



THE BEAD FORUM

Newsletter of the Society of Bead Researchers

Issue 61

Autumn 2012

Bead Classification Methods: An Archaeological Case Study from a Shipwreck in Elmina, Ghana

Part I in a series of II articles

Lisa Hopwood

This article is the result of problems the author encountered with classifications during her thesis research on a bead assemblage from a European shipwreck off the coast of Elmina, Ghana (Figure 1). The objective of this publication is to bring awareness of these issues to bead researchers and provide suggestions on how to reduce these problems. The major dilemma that emerged from this research was the inability to compare this bead assemblage to other bead assemblages for analytical analysis because a standardized classification system has not been universally accepted. Presented here are the methodologies most commonly used by bead researchers, new methodologies that have recently been introduced, and a discussion on bead interpretations researchers can attain by using these new techniques.

THE CASE STUDY

This bead assemblage was collected from a shipwreck located off the West African coast near the town of Elmina, Ghana. 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 underwater cultural remains in that region. 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 recov-

ered diagnostic artifacts from the surface of the site. Investigators are still working to discover the nationality and age of the shipwreck, but current radiocarbon dates from the ship's hull are from the mid-seventeenth century (Greg Cook 2011, pers. comm.). Interestingly, the ship has collected some artifacts that date to the eighteenth and nineteenth centuries, such as onion bottles and a transfer-print sherd with a steamboat image. Current consensus is that the strong ocean surge deposited more recent artifacts from the nearby town of Elmina.

Elmina Shipwreck Site Description

Currently, the placement of the artifacts within the wreck suggests that the ship may have

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Figure 1. Beads from a European shipwreck off the coast of Elmina, Ghana.

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settled, at least partially intact, on an even keel. The amount of European cargo still on the ship suggests that the vessel had not yet conducted extensive trade on the coast. Metal artifacts comprised the majority of the site assemblage, which consisted of brass basins, pewter wares, lead sheathing, brass pins, *manillas*, and iron concretions. Glass artifacts included glass bottles (onion bottles, case bottles, wine bottles, and a cologne bottle) and a large volume of seed beads. The ceramic group contained stoneware jugs, a late-style olive jar, hand-painted and transfer-printed bowl fragments, and some African ceramics. Some organic material was also found, such as cattle bones, cowry shells, seeds, and charcoal. Archaeologists recovered the smallest artifacts during lab analysis and conservation. The smaller objects such as seeds, brass pins, and beads were found inside bottles and jugs or concretioned to an assortment of other artifacts (Cook et al. 2006). The dispersal pattern of small loose items was caused by a state of semi-suspension over the shipwreck where objects tended to float just above the sea floor with the movements of the ocean surge (Muckelroy 1998:284).

Bead Assemblage General Description

Within the surface collection sample, there were 16 visually identifiable types of beads (Figure 2). The majority of the beads were contained in four large concretions (Figure 3). In total, researchers found an estimated 35,256 beads either in these concretions or loose among other artifacts. The author estimated bead counts by removing the beads from one small section of one of the bead concretions, counting the

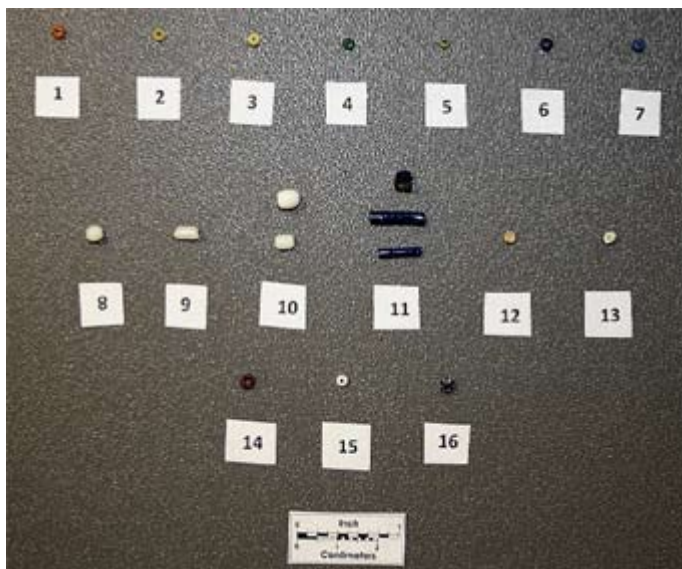


Figure 2. The sixteen bead types.

