study of the Elmina bead assemblage is not yet finished, but he notes that some of the European beads were likely to provide a *terminus post quem* for archaeological sites of the area, while other beads could provide chronological information when exposed to seriation studies like those used on ceramics (1989:45).

The beads from Elmina were mostly of the wound variety, similar to Kidd and Kidd designation WIIIb, but of various colors and shapes. Archaeologists also recovered some mold-pressed beads, mostly mandrel-pressed. DeCorse’s research on earlier bead varieties from Elmina “confirm that their temporal distributions are equivalent to those of similar beads found in North America” (1989:47). Archaeologists found beads in several burials which dated to between ca. 1700 and 1775, based on associated ceramics, and included types IIb18, IIb’7, W1d*, and WIIc2. All of these bead varieties have
counterparts in Amsterdam from the 1600s (see Baart 1988; Karklins 1974; van der Sleen 1963, 1973). The Dutch bead industry collapsed by about 1750; thus, DeCorse believes that these late-eighteenth-century examples came from Venice, Germany, or Bohemia (Karklins 1974:66; DeCorse 1989:46-47).

Currently, DeCorse (1989) has only been able to discuss the temporally diagnostic beads found at Elmina. To date, he has described 29 out of 400 styles found in the historic city of Elmina. Overall, archaeologists recovered most of the Elmina beads from nineteenth-century contexts, both domestic and ceremonial. Although DeCorse does not describe the other types of beads found at the site, this author assumes that there must be some simple drawn seed beads since that style was popular in most areas of the world, including West Africa. DeCorse does state that a complete evaluation of the entire bead assemblage is ongoing, but currently there are no published details about the non-diagnostic beads. The lack of information inhibits a comprehensive comparison between the Elmina shipwreck bead assemblage and the Elmina city bead assemblage at this time. Out of the beads examined so far, the beads found on the Elmina shipwreck do not match any of the 29 diagnostic bead types found at Elmina (DeCorse 1989).

DeCorse was able to make a bead assemblage comparison of the Elmina city beads to David Calvocoressi’s 1977 bead assemblage from Bantoma. He states that these two sites are good examples of how archaeological sites, close in both time and space, can exhibit significantly different artifact assemblages. In DeCorse’s words, “Although the beads have counterparts in the Elmina assemblage of seemingly comparable age, the relative frequencies are different” (1989:50). One difference is that the majority of Bantoma beads are small seed beads that range from 4mm to less than 2mm. DeCorse
says that Elmina has mostly large (6-10mm) to very large (> 10mm) beads. In comparison, DeCorse notes how the large beads are almost absent in the Bantoma site. They are also absent from the Elmina shipwreck site. DeCorse explains that any multiple reasons could cause this disparity, “the date of the deposits, or the sex, ethnicity, age, social status or personal preference of the original owners” (1989:50).

In one interesting note, DeCorse (1989) mentions that he did not recover any “mosaic” beads from excavations at Elmina, which disputes the idea that this type of bead was common before the nineteenth century. Mosaic beads are widespread in modern Ghanaian bead markets and are composite beads of several glass rods in various patterns. The negative evidence supports Karklins’ thoughts that mosaics are a twentieth-century production, as evidenced by his research of historic photographs from before 1935. Karklins found no mosaic bead photos out of the more than 10,000 he reviewed. There were no mosaic beads found on the Elmina shipwreck either, nor any of the other sites mentioned in this chapter, evidence that may lend more support to Karklins’ claim (DeCorse 1989:49).

The recovery of many partially melted beads is likely related to the 1874 destruction of Elmina. Archaeologists found similar melted beads in other areas of West Africa, like in the city Savi, the capital of the Hueda kingdom that was destroyed in 1727. Here, archaeologists found hundreds of glass beads, and most of them exhibit evidence of fracturing or discoloration that often results from fires (Kelly 1997:356). Several beads recovered from the Elmina shipwreck also have fracturing and discoloration, particularly the striped variations. The damage could be evidence of being in a fire, but it could also
be the result of post-depositional staining, devitrification or glass disease; hence, further research is needed.

DeCorse’s bead assemblage has potential for use in a seriation study. It is even reasonable to think that such a study could pinpoint a similar group of beads resembling the Elmina shipwreck assemblage, supporting a date in which these specific beads were most popular in the area. Equally important, DeCorse believes that local West African beads could also prove to be valuable as a chronological tool and complement other dating techniques such as Killick’s (1987) seriation of a small sample of beads from South African sites. Once a full report on the Elmina beads is published, a review of the Elmina shipwreck’s bead assemblage would be appropriate, especially since a large portion of the recovered beads from Elmina City come from a nineteenth-century context, before the 1873 destruction of the town. Correlations between the terrestrial site and the Elmina shipwreck site might be particularly relevant because of geographical proximity and chronological similarity.

African-American Sites with Bead Assemblages

There are many documented bead assemblages among African-American sites, including burial and plantation sites from New York and the Caribbean. This next section is not only an assessment of their bead assemblages, but also a discussion on their usefulness to this thesis. While it may seem naïve to include African American plantation sites in this thesis, the author believes the comparisons are necessary to explore examples of bead assemblages related, even if indirectly, to the Elmina shipwreck’s assemblage.
However, the lack of archaeological and ethnographical research in West Africa and the Americas in relation to trade beads has inhibited comparisons of many sites.

Not that long ago, archaeologists like DeCorse and Jamieson considered African archaeology, especially the colonial period, a new and limited area of study. North American and Caribbean archaeology of colonial sites has occurred since the 1970s, but Jamieson says funding, tourism, and salvage situations severely limited the work (1995:41-42). For more information about post-emancipation burial excavations, see Bell (1990); Cheek and Friedlander (1990); Combes (1972); Parrington and Wideman (1986); and Thomas et al. (1977). Ross Jamieson (1995) cautions researchers from directly comparing African-American sites to African sites. His writings cover African-American burial practices as a major problem area for most African related research and points out several mistakes that researchers make. This thesis has therefore tried to avoid, or at least acknowledge, comparative issues to circumvent any confusion about the conclusions made in this report.

Jamieson restates what many researchers have known for years; that inherent meanings are visible within archaeological contexts. Burial contexts usually contain some of the most direct symbolic relationships available at a site. Because of the significance linked to mortuary practices, it has been common practice to study these sites in order to gain insight about the people buried there and the cultures to which they belong. Archaeologists have been able to show that African-American burial practices are based, at least in part, on African traditions (Jamieson 1995:39; Genovese 1972:194-202; Thornton 1992: 228). Unfortunately, many factors limit how an archaeologist can research African-American mortuary traditions.
The most pertinent archaeological information on African-American history and African traditions comes from plantation sites and African-American cemeteries. There are, however, only a couple of large pre-emancipation (1862) New World cemeteries that archeologists have excavated to date; one in Barbados (Handler and Lange 1978) and one in New York (Harrington 1993). Barbados was the largest and earliest burial site of enslaved African Americans until the New York Burial Ground was uncovered. There are also many other smaller sites such as the Seville Plantation located at St. Ann’s Bay, Jamaica. The plantation was part of the British colony, starting in the 1670s and lasting until 1838, and had an average of 275 enslaved African workers. There were two slave villages and within these villages, there were several house-yard burials (Armstrong and Fleischman 2003). These earlier cemeteries have been helpful in determining any “flow of traits” that may have come from Africa, but Jamieson has several cautions about how one uses the information contained at these sites.

First, several types of restrictions were placed upon enslaved individuals at plantations to purposefully crush African cultural identities. Jamieson explains that desocialization came from plantation owners banning any importation of cultural materials from Africa and prohibiting many cultural practices. These actions inevitably influence the type of cultural material archaeologists find during plantation excavations. On the other hand, Jamieson explains that on many plantations the owners did not attend or oversee slave burials; rather, they allowed the enslaved to do so (1995:40-41). Many enslaved peoples followed African or African-American funerary traditions at these select times because plantation owners did not encroach on mortuary affairs. Therefore,
archaeologists do get a small window of opportunity to find traditional practices or modified practices within such early burials.

However, Jamieson states that a major increase in Christian influence affected African-American traditional practices. He contends that older graves had a relatively large number of grave goods, a practice that became virtually unheard of after 1820 in the New World (Jamieson 1995:49). Later burials have nineteenth-century grave goods that are more often related to European and Christian practices even though they are in African-American burials. For example, there were 140 burials excavated in a cemetery at the First African Baptist Church in Philadelphia that date between 1824 and 1842, and they all contained traditionally European grave goods, such as a coin by the head, a shoe on the coffin, or plates on the stomach (Parrington and Widerman 1986:60-61). Handler and Lange also elucidate that African influences faded out by the 1820s and that in the 1850s, cities created municipal cemeteries, making African-American burials indistinguishable (1978:213). Therefore, archaeological clues to African traditional practices are not likely to be found in the more common post-emancipation burials.

A second issue with direct comparisons is lack of well-researched ethnohistorical work, a problem that tends to cause researchers to over generalize West African cultures. Jamieson contends that researchers have long known that comparing historical sites with modern African ethnographic studies is not ideal and that the lack of data on West African burial practices from the colonial period is hindering current research efforts. Merrick Posnansky also comments on the subject, stating that in areas like West Africa “it was not the major states like Benin, Asante, or the Hausa city-states which contributed the major numbers of slaves but rather the weaker societies, societies which lost out in
the process of state formation” (1989:4). Phillip Curtin estimated that while 21 percent of
slaves came from the Gold Coast in the 1680s, half as many came from there in the
1750s, and even less by 1800 (1969:129).

Thus, a two-fold problem occurs in trying to draw comparisons. They are not
accurate because the better-studied African societies were generally not the ones forced
into slavery, and the smaller groups, whose ancestors are more likely buried at the
plantations, were much less studied (Jamieson 1995:43). By the time ethnographers
started to record details about these other societies, it was the early twentieth century, and
“they had been displaced, marginalized, and ravaged by the slave trade” (Posnansky
1989:4). Many comparisons generally result in an oversimplification of West African
cultural diversity. Therefore, a direct comparison of plantation-site bead assemblages to
the Elmina shipwreck assemblage would be problematic at best.

Additionally, not enough ethnographic information is available for deeper
research into historic Gold Coast mortuary practices. Therefore, while beads were part of
many West African, and some African-American burials, specific details as to which
groups used beads in their mortuary traditions, or which beads were important in those
rituals, remain elusive. The information provided below is an attempt to suggest
connections, but the author recognizes such connections cannot be confirmed.

New York Burial Site Bead Assemblage

Archaeologists believe that one of the best examples of African continuities
expressed in New World Archaeology is that of the African Burial Ground located in
New York where archaeologists uncovered hundreds of graves from the eighteenth
century. Even though it is impossible to associate any specific African group with this site, research related to the site still offers the best collection of artifacts supporting continuity of African customs. Several burials contained personal adornments, mostly factory-made, such as beads, buttons, cuff links, and rings (Bianco et al. 2006). The artifact assemblages contained a large number of monochrome beads and copper alloy beads, leading investigators to believe that the burial objects came from the lower end of the market. Bianco et al. explain in the *New York African Burial Ground Archaeology Final Report* that during the 1700s, inexpensive jewelry became more abundant in the major colonial cities and was even advertised weekly in the local press. These same papers show images of Africans wearing earrings, bracelets, buckles, buttons, and even the occasional wig.

Even with the increase in jewelry availability, only twenty-five graves (or 6.7 percent of the total 376 graves) contained adornments. The majority of burials with ornamentation were adults (nine women and eleven men), but there were also two infant and two child graves, along with one unknown burial that was probably an adult. Archaeologists found associated beads in several places with individuals, including the cranium, throat, and wrist, but most were located around the hips/pelvis area. For example, one child and one female adult each had strands of beads around their pelvis. These beads made up the majority of total beads recovered from the site. Along with the pelvic beads, archaeologists found a glass bead bracelet on the adult. The glass beads were European imports, and her waistband included seven cowries, which were common imports on the West African coast (Bianco et al. 2006). The beads worn at the waist were, and still are in some areas, common everyday attire in Ghana and Nigeria. Chapter
Six discusses waistbeads in detail and it is possible that the female from this site used waistbeads in a similar manner.

In addition, one of the infants at the site had African manufactured beads around its throat. Archaeologists estimate the earliest grave dated to before 1776 (Bianco et al. 2006). Bianco et al. contend that gift giving between adults and children in slavery is unusual in the eighteenth-century archaeological record. The authors provide two examples of infant/child burials that had beaded necklaces in other African-American cemeteries. One was in the neighboring property of Washington Heights, and the other was a site in the Chesapeake.

The final report for the New York African Burial Ground includes excellent documentation for its bead assemblage. The glass bead assemblage contains 146 beads, including nine beads of West African manufacture. The rest of the assemblage consists of two groups, simple monochrome beads (99 percent of the total) and complex beads with decoration (one percent). Cheryl LaRoche identified 14 different types of glass beads within the assemblage that archaeologists recovered from seven burials (1994:3). LaRoche applied the Kidd and Kidd 1983 classification system and Karklins’ 1985 terminology (Table 5).

The European beads consist of both wound and drawn beads. The assemblage colors include opaque black (22 beads); opaque and translucent yellow, light gold, and whitish tan (30 beads); transparent blue (58 beads); and translucent blue green (26 beads). The bead sizes range from very small (about 2mm) to medium (4-7mm) and large (over 10mm). Most of the beads were small to medium in size with the black beads from burial 187 being the smallest (Bianco et al. 2006:398-99). The authors point out that even
though the blue and blue-green beads make up 57.5 percent (yellow/light gold 19.9 percent, and black 17.8 percent) of the whole assemblage, they cannot assess a “color preference at the collective level because the majority of the beads were recovered from a single burial” (Bianco et al. 2006:399). Stine et al. further discuss this issue and suggest that researchers cannot determine details about color preferences within single burial sites because such sites are not “quantifiable” (1996:63).

Table 5. New York African Burial Ground Bead Assemblage

<table>
<thead>
<tr>
<th>Kidd Type</th>
<th>Shape</th>
<th>Color</th>
<th>Size</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia1</td>
<td>tubular</td>
<td>opaque redwood, clear coat</td>
<td>small</td>
<td>(3.5mm by 9mm)</td>
</tr>
<tr>
<td>Ila6</td>
<td>round</td>
<td>opaque black</td>
<td>small</td>
<td>(2.2-3.0mm by 1.5-2.5mm)</td>
</tr>
<tr>
<td>Wlb?</td>
<td>oblate</td>
<td>transparent yellow</td>
<td>medium</td>
<td>(4.0-4.8mm by 2.7-3.8mm)</td>
</tr>
<tr>
<td>Wlb*</td>
<td>round</td>
<td>opaque black</td>
<td>very large</td>
<td>(13mm by 11mm)</td>
</tr>
<tr>
<td>Ila*</td>
<td>circular</td>
<td>transparent light gold</td>
<td>small</td>
<td>(3.1-3.8mm by 2.0-2.6mm)</td>
</tr>
<tr>
<td>IIa*</td>
<td>circular</td>
<td>transparent blue green-turquoise (10BG 5/6)</td>
<td>small</td>
<td>(3.4-3.8mm by 2.0-2.6mm)</td>
</tr>
<tr>
<td>IIa55</td>
<td>oblate-barrel</td>
<td>transparent cobalt blue (5PB 2/6)</td>
<td>medium to large</td>
<td>(5.3-7.5mm by 4.0-7.1mm)</td>
</tr>
<tr>
<td>IIj2</td>
<td>barrel</td>
<td>opaque black (5PB 2/1) white wavy lines</td>
<td>large</td>
<td>(8.1mm by 8.3mm)</td>
</tr>
<tr>
<td>Wlb6</td>
<td>globular-oblate</td>
<td>transparent light gold (2.5Y 7/8)</td>
<td>large</td>
<td>(6.2-6.6mm by 4.7-4.8mm)</td>
</tr>
<tr>
<td>WIIC?</td>
<td>faceted</td>
<td>N/A</td>
<td>medium</td>
<td>(5.5mm by 5-6mm)</td>
</tr>
<tr>
<td>WIIIB*</td>
<td>irregular barrel</td>
<td>opaque blue (5PB 2/1) wavy gilt stripes</td>
<td>large</td>
<td>(6.1mm-6.2mm)</td>
</tr>
<tr>
<td>WIIC2</td>
<td>faceted</td>
<td>transparent light gray</td>
<td>large</td>
<td>(8-9mm by 7.5mm)</td>
</tr>
</tbody>
</table>

Notes: notations of “?” and “N/A” original (LaRoche 1994:7-11), * Karklins (1985)

Similarities of this bead assemblage to the Elmina shipwreck assemblage include small monochrome beads, clear glass encasement, and a high number of blue beads.
Specifically, IIa6 matches the Elmina beads in size, about 2.5mm in diameter and 2mm in length. While LaRoche (1994) calls these beads round, this author calls them oblate. Van der Sleen (1973) calls beads that are shorter in length than their diameter oblate, and DeCorse et al. (2003) calls them short oblate. Bianco et al. define oblate beads as those that have profiles that are circular to ellipsoidal (2006:401). Thus, the measurements provided by LaRoche still lead to the conclusion that IIa6 are the same shape and size of the many IIa* beads in the Elmina collection. The other two IIa* beads LaRoche describes are also within the size range and shape of the Elmina IIa* beads. She notes hers as light gold and blue/green, and even though the Elmina assemblage also has yellow and blue beads of that size, the Munsell numbers suggest that they are not very close in color.

Bead Type Ia6 is the same size and shape as the Elmina bead type IIIa10 but is a different color and manufacture. However, it is interesting to note that Ia6 has a clear glass casing. Many of the beads from the Elmina shipwreck also have clear glass encasing them, a trait which Karlis Karklins calls flashing (personal communication 2008). Francis and Brain are the only other researchers this author has found that mention flashing. Francis believes that, “white beads lost their clear coats in the late 1860’s” (1997:8). Brain observed that his bead type IV A2 (or Kidd type IVa6) had an outer “veneer of transparent, clear glass” (1979:106). The Elmina shipwreck bead assemblage contains beads with clear coats that are similar and exact to the Ia6 and IVa6 beads respectively. Karklins believes that flashing is “not a sacrificial layer but intended to increase the brilliancy of the beads and probably also to keep certain glasses from
oxidizing/dischloring during the rounding process and perhaps after as well” (Karlis Karklins, personal communication 2008).

The final similarity between the New York African Burial Ground and the Elmina shipwreck is a high number of blue beads. Although this occurrence does not have any direct relationship to the Elmina shipwreck assemblage, it may support the idea that blue was a highly popular color in many areas. However, as discussed before, having just one or two associations of blue beads is not enough data to assert any conclusive evidence (a discussion about blue beads is also presented later in this section).

*Georgia and Caribbean Assemblages*

Another African-American site that produced beads is the Stafford Plantation in Georgia (1834-1865). This plantation used a task labor system, which was generally the arrangement used on Cumberland Island and other islands of the area (Hardy 2002:56; Jones 1993:66; Smith et al. 1981:167-69). This type of work system allowed the enslaved some “free time” where they could tend private gardens and sell the produce. The enslaved often spent the small income made through this system on “dress and trinkets” and “baubles” (Hardy, 2002:56; Genovese 1972:555, 557). The Stafford Plantation had anywhere from 7 to 348 slaves throughout its 50 year span, and during the excavations of the site, 141 glass beads were recovered from areas with slave cabins. Archaeologists found several colors including purple, red, and amber; however, the most prevalent colors were blue, black, and green.

Meredith Hardy (2002) argues that the presence of glass beads in the context of slave cabins shows color preference that reflects cultural ties during the Creolization
Hardy provides bead information on five other plantations nearby (ranging in date from 1787 to 1862) as evidence for her argument. The five sites had respectively 1, 8, 10, 3, and 12 beads. The sites had a similar color distribution as that of the Stafford Plantation, and every site had one color in common, blue. However, Hardy acknowledges that the small sampling size of the bead assemblages could be a result of the amount of excavations at the locations. On the other hand, she believes the low numbers could be caused by the limited availability of market goods to the enslaved at the sites. With this said, it should also be noted that even with limited access to market goods, many enslaved people were allowed some informal trading, buying, and selling abilities. Therefore, researchers can still obtain important information from such small samples.

