

## **Report on 2018 fieldwork at Umhlatuzana Rockshelter**

### *Introduction*

Geeske Langejans and Gerrit Dusseldorp obtained the excavation permit to excavate at Umhlatuzana in 2015. In December 2017 they secured the necessary funding to conduct an excavation campaign at the site.

We conduct a geoarchaeological excavation from 11 June through to 30 August. The goals of the fieldwork are the following:

- Assess the state of the site after reports of vandalism
- Attempt to refine understanding to the site's stratigraphic sequence
- Attempt to refine understanding of the site's chronology
- Obtain archaeological assemblages with fine stratigraphic resolution to study the site's technology
- Obtain environmental information to contextualise the archaeological remains

### *Team*

The excavation team consists of:

- Dr. Gerrit Dusseldorp (Leiden University; University of Johannesburg)
- Dr. Geeske Langejans (Leiden University; University of Johannesburg)
- Irimi Sifogeorgakis MSc (Leiden University)
- Valentijn van den Brink (ACVU-HBS CRM company)

Additional researchers involved in fieldwork and sampling:

- Dr. Andrew Carr (University of Leicester)
- Dr. Irene Esteban-Alama (University of the Witwatersrand)
- Dr. May Murungi (University of the Witwatersrand)

### *Site assessment*

From 11 June through 18 June 2018 we assessed the state of the site. We conclude that the site has suffered greatly from repeated illegal excavations of the Kaplan trench (in 2014 and again in 2017). The backfill was removed to about 1.4 m and part of profiles either collapsed or were dug into. The northern and western profiles are particularly damaged and undercut by vandalism. In collaboration with the CRM company eThembeni Heritage we installed scaffolding and sandbags to stabilize the damaged profiles. When the site is closed (28-30 August) the last layer of sandbags will consist of heavy 25 kg sandbags and the top part of the pit will be filled with soil. This to discourage vandals and make the pit harder to locate.

### *The excavation*

We started excavations with the goal of producing a clean profile covering the Holocene and Upper Pleistocene parts of the sequence of the site (which has a total stratigraphic depth of 2.5 meters). This in order to study in detail the site's stratigraphy.

From June 19<sup>th</sup> 2018 we opened three 50 x 50 cm squares; according to the grid of the original excavations by Kaplan (1990). Our squares are L3a, L2a and L2b in this grid. This resulted in an excavation area of 075 m<sup>2</sup>. In practice due to damage to the profile the excavated area is smaller. We stopped excavating on August 15<sup>th</sup> 2018. By that time we had excavated two squares to a depth of approximately 1.8 meters below the surface and the third square to ~1.5 meters below the surface.

We excavated the site following the natural stratigraphy and thick units we subdivided into  $\leq 2$  cm spits. We 3D piece plotted all the finds  $>2$  cm using a Robotic Total Station, recording almost 5000 single finds. The sediments were sieved over a series of nested sieves of 5 mm and 2 mm. In the lower levels we used 5 mm, 2 mm and 1 mm sieves. The sieved material is sorted according to material type.

Basic details of all the finds including provenance, raw material and weight have been entered in a database. The bulk of the finds consists of lithic materials, as preservation of bone in the lower part of the sequence is very poor. The typology of the finds remains to be studied in detail, initial results appear to confirm the cultural succession observed by Kaplan (Kaplan 1990).

### *Stratigraphy*

Prior to the excavation we also documented the western profile. We are able to confirm most of the observations of the rescue excavation by Jonathan Kaplan conducted in the 1980s (Kaplan 1990).

In the upper part of the profile we observed different hearth features and ash patches and a generally clearly visible natural stratigraphy. In the lower part of the sequence, the stratigraphy was much less clear. This was previously defined as Red Brown Sand (RBS) and Purple Brown Sand (PBS) The previous excavation was under great time pressure and the lower part of the site was excavated in 5 to 10 cm spits (see Kaplan 1990).

Where the previous team was only able to rely on natural light, we use a bright LED light installation and we are able to identify subtly different stratigraphic divisions in the deeper part of the sequence. We defined 41 initial stratigraphic units during subsequent excavation more were recognized bringing the total to 59. We described each defined stratigraphic unit in detail, recording among others the sediment characteristics (sand, silt, clay), sediment plasticity, Munsell colour, and the frequency and type of inclusions. This increased detail in the natural stratigraphy of especially the lower parts of the sequence represents a great improvement in our understanding of the stratigraphy of the site.

Our excavation covered both the deposits described by Kaplan (1990) as RBS and PBS We were able to subdivide these deposits more finely into at least 5 and 3 different stratigraphic units respectively. One of the issues that we hope to resolve using

micromorphological analysis is if the RBS sediments were post-depositionally displaced relative to the PBS deposits by a process of rotational slipping (Kaplan 1990). And whether this concerns all of the RBS deposits or only part. Some of our observations in the field suggest that the latter may be the case.

### *Sampling*

From 15 August 2018 we stopped excavating and documented the new profile produced in the excavated squares. The profile was sampled for phytoliths by Dr. May Murungi and Dr. Irene Esteban-Alama of the Evolutionary Studies Institute of the University of the Witwatersrand. They took in total 41 samples covering each major stratigraphic unit. We also took samples for micromorphological analysis from the profile. Here we took 31 samples, either using Kubiena sampling tins, or more commonly in units with many stones, we used plaster to encase blocks of sediment. We sampled all major stratigraphic transitions. Finally from 24 to 27 August Dr. Andrew Carr of Leicester University will take samples for OSL dating and stable isotope analysis. In conjunction with sampling for OSL we will also take charcoal samples from the profile for radiocarbon dating.

### *Outlook*

To study the stratigraphic sequence and the taphonomy of the site in greater detail, micromorphological analysis will be conducted. This will allow us to confirm the subdivisions observed in the field of especially the Pleistocene part of the sequence in stratigraphic units.

OSL and radiocarbon dates are complementary to this analysis leading to a better insight in the site's chronology, especially during the Pleistocene Later Stone Age and the later part of the Middle Stone Age. Only the lowest levels of the site have so far been dated with OSL (Lombard et al. 2010). Radiocarbon dates were obtained in the 1980s. However, a large part of the Pleistocene sequence is near or beyond the boundary for Radiocarbon dating. Hence more OSL dates are required to understand the chronology of the entire Pleistocene sequence.

Analysis of phytolith samples and stable isotope samples will give crucial environmental information allowing us to reconstruct the local conditions that hunter-gatherers faced during the end of the last Ice Age and potentially documenting the transition to the Holocene.

The lithic industry will be studied in detail to determine the technological organization and changes therein through time.

To study and sample the remaining part of the lower profile, we plan to excavate at Umhlatuzana Rockshelter at least one more time between 2019 and 2023.

*References*

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