SOURCING A UNIQUE MAN-IN-THE-MOON BEAD

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Chemical analysis of a unique black bead found in southeastern Turkey that depicts the four phases of the moon reveals it most likely originated in the Fichtelgebirge region of Bavaria at some time prior to the early 19th century.

INTRODUCTION

About 40 years ago, a young girl dug for beads on the beach adjacent to the ancient Girl Fortress at Kızkalesi, Mersin Province, Turkey (Figure 1). She came back with more than 20 beads representing a wide range of cultures and time periods: Greek, Roman, Islamic, and others (Figure 2). Among these beads – which now belong to the senior author – was an unusual "man-in-the-moon" bead which forms the basis of this article.

Figure 1. The Girl Fortress at Kızkalesi, Turkey. The "bead beach" is visible directly behind the ruins (courtesy of Mersin Directorate of Culture and Tourism).

THE BEAD

Likely of furnace-wound manufacture, the bead is round, 12.4 mm in diameter, and its opaque black body exhibits four phases of the moon: new, waxing crescent, full, and waning crescent (Figure 3). Each phase is separated from its neighbor by two stars. The new moon is represented by a circle enclosing four dashes that form the features of a human face. The full moon is a solid circle. The two crescent phases have human features. The designs are not trailed but were produced by painting on a suspension of pulverized yellow glass in water, possibly with the addition of gum arabic, then fired in the furnace to fuse the material.

Figure 2. The beads from the beach adjacent to the fortress at Kızkalesi (photo: Thomas Stricker).

Both the crescent moons and stars are very similar to those found on classic man-in-the-moon beads which have been found at a number of archaeological sites in eastern North America (Figure 4) (Lorenzini and Karklins 2000-2001), as well as in France, Mali, Morocco, and Jerusalem. Unlike the Turkish specimen, they are tabular in form and generally blue or amber colored. While many Islamic nations have espoused the crescent and star as a heraldic device, the crescent never has human features. This is apparently a uniquely European configuration.

SOURCING AND DATING

In an attempt to determine the possible origin of the bead, it was investigated using ED-XRF analysis at the Ion Beam Analysis of Material Laboratory, Arizona State University, Phoenix (Thaddeus Watts 2018). The bead was

Figure 3. The four phases of the moon on the Turkish bead (photo: strickerphotograph.com).

Figure 4. A typical blue tabular man-in-the-moon bead found at Fort Michilimackinac, Michigan (photo: strickerphotograph.com).

found to contain low percentages of potash and soda, and high levels of iron, alumina, and lime. This composition is somewhat unusual for traditional glass and seems to be a better match for Proterobas, an igneous rock found in the Fichtelgebirge region of Bavaria that was used locally to make a truly opaque black glass without the use of any additives (Karklins et al. 2016:16). It served in the production of ball buttons, spindle whorls, and beads. While there are notable discrepancies, such as elevated levels of iron, potash, and lead, the other constituents generally match quite well (Table 1). The indication is, therefore, that the Turkish bead is composed of Proterobas and originated in one of the Fichtelgebirge glassworks.

Dating the bead is difficult in that it is a surface find with no know counterparts in dated contexts. While it is not known exactly when the production of Proterobas beads and buttons began and ended, in the eastern United States, Proterobas ball buttons are restricted to sites occupied during the 16th and 17th centuries, though historical documentation reveals that Proterobas buttons and beads were still being made in the Fichtelgebirge in 1811 (Karklins et al. 2016:23). It is therefore probable that the Turkish man-in-the-moon bead was produced at some point in this time range. It is

Table 1. Compositional Analysis of the Turkish Man-in-the-Moon Bead and Proterobas Objects from the Fichtelgebirge Region of Bavaria.

Elements	Turkish Bead (% weight)*	Values Converted to % of Oxides**	Proterobas Objects (% of oxides)***
Si	34.8	45.0	48.8-53.8
Fe	22.4	19.4	6.6-11.0
Al	11.4	13.0	13.6-16.9
Ca	9.4	8.0	9.5-13.1
K	7.3	5.3	1.2-4.1
Mg	5.2	5.2	7.0-9.2
Pb	2.6	1.7	> 1.0
Na	2.5	2.0	2.1-3.2
Mn	0.5	0.4	0.2-0.5

*ED-XRF analysis (Watts 2018); **Turkish bead values converted to % of oxides and normalized to 100% by Laure Dussubieux, Field Museum, Chicago; ***LA-ICP-MS analysis (Dussubieux 2016).

interesting to note that Turkey was a major destination of Fichtelgebirge products during this time period (Karklins et al. 2016:17).

CONCLUSION

This is the first Proterobas bead to be identified from a context outside the Fichtelgebirge region. It is hoped that the compositional analysis of other opaque black beads from sites around the world will identify more of them and allow their temporal range to be determined.

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