In a further comparison of slave sites, Hardy (2002) also looked at a Jamaican plantation and a Barbados slave cemetery. The Drax Hall Plantation in Jamaica (1669-1838) produced thirty-eight glass beads during excavations there, the majority of which were also blue. Archaeologists found many of the beads in two features that were small structures and dated to 1807-1838 and the late 1700s. In Barbados, the Newton Plantation cemetery (1650’s-1834) contained 899 glass beads. Of these beads, the most frequent colors were blue, brown, and red/green. Eleven total burials contained beads, two of which (numbers 60 and 61) had the majority of beads, 599. One of the eleven burials (number 72) also contained copper bracelets, an iron knife, a handmade clay pipe, copper and white metal rings, and an elaborate necklace with cowry shells, dog canines, beads, and fish vertebrae (Hardy 2002). Researchers believe the elderly male was likely an Obeah practitioner (traditional priest) of high status among the plantation slaves.
Handler and Lange (1978) conducted investigations on the Newton Plantation and found that the old adult male (referred to as number 72 above) was buried with a seventeenth-century pipe commonly used in the area now known as Ghana. European glass beads “dating mostly to the first half of the eighteenth century, were found in eight of the burials, with two particular burials containing over 200 beads each” (Handler and Lange 1978:145). Compared to other sites, these sites had a relatively large number of grave goods, a practice that actually lessened after 1820 in the New World as a period of major Christianization swept the area (Jamieson 1995:49-50).

Hardy’s 2002 report of the Cumberland Island bead analysis from the Stafford Plantation also provides a well-documented bead assemblage. She used the Kidd and Kidd typology and the Munsell Color Charts. She also explained that she designated the descriptive color terms in her analysis and that out of “143 glass beads, 48 were blue, 25 were green, 27 were black, and 22 were colorless [clear]” (Hardy 2002:70). The bead assemblage consisted of 106 drawn and hand-faceted beads and 37 wire-wound beads. One light blue bead was Munsell Color 5PB 5/10, which is nearly the same color as the Elmina shipwreck’s light blue beads, Munsell Color 5PB 5/8. Although all shades of color in beads were in flux until the mid-nineteenth century when more standardized glass production started, none of the other colors from the Stafford Plantation bead assemblage matched those of the Elmina shipwreck assemblage.

Hardy’s 1999 excavation did not recover any seed beads, but she suggests the reason for the bead absence is possibly a result of the size of the screen they were using (1/8-inch), which was large enough that very small items would have fallen through. If
they had used a smaller screen (1/16-inch) instead, she admits they may have recovered smaller beads (Hardy 2002).

Discussion of Bead Colors in American and Caribbean Assemblages

In summary of the slave sites presented here, the most popular bead colors in American plantation sites were blue (35.7 percent), white (22.2 percent), and black (12.5 percent). Comparisons to the New York African Burial Ground showed the colors blue, blue/green (57.5 percent), yellow/light gold (19.9 percent), and black (17.8 percent). In the Caribbean, the plantation site had a higher number of blue beads (44.7 percent) and fewer white and black beads (7 percent). The Barbados cemetery shows a slightly lower percentage of blue (30 percent) and different colors from the plantation sites as the next highest: brown (25.4 percent) and red/green (15 percent). The cemetery also had a greater variety of colors and types of beads than the plantation sites. As mentioned earlier, the slave sites all have one common color, blue, which is also the color found most often in these sites (Table 6).

Table 6. Popular Bead Colors from Slave Sites in Selected Areas of the Americas

<table>
<thead>
<tr>
<th></th>
<th>Blue</th>
<th>White</th>
<th>Black</th>
<th>Brown</th>
<th>Red on Green</th>
<th>Light Yellow or Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>North American</td>
<td>35.7%</td>
<td>22.2%</td>
<td>12.5%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>New York</td>
<td>57.5%</td>
<td>-</td>
<td>17.8%</td>
<td>-</td>
<td>-</td>
<td>19.9%</td>
</tr>
<tr>
<td>Caribbean</td>
<td>44.7%</td>
<td>7%</td>
<td>7%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Barbados</td>
<td>30%</td>
<td>-</td>
<td>-</td>
<td>25.4%</td>
<td>15%</td>
<td>-</td>
</tr>
</tbody>
</table>
The numbers indicate a preference of one color over another, which is a phenomenon that Linda Stine and colleagues (1996) illustrate in their report “Blue Beads as African American Cultural Symbols.” They demonstrate a predominance of blue beads in African-American sites. Many of the people at these sites had limited access to market goods; thus, the authors believe even small preferences provide key insights to plantation culture and African-American history. The Stine et al. investigations focus on African-American slaves sites and the significance of the color blue, but the authors do acknowledge that other researchers oppose their theory. For example, Thomas Wheaton (1993:80) believes the cultural connections to the color blue is a creation archaeologists unwittingly fashioned from unsubstantiated evidence and is not actually historically correct.

Stine et al. suggest five reasons for believing that blue beads have cultural significance. First, West and Central African cultural practices include using charms and adornments (with beads) for protection and to ward off illness. Second, researchers believe that many cultural practices came to the Americas along with enslaved West Africans. Third, African-American slaves had limited access to material goods, but were able to maintain an informal economy, which lead to reinterpretations of African-derived economic practices. Fourth, both Muslim and Christian religions had beliefs in “the evil eye,” which was recorded in both Africa and America. Lastly, the color blue is a motif documented in African-American folklore as a form of spiritual protection against the evil eye and harm in general (Stine et al. 1996:49).

Stine et al. compared archaeological data from North American sites with a secondary focus on the southern states of South Carolina and Georgia. Stine et al.
acknowledge that it was not a systematic plantation study, but they did find data that “incontrovertibly demonstrate blue beads are consistently represented more often than any other bead color on African American sites” (1996:50). Blue was also the most uniformly represented color in their national site sample.

The researchers had problems with the archaeologically recorded bead attributes, which this thesis has also discussed, and contended that most archaeological reports only record bead frequency and color. Because the bead types and sizes were not comparable for all the sites, color was the only comparable attribute. The study looked specifically at beads from African-American residences, plantation kitchens, and complexes in South Carolina and Georgia. Stine et al. studied 392 beads from 50 sites and 58 temporal components; 42 sites had beads, and 34 sites contained blue beads (or 81 percent of the sites). Blue beads represented 36 percent of the total bead sample, and archaeologists recovered them in 48 percent of residences, 24 percent of kitchens, and 21 percent of complexes. The archaeologists argue that the distribution difference between domestic areas and plantation areas is significant, and demonstrate that the beads were either lost or discarded most often in or around African-American quarters. The predominance of blue beads lasted until the Civil War period, after which they declined and black beads increased (Stine et al. 1996:51-53).

Stine et al. believe that their results do not just reflect blue bead availability because they did not find blue beads equally in all areas of the plantation. However, the authors do discuss how many researchers believe beads from African-American sites “merely reflect availability and manufacturing trends rather than slave or planter choice or cultural preferences” (1996:55). Unfortunately, they explain that published reports
covering bead production, types, and numbers are not easily accessible. Karklins notes that at least two published bead catalogs, the Levin Catalogue and the Venetian Bead Book, imply that bead manufacturers made more varieties of blues and greens than other colors (1985:12, 43). On the other hand, Stine et al. (1996) contend that blue and green bead trends could be the result of market demand. Other researchers believe the trend has to do with bead manufacturing technology. For example, Jones and Sullivan explain that “cobalt is one of the strongest colorants available to glass manufacturers” (1989:14). However, Stine et al. defend their thoughts that the market plays the largest role, and that blue beads, while easy to produce, had to have consumer demand for the traders to continue marketing the beads.

Stine et al. do not try to create one-to-one correspondences with ethnic groups but think it is reasonable that beliefs and practices survived the middle passage and that African Americans adapted them to the new regions. The authors explain that some 13.4 percent of the enslaved in South Carolina came from the Gold Coast area of West Africa and that they mixed with multiple other African groups once in America. Therefore, researchers should think of bead use as a fusion of all of the groups, or a pan-cultural phenomenon (Stine et al. 1996:53). These thoughts agree with Jamieson’s comments earlier in this section.

During their research, Stine et al. did find that in African-American mortuary practices, women and infants were more often buried with beads (sometimes blue beads, as noted earlier) because of the belief that mothers and infants were the most susceptible to harm. In addition, researchers believe some burials belong to conjurers, or traditional
priests, because archaeologists generally find more grave goods, including more beads, than with most other burials (1996:62-63).

They also found beads as mortuary goods in Stanley South’s work at Means Graveyard, an African-American burial from an eighteenth- and nineteenth-century plantation on Parris Island, South Carolina, contained a pit with charcoal and 3,481 beads. Most of the beads were blue or polychrome – blue, white, and coral (reddish color). Archaeologists recovered two more cremation pits with beads within the plantation complex (South et al. 1988:163-165). South et al. found that cremated material goods derived from a mortuary ritual from West Africa.

In contrast, Stine et al. observed that most African-American cemeteries do not contain many beads. They researched seven other African-American cemeteries and found that less than five percent of burials on average contained beads (Cotter et al. 1992; Handler and Lange 1978; LaRoche 1994; Parrington 1987; Rose 1985; Shogren et al. 1989; Watters 1987). The authors also used Michael Shogren and colleagues’ archaeological findings at Elko Switch Cemetery to reference the typical bead associations found in African-American cemetery contexts. Two graves out of 56 contained beads, and one burial (1850-1870) was a post middle age woman with a necklace of black beads (with a central blue bead). Another burial (1895) was an infant with 300 clear beads (twenty-four large beads and the rest seed beads) (Shogren et al. 1989: 46-49, 91-93, 143). The archaeologists then refer to the New York African Burial Ground where seven out of 400 graves contained beads, three women and two infants and two unknowns. As mentioned earlier, the infants had either waist beads or a necklace,
and one female had a strand of waist beads. Blue and turquoise beads comprised 58 percent of the total sample (LaRoche 1994:3-20).

Stine et al. (1996) note that the mortuary data demonstrates how African-American burial practices beads do not usually include beads, but when archaeologists do find beads, the pieces are usually associated with women, children, or conjurers. In addition, “although only quantifiable at the African Burial Ground, Newton, and Elko Switch cemeteries, blue beads in interments represent less than 30 percent of the beads by color” (Stine et al. 1996:63). However, in African-American domestic contexts, the distribution of blue beads differs significantly, rising to 48 percent. The authors argue that the difference could mean African Americans used different bead colors for daily life than they did for burial practices.

Stine et al. (1996) also assert that the reason blue became more prevalent in the Americas (and possibly why blue is more prevalent in domestic contexts) is attributed to the hostile settings of slavery and the increased need for protection. It seems that enslaved Africans selected and magnified certain African-cultural elements in their new plantation settings. Anthropologists studying colors within cultures explain that the color blue belongs to a set of four colors (blue, black, red, and white) that hold deeper values and meanings in certain cultures. The combination of these colors, expressed as binary oppositions, creates social contexts, which give these colors their values. Several cultures embrace this set of colors as important, African-Americans included (Wahlman 1993; Stine et al. 1996). Unfortunately, this study needs more research in order to make a stronger connection to African color symbolism. The authors believe archaeological
reports should also contain additional bead attribute information so that researchers can gain more insight than color alone can provide.

Nautical Sites

One of the earliest shipwrecks with a large bead assemblage is the La Belle from 1686. The ship held over 790,000 beads, and most of the assemblage consisted of seed beads. There were larger beads, but they only numbered about 2,500. The most frequent color found was blue, but white, black, green, and red were also common in the assemblage (Bruseth and Turner 2005:87). A color photo reveals that at least two types of beads in the La Belle assemblage are quite similar and possibly the same types as some recovered from the Elmina shipwreck. The La Belle contained blue and white seed beads that look like Elmina Type 6 and Type 15 (respectively Kidd Type IIa* and IVa11, or a similar white bead Kidd Type IVa13). These similarities demonstrate the extended time range of use for these bead styles.

The most interesting aspect about the La Belle bead assemblage is that archaeologists recovered many beads insitu in their holding box. The box (28 inches by 11 inches by 11 inches deep) was located in the aft hold, near the stern of the ship. The beads were strung by color and laid in rows on top of hay, each group of colors held by a larger, 1/5 inch cord (Bruseth and Turner 2005:87). As for the loose beads, they were found throughout the site. It would be interesting to know if the distribution of loose beads was similar in any way to the Elmina shipwreck. Such a comparison could shed light on post-depositional events and whether or not bead-scatter patterns reveal any
insights to those events or could definitively show where beads were originally stowed, as the author attempted to find for the Elmina shipwreck in Chapter Four.

Unfortunately, a “blower” (or a prop-wash deflector that can quickly move large amounts of sediment) was used before formal excavations were started on La Belle. The adverse effect was that holding containers were blown open, and many items, including the beads, were propelled across the site (Bruseth and Turner 2005:87). Therefore, distribution patterns were altered, and a study of bead patterns would be inaccurate. However, beads found concreted to other objects would still be in their original post-depositional locations and could possibly still reveal such patterns. It cannot be determined from the report how the beads were recovered in relation to concretions and other artifacts, or whether or not individual bead locations were recorded.

One shipwreck with known links to the West African trade is the Henrietta Marie, wrecked in 1701. The archaeological excavation of this ship resulted in the recovery of over 3,000 glass beads. The majority of the assemblage consisted of green and yellow beads, and Moore (1988) notes another ship’s record, from the Albion, that he thinks might explain the abundance of green and yellow beads. The English ship had difficulty, around the same time as the Henrietta Marie, trading its green and yellow bead cargo when it had docked in Nigeria. Because the color preferences in parts of West Africa changed seasonally, it elucidates why the Henrietta Marie could also have had trouble trading those same colors of beads only a few months after the Albion. The Henrietta Marie would have had to carry the unwanted goods, including beads, back to England after finishing its trade route to the Caribbean. The Henrietta Marie is an excellent representation of how traders had to travel well prepared with several trading options.
since they could not accurately know what items would be of the most interest at the time of their arrival (Alpern 1995).

The Henrietta Marie bead assemblage may represent types with low demand in the West African market, but a direct comparison of the shipwreck still yields many insights. The Henrietta Marie bead assemblage contained thousands of beads and is just a sample of what remains on the ship. Archaeologists recovered beads from all over the site, but there was a concentration of beads located within 9.3 square meters west of the “South Cannon Datum” (Moore 1988). The assemblage consisted mostly of seed beads with a few larger striped beads known as “gooseberries,” and at least one tube type. The seed beads include the colors white, blue, amber, gray, green, and yellow. Some of the beads were possibly strung on iron wire because conservators extracted many of the beads from extremely hard concreted masses that were similar to encrustation built up on many of the iron artifacts from the site.

The Henrietta Marie’s bead assemblage has many similarities to the Elmina shipwreck’s assemblage. David Moore (1988) classified over 90 percent of his bead assemblage as seed beads; however, there are some discrepancies in his use of Kidd and Kidd’s classification. As discussed in Chapter two, Moore, like others, uses the same classification for beads with different diaphaneity. His assemblage’s Kidd type Ila27 is described as clear/transparent, but he later uses Kidd Type Ila27 again for another bead, which he says is opaque. As pointed out before, only one of the beads can be the Kidd Type variety Ila27. It turns out that Kidds’ variety Ila27 is clear/transparent; thus, Moore’s opaque variety should be Ila* because it is not the same diaphaneity.
Another inconsistency comes from Moore’s statement that the majority of his bead assemblage is green and yellow. After calculating the numbers, his statement is not quite right. Moore’s (1988) Table X shows that when all the green beads are added together, it equals 66 percent: the yellow beads come to 14.3 percent and the blue beads (even without the .06 percent of turquoise beads) make up 14.7 percent of the total assemblage. Therefore, the representation of yellow and blue beads is equal, and the calculations should reflect that fact. Thus, 95 percent of the *Henrietta Marie’s* bead assemblage consists of green, blue, and yellow beads.

At first glance, several of the beads appear to be quite similar to the beads in the Elmina shipwreck assemblage. Moore’s (1988) bead types IIa19 (circular, small, opaque amber), IIa27 (circular, small, opaque, emerald green), IIa56 (circular, small, clear, bright navy) are similar in shape, size, color, and diaphaneity to the Elmina bead types: Type 1 (IIa* - translucent Russet Orange), Type 4 (IIa* - translucent green), and Type 6 (IIa* - transparent blue). Unfortunately, as found with many other early bead reports, the author did not include color codes, photos, or subjective descriptions of the beads, making adequate comparisons to other collections difficult.

Another shipwreck with a well-documented bead assemblage is the Manilla wreck, which sank in the middle of the eighteenth century near Bermuda. Salvagers named this shipwreck the Manilla wreck because its hold contained distinctive brass trade bracelets that are best known as trade items in the West African market. Karklins (1991) published a report on the bead assemblage from the Manilla wreck. He states, “shipwreck assemblages are ideally suited for preparing and refining [artifact] chronologies, and determining the trade assemblages of different countries or trading companies at
narrowly defined periods of time” (1991:33). The Manilla wreck contained about 10,000 glass beads and some of wood, most of which were concentrated in one section of the wreck. There were both drawn and wound beads, and Karklins provides the best classification seen by this author.

The Manilla wreck bead assemblage consisted of bead types Ia5, Ia*(a and b), Ib*(a, b, and c), IIa27, IIa*(a), IIa56, IIa57, IIb*(a), IIa18, IIb*(b), IIb26, IIIb*(a), IVa3, and several types of wound beads. The beads that are most similar to the Elmina shipwreck’s beads are IIa27 (circular, small, transparent emerald green) Munsell 10G 5/10, and IIa56 (circular, small to medium, transparent navy blue) Munsell 7.5PB 2/7 (Karklins 1991:34). Unlike the *Henrietta Marie’s* bead assemblage, the Manilla wreck has Munsell color notations that provide comparable data to the Elmina shipwreck’s bead assemblage. These notations determine that the similar beads in the Elmina assemblage, IIa* - (circular, small, translucent green) Munsell 2.5G 4/6 and IIa* - (circular, small, transparent blue) Munsell 10B 3/10, are not the same colors. Nevertheless, they still represent varieties of the same type of bead, Type IIa*, which was one of the most popular types among trade beads in general. In addition, seed beads created before the 1860s varied greatly because of their manufacturing process and colors changing with each batch made (Francis 1988a, 1997).

A key approach to bead analysis is to focus on bead frequencies and viewing the assemblages as a whole. The Manilla wreck consisted principally of bead types IIa56, IIb18, IIb*(b), W1b4, and W1c*(a). The colors of these beads are in accordance: navy blue, gooseberry (clear with white internal stripes), white with red stripes, pale blue, and light gold. Thus, the color blue, overall, predominates in this assemblage as well as
within that of the *Henrietta Marie*. Karklins’ comparative study found few wrecks with any significant quantities of diagnostic beads, and the sites with the best correlative were “two 18th-century Indian sites in the eastern United States (a Tunica village in Louisiana and a Kaskaskia village in Illinois), as well as sundry 18th-century sites in Amsterdam,” and St. Eustatius, a Dutch commercial port in the Caribbean (1991:36). The dates of these sites are Tunica 1731-1764, Amsterdam sites from 1590-1800, and St. Eustatius eighteenth-nineteenth centuries.

Karklins refers to one particular bead study that helped him date the Manilla wreck bead assemblage, G.I. Quimby’s (1966) study on wound beads, which provided a core date of 1725-1750 that other artifacts associated with the wreck confirmed (1991:37). Karklins also believes that the Manilla wreck is likely a Dutch ship because of the number of cannon on board and the ceramics and glassware, the latter of which correspond to artifacts recovered from the *Amsterdam*, a 1749 Dutch East Indiaman, and the *Hollandia*, a 1743 East Indiaman (1991:40).

One archaeologically investigated VOC wreck includes the shipwreck called *De Liefde* that wrecked off the coast of Scotland in 1711. It was sailing to Batavia, Java, by way of the Cape of Good Hope and Ceylon on a trading mission. A ship’s bell and newly minted coins securely set the date of this ship and its cargo. Archaeologists recovered seven types of glass beads, which Karklins (1988) examined and identified as IIj*, W1b*, W1lc2, W1**, and two varieties of type WIIIb*. The most common type was W1lc2, accounting for most of the assemblage at 347 beads. The other types had only one to four specimens found apiece. None of these types (all of which are wound, except IIj*, which has wavy lines) is similar to the beads found on the Elmina shipwreck. Karklins contends
that the *De Liefde* demonstrates trade knowledge, such as bead trade routes to foreign ports and commercial bead assemblages taken to these ports, in this case South Africa and Sri Lanka. This bead assemblage also contributed to bead chronologies because previous researchers believed two of the bead types ranged in use from ca.1760 – ca. 1820 and the context of the shipwreck safely extends that date by fifty years, at least for these areas.

