

examines the sources used to produce the vases in relationship to the location and significance of Late Classic settlements.

Results from stable isotope and petrographic analysis of ten sources from the Ulua Valley indicate that marble and limestone are abundant in the region.

Carbon and oxygen isotope analysis of marble vessels suggests a southern procurement zone in the Ulua Valley, while petrographic research demonstrates that marble used to produce the vases is derived from Cretaceous rocks believed to be located on the western slope. This paper discusses the benefits of a multi-method approach to marble sourcing. The most current results of our analyses of geological and archaeological samples in this continuing study will be presented.

KEYWORDS: Honduras, Marble, Ulua Valley.

RECENT FINDS ON ROCK ART PIGMENTS FROM BAJA CALIFORNIA (312)

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The current research focuses on the Cueva del Ratón, a shelter located within the Sierra de San Francisco, in Baja California, Mexico. This investigation defines the materials which have been used to create the rock art and establishes some of the physical and chemical changes that have occurred since the paintings were applied.

The preliminary results shown, provide an insight into the painting techniques and these data will be extremely helpful to form the basis for a conservation strategy for the rock art of this region.

KEYWORDS: Pigments, weathering, Cueva del Ratón.

DATA CONCERNING THE PAINTING PIGMENTS USED IN THE DECORATION OF THE CUCUTENI CULTURE POTTERY



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One of the most interesting Chalcolithic/Aeneolithic evolution in the south-east of Europe is connected with the Cucuteni culture, part of the Cucuteni-Tripolye cultural complex, which evolves over one millennium, in the interval 4,600-3,500 Cal BC. The main characteristic of this culture is the polychrome painting of the pottery.

In the last decades there have been made analysis which have revealed the composition and physical-chemical characteristics of the clay for making pottery, as well as of the pigments used for painting.

Our presentation deals with the pigments used by the cucutenian craftsmen for painting the pottery from the first phase of this culture (Cucuteni A), taking into account new discoveries, coming from 2 different settlements. In Scanteia we discov-

ered many granules and even a pot which contained a red power, and from Dumesti, we have a «painting case» which contains two types of granules and two small brushes.

The discovered «granules» were analysed by microscopy. We have studied their chemical composition and structure (X-ray Diffraction), in order to establish the relations between their own characteristics and those coming from red dye (or black one) on the painted pots from the mentioned settlements.

KEYWORDS: Prehistory of Europe, Cucuteni culture, pigments, painting.

**THE MAYA BLUE PIGMENT: AN EXAMPLE OF THE TECHNOLOGICAL
DEVELOPMENT IN THE PREHISPANIC ERA
(310)**

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This work presents a comparison in microstructural characteristics and elemental composition among different blue pigments from several archaeological sites and colonial convents of Mexico. Analysis was performed by Scanning Electron Microscopy, X-Ray Diffraction and Infrared Spectroscopy. The results obtained show that the blue pigments, called Maya Blue, is constituted by needle-like fibers with diameters from 30 to 60 nanometers. The chemical elemental composition are constituted by O, Si, Ca, C and lower concentration of Mg, Al and Fe. The identified crystalline phases were calcite and paligorskita, however calcite is mainly associated to the substrate. Presence of indigo pigment was identified by infrared spectroscopy. Reactivity tests on the Maya Blue showed that it is resistant to chlorhidric and fluorhidric acid (1%), moreover is resist to temperatures over 120°C. These results are congruent with the ones got by other researchers. Though this pigment has been widely studied, the physicochemical processes that originate its resistance to the several environmental conditions have not been completely disclosed. This pigment has a great importance due to its wide use in all the Mesoamerican area since pre-Hispanic to post-colonial ages.

KEYWORDS: Pigment, Archaeology, Maya Blue, Electron Microscopy, diffraction.

**CHARACTERIZATION OF SURFACE PIGMENTS ON AZTEC CERAMICS USING LA-ICP-MS
(309)**

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This study illustrates the potential of ICP-MS with laser ablation as a tool for rapid, precise quantitative characterization of surface pigments (including paints and slips) on archaeological ceramics. In contrast to electron microscopy techniques which require a well-polished surface for quantitative determinations, LA-ICP-MS is not as sensitive to minor topographic variation across the surface of a sherd, enabling Analyses in plane view and minimizing sample preparation time. Analyses of Aztec-period ceramics from the Basin of Mexico characterize the elemental composition of surface paints and identify their prob-