

Archaeological study of ostrich eggshell beads collected from SDG site

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Ostrich eggshell (OES) beads from SDG site reflect primordial art and a kind of symbolic behavior of modern humans. Two different manufacturing pathways are usually used in the manufacture of OES beads in Upper Paleolithic. Pathway 1 is identified from these collections; blanks are drilled prior to being trimmed to rough discs. Based on stratigraphic data and OSL dating, these ostrich eggshell beads are probably in Early Holocene (10 ka BP).

The study has been reported in Volume 54 Issue 21 (November, 2009) of *Chinese Science Bulletin*. Academic team led by Prof. Gao Xing of Institute of Vertebrate [Paleontology](#) and Paleoanthropology, Chinese Academy of Sciences carry out this important research.

The discovery of shell beads from some Paleolithic sites in North Africa and South Africa has been taken as [archaeological evidence](#) of the oldest human artistic activity and the earliest record of modern human behavior. Nowadays, the issue of primordial art origins, especially in East Asia, is currently a hot topic in academic world. Paleolithic archaeologists are eagerly searching for new material and dating evidence to solve this research question.

This paper presents a comprehensive production chain for analyzing and rebuilding the manufacture stages of OES beads, concludes some typical characteristics of all different manufacture stages and explores the symbolic meaning of them. Pathway 1 is identified from these collections; blanks are drilled prior to being trimmed to rough discs.

In recent years, many shell beads have been found in some Paleolithic sites, but scholars do not pay more attention to the manufacturing technology of beads and symbolic meaning of them. Based on microscopical observation and experiments, the academic team led by Prof. Gao rebuilt the manufacture stages of OES beads from SDG site, concluded some typical characteristics of all different manufacture stages and explored the symbolic meaning of them.

According to previous observation and study systems of Western scholars and the specific characters of OES beads from SDG site, this study found that the two pathways of manufacture used in SDG site differed in the order of the drilling and trimming stages. The SDG site predominantly shows blanks drilled before trimming - Pathway 1. Blanks trimmed to circular discs prior to drilling constitute Pathway 2. Pathway 1 comprises four activities falling into eight manufacturing stages as follows: 'blank preparation' (Stages I and II), 'drilling' (Stages III and IV), 'trimming' (Stages V and VI), 'grinding' (Stages VII and VIII).

According to observed attributes and analyzing methods, the academic team conducted mass analysis in three aspects: direction of perforation, diameter and area of OES beads, aperture and external diameters of OES beads. OES beads are mainly drilled from inside of beads, followed by both sides, beads drilled from outside surface and uncertain samples are rare. Directions of perforation are in close relationship with the microstructure of OES. The microstructure of OES makes the outside surface more compact and firmer; furthermore, hominids are difficult in finding out appropriate drilling point by reason of the outside slippery surface of OES, breakage generally occurs when drilled from the outside surface of blanks. Thus, hominids are inclined to drill from the inside surface of OES and avoid high rate of breakage. The change of diameter and area indicates a greater degree of uniformity in production; it reflects the excellent skills of prehistoric artisans. Aperture and external diameters of OES beads indicate that the aperture size presents a greater

degree of uniformity in Pathway 1; the beads with bigger and more consistently sized aperture could indicate a relatively excellent skill in bead manufacture. Hominids can hold the standard of beads size and make standardized final beads so as to alter and enhance the appearance of the individuals who wear them.

These OES beads play important roles in modern human behavior. According to the ethnological and archaeological materials, if someone wears personal symbolic ornaments, they used to express wearer's some message to a variety of audiences. The ways and decoration people ornament themselves may indicate their ages, group affiliations, marital status, social standing, level of wealth and so on.

"Mass analysis of OES beads in Paleolithic sites has wider application and perspective. Through analyzing the above aspects by experiments and microscopic observation, scholars can reestablish the manufacture stages of OES beads and explore the symbolic meaning of them" said one journal reviewer. "This study concludes some typical characteristics of all different manufacture stages and reflect interactions among existing capacities, changing ecological and demographic conditions." said another reviewer.

More information:

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