PROCEEDINGS OF THE IFRAO CONGRESS
September 2010

2013 # 5

http://www.palethnologie.org
ISSN 2108-6532

directed by
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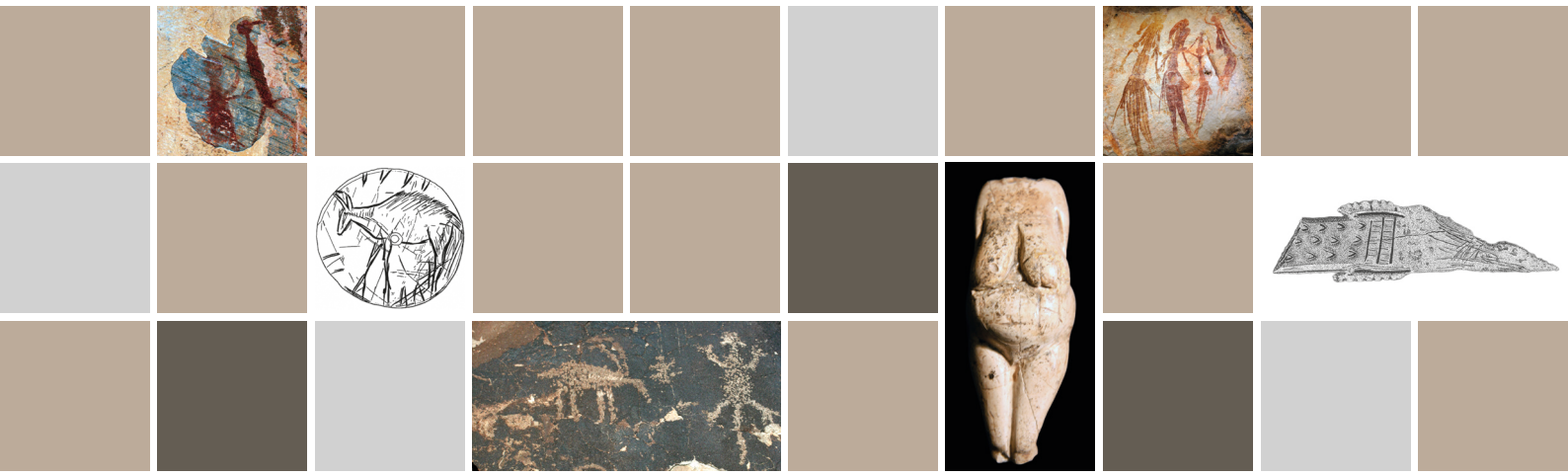
PLEISTOCENE ART OF THE WORLD

Short articles



PALETHNOLOGY
Bilingual review of prehistory

AMS04 Yacobaccio *et al.*
Full article, pp. 751-772

PLEISTOCENE / HOLOCENE ROCK ART IN LA PUNA DE ATACAMA (JUJUY, ARGENTINA)

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In this paper we present new findings from the Hornillos 2 site in La Puna de Atacama (Jujuy, Argentina) concerning early figurative rock art. In particular, we have tried to establish the methods used for preparing paints by identifying the raw materials employed and their likely sources. We then considered these results in the context of the surrounding area, investigating the use of local mineral resources and the distribution of different pictorial forms – both figurative and abstract – in other contemporaneous sites in the region.

Figurative representations (zoomorphs and anthropomorphs) have been found from southern Peru to northern Chile. While they vary significantly in chronological terms, the majority can be dated to the Late Holocene, with several other sites dating to the Middle Holocene. The Hornillos 2 site includes 28 painted motifs of camelids, five anthropomorphs, and a bird.

The site is at an overhang located at the base of an ignimbritic cliff that is 4 020 m above sea level. An area of 12 m² has been excavated and 9 layers have been identified to a depth of 118 cm. During the Late Pleistocene / Early Holocene (11 650 cal BP and 10 230 cal BP) the site was repeatedly occupied with evidence of the general use of local raw materials. In contrast, occupations after the Early Holocene (9 410 cal BP to 6 990 cal BP) were more sporadic and were clearly greater and more extensive than during the earlier period, suggesting greater population densities.

Detail of the panel painted in ochres, reds, and black (the dotted lines indicate the areas where the rock has undergone significant amounts of exfoliation).

Our physico-chemical research involved analyzing micro-fragments of red and black pigments sampled from the wall, reddish pigments recovered during excavation, and red pigment found on a pestle. The analytical techniques used were X-ray diffraction (XRD), energy-dispersive X-ray spectroscopy (EDS), total reflection X-ray fluorescence (TXFR), Fourier transform infrared spectroscopy (FT-IR), and gas chromatography / mass spectrometry (GC-MS).

The results seem to indicate that the red and black paints were both prepared in the same way, by grinding and mixing at least three substances:

1. iron oxides and oxyhydroxides for the red paints, and probably iron and manganese oxide for the black paints (pigments);
2. gypsum (an extender);
3. ruminant animal fat (a binder). A fourth substance could also be included: apatite. Very low levels of this mineral were found in the paint, and while not detected by XRD, its essential elements (Ca and P) were detected by the EDS analysis in all the red and black paint samples including the red pigment that was on the pestle.

Paint was also usually made using other substances such as animal fats which came from domestic contexts. The pestle is a sign of this, as it was used for grinding pigments as well as breaking up gypsum and grinding bones. The skeletal remains in layer 6 are highly fragmented, indicating the intensive processing of bone marrow for food, but perhaps also as a paint binder.

It should be noted that the gypsum found in the paint on the wall had been completely blended with the pigments, unlike at other contemporary sites with abstract art on the Jujuy plateau (Inca Cueva 4) where the gypsum was found below the paintings like a "coat of plaster on the original wall". The pigments and raw materials for preparing the paints are found within a radius of 50 to 80 km of Hornillos 2 and overlap geographically with the distribution of obsidian. Pigments could therefore be obtained within the radius of regular mobility west of the Jujuy Plateau on a main north–south axis. This seems logical given the distribution of the early figurative motifs which do not extend west of the Jujuy Plateau (Inca Cueva 4) nor to the south in Puna Salada (Quebrada Seca 2).

Can these practices and stylistic forms be linked to the movement of hunter-gatherer metapopulations? Some time ago it was suggested in reference to the end of the Middle Holocene that "the practice of rock art is a phenomenon that appears when different geographical and social spaces begin to interact." The differences between the stylistic forms of Hornillos 2 and Inca Cueva 4 at the east of the Jujuy plateau suggest the use of different river basins by different groups of hunter-gatherers in the Early Holocene. As a result, the migration of these groups could have led to spatial diversity resulting in the appearance of different artistic forms.


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