Addendum to the Analysis of the Clayoquot Beads: Batch Two

Melissa Darby MA RPA

Lower Columbia Research & Archaeology

March 28, 2005

Prepared for
The Tonquin Foundation
Box 609, Tofino, British Columbia
Canada

TONQUIN FOUNDATION

Introduction

This is an amendment to the first report dated September 3, 2004. In that report I analyzed 147 beads (Whole beads N=137, Split beads N=10). These will be referred to as Batch One beads.

On February 1, 2005 I received a package of beads that had been recovered from a matrix containing iron oxide concretions, soil and debris from the Clayoquot Sound “bead anchor.” They were labeled “Jan 22/05 Recovered from anchor concretions by Naeco and Nixie Palm”. The anchor was discovered in 2003. This material had been stored in a garbage can container. A total of 63 beads and 56 bead fragments were contained in the package. These are the remainders of the Clayoquot Anchor beads, which are the object of this study and are referred to here as Batch Two. Rod Palm found a bead after Batch Two was shipped. Nixie indicated that it did not have a nib, and it was added to the database as specimen 212.

The total number of beads in the set numbers 201 whole beads and 66 bead fragments. All of the whole beads are classified as bead variety FOVA 2002. Two beads split during analysis or stringing, and are counted as whole beads because the measurements are intact.

Methods

The Clayoquot anchor beads received on Feb 1 are the same variety analyzed for the September 2003 report. They correspond to bead variety WIb-stp/tl/ops/1-2, also known as Fort Vancouver variety FOVA 2002. The bead classification system is designed by Ross (1990) and is based on the classification system developed for archaeologists by Kenneth and Martha Kidd (1970), as modified and expanded by Karlis Karklins (1982, 1985).

The Batch Two beads were analyzed for size, color, shape, diaphaneity and manufacturing type in the same way the first batch was analyzed except the split beads were not measured. It was suggested to this analyst that the split beads are not representative of the size the whole bead would have been before it broke, and the measurements from the split beads should not be used. For this analysis, average bead width and length for the whole assemblage were averaged without the split beads measurements. Split beads were bagged with bead fragments in a single artifact bag, specimen 209.

Many of the beads in both batches exhibit unusual horseshoe shaped pockmarks filled with rust-colored matrix. The origin of these pockmarks is unknown, and beads in the comparative collection at Fort Vancouver were examined and this type of damage was not found.

The beads are not well-finished and do not exhibit evidence of heat treatment or fluoride treatment to create luster. Several of the beads were encrusted with rust concretions. In some cases, this was gently removed in order to measure and observe the bead. Many of the beads have bubble flaws on the surface or manufacturing flaws where part of the hemisphere is missing. Several of the beads are not symmetrical on a bi-lateral axis being poorly shaped during the manufacturing process. Some of the beads exhibit swirls of opaque and translucent glass, indicating that the molten glass was not completely homogenous. Most of the beads are opaque, though eight of the beads in Batch One are translucent, as a collection the beads are less opaque than is typically found in this bead type.

The small protrusions or nibs around one or both mandrel holes have not been ground off. These nibs of glass are by-products of the winding process. A total of 63 beads (N=63), including one of the split beads, exhibited this nib in Batch One. Two beads in Batch One and two beads in Batch Two exhibit this nib adjacent to both mandrel holes. One bead from Batch One (Specimen 53) and one bead from Batch Two (specimen 160) have nibs that project almost 1mm out from the main body of the bead. This nib is fragile, and if it had been worn in a necklace string it would have broken off during wear. This suggests that the bead collection was new when deposited.

This nib is present on 80 of the 201 whole beads, or 40% of the whole beads. This suggests that this assemblage may have been deposited earlier than 1830 when these superfluous nibs were generally removed through a heat treating process that finished the bead (Kaehler 2002:76).

The average size of this assemblage corresponds to the “2nd Size” or second to largest of Canton bead described by Ross (1990:48). Excluding the split beads, the average width (also referred to in the literature as ‘length’) of the combined batches of the Clayoquot FOVA 2002 beads is 5.07mm. The average diameter is 6.67mm (see Figure 1).

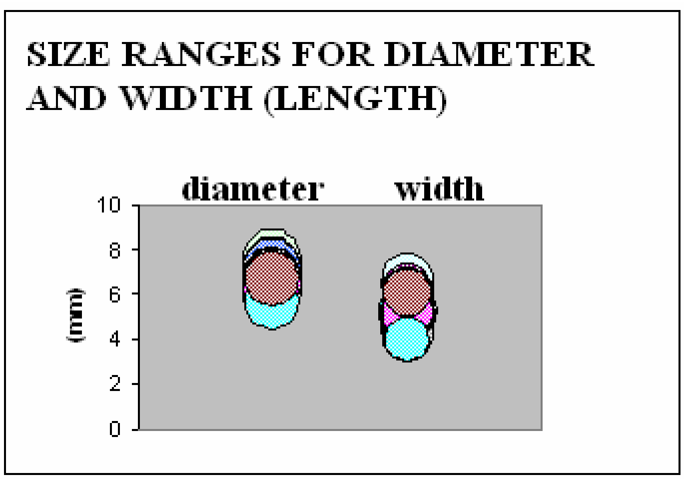

Figure 1: Size ranges for the measurement of the diameter and the width (length).

Conclusion and Discussion

FOVA 2002 beads are a common early bead found in several size ranges in many early historic archaeology sites. They may have been traded into the area as early as 1790 and as late as 1845. According to Lester Ross, these beads are originally from China. The presence of the nib or protrusion of glass adjacent to the perforation is more commonly found in sites that pre-date 1830. They may have been strung or in a container before they were deposited. The presence of 1mm long nibs on two bead specimens suggests that they were new and had not yet been worn in necklaces or as other ornaments.