The pirate ship *Queen Anne’s Revenge* has several beads recovered from its hull, but investigators have only identified five at this time; the other beads are still inside concretions. Of these five, investigators consider three pony beads (4-6mm), one as slightly larger than a pony bead, and the last is a powder-glass bead from West Africa (Table 7) (Carnes-McNaughton and Myers 2007).

Table 7. *Queen Anne’s Revenge* Bead Assemblage

<table>
<thead>
<tr>
<th>Specimen Number</th>
<th>Kidd Type</th>
<th>Manufacture</th>
<th>Size in Diameter</th>
<th>Shape</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>286.005</td>
<td>IIa19</td>
<td>simple drawn</td>
<td>6mm</td>
<td>circular</td>
<td>translucent light gold/yellow (5Y7/6)</td>
</tr>
<tr>
<td>345.024</td>
<td>IIa7*</td>
<td>simple drawn</td>
<td>6mm</td>
<td>circular</td>
<td>translucent black/dark reddish brown (2.5YR3/4)</td>
</tr>
<tr>
<td>347.002</td>
<td>compound drawn</td>
<td></td>
<td>7mm</td>
<td>oval</td>
<td>translucent oyster white outer layer, opaque light grey core</td>
</tr>
<tr>
<td>387.011</td>
<td>fired powdered</td>
<td></td>
<td>5.79-6mm</td>
<td>circular-doughnut</td>
<td>opaque whitish tan to pale yellow</td>
</tr>
<tr>
<td>904.001</td>
<td>IIa7</td>
<td>simple drawn</td>
<td>5.2-6mm</td>
<td>circular</td>
<td>opaque black</td>
</tr>
</tbody>
</table>

Note: *diaphaneity different from Kidd and Kidd’s IIa7
This assemblage, similar to other reports, has a common error with using the Kidd and Kidd system. The error is that beads with different diaphaneities should receive different alphanumeric designations (Table 7). IIa7 is correct for bead specimen 904.001, but not for bead specimen 345.024 (it should be IIa* according to Karklins’ 1985 guide).

Additionally, the author caught an interesting discrepancy with Carnes-McNaughton and Myers’ (2007) color designations in their article. Color descriptions, as mentioned in Chapter Three, are often problematic because of authors not using the same color systems or designations. However, Carnes-McNaughton and Myers did include Munsell codes in their publication, thus allowing others to accurately compare the colors. This author was able to determine if any of the Elmina shipwreck beads were similar to the *Queen Anne’s Revenge* beads. Even so, the author wants to point out that she would have made an incorrect judgment had she used only the Kidd designations presented in the *Queen Anne’s Revenge* report for comparison, because her judgment of bead type IIa19 was different from that made by Carnes-McNaughton and Myers.

To clarify, Carnes-McNaughton and Myers designated one bead (286.005) as Kidd type IIa19 and described it as light gold/yellow with a Munsell of 5Y7/6. This author originally designated a bead IIa19 (now labeled Elmina Type 1, Kidd Type variety IIa*) and described it as orange, with a Munsell of 5YR6/12. The Kidd and Kidd classification refers to Type IIa19 as an amber color; thus, here are three different color descriptions for the same bead type. By using Karklins’ (1989) color equivalency charts, the author found clarification for the colors. The Kidds’ color name for IIa19 was amber, and Karklins’ table shows this color name is equivalent to the Harmony code 3 lc or Munsell 10YR7/8. The Munsell code for the Kidds’ amber color indicated that the
author’s designation of IIa19 was wrong because the Elmina shipwreck bead is Munsell color 5YR6/12, not 10YR7/8. The bead is now designated IIa* and the author found that Munsell 5YR6/12 is actually called russet orange (Karklins 1989).

In actuality, *Queen Anne’s Revenge* specimen 286.005 is much closer to a different Elmina shipwreck bead. Elmina Type 2 (Kidd IIa*) is translucent and has a Munsell of 5Y7/8 and is yellow. The *Queen Anne’s Revenge* specimen color, 5Y7/6, is almost identical; only a two color chip difference on the same hue page. Besides the size, Elmina Type 2 is very small to small and the *Queen Anne’s Revenge* Type IIa19 is pony size or medium, there seems to be no other difference. The *Queen Anne’s Revenge* project has photos of their bead assemblage online, and after looking at the image, the author noted that *Queen Anne’s Revenge* Type IIa19 corresponded visually to Elmina Type 2. Therefore, without the Munsell designation, I might have erroneously concluded that Elmina Type 1 corresponded to Carnes-McNaughton and Myers’ type IIa19, instead of correctly stating that Elmina Type 2 corresponds to their type IIa19. The error in visually matching beads through publications is that beads everywhere are unwittingly lumped together, and information on individual bead color, luster, and diaphaneity is lost.

**Conclusion**

The historical sites presented here demonstrate several archaeological needs. First, the various Ghanaian archaeological sites illustrate that archaeologists need to review regionally associated bead assemblages in order to uncover regionally specific bead attributes. Second, the African-American sites, while important in establishing historical continuity of African practices in the Americas, are often used to over
generalize statements about African connections. Lastly, archaeologists need detailed bead descriptions from nautical sites to assist researchers analyzing beads for seriation studies or to find new temporal-spatial markers to help date sites.

The importance of seriation studies cannot be emphasized enough, and through proper documentation and the help of databases, archaeologists can better conduct these studies. To further underscore this point, presented next is the seriation study completed by Jeffery Brain. *Tunica Treasures* is one of the only bead seriation studies found by this author, but the work provides a temporal and spatial distribution of about 60 bead types. Brain (1979) used only the bead types that archaeologists recovered in at least four sites from the eastern region of North America. His goal was to refine an earlier study by G. I. Quimby, who was able to illustrate three American historical periods defined by bead types, wound beads in particular. Brain was able to use his seriation study to increase the number of periods from three to six, dating from pre-1700 to post-1800, doubling the chronological control of certain bead varieties within the United States.

Brain’s study involved using the Tunica collection as the primary data and graphing the beads’ chronological distributions, including coming up with mean dates and periods of probable introduction and peak popularity (1979:116). He based his predictions on correlated historical events of the eighteenth-century Lower Mississippi Valley. Brain also mapped geographic distributions and found that some bead varieties have a rather restricted connection to certain European nationalities. Thus, Brain was able to state that he considers the beads from the Tunica collection (from the Trudeau site) “normal complements in the early to mid-eighteenth century French trade inventory” (1979:116). Even though this thesis cannot make a similar statement at this time, it is this
author’s hope that future research will complete the work started here. As archaeologists find and investigate other West African shipwrecks and review regional bead assemblages from the Gold Coast, they will gain a more comprehensive understanding of bead chronology for the area.

The shipwrecks presented here demonstrate trade bead collections involved in the Atlantic Trade during the 1700s. The Elmina shipwreck bead assemblage adds another collection of trade beads, but from the mid 1800s. Even though Karklins noted that few shipwrecks have produced diagnostic beads, this author believes that researchers need to review and report on even the non-diagnostic beads. The non-descript beads in particular need detailed assessments because only in that manner can archaeologists create a comparable bead database. A shipwreck bead database will generally have assemblages with short timelines, which archaeologists can compare with bead seriation studies completed for terrestrial sites. However, comparisons can be made only if all researchers are using a comparable classification system. This chapter has further demonstrated the faults of current approaches and how researchers are unknowingly misusing them.

Lastly, this chapter presents evidence that blue beads are found in almost all of the archaeological sites discussed here, whether Native American, Caribbean, or African. Blue bead occurrences in large numbers of historic sites have caused many researchers to comment on their prevalence. The next chapter discusses this topic in more detail and explores possible explanations.
CHAPTER VI

HISTORICAL AND MODERN BEAD PRODUCTION ON THE GOLD COAST

This chapter focuses on how local beliefs endowed beads with special significance, which, in turn, resulted in West Africa’s historical bead industry. Gold Coast peoples traded beads domestically along the West African coast before the introduction of beads through European maritime trade. After the introduction of European goods, bead artists had better glass resources, and the bead industry boomed. This chapter concentrates specifically on bead production and alteration, significant precious beads, and bead usage in Ghana and along the Gold Coast. This section will also explore noteworthy connections to the historic Gold Coast’s bead industry from other areas in Ghana and West Africa. Another segment of this chapter investigates how Ghanaians could have used the beads recovered from the Elmina shipwreck, had the beads made it into the West African market. For example, recent research shows that many West Africans bought Venetian monochrome beads almost exclusively as coloring agents for the art of powder-glass bead making.

*West African Bead Connections to Ghana through Early Production and Trade*

The historic roots of West African beadmaking date from the eighth to the eleventh centuries. Archaeologist Thurstan Shaw describes thousands of beads recovered from two Nigerian sites. These beads included imports from India, the Middle East, and to a lesser extent, Europe (Shaw 1970, 1977). The beads were mostly glass of opaque
solid colors, translucent solid colors, or others with longitudinal stripes and some eye beads. The preferred glass color was blue, including long blue cylinder beads. Shaw’s investigations uncovered a medieval West African bead trade that extended long distances east and west via the Lake Chad region, which was a separate trade route from the Trans-Saharan trade. The latter reached West Africa’s forest states and Sudan areas through the northern regions of Africa, and trade by this route was steady by the sixth century. Muslim populations controlled trade in this region, and Arabic trade accounts mention the presence of bead trade goods starting around the thirteenth century. One often-quoted Arabic trade account comes from Yāqūt’s *Mu’jam as-buldān*. “Merchants travel from Sijilmāsa to a town on the frontiers of the Sūdān, called Ghāna. Their wares are salt, bundles of pine wood, blue glass beads, bracelets of red copper, bangles and signet rings of copper, and nothing else” (1981:167-169 [1224]).

Authors often refer to trade beads as logical items for the caravan trade because of their small size, the ability to move them in large quantities, and their comparatively high value in Africa (Bovill 1995:105; Shaw 1961:74). Many authors believe that overland trade centers were the first to introduce West Africans to glass beadmaking techniques (Francis 1993a:12; Garlake 1990:135; Liu 1984:57). Historian Edward Bovill asserts that the thirteenth century brought about an increase in trade to Africa, which Europe participated in by sending a wide variety of goods via the trans-Saharan caravan trade. He notes that the demand for glass beads was large within Sudan trade and drew Venetian glassmakers and their representatives to the area where they continued to report bead demands until recent times (Bovill 1995:105).
Nigeria has the most extensive evidence of early West African beadmaking, and the city of Ifé was a major production and export site for drawn-glass beads from the tenth through fifteenth centuries. Frank Willett suggests that glass-bead making in Ifé consisted of reworking imported glass and glass beads by drilling or melting them in crucibles, and the imports likely came from both Europe and the Islamic world as early as 800 A.D. (1977:22). Peter Francis (1993a:6) cites similar resources for Ifé in his discussion of Aggry bead materials, and Merrick Posnansky contends that the northern trade brought in over 165,000 beads to Nigeria (1973:153).

Early explorers of the region provide support for the idea that Ifé residents reworked imported beads by fusing them together. The Lander brothers, for example, bought such a bead at a local market. They maintain that local inhabitants told them the bead “was dug from the earth, in a country called Ifie,” and the brothers thought the bead was a stone consisting of “a variety of little transparent stones, white, green, and every shade of blue, all embedded in a species of clayey earth, resembling rough mosaic work” (Lander and Lander 1832:180). Frank Willet believes this statement is evidence that local artists fused glass beads together to form new beads (1977:22). This region has several locations where locals reworked beads by fusing them together, including the sites Olokun Grove and Ita Yemoo (Willet 1977:22, 24). Oral traditions suggest that Olokun Grove was the first Yoruba center of bead production in Southern Nigeria (Eluyemi 1987:200; Frobenius 1968:94). Here, archaeologist Eluyemi excavated fourteen shallow furnaces containing fused glass beads. These ranged from small 2 millimeter beads to larger 10-millimeter beads with the samples consisting of mostly tubular or circular beads, and they were mainly opaque blue or translucent blue (Eluyemi 1987:203-213).
X-ray fluorescence analysis shows that drawn blue beads, called *segi*, from Nigeria are similar enough in composition that glass specialists grouped them with other blue beads from the sites of Kumbi Saleh and Gao, in Mali and Tegdaoust, in Mauritania (Davison et al. 1971:652, 654-655; Eluyemi 1987:216, 219; Gott 2002:74). Since archaeologists have found these blue beads in sites from Nigeria to Mauritania, their presence illustrates how far Ifé’s trade networks were established, or possibly how widely-dispersed this beadmaking technology was. Either way, the production and export of blue glass beads was important to early Ifé trade (Francis 1993a:6; Gott 2002:74).

Blue drawn-glass beads seem to have a connection between those made at Ifé and those made at the city of Begho, which was one of the major trading hubs in the northwest Brong-Ahafo region of Ghana, bordering the northern Akan goldfields. Posnansky (1970) discovered a glass-bead production site at Begho that had evidence of blue drawn-glass bead manufacture, similar to those produced at Ifé. Posnansky recovered glass-encrusted crucibles and snapped solid ends of cane beads, which were waste products from the drawn-glass beadmaking process (1973:158; 1970). She believes that Begho was a popular trade area that likely saw its peak in the late sixteenth and seventeenth centuries (Posnansky 1973:158). The similarities of the beads suggest that the inhabitants of the city of Begho traded with the people in Ifé or at least gathered their bead knowledge from that area.

**Ghanaian Bead Use and Significance**

Unifying Principle of Generative Nurturance in the Arts of Southern Ghana. According
to her research, historic Gold Coast peoples shared traditional views leading to the belief
that beads have a spiritual nature because of their “mysterious origins, supernatural
powers, and generative capacities” (Gott 2002:1). To fully understand why glass beads
are so important to Ghanaian lifestyles, one must first learn how they derived their
supernatural stature. Knowing about the tradition beliefs concerning the mystical origins
of beads may reveal why Ghanaians established bead trading along the Gold Coast and
manufactured their own powder-glass beads.

Brigid Sackey (1985) notes that most ethnic groups in Ghana use beads, and some
beads are more important than other beads. A common theme among West African
groups is that certain types of beads, the ones many authors call “precious beads,” are
considered sacred because of their antiquity, their association with deities, and because
many of these beads supposedly have the power of self-reproduction. There are several
sacred and highly valued beads found in the coastal areas, but historically Ghanaians
treasure those called Aggry the most. They are the earliest of the precious beads. Later,
the Bodom bead came into popularity, which many bead researchers agree happened in
the nineteenth century (Francis 1993a:12; Liu et al. 2001:29). Currently, valuable antique
beads include the koli (a Ga term), bota (a Fante term), or abute (an Ewe term). Evidence
suggests that Ghanaians either made or reworked all of these beads locally, but the
materials for all the beads came from imported European glass (Fage 1962; Francis
Wild 1937:96). This chapter will describe each of these bead groups in more detail, but
the principal thought to bear in mind is how precious beads attained their status.

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Gott provides a glimpse of their sacredness in this passage about bead origins from several West African groups. She states

Among the Ewe of southeastern Ghana and Togo, spiritually-empowered beads are said to appear as excrement deposited by the rainbow serpent deity Dan Anydohoédo as he rises from under the earth in order to plunge into sacred waters—a supernatural origin similar to the bead-wealth excrement of Òsùmàrè, the primordial rainbow serpent of the Yorùbá [also for the Ga of Ghana]. For the Krobo, a Dangme people of southeastern Ghana, beads and stone celts with special curative powers are produced when the lightning of the sky deity strikes the earth. In Akan belief, beads possessing reproductive powers may be retrieved after they miraculously emerge from underneath the forest floor, the sacred realm of the maternal earth deity Asase Yaa [Gott 2002:20].

These beliefs illustrate a strong spiritual link to specific bead groups and provide insight into West African views that beads in general have a higher value, both culturally and monetarily, than other objects. This view is especially relevant when compared to the value historically attributed to beads by Europeans.

The concept of supernatural origins of beads, as ancient gifts from deities, was perpetuated by the discovery of those beads in the ground, which many researchers believe were actually beads emerging from historic burials, previously occupied sites, hidden caches, and other similar instances. The consequence of burying beads in the soil is that it creates a deteriorated porous surface on the beads, reinforcing the ancient imagery regarding their age. The idea that beads have life-giving abilities came from stories of people finding not just one bead, but groups of beads in the ground. The
occurrence was common enough to support the local belief that beads have supernatural regenerative powers. Ghanaians call these special beads “ground beads,” and some believe these beads can reproduce themselves if reburied (Bowdich 1966:268 [1819]; Freeman 1967:403-405 [1898]; Fynn 1974:40, 65; Gott 2002:3, 32; Gott 2007:89; Kumekpor et al. 1995:15; Lamb 1976:37; Quarm 1989:30; Sackey 1985:184). The fertility powers associated with these beads led to the belief that ground beads have many life-giving properties; eventually, these powers were associated with not just those beads, but many others too.

Waist Beads: Uses in Daily Life and Rites of Passage

There is a tradition in West Africa that all precious beads have reproductive powers, and one of their main functions is the use as waist beads for women, which is still a popular tradition in modern Ghana. Waist beads, in utilitarian form, are strands of beads that women use to hold their loincloths in place (Quarm 1989:47). In Asante, the people call waist beads *tomma*, and they are the most fundamental part of female attire (Gott 2007:84). *Tomma* consist of up to six strands of beads worn on the waist, and all West Africans consider both these beads and this part of the body to be private (McLeod 1981:144). This belief extends the idea that women must always hide the beads and the waist from view (Gott 2002:38).

Waist beads have many other functions beyond their utilitarian uses. Suzanne Gott (2002:4) explains that waist beads are closely associated with the female concepts of fertility and sexuality. Traditional belief held that waist beads possess supernatural fertility powers, which “extends to include those waist beads of imported or locally
manufactured glass . . . beads” (Gott 2007:85). Women often include precious beads in the strands of waist beads since they believe them to enhance female fertility through the power of touch. West African women make strands of waist beads using local powder-glass beads and European imported glass beads. When rare precious beads are available, they incorporate them as well (Gott 2007:85).

The power of beads starts at birth when mothers, especially Asante mothers, “tie strands of imported or locally produced beads at strategic points on an infant’s body . . . around the wrists, elbows, ankles, calves and waist” (Gott 2007:86, 93). Infant females wear miniature waist beads and girls continue to wear them into adulthood. Ghanaians traditionally believe that waist beads help create a curvy body, which is equated with health and beauty (many modern Ghanaian women now attribute this tradition to gauging a baby’s weight and growth).

The seventeenth century traveler William Mueller (1983) also noted similarities in the dress of newborn infants. He observed that a child’s neck was draped with various kinds of beads and gold and that the child’s waist, hands, and feet were decorated in a similar fashion. He explained that the local people believe these fetishes give their babies strength against the devil and from illness, injury, or accidents (Jones 1985:161-62). Sackey, one of the only other authors to mention small beads, noted similar practices in 1983. She observed that beads were used not only to adorn infants, but also to usher them safely into the “living” world after their first eight days of life. Some groups used three beads, called Gyanie, Abia, and Nwansana’i, while the Fante use several small bodom beads or one big bodom bead. She also observed that
Tiny white beads called “mfufua” (Akan) are also tied to both wrists, neck, legs and waist of the child. The mother and close relatives also put on “mfufua” to signify their victory and joy. Two strings of red and black tiny beads called “Abrekuni” (Akan) are tied round the child’s neck to protect and hold the fragile neck from falling back [Sackey 1985:185].

Additionally, Sackey says that Akan twins also wear special beads called an Abam charm that consists of red (Nenkyerma), yellow (bodom), and blue (Ekuar) beads. The Ga people use flat white beads and round black beads instead of bodom, which are normally reserved for priests (Sackey 1985:186). Therefore, one can see that many types of beads, including precious and simple small beads, are used for protection, to signal happy or significant events, and are used during birth rituals.

