Ife and Igbo Olokun in the history of glass in West Africa

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Recent excavations at the site of Igbo Olokun in the Yoruba city of Ile-Ife, in south-western Nigeria, have shed light on early glass manufacturing techniques in West Africa. The recovery of glass beads and associated production materials has enabled compositional analysis of the artefacts and preliminary dating of the site, which puts the main timing of glass working between the eleventh and fifteenth centuries AD. The results of these studies suggest that glass bead manufacture at this site was largely independent of glassmaking traditions documented farther afield, and that Igbo Olokun may represent one of the earliest known glass production workshops in West Africa.

Keywords: Nigeria, Yoruba, glass production, beads, trade

Supplementary material

Additional information about the luminescence dating

Five crucible samples containing coarse quartz temper fused to the ceramic matrix were submitted for luminescence analysis. They were excavated from depths between 0.5 and 1.3m. Associated sediment samples were provided, but no background radiation dosimetry data was available. The geology of the region is dominated by granitic rocks, some of which have elevated uranium content. Uranium values in the ceramics were found to be higher than thorium levels.

The samples were analysed at the Luminescence Dating Laboratory of the University of Washington, Seattle, using established protocols for TL, OSL and IRSL; a detailed report is on file with the authors (UW Lab numbers UW3020 through to UW3024, April 2015).

The results of the different methods did not match for each sample, and an assessment was made by Dr James Feathers as to which dates were analytically more reliable. For two

samples, these were the OSL results, for one IRSL and OSL, for one uncorrected TL and OSL, and for one IRSL and uncorrected TL. Three samples gave calendar dates of 500–700 BC ±220 years, and two samples gave calendar dates of *c*. 1800–2000 BC ±300–500 years.

Clearly, these dates are much too old to be true, with glass use in West Africa not widespread before the late first millennium AD, and Ife glassmaking typically associated with dates spanning the first half of the second millennium AD. The dates were therefore considered erroneous and were not included in our discussion.

We were unable to identify the reasons that would lead to such unrealistically early dates. Among the potential reasons are the unusually high uranium content of the ceramic and the fact that only fine-grain analyses have been done, while experience with similarly highly vitrified material elsewhere has shown that fine-grain dates are often not in agreement with coarse-grain dates. The high degree of vitrification, related probably both to the high potassium content of the samples and the very high temperatures of the operation, will have affected the fine-grain analyses. Finally, the absence of dosimeter data on the local gamma radiation levels further affect the ability to obtain accurate dates, particularly if the background gamma rate is unusually high.