The Clayoquot anchor beads are a significant and early collection. This assemblage is important because it represents the largest collection of bead variety FOVA 2002 found in one context at an archaeological site in the Northwest (N =201 whole specimens and 66 fragments). This assemblage may have been from the same manufacturing run and packaged together as a particular size. This collection is important because it gives archaeologists parameters in size, diaphaneity, and color ranges that may occur within a single variety and size. This information can be applied to bead collections from archaeological sites throughout the Northwest.

Figure 2: Beads visible in iron oxide concretions.

Figure 3: Assistant bead analysts Nixie and Naeco Palm with FOVA 2002 beads from Batch One, on a string.

Comments and Recommendations for Future Study from Lester Ross

The beads were examined by bead expert Lester Ross on March 28, 2005. His comments in part are as follows from an email:

The beads you showed me yesterday exhibit a relatively wide range of variability for attributes of color, diaphaneity, shape, and glassworking and beadworking technologies. Since they were recovered from an underwater archaeological context which is probably a shipwreck, they represent an assemblage of beads that would have been deposited at a single point in time. As such, they probably were packaged together in a single container, possibly a wooden chest, and presumably represent a single bead variety, possibly even a single bead size (the sizes still needs to be statistically demonstrated by graphing the length to diameter measurements). Thus, one working hypothesis would be that the assemblage represents one size (possibly two?) of a single bead variety, and that the the range of variability for all attributes represents the tolerances accepted by their manufacturer for that variety and size (or sizes).

It would be useful to document and illustrate the range of variability for each attribute, including: color, diaphaneity, shape, and beadworking technology. If possible, it also would be useful to select samples of the beads which demonstrate the range of variations in color, diaphaneity, and beadworking technology; and have the compositions of their glass analyzed to determine the range of variation in the percentages of elements comprising the glass. Compositional analysis of glass is best determined by neutron activation analysis. To my knowledge, no one has analyzed Chinese blue wound glass bead compositions to establish periods or places of manufacture. Robert Brill (1999) has analyzed thousands of pieces of pre-20th century glass, but only a 170+ glass beads from relatively well-documented proveniences. Without reviewing his catalogues, I cannot tell you how many samples of Chinese glass were analyzed.

Neutron activation analysis is non-destructive, but render objects radioactive for a period of time. Labs which have a SLOWPOKE reactor facility can irradiate objects at a low level to minimize the build-up of radioactivity in the glass, thus allowing samples to be returned with a year. Certain elements in glass, such as cobalt, will become more radioactive than other elements, so elements present in the glass should first be established by an energy dispersive x-ray (EDX) process. I cannot recommend a specific lab that presently has a program for the analysis of glass beads (the one physicist in Toronto who was doing most of the analyses has retired, Dr. R.G.V. Hancock), but one lab that has analyzed archaeological specimens in Canada is the SLOWPOKE lab at the University of Alberta. Dr. Michael Wayman would be the person to contact. It seems to me that they charge something like $100 per sample. I doubt this lab has analyzed glass beads before, so they would have to become familiar with the literature on the subject first.

Unless Robert Brill at the Corning Glass Museum has established chronological indicators for Chinese glass, it is doubtful that compositional analysis will help date the beads. Such analysis will, however, allow the type of glass and its variability to be identified. Peter Francis (2002) has published an excellent overview of Asian beads, but only briefly mentioned the 19th-century Chinese blue wound beads. His Appendix B provides a good summary of Indo-Pacific glass bead compositions determined by neutron activation, but I doubt it has much relevance for Chinese beads.

Brill, Robert H.
1999 *Chemical Analyses of Early Glasses*. 2 vols. Corning Museum of Glass, Corning, NY.

Francis, Peter Jr.
2002 *Asia's Maritime Bead Trade: 300 B.C. to the Present*. University of Hawai'i Press, Honolulu.

Karklins, Karlis and Roderick Sprague
1980 *A Bibliography of Glass Trade Beads in North America*. South Fork Press, Moscow, Idaho.

1987 *A Bibliography of Glass Trade Beads in North America: First Supplement*. Promontory Press, Ottawa.

Bibliography

Coues, Elliot
1897 *New Light on the Early History of the Greater Northwest: The Manuscript Journals of Alexander Henry and David Thompson 1799-1814*. Vol. 2, New York: Francis P. Harper.

Gibson, James R.
1992 *Otter Skins, Boston Ships and China Goods: The Maritime Fur Trade of the Northwest Coast, 1785-1841*. University of Washington Press, Seattle.

Hoffman J.J and Lester Ross
1975 *Fort Vancouver Excavations IX, Indian Trade Store.* Vancouver: MS on file at Fort Vancouver National Historic Site.

Kaehler, Gretchen
2002 *Patterns in glass : the interpretation of European glass trade beads from two protohistoric sites in the greater lower Columbia region*. MA thesis Portland State University.

Karklins, Karliss
1985 *Glass Beads, The 19th Century Levin Catalogue and Venetian Bead Book and Guide to Descriptions of Glass Beads*: National Historic Parks and Sites Branch, Parks Canada.

Munsell Book of Color

1998 *The Munsell Book of Color. New Windsor*: Gretag-Mcbeth a Division of Kollmoregen Instruments Corporation.

Ross, Lester
1976 *A historical Investigation of the Goods Imported and Manufactured by the Hudson's Bay Company*: US Department of the Interior, National Park Service.

1990 *Trade Beads from the Hudson's Bay Company Fort Vancouver* (1829-60), Vancouver, Washington, Beads 2:29-67.

Personal Communication; Lester Ross March 28, 2005