Women dress their daughters with waist beads to help form full curves and well-developed bottoms and thighs that they associate with fertility and sexual attractiveness. One author even noted that if a young girl did not wear beads on her waist, then other children teased her and told she had a “beadless, shapeless” bottom (Quarm 1989:46). Kumekpor et al. maintain that among the Akan, it was disgraceful for adult women to not wear their waist beads (1995:19). If a woman is barren, she can carry an Akuaba fertility doll that is adorned with small beads, thought to improve a woman’s reproductive abilities (Sackey 1985:186).

Bishop Peter Sarpong noted that in the Asante nubility rites for girls reaching marriageable age, the girls receive waist beads from her family or her future husband. Sarpong discussed how an “initiate’s family or future husband presented her with special gifts of tomma” that denoted “her entrance into female maturity and sexual life”
There is also a public procession where a little girl precedes the initiate to show off the precious waist beads that are known to be worn by the initiate, but not seen by spectators, thus shown by proxy. Once a girl becomes a woman, her waist beads are kept private; thus, she cannot actually show the beads to anyone in attendance to the ceremony. Sarpong also notes that the special beads are not exceptional because of their beauty (stating that many locals do not find them attractive), but are special because of their antiquity and reproductive powers (Sarpong 1977:46; Gott 2007:87). The Krobo, of the Ga-Adangbe people, have a similar rite of passage for girls called the “Dipo.” The ceremony also incorporates waistbeads and many other strands of precious old beads around the neck, arms, and legs (Sackey 1985:186).

As a rule of privacy, only other women generally see waist beads, often during bathing and other such activities. The exception to the rule is when a woman takes on a lover or husband. Then she uses the beads to indicate when she wants to make love, and she will move around to make the beads rattle audibly, so the man can hear them when she is nearby (Gott 2002; Quarm 1989:47).

Even in death a “woman would be dressed with waist beads prior to burial, as a testimony to her fulfillment of the generative and maternal ideals of Asante womanhood” (Gott 2002:4). Sackey contends that normally “two girdles of waist beads, a necklace and wrist beads are used to adorn” a woman’s body at death and that the type of beads chosen can often reveal her social status (1985:189). One elder woman that Gott interviewed said, “waistbeads are ‘women’s property,’ the most essential means of distinguishing women from men: ‘When you find a skeleton, how do you know which is the man and which [is] the woman? By the Beads!’” (2002:39).
Another author claims that a man can even swear an oath by his wife’s waist beads, while a queenmother told the author that revealing a married woman’s waist beads is the same as adultery, and the person can be sued for damages (Quarm 1989:47-48). When a woman dies, friends and family put her waist beads on her body at the funeral, so everyone can see she was a good maternal woman. They even give gifts of *tomma* (waist beads), and the loincloths worn with them, for her use in the afterlife because according to Akan customary beliefs, there is an ancestress deity that “guards the entrance to the ancestral world to ensure that all women who enter are wearing waist beads” (Gott 2007:91-92; Brempong 1986:54).

While some Ghanaians believed beads were related to witchcraft, it was more usual for people along the Gold Coast to believe that beads or gold could be used as a personal means of protection (Gott 2002:54, 57; 2007:87; McLeod 1981:111; Rattray 1927:30; Sackey 1985:181). Dutch trader Pieter de Marees observed in 1602 that Gold Coast men generally wore a mix of Venetian beads and gold beads, along with gold ornaments around their knees (Jones 1995:34; Purchas 1905:266 [1625]). Also, “Around their necks they hang a string of beads or *Madrigetten* of diverse colours, which are brought by us Dutch” with the note that *beviesen of Madrigetten* refers to small beads or pearls, often called Venetian beads (Jones 1995:34, note 1).

Gold Coast women also had types of charms or fetishes on their waist beads. They wore little straw-wisps on which they strung beans and Venetian beads (Gott 2002:2; Jones 1995:39; Purchas 1905:271 [1625]). Fetish items were important to Gold Coast peoples because they believed them to be Fetissos, or Saints (Purchas 1905:271...
(1625)). They would even care for the objects as if they were living spirits, giving them something to eat and drink before they themselves would partake (Jones 1995:39).

The information provided here not only illuminates the significance of beads in a woman’s daily life, but also provides information on the uses of Venetian beads. The charm beads worn by both sexes, the miniature waist beads used on infants, and the powder-glass beads all use imported beads in some manner. It is also important to note, as Gott stated above, that Ghanaians believed even the imported beads held some supernatural powers.

*Precious Beads in Ghana*

Beads that are considered “precious” are somewhat specific to different populations of West Africans. *Aggry* (Aggery, Akori, Accori, etc.) beads were valuable among the Akan in general, but the definition of *Aggry* has varied over time and is discussed below. *Bodom* beads, on the other hand, are more specific to the Asante. The other terms *koli* (Ga), *bota* (Fante), *abute* (Ewe), and *Akosu* (also an Ewe term) are said by several authors to serve the same purpose as the *Bodom*. As a group, these beads all seem to be variants of purportedly ancient supernatural beads. Again, Ghanaians revere these specific beads as the most powerful and valuable because of their belief that they contain spiritual links to ancient deities (Gott 2002).

Among the Akan, the *Aggry* bead has long been the most sought after bead in all of the Gold Coast, and it seems to be the oldest and most powerful of all the precious beads. Bosman was one of the early travelers to observe these beads, and he describes a blue coral called *Accorri* (or *Agrie*) that was worn in the hair and around the arms, legs,
waist, and neck (1967:119 [1704]). Another traveler named Wilhelm Mueller observed *Aggry* beads, which he mistook for stones that were sky-blue and yellow and came from the river (Jones 1985:134-35 and 204-5). Historic sources have also described the glass as blue and green. For example, in the early 1600s, a Portuguese trader asked a glass expert in Amsterdam to help him fake a very valuable blue/green glass from Africa (Francis 1993a:6; Zecchin 1984:24). The trader’s request for an imitation bead is evidence of the popularity of *Aggry* beads.

In 1614, Samuel Brun observed a bead, assumed to be an *Aggry* bead, and noted that if a person looked at the glass, then it was sky-blue, but if the person looked through the glass, it was sea green (Francis 1993a:6; Jones 1985:69). Scientists call this phenomenon dichroic (meaning bicolor glass). Dichroism occurs when crystal structures produce multiple colors individually, or in the case of glass, a similar phenomenon happens when a person exposes this type of glass to different light sources. Therefore, glass material may look blue, but when held to a light or to the sun, it can look greenish-yellow (Davison et al. 1971:657, note 1).

Ghanaians imported the mysterious dichroic *akori* from the Bight of Benin. They believed these beads came from the heavens or the water and linked the beads’ supernatural abilities to the deity of water, fertility, and wealth (Gott 2002:20-22). Gott suggests that the *Aggry* beads could have been offerings thrown into sacred waterways, which locals recovered much later allowing the beads to reenter the coastal trade, comparable to the manner in which “ground beads” were likely artifacts dug up from burials and other historic sites before reentering the coastal trade.
There are several historical accounts of bead use during funeral rites, many of which refer to beads as coral or pearls, depending on the language spoken by the traveler. Bosman explained that in burial people are dressed in elaborate cloth, gold, fetishes, coral, etc (Bosman 1967:230 [1704]). Also noted are missionaries Ramseyer and Kuehne, who in 1875 noted similar burial practices and stated that “When a rich man dies, his wife… adorn[s him] with pearls” (Ramseyer and Kuehne 1875:50). In German, perlen is a general term for beads. In one Asante clan, dying kings are given a drink infused with pulverized beads and gold for use in the afterlife (Gott 2002:3-4). Today, among the Fante, certain men at death have “a short striped bead called ‘Brempon assen mu’ . . .” tied to their left foot, an adornment that signifies the death of a worthy person. Mourners show their remorse by wearing dark beads of any style, but widows or orphans have specific beads to wear that symbolize their relationship to the deceased (Sackey 1985:189).

Grave goods are the most effective for illuminating African influences, and they vary greatly among African groups (Jamieson 1995:49). Elminan grave goods include ceramic vessels, beads, and tobacco pipes. Early historical documents state that locals buried all of the belongings with the deceased (DeCorse 1992b:183). Peter Ucko explains that the Nankanse of northern Ghana have a practice where friends and family place their personal objects in with the dead to provide the deceased’s soul with help to enter the after life (1969:265). Therefore, the artifacts do not always relate to the tastes and beliefs of the deceased. In addition, Akan funerary customs often include spirit pots, which are not buried with the body, but in a sacred spot elsewhere (Jamieson 1995:49; Vivian
The additional sacred area means that archaeologists will likely not find all of the significant objects related to death rites within a grave.

Researchers also believe Aggry beads were used in necklaces worn by devotees, which local groups generically called kori. Several authors note that the term akori (related to Accary, Aggry, or Aggrey) is likely a plural version of kori, which came from Yorùbá. The addition of an “a” to a word is an Akan plural prefix. Historic Gold Coast accounts include uses of the term akori in a more general application, referring to a range of bead types that seems to diversify with time (Francis 1993a:6; Gott 2002:33, footnote). Therefore, Gott believes that the historic use of kori beads is as a collective group of sacred beads and does not refer to single beads (2002:26). This idea seems most evident in Rattray’s observation that the Asante also call the Bodom bead an Aggry bead, which would be strange since the Bodom bead is usually a yellow powder-glass bead, and the Aggry bead is traditionally a blue color and possibly not even made of the powder-glass technology originally (1923:147). Therefore, his remark lends much to the notion that the term Aggry came to refer to all precious beads as a group.

Gott refers to another historical account that helps substantiate that the term Aggry refers to a group of sacred beads (2002:35). In the nineteenth century, Colonial Surgeon R. Austin Freeman wrote that “In form, colour and general character different specimens differ so widely that it seems impossible to lay down any characteristics as being diagnostic of the genuine Aggri bead,” but they were “certainly not imported or manufactured by any European nation at the present day” (1967:399-400 [1898]).

Ray A. Kea (1969) explains that Aggry beads were well established before the Europeans arrived on the coast, indicating that the locals did some coastal trading in
beads before the arrival of the Portuguese in the late fifteenth century. The Republic of Benin produced and exported kori beads in medieval Ifé, currently inhabited by the Yorùbá. Archaeology has provided the links between Ifé and beadmaking, and historians now consider Ifé to be West Africa’s most productive center for kori manufacture and export, lasting until the nineteenth century (Gott 2002:28). Southern Ghana has links to overland trade routes going to Ifé through the northern caravan trade (for other discussions on Ifé see Francis 1993b and Shaw 1976). Bowdich noted in his 1817 mission memoirs to Kumassi that the term “aggry is an exotic word no native can explain,” which supports the coastal trade notion that the beads originally came from another region (1966:270 [1819]).

Another of Bowdich’s observations concerning the Aggry bead involves Leyden, another writer at the time, and his description of Aggry beads as stones that were possibly jasper of a greenish blue color. Bowdich says that instead Dr. Leyden is actually describing the popo bead, which is semi-transparent bright blue and dug from the ground like other precious beads (1966:267 [1819]). Ethnographer Euba identified these beads through their association with the coastal Popo people of the Republic of Benin. She agrees that people dug the popo beads from the inland country, just like the Aggry beads, before Muslim traders brought them to the coast (Euba 1981-82:110). Historian J. D. Fage further says that the term Aggry “is now the generic name for a precious bead of . . . any color, [but] the blue variety is associated with Popo (Dahomey) as much or more so with the Gold Coast” (1962:345).

Aggry bead theories abound, and some individuals maintain that the beads possibly came from tektites (natural glass rocks), the mineral cordierite, or coral
(Allopora subviolacea or Corallium); however, Francis believes it is more likely that the glass was produced somewhere in Europe. He states

Drawn tubular dichroic beads and chemically similar drawn cored [with striated surfaces] blue beads have been found at many West African sites linked to the trans-Saharan trade, including Ifé, Nikrowa and Old Oyo in Nigeria; Gao and Kumbi Saleh in Mali; Tegdaoust in Mauritania (Davison et al. 1971); and Diouboye in Mali (Opper and Opper 1990:28). . . . Bottles of this glass are known from the ninth/tenth century Egypt, Armenia, Azerbaijan, Georgia, and nearby (Kurinsky 1991:374). These products of the Muslim world are likely related to the sources for the dichroic beads. . . . Ifé, Nigeria, seems to have attracted many of these beads. Some were melted down and reworked there, and others appear to have been associated with shrines. Ifé apparently flourished between A.D. 1100 and 1450 (T. Shaw 1976:158-61), a period of intense trade with the Arabs. After direct trade with the Arabs ceased, Ifé may have become the principle source for Aggrey beads . . . [Francis 1993a:6].

The archaeological evidence provided by Francis supports one of the best arguments for glass origin theories for Aggrey beads. One other report by J. E. J. M. van Landewijk (2003) comes to the same conclusion, but with the glass originating from low-grade iron ore smelting as silicate slag. Manufacturers normally use silica, or sand, in the process of smelting, and the impurities in the sand can cause coloration in the slag (melted silica).

Jeffreys (1961) contends that other beads had replaced the blue Aggrey beads, but retained the name. The common element was that the beads were valuable enough to circulate as money. P. A. Talbot (1926) explains that the Aggrey name eventually came to
mean mosaic beads from Venetian manufacturers and is supported by J. F. Sick and company calling the beads on their 1936 trade cards “Real Aggrey Beads” (Landewijk 2003:133). Landewijk agrees with the other accounts and notes that Aggrey beads now apply to any old valuable bead; however, he originally believed Ghanaians reserved the name for blue beads, citing historic observations from Pereira (1481), Samuel Brun (1624), and J. Barbot (1732) (2003:132-133, 139). Sackey found that in 1983 the term Aggrey was even used for locally made beads of various materials (1985:183). The European attempt to ensnare the Aggrey name might have ended its use in West Africa. Several authors state that locals, in general, do not use the term widely anymore.

Imitations from Europe also abounded, for the Aggrey was always worth its weight in gold. Traders, including the Dutch, came to use a fire test to distinguish between the real beads and the fakes. They put any suspect bead directly into a charcoal/wood fire, and if it melted or changed, it was a fake. The traders believed that authentic Aggrey beads had a much higher melting point. Landewijk cites a nineteenth-century iron ore factory in Keppel as having a translucent green slag byproduct (2003:138-139). He also reported that a Ga-Adangbe family showed him an old koli bead in 1970 that was blue and translucent green, suggesting that koli beads may also be a variation of Aggrey (2003:134).

Ghanaians associate precious beads not only with fertility and protection, but also with the belief that the beads bring wealth too. The notion relates to the reproduction characteristic of ground beads, or the belief that if a person buried one, then the bead would reproduce and bring that person wealth in the form of precious beads. Ghanaians used Aggrey beads in several rituals because of the beads perceived supernatural powers. Bowdich describes one ritual where locals rubbed royal child successors, or any child
who might receive a rich inheritance, with ground Aggry bead powder. They believed such action would encourage growth and maturity, making those children healthy and honoring their status. He even mentions that Aggry beads were used to oust thieves in court as the victim “invokes the power of the bead to kill” the other man if he is guilty (Bowdich 1966:266-267 [1819]).

Bodom Beads

The Asante favor gold over beads in general, unless it is a sacred Bodom bead, which they consider far more valuable than gold. The Bodom is so valuable that the Asante would give their dying rulers a rum drink mixed with Bodom beads and gold dust for use in the afterlife. Royals still bathed their children in water with powered Bodom beads to help them grow strong, similar to the way in which the Akan rubbed their children with Aggry powder (Gott 2002:49-50). Kings and the elite among the Asante are normally the only ones who can afford to own Bodom beads; some cost several hundred dollars each (Francis 1993a:12).

Bodom beads are large, at least an inch in diameter, and are usually yellow with multicolor designs. They also have a signature trait, a dark core. Occasionally, the cores also have gold flakes mixed in with the glass. Francis states that “Bodom are old and technically different from beads made in Ghana today” (1993a:12). They are not fired in molds like most powder-glass beads, but are instead mixed with a binding material similar to gum Arabic and then covered with yellow glass, powdered or not, and then fired. The organic material forming the core blackens during the firing process, creating the unique attribute.
Another bead researcher, Robert Liu (1974; 1984), explains how the two forms of powder-glass processes, one dry and the other wet, are significant to Gold Coast’s history. First, beadmakers from the areas now known as Ghana and Nigeria are most associated with the dry-form technique, during which clay molds are used to fire glass powder into beads. Second, researchers thought the wet-form technique belonged only to the beadmakers of Mauritania in Northwest Africa, bordering Senegal. *Bodom* beads appear to be an exception, and Liu believes that their black or blackish cores are likely more than a coincidence. The wet-form of making powder-glass beads uses no mold, but a binder, such as honey or sugar and produces a gray or black core when fired. The wet-form technique is not found in Ghana today and leads Liu to the conclusion that the Gold Coast bead industry did at one time use the wet-form process, whether conceived of independently or transferred through Hausa bead-traders (1984:57). Francis explains that the Asante believe the bead originated in regions farther north, a belief that would fit well with the Hausa theory (1993a:12).

Researchers still debate the age of these processes; Lamb (1976) dates them to the sixteenth century, while Krieger (1943) thought they were only a hundred years or so old (Liu 1984:54). In agreement, Francis (1993a) reports that the first historic sightings of *Bodom* beads were in 1814. Either way, Ghanaians may have historically employed both the dry-form clay mold techniques and the wet-form moldless techniques. Both forms used European glass “in the form of scrap, broken bottles, pulverized beads or glass ingots imported from Venice or Jablonec” (Lamb 1976:38; Liu 1984:52). The wet-form, however, differs significantly because the Mauritanian beadmakers make the cores separately. Liu states that the “women use European glass beads, or their own powder-
glass cores for the base” (1984:23). They then add moistened glass powder, up to seven or eight colors, to its surface and fire it. They make the glass paste from the same resources mentioned above, and Liu reiterates that the cores can be made from European glass beads.

The Bodom beads have similar reproductive powers to the Aggry beads, as indicated by this proverbial saying: “One bodom bead, in time, becomes two” (Gott 2007:89). Another belief is that placing a Bodom in a pot, with or without other items, will warrant the owner one to six new Bodom beads or other valuable beads in about a year (Francis 1993a:12). Certain clans of the Asante even claim a supernatural kinship to precious beads. The Ekoona clan, for instance, greets one another other by saying, “Greetings to the Bead!” (Gott 2007:89). Similarly, the Asene clan claims to have descended from the Berewua bead (Sackey 1985:187).

Another important use for Bodom beads is in the creation and consecration of shrines for Tano gods. A person possessed by a spirit or a god dances and eventually captures a mystical object from the air or the water and places the object into a brass pan (which eventually becomes the spirit’s temporary home). Once the object is in the pan, the priest covers it quickly with several important elements: sacred river clay, medicinal plants, “virgin” gold (i.e. never circulated), and beads. One bead is “a bodom, and a long white bead called gyanie” (Rattray 1923:147). The priest mixes all of the elements into the clay, which is set on top of the mystical object and the spirit’s home, and the shrine is complete.

Ivor Wilks (1996) explains that the two biggest historical state powers of Ghana, the Denkyira and the Asante, both trace their ancestral origins to sacred stools decorated
with precious beads or gold. Gott maintains that the Denkyira’s most revered piece of royal regalia is the *Amankamdwa*, or “the Stool of Precious Beads.” These stools are holy and contain “the spiritual essence of not just one great ancestor, but the collective soul of the Denkyira” (Gott 2002:6-7). The group believes the stool is so powerful that if it is moved without the proper rituals, then it will bring about a great wrath. The priests believe that the stool derives its supernatural powers, in part, because it is made of supernatural objects (Gott 2002:13).

*Koli Beads*

*Koli* means “highly valued antique beads” to the Ga people living in and around Accra, and it is likely linguistically related to the early form of *Aggry: cori* (Landewijk 2003). An early reference from Zimmermann in 1858 states that the term *koli* still referred to these “Benin beads.” The statement indicates an eastern origin of the original *koli*, also similar to *Aggry* beads, and that they were well established before the 1850s (Landewijk 2003:133). The popularity of beads in Ghana brought about European copies of African made beads, particularly the highly valued *Aggry* bead. Locally, Ghanaians were also imitating valuable beads (Gott 2002:118-119). For example, in the 1960s, ethnographer Augustus Sordinas observed a “cooking” process in Ghana that changed the appearance of cheap imported glass beads to look more like older dichroic beads.

