Engraved stone artifact found at the Shuidonggou Paleolithic Site, Northwest China

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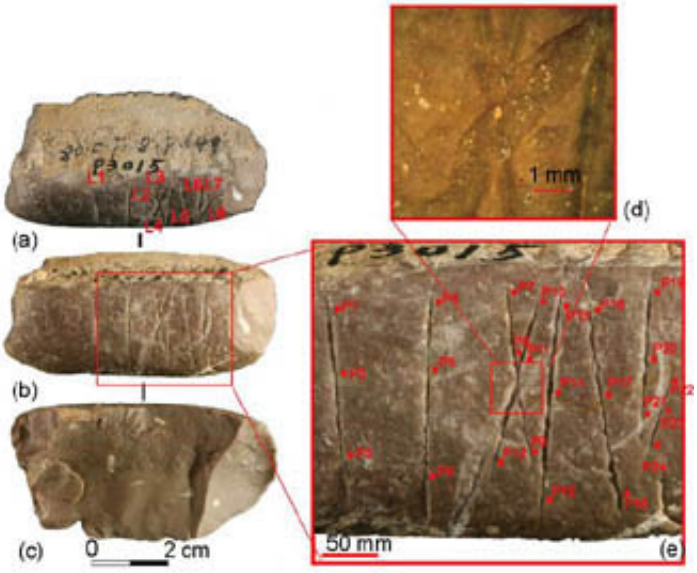

The engraved stone artifact from the Shuidonggou Paleolithic site, Ningxia, Northwest China. Credit: PENG Fei

Engraved objects are usually seen as a hallmark of cognition and symbolism, which are viewed as important features of modern human behavior. In recent years, engraved ochre, bones and ostrich eggs unearthed from various Paleolithic sites in Africa, the Near East and Europe have attracted great attentions. However, such items are rarely encountered at Paleolithic sites in East Asia. According to article

published in the journal of Chinese Science Bulletin (vol.57, No.26), Dr. GAO Xing, Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, and his team reported an engraved stone artifact in a stone tool assemblage at the Shuidonggou Paleolithic site, Ningxia, Northwest China.

The Shuidonggou Paleolithic site includes 12 localities, ranging in date from Early Late Paleolithic to Late Paleolithic. The engraved stone artifact was found at Locality 1, which is about 30000 years ago. As the first Paleolithic site discovered in China, Shuidonggou Locality 1 is distinctive in Late Paleolithic industry of north China, because of its components of elongated tool blank production and Levallois-like technology. When analyzing the materials unearthed from the site during excavations in the 1920s, French archaeologist Henry Breuil observed parallel incisions on the surface of siliceous pebbles, but he did not provide details on those incised pebbles.

This engraved stone artifact was found in a recent technological analysis of the stone tool assemblage unearthed at the Shuidonggou site in 1980. It is the first engraved non-organic artifact from the entire Paleolithic of China.

Archaeologists used a digital microscope to observe all the incisions and obtain 3D images. After excluding the possibility of natural cracking, trampling and animal-induced damage, and unintentional human by-products, they believed that the incisions were made by intentional behavior.

The straight shape of each line shows that it was incised once over a short time interval without repeated cutting, implying the possibility of counting or recording at that time. Furthermore, creation of such an engraved object may indicate the possible existence of complex communicative systems such as language.

"Comparison studies indicate that the blade technology was probably introduced from the Altai region of Russian Siberia, and the flake technology is typical of the Late Paleolithic in north China. So, who created the incisions, the migrants from the west or the aborigines in north China? At this time, we cannot provide a clear scenario. More archaeological and anthropological evidences are needed to solve the puzzle", said Dr. PENG Fei, first author of the study at the IVPP.

"This discovery provides important material for the study of symbolic and cognitive capability of humans in the Late Paleolithic of East Asia. As we know, so-called 'behavioral modernity' is often defined as changes of technology and subsistence strategies, expansion of activity areas, revolution in cognition, and other features. Most of these features have been identified at Paleolithic sites in Europe, the Near East and Africa. But in East Asia, the issue is more complex", said project lead GAO Xing, corresponding author of the study.

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Provided by Institute of Vertebrate Paleontology and Paleoanthropology