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Short articles



PHYSICO-PSYCHOLOGICAL APPROACH FOR UNDERSTANDING THE SIGNIFICANCE OF LOWER PALAEOLITHIC CUPULES

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Daraki-Chattan Cave is one of the richest Palaeolithic cupule sites in the world. It is situated in the heavily metamorphosed quartzite buttresses of Indragarh hill near Bhanpura, Mandasaur district, Madhya Pradesh in the Chambal basin.

Because of its small size and shape the cave is unsuitable for habitation purposes. Still it bears more than 500 cupules on both its vertical walls. The number of cupules must have been much greater as the front portions of both faces of the cave walls show heavy exfoliation scars. Based on the shape, size and nature of their depth, the cupules in Daraki-Chattan have been classified into four distinct categories, each with subcategories a and b.

The excavations carried out at Daraki-Chattan for five seasons from 2002 to 2006 under the EIP Project have unambiguously established the Lower Palaeolithic antiquity of the cupules in the cave. The question is that what the significance of these cupules is and why such a small cave was chosen as a center of cupule creation activity, and also why this went on, on such a large scale, for such a long time right from the Lower Palaeolithic? The answer is not easy.

For understanding the significance of cupules we adopted a physico-psychological approach which involves replication of cupules on hard quartzite rock and observations made in this process. We have been experimenting on this project since 2002 and it is still going on.

In the process of replication of cupules on hard quartzite rock it was revealed that creation of cupules requires very hard labour and devotion. In Daraki-Chattan, Cupules of Category-1a (big circular cupules of more than 50 mm diameter and more than 5 mm smooth saucer shaped depth) appear to be the work more of strength and commitment and less of mind. They were produced by using a very simple and primitive technology of direct percussion. They appear to represent the earliest stage of cupule production. Our experiment indicates that to produce cupules of Category-1a needs two to six hammerstones on cobbles or pebbles depending on the quality of the stone used and the strength of the person at work. It is a tough and tedious task to produce a cupule on hard quartzite rock. It requires motivation, commitment, strength, endurance and patience for their production. Big deep cupules of Category-1b can be produced similarly by using hammerstones with stout and sturdy striking heads. It needs a longer duration of work and high concentration besides all the above-mentioned qualities. At the same time, it requires the use of multiple hammer stones to achieve a deep round and smooth depth.



Replicated cupules on the experimental hard quartzite rock by the side of Daraki-Chattan.

Cupules of Category 2 are comparatively small with conical depth, particularly of Category 2a. We successfully replicated the latter in December 2008 and June 2009. They appear to be the work of a modified technology of direct percussion with small hammerstones of proper shape and size. Nearly 30 000 strokes by direct percussion technique were needed to produce a small cupule No. RC-9 of dimensions $32,0 \times 31,5 \times 9$ mm. It requires proper planning, immense skill and great precision and patience to produce such cupules. The person at work on cupule production cannot afford a wrong stroke, even in a thousand ones, as it increases the diameter of the cupule by one millimetre. Hence, it takes two to three days to produce such cupules.

We have been replicating cupules to understand the technique and process of their production. In this process we also came to know their significance. From our experiments it became very clear that creation of cupules is definitely neither a leisure work nor a play work. It is a very tough job and appears to be closely associated with something special and deeply related with life. It is a scientific conclusion and can be tested by anyone who is interested.





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