

# The Geoarchaeology of Western Sahara Project: Anglo-Italian Expedition in the Liberated Zone

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## Introduction

This summary report describes the findings of the Anglo-Italian geoarchaeological reconnaissance mission to Western Sahara, which took place in the Northern Sector of the Liberated Zone between 24 September and 11 October 2002. A full report will be published in *Sahara* journal in 2003. The purpose of the mission was to provide a preliminary assessment of past changes in human populations and culture within the context of environmental change and the broader context of Saharan archaeological research. Further expeditions will take place in the future in order to provide a comprehensive description of the archaeology of the Liberated Zone, subject to negotiation with Polisario and the Universities of Girona and Grenada, which have also undertaken archaeological work in the region.

## Archaeological finds

### *Stone tools and pottery*

The team travelled throughout the Northern Sector, and found abundant evidence of past human occupation from Palaeolithic times to the Islamic period. Stone tools representing the three Palaeolithic epochs (Acheulian, Mousterian and Aterian) were collected and presented to the museum in Tifariti. These materials represent the Middle and Late Acheulean periods, approximately spanning from 400,000 to 150,000 years ago. More recent occupation is testified by the Mousterian and Aterian, dated to some 90,000/50,000 years ago. Neolithic stone tools and pottery representing approximately the last 10,000 years were also recovered.

### *Burials*

A variety of different burial types were recorded. Most of the burials are in the form of circular mounds of a type found throughout the Sahara. These are often found close to areas containing prehistoric hearths, representing foci of human activity. Also present are a number of burials of a

linear or crescent type, as well as antenna tombs, so-called because they consist of a burial mound associated with two linear stone arrangements or “antennae” which radiate from the central mound. These are of particular significance as they have been documented in Libya and eastern Algeria, but have not been recorded further west in the archaeological literature. They therefore demonstrate a geographical and cultural continuity as well as contacts between Western Sahara and the central Sahara in prehistoric times between approximately 5000 and 2000 years ago. More recent burials, including the spiral monuments in the north of the Liberated Zone and some related structures nearer to Tifariti, most probably date from later pre-Islamic times. These may be classified as “proto-Berber” sites, and appear to be related to similar structures found further north elsewhere in the Sahara. They are significant as they may demonstrate that the area was occupied by populations related to the present day inhabitants of the region prior to the Arab conquest of North Africa. Numerous Islamic burials are also present; these and burials dating from the recent conflict attest to the continuous occupation of the region from prehistoric times to the present day.

### *Rock art*

The Northern Sector is rich in rock art, much of which has been documented by the University of Girona. The Anglo-Italian team visited the major rock art sites of Sluguilla, Erkeiz and Irghrayra, and also a previously unrecorded rock art site at Bou Dheheir. Significant damage to the paintings at Erkeiz and, to a lesser extent, Irghrayra, was observed. Much of the rock art at Erkeiz has been completely destroyed or severely degraded as a result of “washing”, in which water is poured over the paintings in order to make them clearer for purposes of photography. Much of this damage appears to have occurred in the past two years and is probably related to tourist activity, although “washing” of rock art has been used extensively by previously archaeological expeditions in Algeria and Libya.

The previously unrecorded site at Bou Dheheir is in a much better state of preservation, although natural weathering processes have resulted in the disappearance of some paintings. This site may be described as one of the most significant rock art sites in the whole of the Sahara, because of the variety of fauna depicted, the arrangement of the paintings, and the variety of styles used to represent both humans and animals. This site contains paintings of fauna previously only recorded in engravings, specifically rhinoceros and buffalo, indicating a much wetter environment than exists today. The human figures are also highly significant; while some appear to have a style different to that represented at other Saharan sites, certain figures are highly reminiscent of those depicted in the Acacus mountains of southwestern Libya, again suggesting a cultural link between Western Sahara and the central Sahara in Neolithic times.

### **Environmental context**

The archaeological sites described above are generally associated with areas where water would

have been abundant in the past. Evidence of human activity tends to be concentrated at the edges of wadis which would have been seasonal or permanent rivers during the last wet period, between around 10,000 and 5000 years ago. Dating of charcoal from cave deposits and hearths in these locations can tell us when such sites were occupied, and give an indirect means of determining the timing of the last humid episode. Samples of charcoal were collected, and will be dated once the team return to the UK and Italy. While successive arid and humid phases have extended throughout the Sahara, there is still debate as to their exact timings, and whether or not changes in rainfall occurred at the same time in different Saharan locations. Situated at the extreme west of the Sahara, the study area may be subject to climatic influences from the Atlantic Ocean and may therefore have experienced a somewhat different environmental evolution to the rest of the Sahara.

The Northern Sector contains a large number of dry lake beds, from which dates of past wet periods may also be determined. During this first field season, shells of freshwater snails were collected from the centre of one such lake bed; these will be dated in order to determine when this lake last held significant amounts of water. While some archaeological materials have been recorded at the fringes of the lakes, a relative absence of finds compared to other regions suggests that these lakes may predate the last wet episode in Western Sahara.

### **Future work**

The reconnaissance survey indicates that the Northern Sector of the Liberated Zone is extremely rich in archaeological materials, and contains some very important archaeological sites, many of which demonstrate cultural links with the central Sahara and other parts of North Africa. There is great potential for further study in the region, and the Anglo-Italian team would propose the following studies:

- i. A comprehensive archaeological study of the Bou Dheheir area, including analysis of burials, rock art, cave deposits and evidence of past environmental change. This site has not been recorded, and would be best interpreted via an integrated assessment of all aspects of the archaeology. Particular attention would be paid to conservation of the rock art in order to avoid the damage that has occurred to rock art at other sites. Rather than wetting the rock surface to enhance the paintings for photographing (which damages the rock art), photographs of the paintings would be digitally enhanced using computer-based image processing methods.
- ii. A survey of the burials in the north of the surveyed area, in the vicinity of Wadi Ternit and Wadi Erni. This area exhibits a variety of burial types, providing an opportunity to study funerary practices from several different periods from the Neolithic to the later pre-Islamic. Some burials would be excavated and human remains could be dated and also subject to genetic analysis if they are sufficiently well preserved.

iii. Further studies of lake beds and other indicators of past environments in order to retrieve materials for dating and build up a comprehensive picture of past environmental change.

iv. Exploratory surveys of the southern regions of the Liberated Zone in order to identify new archaeological sites and sites indicative of past environmental conditions. Areas of sand dunes are of particular interest as these often contain dry salt lakes, which offer better opportunities for dating studies as they are controlled by groundwater levels and have no input or outflow that leads to the removal of sediments, as is the case for the clay lakes in the north.

An initial project consisting of two field seasons of three to six weeks duration, involving a larger team (of some ten or twelve researchers) is proposed for the period 2003 - 2004. It is requested that a formal agreement be signed between the SADR and the University of East Anglia, Kings College London and University of Rome La Sapienza. The principal participating institution would be the University of East Anglia. A formal agreement would greatly increase the potential for acquiring funding from the British and Italian governments and research funding bodies. It is also proposed that some funding be sought for the setting up of an archaeological laboratory containing dedicated computer facilities, to be based either at Rabbouni or Tifariti. Funding could also be sought in order that a Sahrawi archaeologist could travel to the United Kingdom or Italy for training.