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PLEISTOCENE ART OF THE WORLD

Short articles



# **SYMPOSIUM 2**

## **PLEISTOCENE ART IN AFRICA**

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## A BRIEF OVERVIEW OF MAJOR PLEISTOCENE PALAEOART SITES IN SUB-SAHARAN AFRICA

Peter B. BEAUMONT, Robert G. BEDNARIK

A literature survey shows that Africa south of the Sahara has as yet produced only a dozen palaeoart sites of Pleistocene age, of which the following seven have yielded multiple finds:

**Chifubwa Stream Shelter** in northern Zambia. Excavations there in 1951 revealed a sequence comprising surface soil with a few Iron Age sherds, 2 m of sterile sand, and then up to 0.7 m of red earth on bedrock with a Later Stone Age assemblage belonging to the Nachikufan 1 industry. The shelter wall, from well above the modern surface to 3 cm above the Nachikufan level, was covered by random cupules and many incised and rubbed petroglyphs, some coated by red or black paint. No viable dates come from this site, but the Nachikufan 1 elsewhere in Zambia dates to between 11 000 and 21 000  $^{14}\text{C}$  / 25 000 cal BP<sub>Hulu</sub>, and it is therefore considered probable that the Chifubwa petroglyphs were made at some time within that interval.

**Apollo 11 Cave** in southern Namibia. A dramatic find during 1969 and 1972 excavations in this small cave on the side of a gorge was the recovery from one of the upper levels of a cluster of seven painted plaques with images that include a possible therianthrope. A radiocarbon sample from above one of the slabs was dated to 28 000  $^{14}\text{C}$  BP, and a subsequent study of ostrich eggshell fragments from two levels on the outer side of the trench indicated that the Later Stone Age strata there range back to 41 000  $^{14}\text{C}$  years ago. These findings indicate that the Apollo 1 art has a calendrical age of about 32 000  $^{14}\text{C}$  BP<sub>Hulu</sub> and that they relate to the middle reaches of the Later Stone Age.

**Pomongwe Cave** in southern Zimbabwe. Excavations there in 1960 and 1979 uncovered a long sequence, in the much-disturbed basal Later Stone Age level of which were found two slabs that feature red-painted patches with well-defined outlines. These items, which are presumed to have spalled from the cave wall, certainly predate an overlying assay of 13 000  $^{14}\text{C}$  years ago, and most possibly lie between 20 000  $^{14}\text{C}$  years ago and the regional end of the Middle Stone Age at 48 000 cal BP.

**Nswatugi Cave** in southern Zimbabwe. This site, some 2 km west of Pomongwe, was first excavated in 1933, and again in 1975, when the upper unit in a 4 m and more Middle Stone Age succession was found to have an age of > 42 000  $^{14}\text{C}$  BP. That level was distinguished from those below it by the presence of largish segments, which would suggest a temporal correspondence with the 60 000-70 000 years old Howieson's Poort industry of South Africa. From it came two slabs, each with a single haematite-coated surface that have been interpreted as palettes for the application of liquid pigment.



Pleistocene palaeoart sites in sub-Saharan Africa.

**Blombos Cave** on the south-western Cape of South Africa. Excavations since 1992 in this small coastal cave have probed Middle Stone Age strata containing a 70 000-77 000 years old Still Bay assemblages overlying earlier material dating from 85 000-100 000 BP. From both have come 15 engraved siltstone slabs, including some with cross-hatched designs, that are taken to reflect a single palaeoart tradition spanning some 25 millennia.

**Hollow Rock Shelter** in the south-western Cape of South Africa. Excavation of the shallow deposits in this shelter in the Cederberg mountains produced a Middle Stone Age assemblage of Still Bay type that is undated, but likely to have an age in the 70 000-77 000 year range. Together with the lithics were found two notched haematite fragments; one with a series of notches on a concave ground edge and the other thin and roughly rectangular, with notches around much of the periphery.

**Wonderwerk Cave** in the Northern Cape Province of South Africa. Fieldwork from 1978 to 1996 in this horizontal and 141 m deep solution cavity established a sequence extending from historical times to basal Oldowan at ~2.0 million years BP. Palaeoart from these include incised haematite plaques from Middle Stone Age contexts, one dated to about 70 000 BP and the others from a level with a basal U-series age of 152 000 BP, as also five incised slabs from a Late Fauresmith level, with U-series dates of 270 000-280 000 years ago.