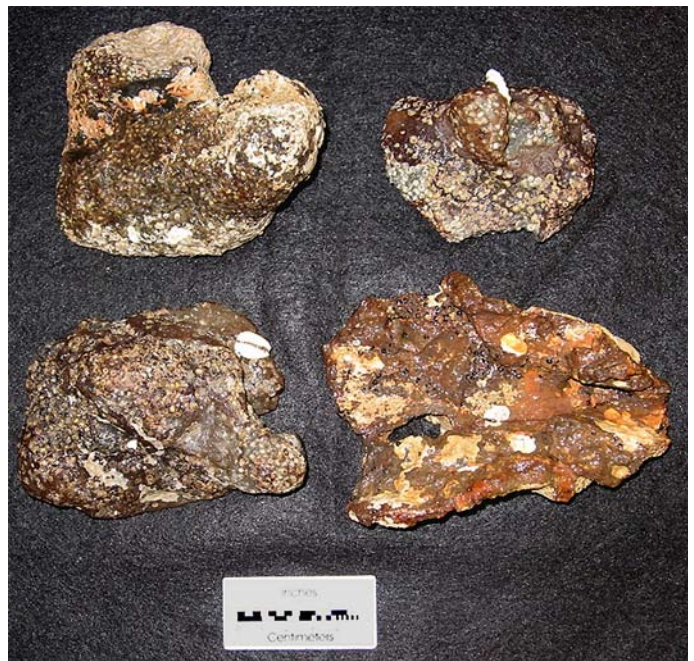


Figure 3. Concretions containing glass beads.

number of beads, and then calculating the amount of beads per gram of concretion. Thirty-one thousand, four hundred and seventy-one (31,471) beads were found within these four concretions alone. Each bead concretion was a collection of just one type of bead. Thus, three of the four contained a yellow seed bead type (approximately 26,349) and one contained a blue seed bead type (approximately 4,931) (Figure 4). An additional small bead concretion contained a striped bead type ($n = 191$) (Figure 5). The evidence suggests that these beads were concretioned *in situ*. Beads that were not from the concretions (i.e., from either inside other artifacts or from encrustation) were termed “loose beads” and were hand-counted ($n = 3,785$).

The author soon recognized that one of the most difficult tasks of her research would be to classify these bead types in a sufficient manner to further analyze the assemblage. A discussion of bead classification methodologies is warranted to illustrate the difficulties encountered.

Bead Classification Methodologies

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). These systems allow archaeologists to identify and compare bead types more efficiently. Stanley South (1977) stresses the importance of using quantitative analysis to detect patterns within archaeological deposits. Previous bead typologies helped to structure the

Society News

The SBR's annual business meeting was called to order by President Billeck at 1:10 pm EST on 23 October 2012. All officers and the *Forum* editor were in attendance

OLD BUSINESS

President's Report

We have a good team in place and things are going well. The journal editor is finalizing the 2012 volume which will be published in November. The *Forum* is attracting articles and is pretty much on schedule. The Secretary/Treasurer is keeping a tight rein on the finances.

Journal Editor's Report

It has been a busy two years for the editor. Volumes 22 and 23 (the Beads from Gablonz issue) were published and distributed in 2011. Vol. 24 is currently in the layout stage and should be in people's mailboxes by late November. Plans for Vol. 25 are progressing.

While the Gablonz issue is a gold mine of information about the Bohemian bead industry and its products, it is not selling as well as expected. To make it more appealing, the Board opted to lower the selling price to \$25 postpaid in North America and \$35 postpaid for overseas.

NEW BUSINESS

Book Table at the SHA Conference, Leicester, UK

As editor Karklins will be attending the Society for Historical Archaeology conference in Leicester, UK, in January 2013, it was decided that the SBR would have a table in the meeting's book room to make the Society and its publications known to the British archaeological community.

Going Digital

To make the journal available to an ever-expanding internet audience, discussion ensued about the possibility of the journal being made available in both a paper and a digital format. The editor and secretary-treasurer will investigate the options and report back at a later date.

Bead Forum Editor's Report

The newsletter came out on time in the Spring and the Autumn issue is due soon and on time. It's

being no trouble to find authors to submit articles. Submissions are always welcome and can include short articles, announcements (exhibits, symposia, conferences), current research items, publications and other bead-research related materials. Items should be sent to the newsletter editor at BURGESSL@si.edu.

