Colored bones. Methodology for studying the funeral body painting of three neighborhoods of Teotihuacan

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Introduction

This study presents the methodology used to analyze 110 pigment samples, obtained from human bone surfaces. The bones were discovered in 33 burials of La Ventilla, Teopancazco and Barrio Oaxaqueño, at Teotihuacan; contexts belong to the period spanning from AD 150/200 to 550. The principal purpose of this study was: (1) confirm the variety of colors used with funerary purposes, (2) identify colors composition and the pigments employed, and (3) identify possible recipes for funerary body painting.

Archaeological Context

Phase 1

Sampling (110)

Phase 2

Light Microscopy (LM)

Phase 3

X-Ray Fluorescence (XRF)

Phase 4

Infrared Spectroscopy / Attenuated Total Reflectance (FTIR-ATR)

Phase 5

X-Ray Diffraction (XRD)

Results. Color mixtures

Red

- Red earth (earth + clays)
- Cinnabar (HgS) + red earth
- Cinnabar + hematite (Fe₂O₃)

Black

- Galena (PbS)
- Bone black [Ca₀.₃₃(PO₄)₀.₃₃] + manganese black (MnO)
- Todorokite (MnO₂)
- Hollandite (BaMnO₃)

White

- Calcium carbonates (CaCO₃) + clays
- Calcite (CaCO₃)
- Gypsum (CaSO₄·2H₂O)
- Diatomaceous earths (Si, Al, Fe)

Green

Red earth

Green earth

Celadonite

K(silicate) + Ce³⁺

Glaucophane

K(silicate)

Green earth + diatomaceous earths

Yellow

Jarosite (Fe³⁺(SO₄)₂(OH)₆)

Jarosite + diatomaceous earths

Materials

The materials studied are a set of 110 pigment samples, obtained from human bones with color remains: red, black, white, yellow and green. These bones are from selected burials of Teotihuacan: La Ventilla (27 burials), Teopancazco (3 skulls) and Barrio Oaxaqueño (3 burials).

CONCLUSION

The results obtained from the analytical protocol, show the wide variety of materials used at the archaeological contexts considered to prepare funerary color recipes. These data confirmed us the presence of color mixtures, obtained mainly, from mineral pigments (cinnabar, jarosite, galena, bone black, manganese black) and natural earths (red and green earth, diatomaceous earth), mixed with calcium compounds and clays. Comparison of the three funerary contexts, allow us to reinforce, the link between colors and Teotihuacan mortuary treatments. The data obtained provide outstanding information about the mortuary customs and rituals of one of the most representative Mesoamerican societies in Central Mexico.

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