Also of note are localities that have produced early evidence for the deliberate retrieval of pigments, believed to have been mainly used for body decoration, of which the oldest presently known occurrences are at the following site: **Kathu Pan 1** in the Northern Cape Province of South Africa. Excavation between 1979 and 1982 of the 11 m deep infill of this karstic doline revealed a stratified succession which included a 540 000 years old Fauresmith level containing a number of smoothed haematite and specularite fragments. A few small haematite pieces also came from the underlying Acheulean level with an estimated age of 0.7-0.8 million years ago.

The present sub-Saharan evidence indicates that the use of pigments arose by at least 540 000 years ago, that incised patterns range back to at least 270 000 years ago and that iconic depictions commenced by at least 32 000 years ago.



## ON A SEARCH FOR ANCESTRAL ROCK ART IN THE SOUTH-EASTERN KALAHARI (SOUTH AFRICA)

**Peter B. BEAUMONT, Robert G. BEDNARIK**

The finding in Excavation 6 material from Wonderwerk Cave of a few mobiliary slabs in a Late Fauresmith context dated to 270 000 years ago raised the question of how long back subcontinental petroglyphs could have survived at open sites, where less restrictive rock surfaces may have permitted a fuller manifestation of the rock art repertoire being produced at any given time.

To investigate that matter, a study centred on the south-eastern kalahari was launched in 2000 for three reasons, of which the first relates to findings which indicate that its present c. 300 mm annual rainfall fell by up to 60% during the last Ice Age, which suggests that human occupation of that region was probably confined to warm and wet interglacial intervals. The second reason was the presence there of a range of quartzite hills, the Korannaberge, in small areas of which are smoothed rock surfaces and rock pools, formed by moving ice in Permo-Carboniferous times, of which the latter form the sole regional sources of semi-permanent water, and must thus have been the focus of past occupations, next to smoothed surfaces ideal for petroglyph production. And the third reason is that the metamorphosed Precambrian quartzites are highly resistant, which means that petroglyphs on them survived for very long, with pertinent age estimates possible by way of the optical dating of close-by artefact-bearing strata, as also the microerosion method, when calibrated via values for the climatically comparable Spear Hill site in the Pilbara of Western Australia.

Many petroglyph sites in the study area were inspected, but more detailed work has, as yet, been confined to only three localities, concerning which details are as follows:

### **Nchwaneng**

At this site, the northern slopes of an inselberg run down to a 45 × 70 m smoothed rock surface with flanking pools, where recording in 2001 documented some 1 500 images, 80% of which show abrasion, that are dominated by cupules, but with many non-iconic images, a few human figures, and a 4% balance of semi-naturalistic zoomorphs. A small 1986–1987 excavation on its western margin revealed two Later Stone Age industries, dating from 8–0.3 ka and underlying Middle Stone Age in the 130–70 ka range, while just to the north is a surface spread of Middle Fauresmith with an age of at least 400 ka, based on a dated similar assemblage at nearby kathu Pan 1, all of which points to Holocene, Last Interglacial and Holsteinian occupations. A microerosion study in 2009 revealed three intervals of petroglyph production, of which the youngest produced estimates of E6060 BP for an eland figure, E5144 BP for a rhinoceros image, and E1900 BP for shallow geometrically-arranged cupules, while older were cupules and circle outlines predating 50 ka, and still earlier a phase confined to very worn cupules (figure).



Cupules of presumed Fauresmith and MSA antiquity  
at the main waterhole of Nchwaneng.

## Potholes Hoek

This locality, on the lower western side of a saddle on one of the northernmost Korannaberge hills, comprises a  $12 \times 26$  m smoothed surface pocked by a few dozen potholes, on the western edge of which erosion of flanking kalahari sands has exposed an underlying rubblerich stratum with some likely Acheulian artefacts, while further upslope are sparse scatters of fresh Middle Stone Age and lightly smoothed Acheulian. Microerosion study showed two discrete episodes of petroglyph production there, the youngest comprising small cupules and outline circles, whereas the older petroglyphs are confined to larger cupules that are significantly more worn, with both groups worn far beyond the dating limit of the microerosion technique.

## Klipbak 1

Near the crest of another Korannaberg hill is a rock pool and an adjacent  $9 \times 20$  m smoothed surface that is weathered, with reconnaissance revealing sparse Ceramic Later Stone Age near the petroglyphs, some earlier Later Stone Age further upslope, a Middle Stone Age scatter on the eastern side of the hill, and some likely Acheulian material in an eroded area downslope of the rock sheet. Mapping in 2001 showed the support to be covered by some 570 cupules, 40 outline circles, 30 rubbing areas and 5 meandering lines, all weathered bar one or two reworked forms, while on nearby slabs are fresh hammered outlines of a “giraffe”, three “eland”, two human male figures, one holding a “staff”, and an indeterminate “antelope” minus head with a microerosion age of E1600 BP.