Secretary/Treasurer's Report 2011

Secretary/Treasurer Scherer reports that the SBR had 146 paid members in 2011; in 2010 we had 118, for a gain of 28 members. They are mostly from the U.S. (114) and Canada (10), but Europe supplied 15, Africa and the Middle East three, Asia two, and Australia two. Institutions make up 18 of our members and bead societies two.

Total revenues for 2011 were \$10,181.86 and total expenditures were \$20,344.29.

As of December 31, 2011, the balances in the various SBR accounts were:

U.S. Bank Checking Account	US\$ 7,350.82
Plus undeposited 2011 checks	US\$ 770.00
PayPal Account	US\$ 1,069.77
Vanguard Account*	US\$ 16,528.15
TD Central Trust	
Checking Account US\$ (CD\$)**	<u>US\$ 125.12</u>
(CD\$128.18)	
Sub-Total	US\$ 25,843.86
Minus Unreimbursed	
2011 Expenses	<u>US\$ 93.80</u>
Total	US\$ 25,750.06

* The amount as noted above for our Vanguard account did not include \$544.29 in unrealized gain.

Summary Report

Balance End of 2010	US\$ 34,879.55
Plus 2011 Income	<u>+US\$ 10,181.86</u>
Subtotal	US\$ 45,061.41
Minus 2011 Expenses	<u>-US\$ 20,344.29</u>
Balance End of 2011	US\$ 24,717.12

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The post of Secretary/Treasurer is up for a vote. Current officer Alice Scherer is running unopposed. Paper ballots are supplied for mailed *Forums* and are appended to the end of this electronic newsletter.

SBR Treasurer's Summary Report for 2011

Opening balance as of January 1, 2011	\$34,879.55
INCOME	\$10,181.86
Annual dues	
Individual-North America	2,929.50
Individual-Overseas .....	.620.00
Sustaining .....	.335.00
Patron .....	.225.00
Benefactor	150.00..... 4,259.50
Publication Sales	
Journal	2,952.38
Newsletter .....	.75.00..... 3,027.38
Investment Income	
Interest Vanguard .....	.528.15
Donations and Grants	2,085.00
Miscellaneous	
Pre-paid postage, Pay Pal Fees, and Credits .....	.281.83
EXPENSES	\$20,344.29
Journal Production (2 issues #22 and 23)	
Imaging, translating	1,843.94
Layout	1,800.00
Printing	12,679.34..... 16,323.28
Newsletter Production (2 issues)	
Printing .....	.130.07
Postage/Shipping	
Journal	2,201.87
Newsletter .....	.66.84
General .....	.476.38..... 2,745.09
Web site (domain name, web hosting, analytics) .....	.162.89
Office Expenses (stationery, supplies)	
Secretary/Treasurer .....	.193.18
Journal office expenses .....	.225.12..... .418.30
Miscellaneous	
SHA Conference Book Room Table Fee .....	.300.00
Oregon Business filing fees .....	.60.00
Bank and PayPal charges, cost of selling, refunds ..	.204.66..... .564.66
Closing balance as of December 31, 2011	\$24,717.12

Respectfully submitted, Alice Scherer, Secretary/Treasurer (October 23, 2012)

Proposed SBR Budget for 2012

Opening Balance as of January 1, 2012.....	\$24,717.12
INCOME	\$ 8,060.00
Annual Dues	
Individual-North America	3,000
Individual-Overseas	700
Sustaining	300
Patron	250
Benefactor	300.....4,550
Publication Sales	
Journal	2,200
Newsletter	60.....2,260
Investment Income	
Interest Plus Vanguard Acct., Canada TD	600
Donations and Grants	300
PrePaid Postage and PayPal fees	350
EXPENSES	\$8,165.00
Journal Production (1 Issue #24)	
Image fees and Drawings	850
Layout	700
Printing	4,000.....5,500
Newsletter Production (2 issues)	
Printing	140
Website	180
Postage/Shipping	
Journal	800
Newsletter	60
General	500.....1,360
Office Expenses (stationery, supplies)	
Secretary/Treasurer	125
Journal Editor	150.....275
Miscellaneous	
2013 SHA Conf. Book Room Table Fee.....	300
Bank and PayPal charges, cost of selling, refunds	350
Oregon Business filing fees.....	60.....710
Anticipated Balance as of December 31, 2012	\$24,612.12

Respectfully submitted, Alice Scherer, Secretary/Treasurer (October 23, 2012)

In Memoriam: Roderick Sprague, 1933-2012

Karlis Karklins



It is with a very heavy heart that I must pass on the news that my dear old friend, Rick Sprague, passed away on Monday, 20 August, at the age of 79. For those of you who did not know him, Rick was one of the pioneers of North American historical archaeology

with trade beads being one of his principal interests. Being a professor of anthropology at the University of Idaho in Moscow, the beads of the Northwest were of special interest but so too were the so-called Prosser beads as well as the modern Chinese bead industry.

