Society of Africanist Archaeologists (SAfA) 2021 Conference Abstracts

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landscape for elucidating the history of Late Pleistocene hunter-gatherers there and the multifaceted nature of crystal quartz economy, technology and symbolism.

BREAK

Brandi MacDonald, Elizabeth Velliky, Jörg Linstädter, Lisa Ehlers and Gregor Bader

Ochre provenance in eSwatini: geochemical insights on Middle Stone Age/Later Stone Age ochre procurement

We present preliminary results of a multi-method, regional scale ochre provenance study centred on five Middle (MSA) and Later (LSA) Stone Age sites and two ochre sources in eSwatini. Ochre artefacts are abundant at MSA and LSA sites and the variation observed in ochre typologies shows changes over time in mineral selection. eSwatini is home tos everal high-grade iron ore deposits that are conducive to the production of high quality, vibrant red pigment. Those sources, such as Ngwenya (Lion Cavern), were sites of ochre collection at least 40,000 years ago, if not earlier. Here, we synthesise data from trace element analysis (NAA, LA-ICP-MS) and mineral and structural characterisation (XRD, SEM-EDS), applying the methods to ochre nodules, lithic residues and geological materials. Our results provide insights into the potential for using changes in ochre procurement as a proxy for changes in ombolity, land use patterns and artistic and mineral preferences during the MSA and LSA.

Guilhem Mauran, Matthieu Lebon, David Pleurdeau and Jean-Jacques Bahain

Exploitation of colouring materials at the ornate site of Leopard Cave, Namibia: provenience, transformation and usages

The recurrent presence of traces of exploitation of colouring materials at rock art sites in southern Africa makes them an interesting case for understanding the social-cultural behaviour of past communities, although they nevertheless remain largely understudied. Since 2007, a joint French-Namibian team has been excavating the site of Leopard Cave (Erongo), allowing the unearthing of coloured materials and tools bearing pigment traces in layers dating back to approximately 3000 BP. These artefacts support the existence of a *chaîne opératoire* for processing colouring materials. We have sought to identifying the different stages of treatment of these colouring materials at Leopard Cave. To do this we have carried out *in situ* non-invasive analyses of the site's paintings and field survey of potential geological sources followed by structural observations and elemental and mineralogical analysis of all the material collected. Our results highlight the sub-local provenience of the material and differences in the treatment of the raw colouring materials used at Leopard Cave.

Justin Coppe, Noora Taipale and Veerle Rots

The importance of understanding the influence of raw material on fracture mechanics when searching for projectiles

The results of an elaborate experimental program on projectiles indicate that raw material is among the key variables affecting the fracture mechanical behaviour of a lithic armature on impact. This aspect has been underestimated in earlier projectile studies, where results have either been directly compared to previously published experimental data irrespective of raw material differences, meaning that raw material has been considered to be an irrelevant

parameter, or experimental replicas have been made of materials that closely resemble their archaeological counterparts. Considering the variability of lithic resources in Africa, projectile studies focused there should rely upon a clear understanding of the effect of raw material on fracture formation. We conducted a pilot experiment with a universal testing machine to examine how different raw materials react to standard mechanical stress. This paper presents the results of the experiment and puts them into the context of the experience gained from our previous work.

Paloma de la Pena, Tammy Hodgskiss, Guilhem Mauran

Leswika a geodatabase: a rock and colouring materials library in southern Africa

Prehistorical raw mineral and materials studies have increased during the past decades. Mineral resources, mainly rocks and colouring materials, were used in every-day life to produce tools and weapons, or as skin care products as well as for symbolic uses. They therefore offer great opportunity to interrogate past communities' behaviors and mobility. Understanding the choices made by the communities in the past requires a large knowledge of the raw materials (lithic and colouring materials) available at the time and of their properties before and after potential anthropic modifications.

In this view, we are building a library of southern African natural rocks and colouring materials. The first step of this open access library and geodatabase has been initiated in archaeologically-rich areas of South Africa. The project will consist in both a material library of rocks and colouring materials freely accessible to all and an online open access geodatabase combining geographical, geological, geochemical data.

The present talk aims at presenting our project and aims at calling for collaborations to build up a robust library, which will benefit to the whole archaeological community.