## Conclusions

A consideration of data bearing on intervals when rainfall sufficed to sustain humans in the study area, the timespan of lithics found in close proximity to the Nchwaneng petroglyphs, and temporal inputs provided by the microerosion measurements, are here taken to support the following petroglyph groupings on the resistant quartzites of the Korannaberge:

- first phase: Relatively well-made large deeply hammered cupules that occur in unstructured clusters which are, given their considerably greater age than the following group, conservatively linked to a 400 ka-old phase of the Fauresmith. Observed at Nchwaneng and Potholes Hoek;
- second phase: Usually smaller and shallower cupules that occur in small groups with well-shaped and typically 8 cm wide circle motifs, that also fall beyond 50 ka and that are best referred to the Middle Stone Age. Observed at all three sites;
- third phase: Much more recent petroglyphs with variable complements of non-figurative and iconographic motifs that contiguous lithics and microerosion readings show to span much of the Holocene. Observed at Nchwaneng and Klipbak 1.



## PLEISTOCENE ENGRAVINGS FROM WONDERWERK CAVE (SOUTH AFRICA)

Robert G. BEDNARIK, Peter B. BEAUMONT

The 12-13 Pleistocene art sites known for sub-Saharan Africa are certainly a meagre tally, relative to the numbers that have been documented in smaller Europe or Australia, but they do, nevertheless, provide a record of regular palaeoart production that extends back to about 100 ka. Less continuity is presently evidenced by earlier finds; namely the Sangoan cupules at Sai Island and the > 276 ka Fauresmith occurrence at Wonderwerk Cave. We here provide a microscopic analysis of two items from the latter site.

The first stone fragment derives from Major Unit 2, in square O120 of Excavation 5, and has an age of ca. 70 ka, based on the date of  $73 \pm 5$  ka for a lower nearby spit. It measures maximally about 48.6 mm by 38.5 mm, and has a thickness of 14.5 mm, is of variable petrological composition, but essentially a low-grade haematite of reddish colour, with a hardness of ~6 on Mohs scale. The extensive lattices of lines were therefore most probably engraved by quartz or chert, although we have made no attempt at traceological analysis, due to the presence of adhering sediment material in the grooves. For ease of analysis the seven surface areas of the fragment were numbered and engravings cover six of them.

A notable aspect of the numerous engraved lines is that all the prominent grooves are deeply notched at their point of commencement, usually beginning on the margin of the adjacent facet, and then diverging into streamer-like or fan arrangements. Overall, this specimen demonstrates great precision and competence in the application of stone tool points to a very hard, small object, which was eventually decorated over nearly its entire surface. The object represents a considerable labour investment on the part of the maker, the markings form repeated patterning involving mainly convergent lines sets and sets of parallel lines, but the edge treatment and the distinctive anchoring to edges is also a dominant factor.

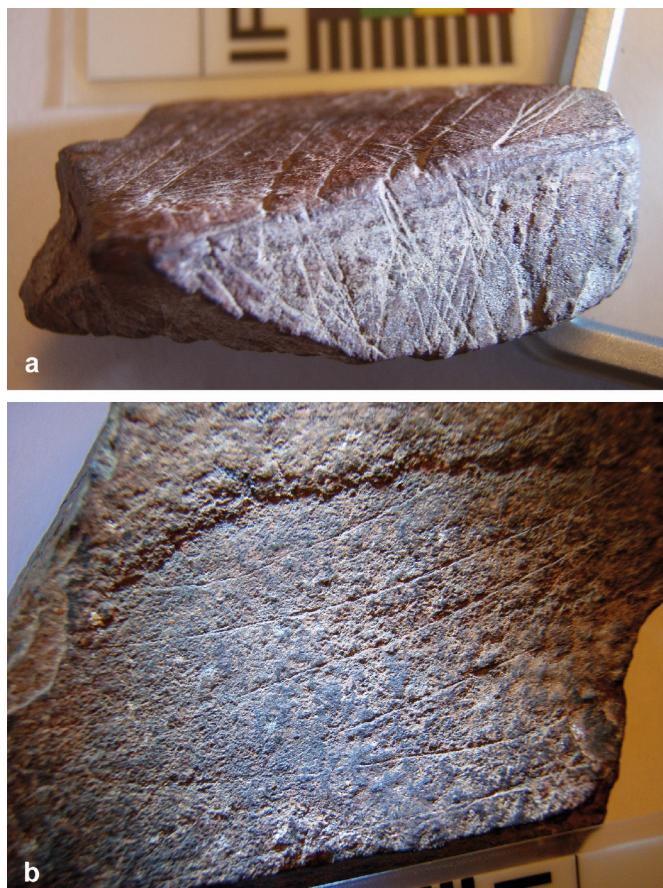
The second, considerably older decorated stone object from Wonderwerk Cave consists of an angular slab of iron-rich cryptocrystalline silicate rock carried into the dolomite cave. It was excavated from spit 45-50 cm of Major Unit 3 in square BB149 of Excavation 6, and has an age of > 276 ka BP, based on dates of 276 and  $278 \pm 26$  ka for the surface reaches of that level. The flattish manuport is primarily formed by two subparallel planes 41-45 mm apart, and one of its five margins, corresponding with five fracture facets (with some small subsidiary facets among them), shows breakage subsequent to the grooves being engraved. This is evident from the truncation of one of the seven remaining lines. The decorated surface is flattish, of coarse surface morphology. The remaining, major part of the panel is slightly concave, separated from the raised upper part by a scarp, and it constitutes the engraved area. The seven grooves are numbered 1 to 7, from top to bottom. Line 7 is truncated by a fracture and line 6 is in part so close to the fracture's edge that it could not have been effectively executed subsequent to the fracture event. The edge formed by the fracture and the decorated panel also shows little subsequent damage, whereas all the other