Related to that interest, he and wife Linda assembled a nice collection of early 20th-century beaded Chinese sewing baskets which is now in The Historical Museum at St. Gertrude in Cottonwood, Idaho. His vast research library has likewise been donated to the Fort Walla Walla Museum in Walla Walla, Washington, where it will be cataloged and made available to researchers.

Rick was a staunch supporter of the Society of Bead Researchers and served as its president from 2004 to 2007. He also chaired the Editorial Advisory Committee for a good number of years and contributed a number of articles, news items, and reviews to the Society's publications. His support and suggestions will be sorely missed. A full obituary will appear in the next issue of *Beads* (Vol. 24).

The Roderick & Linda F. Sprague Research Library

The Fort Walla Walla Museum in Walla Walla, Washington, is honored to have been chosen to house The Roderick & Linda F. Sprague Research Library. Having relocated four van loads, the Museum now has 98% of the books/periodicals/theses/reports, etc. This includes all the written material related to beads but no actual beads. The Museum requested a comparative collection of beads and was told that was possible.

Until the Museum has the funding for a proposed education and research building, the Sprague Library is in an office in the headquarters building. This provides room for approximately 40% of the library to be on shelves, while the remainder is in the archaeology lab and repository.

It will take some time to get this collection organized and cataloged. A retired librarian is currently preparing a plan. The material will be sorted so that references most commonly needed for research will be most accessible. The greatest need at the moment is funding to process and endow the library. Eventually, money will be needed for the new building.

The Museum will offer controlled access to the Sprague Library. Researchers should contact the Museum in advance to let them know what they are seeking and to make arrangements to use the library.

Individuals interested in providing financial support for this project should contact James Payne, the Director of the Museum (james@fortwallawallamuseum.org).

James Payne, Director
Fort Walla Walla Museum
Walla Walla, Washington



Fort Walla Walla Museum, Walla Walla, Washington.

The SBR Donates Funds to Help

At its annual board meeting October 23rd, the board of the Society of Bead Researchers voted to donate \$500 in memoriam to the Roderick & Linda Sprague Research Library to assist the Museum in creating the Sprague library.



Figure 4. Blue seed bead concretion.

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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 1960s, 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 organized 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 additional 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



Figure 5. Striped bead concretion.

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*).

Problems with Previous 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 Systematic Bead Description System (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 and providing the data in a format that allows other researchers to do comparisons. In this manner, the 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 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, they suggest that each site should have its own database with the bead types always starting at the number one. 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.

In theory, Karklins' expanded guide on the Kidds' typology using asterisks to represent varieties not found within the Kidds' original assemblage 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.

The Organization of the Elmina Bead Assemblage

In an effort to organize the Elmina shipwreck bead assemblage, the author explored these various classification systems, including the attribute-level database system created by DeCorse et al. (2003). By using a similar, but slightly modified, relational database the author was able to assess bead attributes common to this particular bead assemblage and explore spatial patterns in the distribution of beads on the Elmina shipwreck (for the spatial analysis, see Hopwood 2009).

In order to analyze the Elmina shipwreck bead assemblage, the author recorded bead attributes and entered them into the Elmina Bead Database (presented

in Hopwood 2009: Appendix A). The Elmina database is a modification of DeCorse et al.'s (2003) SBDS. The author also chose to include the Kidd and Kidd (1983) alphanumeric designations and the asterisk system devised in Karklins' (1985) classification guide. Even though the author has seen numerous misuses or misinterpretations of the Kidds' alphanumeric designations, researchers have used the Kidd classifications for over twenty-five years and the majority of bead assemblages are identified with this system. The author believes that by including the Kidds' system into the Elmina Bead Database the system will then be able to better assist comparisons to other bead assemblages. Each of the 16 bead types found in the Elmina bead assemblage was assigned a Kidd and Kidd alphanumeric designation. The Elmina shipwreck bead types fit well into the Kidds' classification system because they are all drawn beads, similar to the beads the Kidds used to create their 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, which may not be an issue for this assemblage since 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 these attributes is a researcher's goal, then using the original DeCorse et al.'s SBDS as presented in their article is appropriate.