The Fante reproduce similar looking beads called *bota noa* by a “cooking” process, but the Krobo are the beadmakers best known for this modern technique of making *koli*. Some call the modern cooked beads “fakes,” and locals value the new versions of *koli* much less than their older counterparts; however, Sordinas states that
“the retention of the term koli in the vocabulary of modern and rather cheap beads is
demonstrative of the persistence of certain aesthetic predilections among the Krobo for
local products. If this is true then the modern koli are not ‘fakes’ but skeuomorphic
substitutes for the ‘true’ koli” (1964:75-76).

Sordina found two types of cooked beads during his visit. He saw the traditional
blue bead variant that the Krobo call koli and a yellow type, called soso, which was less
popular. Sordinas does not discuss how the Krobo made the yellow variations, but he
does explain that the blue koli “fakes” were imported European beads that the Krobo
altered through the cooking process, which he says did two things. First, it transformed
the beads into a locally crafted good with more significance than the imported beads.
Second, cooking changed the diaphone of the beads from sharp translucent blue into a
soft opaque blue, which is closer in color to the “true” koli (Sordinas 1964:75). Thus, the
cooking process functions to maintain local customs and to purposely ignore the styles
imposed by importing countries.

Sordinas points out that the cooking method of making fake koli beads negates
the principle of economic efficiency because reprocessing the imported beads takes
considerable labour (1964:75). Koli beads start as plain blue glass cylindrical beads
imported from a variety of European countries, and local women buy them a pound at a
time (1964:75). They use large round pots filled with dried palm-oil nut (percarp),
plantain skins, fresh cassava, and palm nut skins. They then put all of the beads on top of
the vegetation and use more palm skins to cover them. The bead workers shut the pot to
create a reduced atmosphere and cook the beads for about an hour, shaking the pot
occasionally. After this step, they remove the blackened beads and place them in water to
wash away the debris and to moisten the beads. They grind both ends of each softened bead to form slanted ends that will fit together once strung. They then grind the outside of the beads until they are nicely polished and the black stains are gone. This process enables the new pale opaque blue color to show (Sordinas 1964:75-76).

Sordinas says that even today, European importers send representatives to Ghana to collect samples of popular beads, and the companies then produce imitations at lower costs. In the same fashion, the local bead makers change their styles to offset the new influx of cheap beads. It is important to realize that both the African and the European bead markets practiced bead imitation. Originally, Ghanaians likely started copying Mediterranean beads and then moved on to copying early European beads. Europeans tried to copy the locally made African powder-glass beads (Lamb 1976:39; 1978; van der Sleen 1963:260-263). Even the Asante produce contemporary versions of the rare Bodom beads and, like the cooked beads, are affordable versions of the sacred and rare countertypes (Gott 2002:123).

Bowdich states,

The natives pretend that imitations are made in the country, which they called boiled beads, alleging that they are broken aggry beads ground into powder, and boiled together, and that they know them because they are heavier; but this I find to be mere conjecture among themselves, unsupported by any thing like observation or discovery [1966:268 [1819].

Gott believes that his description indicates a local awareness of powder-glass beadmaking and locally made imitations of the old aggry beads (2002:126). Bowdich also noted the recycling of other materials, including textiles. He observed that the
Asante people unraveled red taffeta and then wove the strings into cloths of their own manufacture (1966:331 [1819]).

Sordinas confirms that people in southern Ghana still consider locally made or altered beads superior to any of the imports in their original form. At the time of Sordinas’ report, koli beads were the most common adornment among all ages of Krobo women, who wore them below the knees, on each arm, and around the waist (1964:76). Unlike the Asante, the Krobo people favor beads more than gold, and the Krobo, Ewe, and Ga-Adangbe people all use koli beads in their traditional rites, making even the fakes desirable.

Understanding how precious beads came to be significant along the Gold Coast is essential to this thesis. It seems that Ghanaians made almost all precious beads from European glass, including large amounts of glass beads (see van Landewijk [2003] for an alternative theory of local glass slag as a raw material). As for popular colors, blue was the base color for both the traditional Aggry beads and the koli beads, and yellow was the base color for the Bodom beads. It is interesting to note that the four large bead concretions found on the Elmina shipwreck were either blue or yellow monochrome beads, with yellow being the majority. The similarity could be coincidental, however, and may not accurately portray bead demand of that period. Only further excavations and larger samples would determine this for sure.

West Africans needed a variety of other colors to make these beads and decorate them. Many sources of scrap glass could not fill this color need as bottles have a limited color variation, but monochrome seed beads would have been a cheap source of colored material. It also seems logical to assume that local groups would choose monochrome
beads over polychrome beads to meet the needs of the West African bead market. Thus, on a ship that was carrying utilitarian wares of all sorts for West Africa, it would make sense that monochrome beads would be part of the cargo. It would also provide the reason for why the research team did not recover any fancy beads, although the bead sample is relatively small. Even as such, a second reconnaissance trip in 2008 failed to uncover any new noteworthy beads (Greg Cook, personal communication 2008).

Blue is Significant: The Ewe and Beads

An interesting cross-cultural connection found within this thesis and many other reports is the color blue, which seems to be a common color for bead assemblages found in many regions around the world. Chapter Three discussed the topic briefly, and Chapter Four demonstrated some positive evidence, both historical and ethnographical, that tentatively supports the social significance of blue glass beads. This chapter adds an additional element to the debate by providing another West African link to the color blue.

Several historic migrations occurred along the Gold Coast, and one important movement was the migration of the Ewe into southern Ghana from eastern areas of Togo and the Republic of Benin in the late sixteenth or early seventeenth century. The Ewe settled in the southeastern corner of Ghana and along the coastline in that area. This movement created a cultural change in that region of Ghana. The Ewe brought with them similar belief systems to that of the Yorùbá and Benin (Gott 2002:28-29).

Kumekpor (1970-71) describes how the Ewe people of southern Ghana were renowned for their use of beads in ritual and political contexts. The beads most important to the Ewe are of the colors red or blue, which are also the important colors of the Yorùbá
in Ife. As mentioned before, the Yorùbá have a rainbow god that excretes beads as he leaves the water. Gott points out that the deity leaves specifically red and blue glass beads, which became the bead colors most associated with Ife glass beadmaking. The colors red and blue symbolize the hot and cold extremes of nature, and wearing both colors was said to keep a person in balance. Gott claims that the Yorùbá also use imported red and blue glass beads, not just beads made in the Republic of Benin (2002:26).

Kumekpor states that the Ghanaian Ewe used red and blue bead combinations in all bead strands used to represent specific gods and the cults that follow these gods (1970-71:105). The two colors also represent a person’s family status. The color red shows a long and wealthy ancestry as well as hard work and seriousness. Similarly, the blue beads show that a person is from a rich, hard-working home, but that the ancestry of this home was wealthy enough to buy and own slaves. Another ritual is to honor the Ewe ancestors with wealth stools (a sacred type of chair). Officials cover the stool with cowries for men and with precious beads for women. The ritual commemorates the wealthy and prestigious past among certain Ewe men and women. The author points out that Ewe women do not really have a “wealth stool,” but a special mat that they adorn with strings of precious beads (Kumekpor 1970-71:103-7).

The Ewe of Ghana use two types of blue beads (or gblotsi), one called tome meaning “from the river” and the other called gume meaning “ground” (Kumekpor 1970-71:108). Again, these terms voice the common regional themes of the ancestral bead origins from bodies of water or from the earth. Gott suggests that the heaven-to-earth cycle of gume (i.e. the beads coming from the heavens/rainbows, being left in the ground,
and then re-emerging) seems to be a “Gold Coast synthesis of Ewe and Akan beliefs concerning the supernatural origins” ascribed to precious beads (2002:33). Currently, Ewe elders still know of these legends, but many seem to believe that the miracle of the serpent rainbow has ended because of people’s bad behaviors, so the serpent no longer leaves beads (Gott 2002:30).

The cultural beliefs demonstrate how the Ewe hold a sacred place for blue glass beads, much in the same way that the Krobo hold a place for the blue boiled beads that represent their ancient koli beads. From early Arabic accounts of blue beads to the modern day practices of turning imported blue beads into valuable koli beads, blue beads have continued to play an important role within glass bead usage in West Africa and Ghana. The blue beads associated with West African sites in Nigeria, Mali and Mauritania, and the Ghanaian site of Begho also have versions of important blue beads.

Jeffreys (1961) provides more clues about the use of blue glass beads along the Gold Coast. His article focuses on what he considers to be an early currency transition. He agrees that Aggry beads were originally blue, but notes that the reason the term transitioned to other beads of various form and color has to do with their role as currency. Jeffreys shows that trade goods like beads and iron held value, and both replaced the use of cowry shells, but held onto local variations of the names within regions of Africa. More specifically, he uses Elmina as an example of one area where beads supplanted cowry shells as currency (1961:107).

Referring to a translation by George H. T. Kimble of the early Portuguese traveler Duarte Pacheco Pereira who wrote during 1505 – 1508, Jeffreys says he talks about bartering for slaves and cotton up river using skins, palm oil, and “blue shells with red
stripes which they call ‘coris’” (Pereira 1967:128). Pereira also discusses trade at Mina, stating that gold is brought from distant lands and from different tribes. In exchange, they trade “red and blue cloth, brass bracelets, handkerchiefs, corals, and certain red shells which they prize as we prize precious stones; white wine . . . and blue beads, which they call ‘coris’” (Pereira 1967:120). The same term is then used to refer to blue beads at Elmina, which Jeffreys contends were imported from the same river (1961:107). He says that either there was a transition of use from shell to bead, or more likely, as other authors in Chapter Four have also suggested, there was confusion with the term that led to both objects having the same name.

Jeffreys further explains that in other regions, such as the Congo, blue beads displaced shells and took a variant of their name. He believes these blue beads were Arabic in origin, which he argues are also the origin for early West African blue beads. Jefferys explains that along the east coast of Africa, white beads replaced the cowry shells used there and the beads acquired the shell name. Other types of beads also follow this same pattern in Swahili and Mang’anja, Africa (Jefferys 1961:108, 109). He provides a list of bead names from along the coast of West Africa that have the root word kor, the same as the cowry shell and appeared in a 1901 article. It shows that along the Gold Coast—Elmina used cori for blue beads, and Benin used akori, which is the same spelling used for certain beads in Aboh, Rio del Ray, Ambozes, and the Cameroons. Further, the Ga used akoli, the Gold Coast in general used aggrey for Venetian beads, and Liberia used aggy for “light colored beads” (Jefferys 1961:111).

Thus, Jeffreys believes that glass beads, mainly blue beads, replaced cowry shells as the main form of currency in many areas of Africa, specifically West Africa. He calls
this transition the “diffusion rule” and notes that a similar transition happened later when other colors of beads replaced the blue beads as currency along the Gold Coast, but still kept the same name (1961:110,111). Currently, as stated in Chapter Four, “true” Aggry beads are said to be quite rare. The term is even falling out of use in some areas of the coast. The Ga people seem to have retained some of the original meaning by boiling blue imported beads to make koli, which are still the most valuable beads in use in their culture.

It seems that West Africans originally valued blue beads over other colors, but an explanation for why was never recorded or has yet to surface. Chapter Three did point out that the technology of manufacturing blue beads had advantages over other colors in the early world of glass making. Thus, the color may have simply been popular because of availability. Nevertheless, blue did remain a significant color linked to the Aggry bead through time and is still worthy of modern replication by some groups. Even though blue as a color in and of itself, does not seem to hold significance in other areas of Ghanaian and West African ceremonial life, besides the Ewe uses, it does seem to hold significance within the historic role of valuable, sacred glass beads in West Africa.

*Ghana’s Historic and Modern Bead Industry: Altering and Reworking Beads*

In modern times, Ghana’s bead industry has surpassed the historically prominent Nigerian bead industry. The intercontinental and transcontinental commerce helped southern Ghanaians create their own bead industry, and the newly established coastal trade with Europeans provided large quantities of glass beads and glass materials. After the fifteenth century, glass bead imports increased substantially, thus demonstrating how
the Gold Coast’s bead industry matured quickly with access to new sources of materials. Imports, such as pre-strung beads and pipe-beads fueled the local bead industry where they reworked and polished the imports. Further, there was an “abundance of colored glass beads that coastal artists pulverized for use as coloring agents in locally-produced beads of powdered scrap glass” (Gott 2002:93-94).

Some areas of Europe at this time, such as West Africa, also did not produce their own glass and had to import glass sources. Historian R. J. Charleston provides information on glass color sources including glass ingots, cakes, and beads. He explains that glassmakers used beads of all colors to make colored glass (1963:54-67). A couple of historic enamel references illuminate the coloring process. In a 1615 book, *A Booke of Sundry Draughtes*, Walter Gedde describes how to make the color “Blew” in glass for enameling. He states that a person should, “TAKE beades of blew glas, and beat them into poulder, in a brafen morter, and halfe as much of goldsmiths blew amaling that fhines through, and grind them together with gum-water” (1898:110-111 [1615]). Another source, *The Laboratory, or School of Arts* from 1740 states “Glass-colours ready prepared, are glass enamel, which is brought from Venice in cakes of several sorts, also the small glass beads that are brought over from Germany especially from Franckfort on the Main” (Charleston 1963:58; Smith 1750).

Charleston asserts there is evidence that artists were using glass beads as enamel coloring agents since at least the fourteenth century. For example, R. Bruck wrote *Repertorium für Kunstwissenschaft*, a work that discusses fourteenth-century recipes for brown enamel glass given by Antonio da Pisa Ms. from the monastery at Assisi: “Take some of those little paternoster beads made of yellow glass, i.e. those fine Venetian ones
which resemble yellow amber” (1902:247). Charleston also mentions their use at York Minster in 1471, their use by medieval glass painters, and several other sources that mention Europeans using glass beads as coloring materials. He discloses that many of the historic reports say the beads come from German towns like Frankfurt and Nuremberg (1963:58). These references show the parallels of making glass in non-glass producing areas, whether in medieval Europe or the coast of West Africa (Gott 2002:94).

Many other historic records demonstrate how European markets were gearing their products for sale in West Africa. Luigi Zecchin (1984 [1679]) describes a seventeenth-century Venetian family of glassmakers that produced glass canes, or rods of glass, to supply merchants involved in Portugal’s West African trade. Sharma Saitowitz found documentation that between 1932 and 1955, the Venetian island of Murano, “exported a total of 3,706,256 kilograms of glass beads, rods for glass beads and lamp beads to African countries” (1993:38). She explains that Venetians exported glass rods and blank beads from major centers to smaller markets for specialized finishing (1993:35). Lamb agrees with the powder-glass raw material sources being scrap glass and adds that after World War II, locals started to import special glass ingots from Venice and Jablonec (1976:38).

Gott contends that most of West Africa’s glass bead technology was always a glass working rather than a glass making process (2002:86). An apparent exception to this trend was the Filbe people at Bida, who did make glass (see Gott 2002:Appendix 1). As stated earlier in this chapter, West African glass working includes the art forms of altering pre-existing beads and manufacturing new beads using imported materials, and
southern Ghana is the most active of the sub-Saharan regional beadmaking areas (Gott 2002).

The drawn-glass technique is an older form of beadmaking in West Africa and locals created beads this way in both northern Ghana and Ifé, Nigeria. The method is similar to the European process of making drawn beads except that West Africans use pulverized glass. Today’s beadmakers also use dyes mixed in the powder to make the wanted color. After the powder is wetted, the beadmaker makes a perforation and then fills the hole with sand and dust. The powder is heated by fire, below and surrounding it, until it is melted to a certain point. Then, the beadmakers use forceps to draw out the glass into a long tube, which is later broken into sections and polished (Eluyemi 1987:215-216). Currently, most beadmakers now rely on the clay mold technique to create powder-glass beads (Gott 2002:86-87, 91). Older techniques used in Ghana include the wet-form of powder-glass beads (discussed in the Bodom section below) and traditional wound beads. All of these techniques use recycled glass in powder form to make the various powder-glass beads and the mandrel-wound glass beads (Liu 1974:9).

Archaeologists acknowledge that most, if not all, Gold Coast beadmaking practices were likely dependent on imported glass sources (and possibly some smelted glass found locally from iron production) (Bianco et al. 2006:403-404; DeCorse 1989:48; Francis 1993b; Gott 2002:86). The main types of bead manufacture are powder-glass, drawn, and mandrel wound. In other areas of Ghana and West Africa, archaeological evidence of these industries comes from the recovery of clay molds or wasters (left over glass from the manufacture of drawn beads) in places such as Ife, Begho, and other northern states (as discussed above).
Interestingly, archaeologist Christopher DeCorse did not find molds or wasters in his excavations at the historic city of Elmina, but he did recover numerous grooved sandstone blocks. He also found several types of glass beads that demonstrate abraded ends, which attests to bead modification at Elmina. DeCorse says that abraders have also “been found at other Ghanaian coastal sites such as Ankobra, Sekondi, and Winneba” (1989:48). He believes Ghanaians used the abraders in shaping local beads of stone, shell, or glass and for polishing imported glass beads (1989:48). While there is evidence that Elmina locals altered beads, DeCorse did not find evidence that they made drawn beads like the people from the city of Begho or that they produced powder-glass beads like the Krobo and Bida.

However, there are some written accounts that indicate Elminans may have produced beads too. For example, Barbot’s 1682 account mentions the reworking of imported glass bead and specifically states that “the natives of Mina . . . also recast crystal and glass, taking considerable pains,” which Gott says is evidence of the local practice of powered-glass bead manufacture (Hair, Jones and Law 1992:381 [1732]; Gott 2002:100). Gott acknowledges that Barbot used many descriptions taken from other early writers, such as Dapper, Villault, de Marees and Delbee, who all wrote during seventeenth-century travels, and again from Bosman, Le Maire, Froger, and Davenant, who wrote in the late seventeenth and early eighteenth centuries. Nevertheless, Gott believes that the term “recast” is significant because it might be referring to the powder-glass molding process.

The editors of Barbot’s accounts (Hair, Jones and Law) originally suggested the idea. They elucidate how “earlier sources had only stated that European beads (Venetian
pipe-beads) were broken and polished before being resold” and that the 1732 publication stated that Elminians engaged in “melting all sorts of glass, as to give it any shape or figure they fancy” (1992:389 [1732], footnote 36). Gott notes that there is a Twi word association for cast things, called agudee, which consists of all jewelry materials. Its variation is fagudee, which means ground. These words infer that precious items such as gold, beads, etc. come from the ground, but that they are all cast, inferring that powder-glass beads have a long standing (Christaller 1933; Gott 2002:18).

One of the earliest accounts of bead alteration comes from the seventeenth-century Dutch trader Pieter de Marees (1987 [1602]). He observed coastal Ghanaians polishing and modifying imported glass beads on a regular basis. His 1602 account states that local craftsmen, “take a great quantity of Venetian Beads of all sorts of colours, but prefer one colour to another” (Jones 1995:53). De Marees specifically mentions the Gold Coast towns of “De Mina” (Elmina), “Comando” (Komenda), and “Kormentin” (Kormantin) when discussing modification, polishing, and trading of reworked imported glass beads (Jones 1995:53-54, 80, 84, and 177). Ghanaian’s bought Venetian pipe-beads, or short pieces of glass cane, from Murano, which they broke into smaller pieces and ground the ends to make a star-like pattern from the stripes (Jones 1995:53 note 8, 80, 84). Traditionally, observers saw bead sellers break the canes “into four of five little pieces, polish them on a stone in the way children polish cherry-stones, string them on Tree-bark in bunches of ten, and trade extensively in this commodity” (Jones 1995:53, Purchas 1905:282 [1625]). These beads were also used by locals to buy “Cows, Goats, Chickens and other such Livestock and provisions” after their personal slaves had broken and polished the beads (Jones 1995:54, 177).
As stated above, DeCorse did find altered beads at Elmina, supporting de Marees’ written account. The altered beads included several pieces showing evidence of grinding on the ends and some drawn beads that seem to be cut shorter than standard drawn beads. Gott referred to these shortened beads as “pipe” beads and stated that locals usually polished them too (2002:97). Local artists also took intact, European drawn beads and perforated the beads with a second hole perpendicular to the bead’s original hole by use of heat or a drill (DeCorse 1989:48). DeCorse noted that collectors John and Ruth Picard also have reworked and abraded beads in their collections (Picard and Picard 1986:3).