margins of the panel are extensively worn, with impact flaking and crushing almost continuous. The rounding of these other edges is well visible macroscopically, while that of the bottom, most recent fracture is only clearly visible at  $\times 10$  magnification. Therefore it is evident that the plaque was longer at the time of engraving.

Lines 1 and 2 each show sections where the stone tool was raised and then reapplied, which underlines the deliberate Mode of engraving; these are not incidental or accidental grooves, their pattern is the result of intentionality. Line 4 is in one place of adequate depth to illustrate the cross-section of the engraving tool, which was somewhat rounded, non-symmetrical, and 100 microns wide, and the lack of visible striations may indicate that its surface was smooth.

An interesting aspect of the engraved stones from Wonderwerk is how well they match the transition elsewhere between marking strategies of Modes 1 or 2 (Earlier Stone Age) and Mode 3 (Middle Stone Age) attributions. Examples of the former are the engraved objects of Bilzingsleben in Germany, and of the latter those from Blombos Cave in South Africa and Oldisleben in Germany, among others.

From these findings it is likely that subcontinental palaeoart ranges back to before the advent of modern humans, as is also the case further north in Africa, where the ~200-180 ka-old cupules at Sai Island occur with Sangoan lithics comparable to those found with the < 190 ka-old *Homo helmei* skull from Singa. Furthermore, the Middle Stone Age at Wonderwerk extends back to ca. 250 ka, whereas the comparable Nubian Complex lithics from Sai Island postdate 152 ka.



The MSA (top) and Fauresmith (bottom) engraved objects from Wonderwerk Cave (South Africa).



## PLEISTOCENE ROCK ART IN NORTH AFRICA: Securing the Age of the Qurta Petroglyphs (Egypt) through OSL Dating of their Sediment Cover

Dirk HUYGE, Dimitri A.G. VANDENBERGHE

The existence of pre-Holocene rock art in North Africa has been a subject of debate for several decades. Thus far, the oldest petroglyphs identified in North Africa with some degree of certainty, the so-called “fish trap” motifs and associated figurative and geometric scenery of el-Hosh in Upper Egypt, have been ascribed to the Early Holocene and are tentatively dated to ~9 000 cal BP. It has now become clear that even older art, of fully Pleistocene age, exists in the same geographic area: the rock art of Qurta.

At Qurta, situated on the east bank of the Nile between Edfu and Aswan, three rock art sites have been identified: Qurta I, II and III (henceforth QI, QII and QIII). These sites are located in higher parts of the Nubian Sandstone scarp bordering the Nile floodplain. At each site, several rock art locations, panels and individual figures have been identified, with a total of at least 180 individual images. Naturalistically drawn bovids (*Bos primigenius*) are predominant (over 75% of the total number of drawings), followed by birds, hippopotami, gazelle, fish and hartebeest. In addition, several highly stylized representations of human figures appear at the sites. On the basis of the intrinsic characteristics of the rock art, its patination and degree of weathering, as well as the archaeological and geomorphological context, we have proposed an attribution of these petroglyphs to the Late Pleistocene, specifically to the Late Palaeolithic Period (~19 000 to ~18 000 cal BP). This interpretation has met with little criticism from the archaeological community, but proof in the form of science-based dating evidence has thus far been lacking.