However, 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.

To create a site-specific typology for the Elmina shipwreck bead assemblage, the author kept the idea of mass production in the forefront of its organization. Thus, the Elmina database 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. 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, which as a general shape category encompasses both DeCorse et al.'s designations for small beads: "short globular" and "short oblate" (2003:91-102). The seed bead identification stems from the work of Peter Francis Jr. (1997; 2009a:59-64). DeCorse et al. state that they are still revising their categories for simplicity and replication. While future attribute designations will likely be made on a case by case study, they should be based off the original methodologies for consistency.

Additionally, the Elmina bead database used other variables besides the Kidd and Kidd typology and designations provided by DeCorse et al.'s descriptive system. The database included fields that are specific to the Elmina site, creating the ability for spatial analysis and identifying 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*, *Location*, *Kidd Type*, Count, Material, Manufacture, Structure, Secondary Modification, Shape, Length (mm), Diameter (mm), Luster, Diaphaneity, *Munsell Color*, Decoration, Origin, Age, and Notes. The additional fields not only allowed spatial analysis, but also provide Munsell color codes and the Kidd and Kidd Type variety equivalents. For definitions and designations for each category, see DeCorse et al. 2003 and Hopwood 2009. Researchers can make accurate comparisons more efficiently if data in the descriptive fields are consistently recorded.

Color Description Problems

Another problem hindering analysis is that there has been 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. Additionally, some archaeological reports, especially older ones, only provide photos of beads 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 not only outdated information, but it is unavailable to much of the public, hindering research and making archaeologists “color-blind” in their research.

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 bead 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 colors.

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. As previously stated, Karklins made a good point about older bead colors that vary from batch to batch. The Munsell color codes should be considered as 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 inefficient (Karklins 2008 pers. comm.).

Even if the Color Harmony Manual was readily available, the color chips should be considered faded and outdated. 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 2009, pers. comm.).

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, which is 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.

New Developments

Since the publication of the author's thesis, a new bead color tool has been developed. Karlis Karklins recently posted this information on Histarch (public listserv 2012). Munsell® Color Services by X-Rite Incorporated has just published a Munsell Bead Color Book with 176 colors of currently known and recorded bead colors from archaeological and ethnographic collections. This new descriptive tool will be invaluable to bead researchers as it not only provides an accurate color system based on real beads, but it is indefinitely smaller than the current Munsell Book of Colors, which has hundreds of color chips. Additionally, the bead color book is a sixth of the cost of the book of colors, which makes it attainable to almost all bead researchers. This product is an excellent step towards a universal bead typology, and will hopefully result in researchers becoming less dependent on outdated publications and descriptive systems.

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2012 International Iroquois Beadwork Conference



The fourth International Iroquois Beadwork Conference was held at the Iroquois Indian Museum at Howes Cave, New York, September 21-23. It was organized by Dolores Elliott and sponsored by the Iroquois Studies Association, Inc., Iroquois Indian Museum, New York State Historical Association, and the Fenimore Art Museum.

The program featured a number of formal presentations related to raised Iroquois beadwork:

A Survey of Haudenosaunee Souvenir Beadwork, by Karlis Karklins

Canoes and Horseshoes: Two Forms of Iroquois Beadwork, by Dolores Elliott

Daddy, Where do Beads Come From?, by Karlis Karklins

The Many Steps in Making a Piece of Beadwork, by Samuel Thomas, Cayuga Master Beadworker

Beadwork Conservation and Treatment, by Billy Myers, Conservator, Smith College

Where Nations Meet: An Unusual Hybrid in Northeastern Souvenir Art, by Richard Greene, Birmingham, UK (Presented by Dr. Thomas Schantz)

There were also several informal reports on Iroquois beadwork activities as well as a competition for pieces of contemporary and historic raised beadwork. Attendees were also able to view the “Birds and Beasts in Beadwork: 150 Years of Iroquois Beadwork” exhibit at the Iroquois Indian Museum, and participate in a silent auction intended to help fund the conference and a beadwork workshop offered by beadwork artist Sam Thomas.