Other types of altered beads involve the reheating of European beads or glass chips not only to create new beads, but also to alter the color or opacity of the glass itself (Davison et al. 1971:654; DeCorse 1989:48; Sordinas 1964). DeCorse states that the majority were made from broken European beads or the occasional perforated glass fragments (1989:48). DeCorse uncovered several examples of these fired beads, which were made from chips of mostly white and blue or blue-green glass, but he found examples with yellow and brick red glass fragments too, many of which were ground after cooling (1989:48).

Evidence of European Beads as Color Sources

Gott explains that there are several current methods to get colored glass powder in Ghana. One way is to crush bottle-glass to obtain varieties of blue, brown, or green. A second way is to crush imported glass seed beads or bits of broken beads for coloring agents or decoration. Thirdly, a modern development, an artist can buy powdered glass at the market in packets, imported specifically for the powder-glass bead market. Lastly,
beadmakers can also make colored glass powder by mixing in powdered ceramic dyes, also imported in a wide variety of colors (Gott 2002:219). Gott, like other West African bead researchers, refers back to the earliest ethnic recordings of how coastal Africans make powder-glass beads.

In 1937, R. P. Wild published a couple of small reports that contained the first detailed descriptions of Ghanaian beadmaking. One covered horizontal striped beads, and another described vertically striped beads and bauxite beadmaking. Wild observed beadmaking in Ghana’s southwestern Denkyira region in 1934. In his description, “Different coloured bottles and European glass beads are obtained and ground down . . . to about a 60 mesh.” The grinding is “accomplished by grinding on the common stone slab used for grinding corn” (Wild 1937:96). Beadmakers then layer the powdered glass inside a clay mold, one color at a time.

In 1937, G. E. Sinclair of the Gold Coast Administrative Service visited an Asante village west of Kumasi and observed a beadmaker who used powered glass in various colors and bought the glass in packets from stores in Kumasi, unlike earlier years when beadmakers ground glass bottles for the same purpose (1939:128). This comment demonstrates the progress of local bead markets, and how local demand influences which resources are imported to meet their needs for colored glass. Lamb and York add that “a recent examination of both excavated and market-bought beads revealed that very little change has occurred over the past few centuries in their design or style” (1972).

In 1960, Sordinas observed the production of powder-glass beads called adjagba (also known as dzagba or adiagba). Lamb says these beads are different from bodom beads that carry a much higher price (1976:34). The Krobo people produce the beads in
Ghana’s Eastern Region (Sordinas 1965:114). Sordinas observed that the Krobo made these beads by reprocessing European glass beads, which they pulverized into glass powder to gain the colors and consistency they needed. The local Krobo women bought the colored beads they needed from Hausa merchants in the local market, who sold masses of beads as raw material for the Krobo powder-glass bead industry. At that time, they used mostly yellow beads for the color background and green and black beads to form the stripes (Sordinas 1965:115).

Milan Kalous suggests in his article Powder-Glass Bodom Beads that powder-glass technology developed from Akan ritual practices, likely specific to Asante origins (1979:18). Many scholars have recorded these rituals using pulverized precious beads over time. For instance, George MacDonald (who also borrowed from earlier writers, but does cite them better) reported that “Another use for [aggry beads] was to grind a number to powder, and after the body of the deceased had been well greased, to paint the body with the dust of the aggrey beads before its interment” (1969:60 [1898]). He also notes that the families often laid to rest gold and beads with the deceased under the floor of the dwelling house. The family treasures could then be uncovered later if the family fell on hard times.

In R. F. Burton’s words, a body is interred with “pearls, precious metals, and ornaments, Aggri, or Popo beads, and clothes of the greatest value” (1863:84). The graves then act like a bank and family members, especially the eldest son, can remove the treasures if they need extra financial help. He also observed that wealthy women wear a string of large gold beads under their clothing, or of glass or clay beads if they are not rich. He further writes that these items are actually hung up inside their houses if not in
use (1863:86). Among the Fante, each person has a Samán or “a private Fetish, an idol, rag, fowl, feathers, bunch of grass, bit of glass, and so forth…” and he contends that Africans make “everything, even a rag or a bit of glass, his god” (1863:100, 172).

Bowdich and Rattray both have stated that Ghanaians ground up aggray beads and rubbed a child successor to the stool, or of a rich inheritance, on a daily basis to hasten his growth and maturity (Bowdich 1966:266-267, note 42 [1819]; Rattray 1927:22, note 5). Even though locals were grinding up beads in early recordings, Kalous explains that the lack of glass, as a raw material, excludes any earlier dates for powder-glass technology (1979:19). Kalous and Lamb both believe that West African powder-glass beadmaking is an early nineteenth-century technology. However, archaeological investigations, such as those at Begho were from the fourteenth to eighteenth century (Posnansky 1970). DeCorse’s (1989) recovery of powder-glass beads at Elmina indicates the technology was well established much earlier and used similar techniques as those seen with the Krobo beadmakers of today.

Gott claims that the Akan regions have the earliest powder-glass beadmaking sites such as the Techiman-Bono to the north and the Fante along the coast (2002:115-116). These sites support the theory that the modern Krobo people adopted the beadmaking technology once practiced by the Akan. Francis states that visitors observed beadmaking in the Asante regions as early as 1814, but that archaeological data from Mauritania, to the east, indicates locals made them as early as the tenth to twelfth centuries (1993a:10; Robert 1970). These artifacts include both the beads and the flat clay molds used to make them (Francis 1993a:11; Vanacker 1984:46-51). Francis explains that these artifacts are the earliest confirmation of the powder-glass industry that anyone has found thus far.
Historic Accounts of Bead Sales

Records and manifests from historians like Stanley Alpern (1995), Marion Johnson (1976), Phillip Curtain (1969, 1975), and many others provide some raw numbers for glass bead imports via the coastal trade. Alpern asserts that glass beads were “among the all-time bestsellers, with many billions landed in barrels, cases, and casks from start to finish of the Atlantic slave trade” (1995:22). Traders normally shipped the beads pre-strung in clusters or bundles, but did occasionally ship them loose. He also notes the most common shapes, styles, and imitations in the records, and describes the favorite solid colors as “white, yellow, lemon, orange, red, blue, green and black” (1995:22).

Adam Jones, in *Brandenburg Sources for West African History 1680-1700*, revealed several documented bead cargos going into Gross-Friedrichsburg near Axim on the Gold Coast. To understand the bead trade better, Jones provides an explanation of bead terminology used by European merchants. A *cabes* equaled a certain number of strings of beads (the term was later used for cowries), a *mas* was a bundle of beads (which consists of many strings of several threads, each thread several hundred beads), several *mas* made a *cabes*. Each *mas* was around a pound each. Pipe beads, as one might assume, were cylindrical beads (Jones 1985).

*Conte carbe* were mostly black and white small beads, but often had no color description (Jones 1985:313, 60-74). *Quispel* or *quispelgrein* were small glass beads on threads, traders called several together a *masgoed*, which then made a *cabes* of strung beads (Jones 1985:313, 316, 318). *Past* beads are similar to *quispel* and common colors were lemon, orange, green, and lavender (Jones 1995:320). Merchants referred to larger
beads as *olivetten, rosados,* and *margrieten.* Thus, traders developed terminology to specify not just the amounts for sale, but also the general size of beads.

In a clarifying note, the above used *margrieten* is quite similar to the word *margariteri,* which refers to a bead guild that “made mostly simple small beads (seed beads or *rocailles*)” (Pendleton and Francis 2009:53). The term has come to denote both the guild and the small beads they made. The guild was formed in Venice in 1308 and developed drawn beads by 1490, and eventually became a “factory-and-cottage industry that could mass-produce glass beads . . . (by) the opening of the Age of Exploration” (Pendleton and Francis 2009:57).

As stated in previous chapters, the Elmina shipwreck bead assemblage consisted of small seed beads and some cylindrical beads. Therefore, it seems prudent to provide some records showing the sale of small beads to the Gold Coast to get a sense of small bead imports that would be going into the West African market. In 1683, a Debit Leger showed the sales of several *cabes* (a head) of beads of various weights sold to African traders. Some descriptions have no colors indicated; others stated orange, lemon, parrot green, and black, some pipe beads were also part of this cargo (Jones 1985:60-65, 70-74). In September 1685, Gross-Friedrichsburg inventoried

1140 lb. Loose beads of various kinds, 184 lb. parrot-green *quispel,* 618 lb. lavender *quispel,* 221 lb. *conte crebee,* 389 lb. violet *quispel,* 492 lb. green *past,* 400 lb. orange *past,* 274 lb. red *quispel,* 91 lb. *rosados* (rosaries) of various kinds, 433 lb. grass-green, 333 lb. *lemoen past,* 55 cabes white *quispel,* 42 cabes white pipe beads, 29 cabes yellow pipe beads [Jones 1985:114-115].
Similarly, Jones provides a list of goods disembarked from the *Waterhondt* at Gross-Friedrichsburg on December 11, 1685 consisting of the following: “69 cabes white *quispel*, 68 cabes violet ditto, 44 cabes *lemoen parst* [same as *past*], 25 cabes of *orange parst*, 61 cabes green ditto, 10 cabes parrot green, 80 cabes lavender *quispel*” (1985:132). As an interesting note, Jones provides a monthly account of sales at Gross-Friedrichsburg in 1684, which shows that variegated glass beads (1,873 lbs worth) had a profit gain similar to the metal goods and better than European and Indian textiles (1985:78). The profit gain of these beads demonstrates that the local market found beads as valuable as some metals and textiles.

Maintaining the idea of market value, Adam Jones’ *An Anonymous Dutch Manuscript* provides tables with more information on Dutch commodities sold to the various West African regions in significant amounts. Jones concludes that commodities such as iron, brass, copper, beads, and textiles were leading the sales in the Gold Coast in 1653 (1995:12, Table 1). Another table shows the “Percentage Composition of Imports” from 1651-1654, which demonstrates that African commodities, such as slaves, ivory, cloths, and gold were exchanged for textiles, beads, metal-ware, and cowries. Jones’s calculations show that during this time, the Gold Coast imported 50 percent beads, 26 percent textiles, 22 percent other items, and two percent metalwares. At the same time, São Jorge da Mina imported 52 percent textiles, 40 percent metalwares, five percent beads and three percent other items (Jones 1995:13, Table 2).

There may be a simple explanation for the discrepancy in bead imports. As reported earlier in this chapter, Elmina was known for its political and military position, not its bead manufacture. Thus, it would make sense that even though other parts of the
Gold Coast imported many beads, likely for powder-glass bead production, Elmina Castle and the surrounding town did not have a large bead production center (as seen by DeCorse’s archaeological investigations) and would not need bead imports en mass.

On the other hand, one must not underestimate the amount of beads demanded by Elmina’s market. Jones’ five percent calculation still consists of large quantities of beads. He found that Dutch West India Company agents, stationed at São Jorge da Mina in 1653, compiled a list of proposed merchandise, requesting almost 19,000 pounds of Venetian beads. Their order surmised that they would need

4000 lb lemon-coloured past, 3000 lb white quispel, 1000 lb red quispel, 2000 lb torquyn quispel, 2000lb blue lavender quispel, 1200 lb straw-yellow lemon, 2000 lb black rosados with white stripes, 1200 lb striped crystal, 500 lb violet quispel, 1000 lb roo madrigette with white and blue stripes, 1000 lb blue-violet madrigette with white stripes [Jones 1995:179-180].

The agents asked for mostly small beads, such as quispel, and madrigetten, which are “small, transparent glass beads of various colors, made generally in Venice” (Jones 1995:319). Add this term to the others above and we now see that there are far more quispel, past, and madrigette (all small or smallish beads) purchased than the larger olivetten, rosados, and margrieten, at least in the purchase request shown here. The accounts above also seem to have a large percentage of small beads. While these are just a few examples, they seem to suggest that small glass beads have always played a significant role in imported European goods to the Gold Coast. To further build upon this notion, Jones contends that
To buy Bennin cloths it was also necessary to offer a variety of beads (*quispel, masgoet, past*), as well as cowries and almost all types of metalware, whilst in Allada the range of beads and metalware demanded was narrower. Yet in terms of total value beads seem to have been far less important in Benin than on the Gold Coast or in Allada [1995:16].

Again, traders mention the small beads by name, and that it is these small beads in particular that they could trade in multiple parts of West Africa at that time.

Law’s *The English in West Africa* provides correspondence from the Royal African Company of England that references the need for small beads and a demand for broken beads. In Wassa country, 1683, a Mr. Richards wanted sizes 1-4, smaller if available, 60 lbs worth of all (Law 1997:69). Mr. Thorne at Wydah wrote out the “value of goods in slaves” stating that “8 broken bunches of beads” were valued at half a slave and in 1682, “980 rangoes, white small and broken” equaled the price of two slaves, while in another letter 40 lbs of beads, or 200 rangoes (long beads), bought one slave (Law 1997:222, 242, 247-248). Mr. Armitage received “2 chests of beads containing 345 pounds; rangoes, white and small, 1260; rangoes more 900, broken white and small” (a chest equals 32 gallons) (Law 1997:244). These statements demonstrate that the West African market valued even broken beads. One interesting note, which unfortunately Law does not expand on, is the reference for the need of “bead paste” in 1686, at whydah (1997:329). This could possibly be an early reference to glass powder.
Summary

The historic documents presented here reveal early bead demand by West Africans. The documents also demonstrate some degree of value for all beads, especially the plain, smaller beads. The rest of this chapter revealed the long history of the West African bead trade and industry, and that locally made beads were normally more valuable than European beads in their original form. West Africans in Ghana and Nigeria have shown great diligence within the local bead industry, which kept beadmaking traditions alive today. The cultural significance imposed on glass beads helped create the bead industry, and European trade in glass and glass beads made it profitable.

This chapter attempted to show all the aspects of West African bead use and to suggest how the Elmina Shipwreck bead assemblage fit into the scope of Gold Coast society. From the evidence provided here, it appears that the monochrome seed beads recovered from the shipwreck were likely intended for sale to the West African market for two general uses. One, seed beads were largely used as coloring agents to supply the powder bead industry, and two, seed beads were used for the adornment of mainly women, children, and infants in relation to fertility, growth, and protection. The next chapter ties all the elements of this thesis together and discusses the types of insights gained from the research presented here.
CHAPTER VII

INSIGHTS AND DISCUSSION

This final chapter explores the interpretive potential of material culture and style in relation to bead research. One of the main subjects presented in this thesis is that scholars need to place stronger analytical emphasis on non-diagnostic beads because cross-cultural studies of bead use region by region should reveal aspects about these “common beads” and their various roles within societies. For archaeologists to perform such analysis, clear systematic guidelines will need to be universally accepted. Future bead research depends on reforming the way archaeologists approach beads as an artifact class. The lack of comparable material to the Elmina shipwreck bead assemblage is a good example of why such actions are necessary.

So far, this thesis established that West Africans along the Gold Coast used imported glass to create locally made powder-glass beads and further hypothesized that they used monochrome glass beads as coloring agents in their bead industry. Chapter Six provided other cultural uses for small beads including adornment and charm use, for both women and young children. Chapter Seven goes further by discussing the types of information a bead assemblage could provide archaeologists including cultural affiliations, style significance, and site dating.
Glass Beads Interpreted

Janet D. Spector, author of *The Interpretive Potential of Glass Trade Beads in Historic Archaeology*, believes that beads are an artifact class with substantial temporal and cultural interpretive possibilities, especially in historic archaeology, because beads occur so frequently at historical sites (1976:17). She contends that both ethnohistorical and archaeological interpretations will maximize the information potential for beads. The author also advocates the use of descriptive methods to render sites comparable, similar to statements made by K. E. Kidd and Kidd (1983), Karlis Karklins (1985), Christopher DeCorse (1989), and Peter Francis (1988a), to name a few. Spector’s thoughts apply to her studies of Native American sites in the United States, but they are applicable to other historical sites around the world.

The ethnohistoric method of interpretation naturally includes using historic documents, such as early ethnographic travelers’ accounts and European traders’ journals, records, and inventories. Anthropologists have often examined these documents to uncover early bead nomenclature and classification systems used by traders and their constituents (Spector 1976:17). For example, this thesis presented several historic accounts of bead transactions to the Gold Coast in Chapter Six, translated by Adam Jones (1985, 1995). The ethnohistoric method also utilizes early scholarly works such as the documentation of the Asante by R. S. Rattray (1923, 1927). The current challenge has been to use these documents along with archaeological contexts to document beads through time and across geographic space.

The author used the ethnohistoric method in Chapter Four as a means to draw out the tentative conclusion that the West African bead industry was the intended final
destination for most of the Elmina shipwreck bead assemblage and that at least some portion of the bead cargo was intended for use as coloring agents. Further conclusions are problematic since the ethnographic material for other smaller groups such as the Ewe, Dangme, and Ga, are lacking; thus, researchers are left with a gap in the knowledge about these groups and their use of beads. During the research presented here, the author did find occasional documentation of small bead use along the Gold Coast. The most detailed accounts of small bead use are contemporary and came from Brigid Sackey’s (1985) ethnological work from the 1980s. Unfortunately, historic descriptions did not discuss beads in a detailed manner, except to say that among the Akan, small children and infants wore small beads.

The archaeological method of interpretation utilizes other techniques such as artifact classification and spatial distributions. Like other artifact classes, researchers should be able to evaluate bead assemblages with comparative studies of beads from other sites that have already achieved chronological control by “means of artifacts or historic data other than beads” (Spector 1976:17). Chapter Four of this thesis presented site comparisons as a contribution to bead research in West African and shipwreck archaeology. The Elmina shipwreck assemblage provides insights regarding European trade to the Gold Coast, West African bead preferences (including colors), and local beadmaking practices. The significance of this bead assemblage is that it represents a very specific time span within nineteenth-century merchant trading, as well as nineteenth-century West African market demand for glass beads. The hope is that the Elmina beads will become a reliable dating index, once applied to other studies.
To further the argument that beads reflect cultural behaviors, archaeologist Arthur Woodward (1965) researched Native American trade goods, including beads from early North American trade and exploration. Based on his notes about the Lewis and Clark expedition (where only blue and white beads were valued along their trek), he says these trade encounters demonstrate preferences for particular bead colors and types. He asserts that “The colors and sizes of beads were usually dictated by the aboriginal color schemes prevalent in these regions,” and they were associated with common dress fashions and religious beliefs (1965:17). Therefore, the different tribal groups were not just buying beads through “whimsical vagaries but were based upon some fundamental beliefs of the people themselves” (1965:18).

In addition, similar reports by other traders led Woodward to conclude that the same group of people could easily reject a trade item that was in demand the year before, while other goods stayed constant over long periods (1965:20). Consequently, style preferences could change rather quickly through time, but certain goods held steadfast. Janet Spector also researched bead preferences by using the American Fur Company papers. She found inventories pertaining to items “remaining on hand” or “furnished to individual trading outfits of the American Fur Company.” After reviewing these papers, she concluded that

Bead inventories at different sites within a restricted geographical region might differ either because of temporal factors or because of the cultural affiliation of the groups occupying the sites. With proper documentation and archaeological
research, the problem of distinguishing the differences between the sites in terms of cultural or temporal factors should be possible [Spector 1976:17-18].

Furthermore,

Since the outfits usually traded with specific tribal groups residing in a particular locale, the differences in bead inventories should have cultural significance when the time factor is held constant. Conversely, if one investigates the yearly records of an individual outfit, changes in the inventories should be reflecting temporal shifts with respect to bead style preferences [Spector 1976:18].

Therefore, a potential exists for archaeologists to reconstruct which items were fads and which items held persistent cultural values or utilitarian uses. According to Spector’s line of thought, if an investigator knew which beads were sold to the West African market, then the researcher could theoretically follow the patterns of raw materials used by local beadmakers and match the patterns to stylistic changes in the powder-glass beads made at the time. However, the practicality of such a study may be futile at the moment as large assemblages of powder-glass beads have not been recovered archaeologically. Alternatively, if archaeologists found several shipwrecks with cargo in a region, then patterns may be discerned here too. Of course, once archaeologists discover a shipwreck’s identity, they may be able to review the inventories for that company to find regional patterns of bead sales.