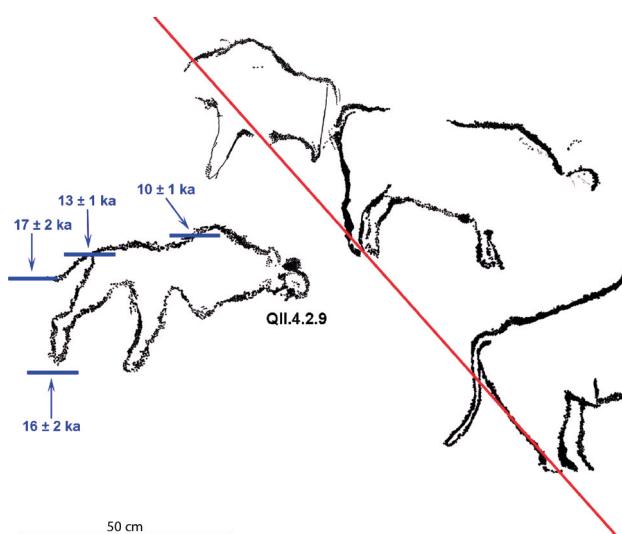
During the 2008 field campaign, it became clear that one of the rock art panels at QII, in particular panel QII.4.2, was partly covered by sediment accumulations that are trapped between the engraved rock face and coarse Nubian Sandstone rock debris that became separated from the scarp. Using petrographical thin sections, the covering sediment could be identified as being derived from the Late Pleistocene “Wild Nile” floodplain deposits of the region, through aeolian reworking. The wind-blown nature of the covering sediment makes it ideally suited for optically stimulated luminescence (OSL) dating.

OSL dating can determine the time that has elapsed since buried sediment grains were last exposed to sunlight. Using the constituent mineral grains of the sediment itself, it offers a direct means for establishing the time of sediment deposition and accumulation. OSL dating requires that the sedimentary grains were exposed to sufficient daylight in order to fully reset the luminescence clock prior to deposition and burial. The most robust OSL dating procedure currently available involves the use of OSL signals from quartz in combination with the single-aliquot regenerative-dose (SAR) procedure. We have applied this procedure to four samples to establish the time of sediment deposition on top of rock art panel QII.4.2 and, in this way, to obtain a minimum

age for the petroglyphs. OSL dating was performed in the luminescence dating laboratory at Ghent University (Belgium). The samples of the sediment that covers panel QII.4.2 yield optical ages that are fully consistent with the stratigraphic position of the samples (figure). The dates range from  $10 \pm 1$  ka at the top to  $16 \pm 2$  ka at the base of the sequence. They provide solid evidence for the pre-Holocene age of the Qurta rock art.

The rock art of Qurta is not an isolated occurrence. Four other sites are known in the region, all with a limited but highly homogeneous assemblage of drawings, which display a very similar art, both thematically and stylistically. One site, Abu Tanqura Bahari 11 at el-Hosh, is situated about 10 km north of Qurta; the other three, Wadi Abu Subeira 6, 13 and 14, lie about 45 km to the south. The repertoire of these sites again consists mainly of naturally drawn bovids, but fish, hippopotamus and Nubian ibex are also represented. None of them, however, offer the dating opportunities that Qurta does.

The Qurta OSL dates present the first solid evidence for the existence of sophisticated figurative Pleistocene rock art in North Africa. Whereas this makes the Qurta rock art definitely the oldest discovered in North Africa thus far, its true age remains unknown. It is clear that the buried drawings at QII were already considerably weathered before they became covered by sediment. It seems likely therefore that the rock art is significantly older than the minimum ages obtained by means of OSL. An age of ~19 000-17 000 calendar years would make the Qurta rock art more or less contemporaneous with Solutrean / Early Magdalenian art as known from Upper Palaeolithic Western Europe. Significantly, the rock art of Qurta and the other Egyptian Pleistocene art sites have several thematic and stylistic features in common with European Late Magdalenian art. This is particularly evident from the human figures, most of which are very similar to the anthropomorphs of the Lalinde / Gönnersdorf type. The latter are dated to ~15 500-14 000 cal BP. Whereas it would be premature to speculate on any implications of this in terms of long-distance influence and intercultural contacts, it is clear that the Pleistocene age of the Qurta petroglyphs along with their degree of sophistication, similar to that of European Ice Age art, introduce a new set of challenges to archaeological thought.



Detail of panel QII.4.2.  
The red line indicates the top of the sediment accumulation. The OSL ages are presented for sediments completely covering drawing QII.4.2.9, representing an indeterminate two-legged creature.