Saturday afternoon offered a trip to the Fenimore Art Museum in Cooperstown where Eva Fognell, Curator of the Thaw Collection of American Indian Art, took groups through the exhibit hall while others viewed a large assortment of the raised Iroquois beadwork in the museum’s collections.

At the banquet held at the Howe Caverns restaurant, Sam Thomas gave the keynote presentation “Power of Place – Strength of Being” wherein he explained his inspiration for various beadwork pieces created at various “places of power” around the world, such as Chichen Itza, Mexico, Stonehenge, England, and the pyramids at Giza.

In all, the conference, attended by about 60 persons, was an informative and fun event. Next year’s conference will be held at Tyendinaga, Ontario, and should also be a memorable occasion.

—Karlis Karklins

Selected Publications/Other Media

Arkush, Brooke S.

2011 Native Responses to European Intrusion: Cultural Persistence and Agency among Mission Neophytes in Spanish Colonial Northern California. *Historical Archaeology* 45(4):62-90.

Discusses the marine-shell beads uncovered at five mission sites in Northern California which date to the period 1775-1825.

Dijkstra, M. Y. Sablerolles and J. Henderson

2010 A Traveller’s Tale: Merovingian Glass Bead Production at Rijnsburg, the Netherlands. In *Zwischen Fjorden und Steppe: Festschrift for Johan Callmer*. Verlag Marie Leidorf GmbH. Rahden/Westf. 175-199.

Glowacki, Mary

2012 The First Florida “Bling”; Paleolithic Beads. *Florida Anthropologist* 65(1-2):47-50.

Discusses two Paleoindian beads from Florida as well as other early North American examples.

Henderson, J.

2011 The Scientific Analysis of Selected Glass Beads. In *The Anglo-Saxon Cemetery at Butler’s Field, Lechlade Gloucestershire, Volume 2: The Anglo-Saxon Grave Goods, Specialist Reports, Phasing and Discussion*. Oxford University: Oxford University School of Archaeology. 115-117.

Prinsloo, Linda C., Arélie Tournié and Philippe Colomban

2011 A Raman Spectroscopic Study of Glass Trade Beads Excavated at Mapungubwe Hill and K2, Two Archaeological Sites in Southern Africa, Raises Questions About the Last Occupation Date of the Hill. *Journal of Archaeological Science*, 38(12):3264–3277.

Robertshaw, P., M. Wood, N. Benco, L. Dussubieux, E. Melchiorre, A. Ettahari

2010 Chemical Analysis of Glass Beads from Medieval Al-Basra (Morocco), *Archaeometry* 52(3):355-379.

Ramli, Zuliskandar, Nik Hassan Shuhaimi, Nik Abdul Rahman

2009 Beads [sic] Trade in Peninsula Malaysia: Based on Archaeological Evidences. *European Journal of Social Sciences* 10(4):586-593.

Towle, A. and J. Henderson

2008 The Glass Bead Game: Archaeometric Evidence for the Existence of an Etruscan Glass Industry. *Etruscan Studies* 10:47-66.

Villa, P., S. Soriano, T. Tsanova, I. Degano, T. Higham, F. d’Errico, L. Backwell, J. Lucejko, M. Colombini, P. Beaumont

2012 Border Cave at the Beginning of the Later Stone Age in South Africa. In *Proceedings of the National Academy of Sciences* 109(33): 13208-13213.

Discusses implications of two South African assemblages that date to the beginning of the Later Stone Age. Artifacts include ostrich shell beads.

Who We Are

The Society of Bead Researchers is a non-profit corporation, founded in 1981 to foster research on beads of all materials and periods, and to expedite the dissemination of the resultant knowledge. Membership is open to all persons involved in the study of beads, as well as those interested in keeping abreast of current trends in bead research. The society publishes a semi-annual newsletter, *The Bead Forum*, and an annual journal, *BEADS: Journal of the Society of Bead Researchers*. The society's website address is <http://www.beadresearch.org>.

Contents of the newsletter include current research news, requests for information, responses to queries, listings of recent publications, conference and symposia announcements, and brief articles on various aspects of bead research. Both historic and prehistoric subject materials are welcome.

The deadline for submissions to the next *Bead Forum* is March 1, 2013. Electronic submissions should be in Word for Windows 6.0 or later with no embedded sub-programs such as "End Notes." References cited should be in *Historical Archaeology* format (http://www.sha.org/publications/for_authors.cfm).

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