Spector’s work encourages research in historical trade documents. These records offer another benefit; they often provide criteria and terminology that merchants used to describe various beads. Many glass bead colors and certain varieties are determinable through the trader lingo, but one can only unearth significant data through intensive study
of historical trade records. Spector believes that in-depth analysis would reveal such evidence as type or color preferences, as well as “frequency distributions; and changes through time in buying patterns” (1976:27).

Spector also discussed the different values associated with particular types of beads. She discovered that type frequencies are related to the price information found within historical records because sale orders for beads depended in part on their individual costs (Spector 1976:18). In Adam Jones’ *An Anonymous Dutch Manuscript*, there is an example of this concept. One document from 1653 estimated that São Jorge da Mina would need 1600 ounces of “fine beads of color Nr.1” at the price of 23 pieces of sterling per ounce, whereas all other bead cargo on the list topped out at 16 pieces of sterling per pound or unit (Jones 1995:179). Researching the price of beads, along with their frequency and amounts, would create a more comprehensive approach to analyzing this artifact class. If a researcher can establish connections between trade records and archaeologically recovered beads, then the potential for understanding dynamics such as social status would increase substantially (Spector 1976:18).

As pointed out above, the relative frequencies of bead types bought year to year can show regional temporal shifts in style preferences. In general, bead differences have varying meanings for each region, thus traders would only order those types preferred by the buyers. When archaeologists compare these shifts to the history of the area, a more intuitive picture develops. Spector points to the example of Europeans trading certain bead types, such as wampum and seed beads, to North American Indians in great quantities over time. However, she, like many other authors, admits that such universal bead types, “appear to have little significance in interpreting sites in terms of culture or
time. On the other hand, the presence or absence of black beads, fancy beads . . . garnets, blue blues, etc. may prove to be more useful for temporal and cultural identification” (Spector 1976:18). However, it is still this author’s belief that seriation studies could tease out patterns in common bead types as well. Every bead type has a cultural function, but some beads are more versatile in use and serve in more than one way. Finding the various patterns of use for the common bead will be more complex than with diagnostic beads, whose functions are usually limited to specific uses.

Spector does not disregard such studies. On the contrary, she believes that major breakthroughs to expand potential bead information will come from studies that include records from broadly separated geographic areas, studies that will provide comparative material. However, she cautions that, “a major problem in comparing sites from different regions is the fact that each area may have experienced the introduction of the same type of bead at different points of time. Thus, coincidence of archaeologically recovered types does not necessarily indicate contemporaneity between widely separated sites” (Spector 1976:20). The statement may prove particularly true for African studies.

On the other hand, documentary research may show that similar beads were popular in several areas within the same historic period, especially during the later years of the Industrial Revolution. For instance, David Killick’s archaeological work in South Africa is an example of a researcher finding cross-cultural bead patterns. Killick claims in his research, “changes in bead variety and relative frequency are roughly contemporary in southern Africa and North America during the 19th century” (1987:5). Similar temporal distributions of trade beads may eventually be uncovered for West African sites as well (DeCorse 1989:45). Cross-cultural comparisons of West African sites and North
American Indian sites could reveal insight about nineteenth-century European bead manufacture and sales.

Seriation studies help provide chronological control as Brain’s study demonstrated in Chapter Five. Researchers can also denote what “typical” bead assemblages should look like for specific areas, at certain times. Furthermore, by including shipwreck assemblages in seriation studies, investigators could potentially close chronological gaps or at least define the historic periods of use and introduction with more precision. Currently, archaeologists distinguish horizons through researching ceramic pattern changes; the same may be possible for beads as well. Anthropologists are now starting to work toward temporal bead interpretation, but all previously recovered bead assemblages, especially those from before the creation and use of the Kidd and Kidd typology, need reevaluation using similar classification systems. Theoretically, all bead assemblages should also go through regional seriation studies. This is a daunting task, but if completed, resulting patterns could uncover cultural influences, migrations, or even cross-cultural relationships not yet realized.

**What Beads Tell Us**

Beads recovered archaeologically reveal significant cultural uses from context alone. For instance, bead strands found together can indicate purposeful placement such as adornments found in burials. Bead strands also indicate methods of transport, storage, and sales. Through their archaeological context and their appearance in historical documents, bead uses insinuate various types of value. For terminology, value normally refers to different subjective views. Francis believes there are two basic subjective value
systems. The first is intrinsic value, established by aesthetic taste and scarcity. The second is social value, based on beliefs and social situations (Francis ca 1990s:6). The first system includes rare “ground” beads, like the Aggry. The second system revolves around cultural and religious beliefs and practices, such as beads used in rites of passage.

The Elmina beads likely did not have much intrinsic value in their original seed bead form, but this thesis has hypothesized that after locals altered or reworked the beads into powder-glass beads, the finished product would have had a distinct increase in intrinsic value. The assemblage’s social value, in its original form, was possibly used by mothers to help their children and infants grow and mature properly, and to keep harmful spirits away. If transformed into powder-glass beads, the social value would also rise because the beads increased in monetary value and changed in social roles.

Francis analyzed many bead contexts in terrestrial sites, assessing intrinsic and social values. In his article, From the Systematic Context to the Archaeological: the Case of the Lost Beads, he noticed some general patterns. He observed that, generally, “beads found scattered around a site will be less valuable than the average of those in use, while those from purposeful depositional contexts will be more valuable than the average” (Francis ca 1990s:11). While this may be a true statement for most terrestrial sites, it is not clear how it might apply to a shipwreck assemblage that never entered a terrestrial context.

In a maritime occurrence, the beads are in somewhat of a cultural limbo and their social values are about to change from their role as European trade goods to something else in the new society. Nicholas Thomas (1991) calls such trade goods “entangled objects.” Archaeologist Kenneth Kelly, who studied the trading town of Savi, Benin,
agrees with this line of thought and says that material goods have “multiple meanings and values created in part by their mere presence in intercultural interaction” (1997:354). If the Elmina shipwreck beads made it to the West African market, then coastal Africans likely would have bought them for adornment or as coloring agents for their beads. Therefore, it would seem that the role of seed beads in the Gold Coast region was for use in important ritual aspects of life transitions (birth, adulthood, and death) or as valuable raw materials. However, since the Elmina shipwreck beads did not make it that far, their role remains as mass-produced commercial goods, or as Arjun Appadurai (1986) calls, it the commodity phase of an artifact’s social life.

On the other hand, there may be more intertwined meanings within the presence of these artifacts. Beads, like other material culture, “encode past human behavior” and enlighten researchers on perceived idiotechnic and sociotechnic behaviors (Francis ca 1990s:14). Binford originally coined these terms and describes the behaviors as able to create 1) items that “signify and symbolize the ideological rationalizations” for the social community and 2) items that reflect the functional context within sub-groups, ultimately revealing a society’s ability to manipulate technology (1962:219). Binford believes artifact classes contain formal complexity and diversity, and when these elements change within the artifact class, it reflects behavioral changes in the associated society (1962:219-220). Glass beads follow this pattern, but investigations into the ideological connotations of beads within a society have only recently been attempted because researchers have often considered beads as only potential markers of technology and trade (Francis ca 1990s:14). Archaeologists note the presence of beads at a site, but not
many archaeologists intensely research the associated behaviors that lead to their presence.

Furthermore, there is a distinction between objects created by a community and those traded into the community. People’s actions concerning traded material culture can contain several other meanings that are a combination of several cultural groups. Nevertheless, the items still have basic purposes such as trade goods that people used because the objects worked to help complete certain tasks or they were new and curiosities (Kelly 1997:362). Trade goods are items that could have many functions within a new society, whether utilitarian or fashionable. The goods come into the society with many meanings already attributed to them that may or may not continue into the new population. Malinowski’s (1920) work on the Kula and Mauss’s (1967) article The Gift both offer other insights into trade, exchange, and gifting.

Kelly makes a good point, however, when he cautions that the simple presence of European possessions does not signify elite status in itself (1997:364). It has been stated elsewhere that trade and use of various types of beads occurred in West Africa well before European coastal contact. In the case of the Elmina bead assemblage, similar beads that did make it into the West African Market were not intrinsically valuable by themselves; only after they were altered did they become items worthy of denoting social status. To further his point, Kelly refers to two categories of trade goods, tobacco pipes and glass beads, which were recovered throughout the site at Savi, in Benin, in both elite and commoner sections. He says the distribution demonstrates that certain imported goods were widely established and available to the majority of the population. Therefore, the behaviors associated with these artifacts also must have been accepted throughout the
society, which proves his point that not all trade goods are valued as status symbols by themselves (Kelly 1997:364). Each individual group must impose values onto trade items for the items to function as valuable material.

Marvin Smith (1987) agrees with Kelly’s statements and explains that distribution of goods also influenced their roles within the new society. Smith says it was probably typical for newly introduced items to be “controlled by the elite as sociotechnic items” (1987:26). After demand for these items caused an increase in distribution, the trade goods no longer held a sociotechnic function as they became available to a larger audience. He further says that “some items such as beads, bottle glass, and guns” could function either in substitutive or socioreligious contexts (Smith 1987:116). Beads are just one example of how trade goods played multiple roles beyond functional uses and each society appreciated them for reasons consistent with their individual cultures and with the level of sustained contact. Kelly stresses, “it is important that the use and incorporation of trade goods be recognized as having had a meaningful content as well as a functional role” (1997:363). Interpreting activities as intentional will help uncover the incorporation of these goods into West African culture and the socially internal values assigned to various material culture (Kelly 1997:363, 366).

European bead manufacturers, especially during the nineteenth and twentieth centuries, paid traders to record fluctuations in the West African bead market and to report on the styles in demand (Francis 1988a; Karklins 1985). The companies invested time and money into making popular beads and replicating valuable beads, therefore, reinforcing at least some intrinsic and social values onto them. The European merchant also influenced intrinsic value by choosing, based on personal trade experience, which
beads to purchase. In contrast, Alpern (1995) contends that traders also resolved to send a wide variety of beads, wagering that the diversity of goods would attract various buyers at each port. One author even used the term “floating supermarkets” to describe the diverse cargo on each trade ship (Hopkins 1973:111). The cargo choices imply a calculation of what was of value, or sellable, on the West African coastal markets during the mid 1800s.

Thomas (1991) refers to the calculations as an estimation of value that one often finds in discussions of cross-cultural exchanges, particularly those of colonial peripheries. He says the value creation process is based on outcomes of “acts of substitution, juxtaposition and transformation” that reveal the attributes of exchange items (1991:31). Many European goods, particularly metalwares, were not particularly useful in their original form (as with iron bars and manillas), but locals would transform them into useful forms such as tools (Thornton 1992:45). Glass seed beads seem to have fit into this process. West Africans did not care how Europeans formed and shipped these items or what their original uses might have been. They only needed them to be adaptable to their needs.

*Tribulations with Beads and Dating Sites*

Earlier, Chapter Three contained a discussion of methodologies about data collection and organization in relation to bead assemblages. Chapter Seven expands on the topic in an attempt to help bead researchers with techniques and tools of bead research in relation to dating beads and the sites they came from. Over the years, many bead investigators have suggested a range of different methodologies. In 1964, A. P. du
Toit suggested that spectrographic analysis, augmented “with bead types of different periods and origin,” would be valuable if researchers submitted archaeologically recovered beads “for analysis and relative dating in order to supplement the archives and coordinate the sites through these finds” (1964:98). Lamb and York (1972) understood the general idea that once archaeologists found bead provenances and dates of manufacture, then researchers could use trade beads for dating sites just like ceramics. The authors also noted that earlier archaeologists affirmed similar proposals, including Shaw (1961). Seriation studies and histograms are products of this type of analysis as discussed earlier with examples from research by Brain (1979), Karklins (1983) and Smith (1983, 1987).

Other archaeologists were also successful in dating beads in various American sites, many focusing on Native American areas. For example, Charles F. Wray (1983) was able to create a trade-bead sequence for multiple Seneca Indian sites from 1550 to 1820. Barry C. Kent (1983) created a bead sequence for the Susquehanna Valley, and he strongly advocated the use of histograms to show bead style popularity. Kent’s research included a large sample of beads (110,000) from 13 sites, and he was able to show the spatial distribution of the most popular bead types from 1575 to the 1760s. Lastly, Marvin T. Smith (1983) compiled a bead chronology for the southeast region of the U.S. for the Spanish period, 1513 to 1670. The collective power of these archaeological reports provides comparative material for various areas within a larger geographic area. The correlations or differences other archaeologists might find when comparing these works to their own sites will eventually provide cross-cultural insights into the Native American cultures of the U.S.
While chronology methods are available to tentatively date beads from many archaeological sites, archaeologists still have problems with dating beads because many beads have extensive manufacturing and circulation ranges. Furthermore, even though researchers know a good deal about bead manufacture the documentary evidence is actually lacking in this area and one reason investigators note for the absence of the information is that beadmakers kept details about glass techniques and mixtures a secret (Francis 1988a; Harris 1984). This secrecy causes problems for historians and archaeologists because it inhibits them from locating definitive dates of manufacture, learning which coloring agents or other materials the beadmakers used, or even knowing where and when bead makers first introduced these technologies. The lack of specific information stifles an archaeologist’s ability to accurately date beads or use beads as a way to date sites (Francis 1988a; Kidd & Kidd 1983).

However, Peter Francis was able to establish several dates relating to seed bead manufacturing. He notes the starting date for the use of colors such as pink and gold ruby glass (1830), the introduction of Imperial yellow (1860s), and the start of color uniformity (1860s). He also provides dates for the introduction of faceted seed beads, or charlottes (1840), specific shapes such as two-cut and three-cut (1860s and 1870s), square holes (1890s), diameter uniformity (1920s), and length uniformity (1940s) (Francis 1997:8).

One method that supplements the lack of documentary evidence on glass materials is chemical analysis. Several chemical elements are currently being investigated for their use in dating beads. For instance, many researchers believe that bead-manufacturing origins are distinguishable by the chemical properties in the raw materials
used to make glass. For example, the alkali ingredient in glass (soda ash or potash) was made from local vegetation naturally growing near the glass production sites. The plant ash chemical signature should lead researchers to general regions where the plants would have a similar chemical signature, thus revealing the area where the glass was manufactured (Davison et al. 1971)

Unfortunately, to date, even these studies have been of limited help in sourcing beads from African sites (Davison 1972; Davison and Clark 1974; Davison et al. 1971; Karklins 1974; van der Sleen 1973). As presented earlier, analysts used X-ray fluorescence to arrange groups of archaeologically recovered beads into two chemical groups. The study revealed that the origin of the glass material was indeterminable because the results were of an “either/or scenario.” They could be of Islamic or European origins because both places used similar products at different times (Davison et al. 1971; DeCorse et al. 2003). On the other hand, investigators were able to identify that one group of beads chemically belonged to the same glass production site as the beads found at Ife (Davison et al. 1971). Even though the data was not definitive for bead origin, analysts did uncover new information on glass beads recovered in West Africa.

Another issue with testing for trace chemical elements is the leaching of components from glass, otherwise called devitrification. The process is especially evident in maritime archaeology where salt water in particular is hard on the glass’s structural integrity. For example, Jerome Hall attempted to have the Corning Museum of Glass analyze whether the Monte Cristi Pipe Wreck beads were made with potash or soda ash, but the ocean water had compromised the test because too much of the lime and other elements were gone (1996:217).
Another chemical signature is comprised of the color additives used in glass. The additives changed with time, usually becoming more complex (DeCorse 1989:44). Unique coloring ingredients include elements such as fish bone ash, arsenic, and lead. Currently, archaeologists do not know when beadmakers used many of these additives, but they are hopeful that chemical analysis will provide the answers and improve bead chronology (Francis 1988a; Kidd & Kidd 1983). One successful researcher, Elliot H. Blair, found that “pre-1600 beads are lower in calcium, chlorine, and sodium and higher in copper than post-1600 beads,” which she says results in darker, less stable beads pre-1600 (2009:157).

In addition, she also found that in the northeast U.S. there was evidence that white beads had been made with different elements to create opacity, especially during the mid to late seventeenth century when there was a switch from tin to antimony. Blair was able to use this information to uncover clues about burial sequences in the area. She found one burial that contained white tin-made beads and another that had white antimony-made beads. Since antimony was used after tin, she could definitively conclude that the burial with antimony beads post-dated the other burial (Blair 2009:158). For more research on bead chemical analysis in the U.S., see Hancock et al. (1994, 1996); Karklins (1983); Karklins et al. (2002), and Sempowski et al. (2000). Unfortunately, chemical analysis is costly and time-consuming, and is only applicable to small samples. Therefore, many archaeological studies are at a disadvantage as they are unable to afford, monetarily or time wise, chemical analysis (DeCorse 1989).

Other researchers have looked to radiocarbon dating for more answers to the bead chronology problem. Christopher Decorse explains that, as temporal markers, beads are
often the only evidence that can date sites as old as the second millennium A.D. At times, they are the only imported articles of trade found, “even on sites known to have been occupied to the present century” (DeCorse 1989:44). In 1986, McIntosh and McIntosh reported on radiocarbon dating in West Africa and their use of high precision calibration curves to ascertain regional chronologies, which was supplemented by reports by Sutton (1982) and Calvocoressi (1977). Nevertheless, Decorse explains that sites within the last 500 years are too young to date properly with radiocarbon dating. However, he does state that older sites would benefit from bead chronologies, which could still assist in evaluating radiometric dates (DeCorse 1989:44; see Shaw 1970, 1989 for further discussions on early bead radiocarbon dating).

Unfortunately, archaeologists are also having trouble with other aspects of bead use that can obscure the actual age of beads, including practices such as heirlooming, imitation, and extended dates of manufacture. The actual age of beads in West Africa is often more extensive than the archaeological context in which they are found (Francis ca. 1990s:10). The social significance of some beads causes them to remain in use long after their manufacture. Herbert Cole explains that prominent people, particularly royalty, unveil multitudes of various antique beads “from family storage chests and royal treasuries” for ceremonial occasions (1975:31). Many historians point to this type of circulating usage, known as “heirlooming,” as problematic when trying to date beads. Lamb and York (1972), DeCorse (1989) and Francis (1988a) have all observed that nineteenth century examples of beads, and imitations, are still available in Ghanaian markets today.
Imitation bead use has a long and unclear history in West Africa. DeCorse explains that coastal trading by the first Europeans would have catered to the already established bead trade. Therefore, the Europeans purposely sold beads similar to the ones already found in the region. Even though they undoubtedly did sell new bead types along the Gold Coast, “not enough is known about trade patterns during the relevant centuries to be certain which bead types were introduced at particular times” (DeCorse 1989:43). To compound the problem, African sites in general have not yet yielded large collections of beads and not many bead assemblages are from closely dated contexts (DeCorse 1989:44). Consequently, the imitation beads cannot be compared to, or be sequenced using, African sites. The common practice of Europeans copying local African bead styles and the fact that local beadmakers often copied very early Venetian bead styles, further confuses any imitation-bead timeline.

In addition, European glass factories competed by imitating each other’s beads, which led to similar bead production developing in several countries. Venetians tried to keep a monopoly on the market by enforcing secrecy on the beadmakers and not allowing them to leave the country. The constraints, in turn, actually led many beadmakers to leave their homelands with the help of bead investors from other countries (Francis 1988a, 2009a; Kidd & Kidd 1983). The movement of beadmakers increased the production of Venetian style glass and beads, making the identification of individual manufacturers extremely difficult for researchers. The fact that every glass factory had the potential to make beads further complicates the identification of manufacture because no glass factory can be left out when researching where beads may have originated (Kidd & Kidd 1983).
Historic European documents, like those mentioned in Chapter Six, often reference beads as cargo in trade, but here again, investigators are plagued with difficulties because the historic terminology is difficult to compare with bead varieties as they are known today. Many early shipping accounts simply list beads by color, weight, and price, and travelers often only note beads as being present at a location as either adornments or trade items. However, from these documents, most authors seem to agree the beads brought to the Gold Coast were likely European beads from Venice, Murano, and Bohemia.

The last bit of problematic documentation mentioned here is the publication of bead assemblage analyses or the lack thereof. It suffices to say, that within archaeological publications, descriptions of many bead finds are simplistic and even nonexistent in some cases, making comparisons difficult (DeCorse 1989:44). There are some exceptional works by Blair (2009), DeCorse (1989, 1992a), Francis (1988a, 1997), Karklins (1985, 1988, 1991), LaRoche (1994), Shaw (1961, 1970, 1977), and even Picard and Picard’s (1986) non-archaeological bead collection. While these authors are to be commended for their work, they are but a handful of authors within the archaeological community.

*Style Defined*

As a stylistic choice, altering materials into new products has several connotations. Michelle Hegmon (1992), author of *Archaeological Research on Style*, discusses various theoretical perspectives on style, including thoughts by authors such as J.R. Sackett, Polly Wiessner and Ian Hodder. She writes that there are two common archaeological ideas on style, “first, style is a way of doing something and second, “style
involves a choice among various alternatives” (emphasis original Hegmon 1992:517-518). In traditional archaeological thinking, she says style involves choices between options that are functionally equal, and these choices take place within a specific time and geographic area. Her belief is that style is actually an active phenomenon because it is an element of human activity. She noted, however, that style should not be confused as an activity itself, but should be understood as being a component of human actions (Hegmon 1992).

There are three common ideas that come from studying style. First, style can function within time-space systems. Second, style can have communicative properties and lastly, style can relate to the cognitive processes of an individual or society. Archaeologists use styles as references when researching patterns within material variations and to decipher the social aspects behind the variations. They usually think of style as a component of material culture, or a “formal variation not determined by technological constraints” (Hegmon 1992:518-519).

Martin Wobst proposed an information-exchange theory on style in 1977 that states, “style functions in cultural systems as an avenue of communication,” with style variations transmitting information from the participating artifacts (1977:321; emphasis original Hegmon 1992:519). Furthermore, style is an expensive way to communicate; therefore, artifacts only convey certain types of information such as power and status. However, researchers have expanded the paradigm of style to include complex and ambiguous information (Hegmon 1992:323, 520). Researchers such as Polly Weissner argue that such ambiguities, while seemingly inefficient, are actually functions of social relationships (1985, 1990).
Style functions as visible communication to people who do not know the wearer or owner of the material. On the other hand, Hegmon does point out that visibility is not always important, especially if the communication is between private social relations. Ghanaian waist beads are a perfect example of this type of communication as previously discussed in Chapter Six. Only spouses, lovers, and certain women get to see, or hear, a woman’s waist beads; they are strictly for intimate relations. Cross-culturally, Hegmon and fellow researcher Jones found that privately visible materials conveyed more about belief systems, rituals, and traditions, while publicly visible materials generally conveyed ideas about group or ethnic margins (Jones and Hegmon 1991:521).

One important distinction made by Wobst is that “not all material variation is style; rather, style is that part of variation that conveys information” (1977:321; Hegmon 1992:521 emphasis original). The simple style of the seed beads in this assemblage seem to have acted in a more utilitarian role, not finding a stylistic role until after they were recast. By themselves, the seed beads may not have conveyed information about status or group affiliation either; however, in their original form the beads could communicate someone’s worldly beliefs if used as protective amulets or growth stimulants, especially relating to the well-being of children and infants.

Sackett believes styles are isochreistic variations or variants “equivalent in use” (1982:72-73). In other words, they are choices made by the artist that will result in communicating similar ideas. Because these choices are likely learned or socially transmitted, variation reflects both social interaction and historical context (Hegmon 1992:522). The koli beads, mentioned in Chapter Six, which now act as pseudo Aggry beads, follow this notion. The historical context that real Aggry beads are no longer
available led to stylistic variations that became acceptable, and now the *Aggry* term is used for any highly valued bead (Fage 1962:345; Francis 1993a:6; Gott 2002:33).

Wiessner further believes that style conveys ideals about personal or social identity, or what she calls “identification via comparison” (1983:58). One can actually see this idea within contemporary Ghanaian use of beads during ceremonies. Ghanaians try to own and wear vast amounts of beads, the larger the better, at these times so everyone around them will know they are part of the wealthy upper class. There is a constant demand for certain powder-glass beads, which reflect wealthy status, indicating that people want to achieve this status and be able to convey that they are not lower class. The notion is especially noticeable during a girl’s transition into womanhood. If the family cannot afford beads, then they will rent them. The ritual is meant to present the girls as potential wives and the beads not only represent their promise to uphold womanly values, but also separate them from the other female children (Gott 2002, 2007; Kumekpor et al. 1995; Quarm 1989).

Active concepts of style include many roles, such as learning and interaction, social distinctions and inequalities, and technological transitions. The basic premise is that social interaction and shared learning is contextual; thus, material similarity within an artifact class is directly related to the context of its creators (Hegmon 1992:526). Postprocessual views interpret style and other features of material culture within individual cultural and historical contexts (Shanks and Tilley 1987:148-9; Hegmon 1992:525). Artifacts obtain meaning through their functional roles and daily patterns of existence (Hodder 1990:4). Hegmon reflects on previous views that stylistic interpretation can happen on a universal level such as understanding the general range of
meanings that a class of artifacts can express, meanings she believes are uncovered through studies about artifact diversity, redundancy, and structural regularity (1992:525).

Occasionally, differences arise within individual communities of material makers, and they create their own micro styles within one general culture. However, this thesis puts forth caution to researchers studying bead assemblages and the concept of finding micro styles in bead attributes. Foremost, one should understand that mass production of materials is much different from local small-scale operations. Stylistic variations happen in both the former and the latter, but the former is meant for a large-scale audience and the latter is not. Thus, variations from non-standardized mass production would not reflect cultural ideologies, whereas variations from individual manufactures could reflect not just ideologies, but individuality too.

Moreover, archaeologists should only find micro styles in certain bead assemblages. For example, small-scale production in a village or in an individual’s home could produce micro styles, since these beadmakers would have the time and freedom to experiment. Even large glass factories in Europe experimented with new bead styles to entice sales, but do these new styles reflect that country’s culture? It would depend on the assemblage and whether it had parallel assemblages found elsewhere in that country. For instance, many bead-card assemblages reflect styles more popular with the West African market than the European market. Furthermore, many bead assemblages from large factories would more likely represent mass production for the sale of beads elsewhere. Similarly, bead assemblages recovered from merchant ship cargos, at least in the industrial age, would probably not reveal micro styles since traders were focused on moving mass quantities of beads reflective of product orders.
Within this discussion of mass-production, it is important to differentiate purposeful bead characteristics from accidental bead attributes. Janet Spector (1976) distinguishes physical features such as size, color, and shape from features that are imperfections of manufacturing. Physical features can reflect the intention of glassmakers, but the other indicates technological abilities or inabilities. Recognizing intention in early bead specimens is somewhat difficult since the technologies for standardized colors, sizes, and shapes was not possible until the late nineteenth century (see Peter Francis 1988a for more details). The point made in Chapter Three is that researchers should be careful how they separate cultural characteristics from mechanical characteristics. Inferring mechanical imperfections as purposeful could lead a researcher to false conclusions.

**Interpretation**

Eventually, through comparative studies, the beads presented here could reveal general cross-cultural stylistic distinctions for cargo bound to West Africa. However, the beads are less likely to be linked to specific ethnic groups because no West African groups actually had the chance to manipulate or use these beads. The majority of the beads recovered so far from the Elmina shipwreck are seed beads, which are often linked to ideas of lower class use because seed beads were cheap, common beads. However, this thesis does not argue that these beads demonstrate inequality of class or status because of their lack of design or expense. Rather, the author proposes that the beads from this assemblage represent, at least in part, a culture’s ability to manipulate materials into styles that communicate local values and beliefs.
As a raw material, glass beads were invaluable to a bead-making society that could not produce their own source of glass. Overall, as an assemblage, the beads simply represent mass production of seed beads in various colors. As obvious as that might appear, the study of mass-produced glass beads is often only attainable from large bead assemblages found at glass factories or on shipwreck sites. These sites are limited in number, and only a few have been archaeologically investigated.

As for their cultural value, Gott stresses the notion that West Africans considered glass trade beads to have an equal exchange value to goods such as gold and kola beans, reflecting the intrinsic value they attributed to glass beads. Furthermore, Gold Coast artists used their skills to recast and rework the imported beads into local artworks that had social value to their society (Gott 2002:9). Gott explains that regional trade established West African beadmaking, but that it was through the maritime trade that artists were able to obtain their materials. Glass beads, along with bottles and other glass objects contributed to the growth of West African beadmaking, especially for coastal areas. Gott states, “Waterborne transport provided sufficient quantities of raw materials to fuel the development of an active glass beadmaking industry among artists within certain coastal settlements” (2002:96).

Conclusion

There are several long established forms of bead use among the coastal areas of Ghana. The most obvious use, noted repeatedly in literature, is as a trade good. Bead trading is nearly universal in most areas of the world, but is usually more intense in coastal regions where maritime trade could transport beads in greater numbers than
traditional land routes. Another common form of bead use is to adorn the body or to decorate the hair, which travelers and ethnographers have observed in Ghana both historically and presently. Bodily adornment is usual in most cultures for the purpose of decoration, visual social cues, or for protection, as with charms. Such use of beads is almost global, but it does differ in Ghana in two distinct ways. First, the cultural beliefs among the different groups in Ghana have created special uses for beads that are distinct to that region. Second, because beads have significant cultural values to West Africans, they developed their own bead industry and transformed European beads and glass into local styles of glass beads that fit local cultural preferences.

The significance of monochrome “seed bead” assemblages is often forgotten and possibly even unknown to some in the archaeological field, but as an artifact class, glass beads hold the same potential to serve as a valuable research tool as do other artifact classes. This chapter reviewed the general interpretive potential and date-ability of bead assemblages and how such research methods relate to the Elmina shipwreck bead assemblage. The authors mentioned in this thesis promoted several different research tools to use for studying beads as an artifact class. Overall, archaeologists using these research methods will be more efficient when using raw data and descriptive information to interpret bead assemblages.
CHAPTER VIII

CONCLUSIONS

The main contribution of this thesis is that it analyzes the first, and currently the only, bead assemblage from a shipwreck site along the West African coast. The Elmina shipwreck by its very nature as a maritime site demonstrates different material culture patterns than most terrestrial sites. While terrestrial excavations such as those at Elmina Castle provide a long-term view of African-European interaction, the Elmina shipwreck offers an unprecedented look at a specific European trade cargo dating to the second quarter of the 1800s.

The Elmina artifact assemblage serves as an excellent example of how shipwreck assemblages differ from terrestrial assemblages. Since shipwrecks are catastrophic sites, they do not represent trends over long periods of space and time, but instead represent goods in transit with a relatively fixed chronological context. As a singular event, they represent the demand of the market, from West Africa in this instance, and the availability of market goods, from the European aspect. A shipwreck’s assemblage will also be composed of a different range of commodities than one would find with a comparable terrestrial assemblage. While ships carry only part of what is available on the open market, Europeans still made a point to carry as many different items as possible to meet varying and sometimes unpredictable demands at their destinations, which was particularly evident for vessels trading in West Africa (Alpern 1995; Hopkins 1973). Therefore, merchant ships will likely contain a large variety of materials that traders
know will sell in a specific area or believe them to be of value in that region. Thus, a
shipwreck presents a look at a trade assemblage that was regionally valued in both the
European and West African state of mind.

The trade context of this assemblage provides considerable insight into European
transactions because the ship holds what appears to be an almost complete and unsold
cargo. The shipwreck provides a micro view of European trade and response to the West
African market. The sample size of the beads from the Elmina shipwreck assemblage is
comparatively small to what likely still remains in the site. However, the components of
the sample tentatively indicate that there was a strong demand for small monochrome
beads. The West African market was the most likely destination based on the shipwreck’s
location and the fact that the items were general cargo, marketable to any of the people
along the coastline. However, researchers will likely never know the ultimate destination
of the Elmina shipwreck bead cargo because traders never distributed the cargo to the
market.

The historical context surrounding the Elmina shipwreck lead the author to
conclude that the ship wrecked during a peaceful time in a region that was normally
stricken with conflict. The coastal area was under peace treaties and had, for the first time
in a long time, uninhibited trade. The author also attempted to show how cargos of ships
vary according to each ship’s mission and that archaeologists can uncover a ship’s
purpose from the artifacts they unearth. Furthermore, the type of bead cargo on a ship
depended on the type of endeavors of each ship. For instance, beads were normally a
component of both trade and colonizing ventures, but beads were not as prevalent on
military, slave, or pirate ships. The amount of bead cargo also changed according to a
ship’s traveling status, an outbound European trade ship held European cargo, while an inbound European ship often had a mix of traded goods and unsold European cargo.

The author also discussed general, key contributions of bead studies that include the potential for beads to serve as chronological indicators, to provide evidence of occupation or trade, to permit observation of artistic trends in material culture, and to contribute insight into peoples’ belief systems. The Elmina shipwreck bead assemblage is an excellent example of such contributions. Eventually, the author hopes this thesis will assist anthropologists trying to trace beads chronologically through seriation studies of assemblages from the Gold Coast region. The catastrophic nature of shipwreck sites provides a relatively tight temporal control and in the case of the Elmina shipwreck, the time is sometime between ca. 1830 and 1850. Therefore, the bead assemblage will add a known era of use concerning these specific bead types in the archaeological record.

A shipwreck bead assemblage might reveal other kinds of knowledge including the possibility that if a similar bead assemblage was located terrestrially, then archaeologists could date that assemblage to the same time. This thesis provided a detailed bead database with relevant information that archaeologists might need for further studies and comparisons to other sites. However, evidence suggests that local beadmakers likely would have considered at least some of the beads in this assemblage as coloring agents. Therefore, the likelihood of finding such an assemblage on land might actually decrease if the local bead buyers did not purchase beads and keep them in their original form, but instead bought the beads to modify or use in the production of powder-glass beads. Nevertheless, the author did attempt to compare the Elmina bead assemblage
to other assemblages from a variety of sites and concluded that direct comparisons are not practical at this time due to inconsistent methods of documentation.

On the other hand, there are several basic observations that can be made about the Elmina shipwreck assemblage. First, because the shipwreck was located near a major trading port along a well-known trade route, the bead assemblage establishes that at least these specific bead types were being sold along the Gold Coast region in the mid 1800s. Second, the author did uncover how coastal Africans might have used the beads from the Elmina shipwreck and provides several early to mid twentieth century examples of coastal Africans using seed beads in various manners. Contemporary descriptions of bead use by West Africans provided evidence of traditional trends in adornment use, talisman use, and ritual use.

The cultural significance of beads along the Gold Coast was of particular importance as it explained why West Africans created and valued the local powder-glass bead industry, which continues to operate to this day. The author uncovered information about beadmakers on the Gold Coast and their use of European beads for the cores of some locally manufactured beads or as raw material and coloring agents for other bead types. Other descriptions helped to identify the variety of colors that were of interest in the area. The Elmina shipwreck bead assemblage was to likely play a part within this bead industry by providing raw glass material, but the beads probably played a part in other cultural functions too such as providing a source for common and ritual adornments.

The artifacts themselves provide specific information that historians cannot always gather from written sources such as ship manifests. As discussed earlier, many
ship merchants wrote their manifest in shorthand with broad general terms that are hard
to interpret today. The Elmina shipwreck provides archaeologists with artifact
assemblages to help fill such gaps, which is especially important for glass bead research
since manifests were notorious for generalizing descriptions about glass beads.

The context of the Elmina shipwreck bead assemblage reflects West African
market demands and the influences of this market on the European trade goods brought
by traders over the years, as well as the European industry response and bead availability.
The local desire for imported glass created a market where it was profitable to ship glass
in the form of old bottles, beads, and ingots (also called cakes). Much of this glass
changed form once in the West African market and went from cheap merchandise to
valuable locally-made beads. Powder-glass beads went on to play many roles, including
protective charms, fertility enhancers, and displays of religious preference, wealth and
status. Some of the beads from the Elmina shipwreck assemblage would have likely
stayed in their original form and their role would have been similar in use, but slightly
different in their social and intrinsic value. Infants and children wore small, “simple”
beads, and sometimes adults of very low status wore “plain” beads. The historical
information is not clear on the details, but terms such as simple and plain lead the author
to think historic travelers were describing monochrome beads.

While the cultural diversity of West Africa is well defined, many cultural groups
along the Gold Coast and other areas of West Africa shared certain common beliefs and
practices. The legends surrounding early glass beads found in the ground led to the notion
that beads have supernatural powers. Once beads gained spiritual significance, West
Africans began to trade domestically in glass beads, then through trans-Saharan trade,
and later through the Atlantic Trade. Maritime traffic boosted the availability and variety of glass sources and the powder-glass bead industry grew along the Gold Coast and into the hinterlands. Today, Ghanaians, particularly the Krobo and Asante, still produce beads in the same clay mold fashion as those before them, and they still use imported glass to make their beads. Alternatively, some of the glass now comes pre-ground in packets and glass pigmentation is available in the West African markets.

To gather other types of information not found in written works, the author organized the bead assemblage by descriptive attributes and placed the data in a relational database, following accepted bead research practices. The author was able to use the relational tool to identify spatial patterns in the Elmina shipwreck. The author contends that the majority of the beads were found *insitu* and the number of beads within the four large bead concretions suggests that the beads were shipped in barrels or containers. There is no definitive evidence at this time that suggests the beads were strung. The assemblage did contain interesting attributes such as clear coats and protruding ends that the author noted during bead analysis. Clear coats on seed beads seem to have an end date in the 1860s, but the author was unable to conclusively state whether the protruding ends were a result of tool marks.

The analysis also uncovered predominance in the colors yellow and blue. The author explored various documentation on the subject of important bead colors and found that yellow was an important base color for the locally made *Bodom* beads. The research on blue beads uncovered a cross-cultural connection to blue beads including their popular use in several areas of the world. Blue bead popularity might relate to glass technology, bead price, or belief systems of people in the areas where blue beads were popular. For
the Gold Coast region, the author was able to conclude that blue beads, particularly the Aggrey, were historically important and valued.

The study of beads has been important in historic and ethnographic research for years, but the importance of bead interpretation in archaeological research has never reached its full potential. During the preparation of this thesis, the author repeatedly found archeological reports that simply noted the general types of beads present, while some others added ethnological information, but only a few authors include all the information needed to compare and interpret their assemblages fully. The main reason for this breakdown of analysis seems to be the lack of a universal typology with which to compare sites and bead assemblages.

The author promotes the use of universal classification systems and color identification systems to improve the descriptive methods used to identify glass beads. Universal systems will allow archaeologists to improve their ability to make cross-cultural, regional, and local bead interpretations. A universal system may not solve all comparative bead assemblage problems, but the use of universal procedures should relieve many unnecessary problems. Adopting such measures will also help other aspects of bead research, like chemical composition and glass density research. Unfortunately, the difficulty of establishing such a set of procedures is evidenced by the fact that no system has been agreed upon so far. However, continuing to discuss the topic of universal systems will bring about more useful ideas that can then be put into use in the archaeological community.
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Johnson, Marion

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Mukelroy, Keith  


Munsell Color (Firm)  

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Wilks, Ivor


Willet, Frank

Wobst, Martin

Wood, Raymond

Woodward, Arthur

Wray, Charles F.

Yāqūt’s *Mu’jam as-buldān*

Zecchin, Luigi
Zimmermann & Co.
Appendix A

The Elmina Database
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<td>eroded, possible protruding ends</td>
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<td>This bead is missing its center stripe's, between the yellow stripes, and its outer glass coating</td>
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<td></td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>TP</td>
<td>blue, Munsell 10B 3/10</td>
<td></td>
<td>likely Venetian</td>
<td></td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>OP</td>
<td>opaque red layer on transparent green layer, Munsell 7.5R 4/10; 7.5GY 8/6</td>
<td></td>
<td>likely Venetian</td>
<td></td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>OP</td>
<td>opaque white layer on opaque bright white layer on opaque white layer, Munsell N 9; N 9.5; N 9</td>
<td></td>
<td>likely Venetian</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Full description of fields provided in Chapter Two.

Elmina Database Key
Material: G = glass
Manufacture: HD = hand-drawn
Structure: S = simple, CPD = compound, CPX = complex, CPE = composite
Modifications: HR = heat-rounded
Shape: SB = seed bead, C = cylindrical, R = round, B = barrel, E = ellipsoidal
Luster: I = indeterminate
Diaphaneity: O = opaque, TL = translucent, TP = transparent