C.I.R.S.A.
Centro Interuniversitario di Ricerca
per le Civiltà e l'Ambiente del Sahara Antico

WADI TESHUINAT PALAEOENVIRONMENT AND PREHISTORY IN SOUTH-WESTERN FEZZAN (LIBYAN SAHARA)

Survey and excavations in the Tadrart Acacus, Erg Uan Kasa, Messak Settafet and Edeyen of Murzuq, 1990-1995

Edited by
Mauro Cremaschi and Savino Di Lernia

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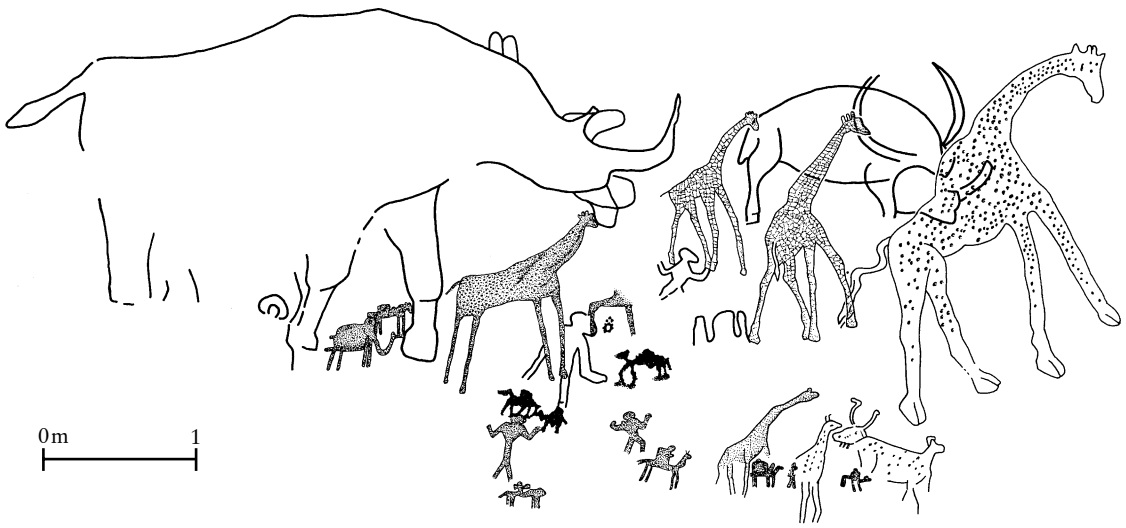

Cover: Ti-n-Aschig engravure is located in a southern branch of wadi Sennadar. First described by MORI (1965), it has been recently surveyed by M. Cremaschi. It is composed by several figures of different rock art styles, covered by a different patina. Wild fauna – indicated by heavy line – (Rhinoceros and Bubalus antiquus) displays eroded grooves covered by black desert varnish as the natural surface of the rock. The wild animals are surrounded by several standing human praying figures, in the same physical conditions, which may be attributed to the "Round Heads" style. "Pre-Pastoral" and "Pastoral" giraffe and cattle display a red patina and are indicated by large dotted punctuation and squared pattern. Human figures, camels, giraffes and riding warriors, which may attributed to the "Horse style", have a clear reddish patina and are indicated by dense punctuation. Camels in black have no patina at all and are the most recent figures.
The superposition of different animal types, rock art styles in different state of preservation, properly symbolises the changes in environment and human behaviour which took place in the area since the wet very beginning of the Holocene up to the present dry conditions.

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Mauro Cremaschi and Savino Di Lernia eds.
pp. 9-10

EDITORIAL PREFACE

Mauro Cremaschi and Savino Di Lernia

Wadi Teshuinat is the main wadi which crosses the middle part of the Tadrart Acacus mountain range. It directly connects the wadi Tanezzuft – the Tassili basin – to the ergs and hamadas of the central Sahara: the erg Uan Kasa, the Messak Settafet and edeyen of Murzuq.
The physiography and the strategic location of this wadi may explain the impressive amount of archaeological sites from the Early Stone Age to the Garamantic period, concentrated in its surroundings. Furthermore, wadi Teshuinat is among the richest areas of central Sahara for rock art paintings, discovered by Fabrizio Mori as early as 1955.
What's more, wadi Teshuinat has been the starting point, both material and ideal, of the researches carried out by the Italo-Libyan Joint Mission, directed by F. Mori in the 1990-1995 field seasons. For these reasons the name of the wadi appears in the title of this volume that discloses the results of palaeoenvironmental, archaeological and anthropological research obtained in this mission. However, the results of rock art research have been just published by Mori (1998) in the book *The great civilisations of the Ancient Sahara*.
A main goal of the research was to reconstruct the environmental changes from the Late Pleistocene to the Middle Holocene and to understand the adaptive strategies and the cultural choises made by human groups in responding to them. The investigation was carried out both in the mountain range, having as important reference the results published ten years ago by B. Barich, and in the surrounding ergs, which were instead practically unknown from the archaeological and environmental point of view. The regional scale of research led to an increasing amount of information, definitively overtaking the site-perspective that characterised the archaeological research in the past, and providing a more articulated framework for the comprehension of the cultural processes in the region.
Basic information for environmental changes, inside the mountains, lies on the occurrence of travertine deposits, as well as rockshelter fills. In the erg areas, lacustrine deposits, swamp remains and relicts of wet soils provided an outstanding source of information, not yet fully exploited.
It has been possible, therefore, to reconstruct the history of environmental changes of the area, starting from the Late Pleistocene aridity, through the onset of a wet period at the Late Pleistocene – Early Holocene transition, and its slow decline, up to the dramatic arid crisis at 5000 years BP. Almost the entire area then dried out, except for the wadi Tanezzuft and other wadi valleys, which became a focal point for the human communities.
The regional survey, which amounts, for sample areas, to around 9000 square kilometres, has been the link for the environmental and archaeological researches. Thanks to this perspective, the connection and exchanges between mountains and lowlands has been documented for the first time.
There is no ineluctable response of human groups to the changing conditions in past environment. The wet phase of the Early Holocene is characterised by specialised extractive strategies of the *Early Acacus* hunter-gatherers, whereas the increasing aridity of the ninth millennium BP dealt with emphasis on wild plant exploitation and broadening of the resource spectrum as far as *Late Acacus* groups are concerned. Wet conditions, again, favoured the affirmation of food production based on pastoral activity. A true, dramatic shift is recorded in the fifth millennium BP: the onset of dry conditions which have lasted up to now. The aridity led human groups either to abandon or to reduce the use of mountain ranges and erg areas, favouring the large wadi valleys where the palaeo-oases were located, and water was still available. We may claim that some forms of cultivation in this area existed, consid-

ering archaeological evidence and relations between site location and soil features.
The archaeology of this region benefits from new data concerning the Pleistocene frequentation, represented by several lithic assemblages discovered *in situ*, sometimes in stratified contexts and, at least for the Aterian techno-cultural phase, with the first radiometric datings. The best-defined frequentation of the Holocene has undergone deep changes in the anthropological interpretation of known cultural phases, as well as the well-defined climatic reconstruction. The previously undifferentiated pre-Pastoral period was divided in two distinct cultural phases, on the basis of radiometric setting, settlement system, mobility, economic basis and material culture. In order to avoid terminological confusion, two *facies* names (*Early* and *Late Acacus*) have substituted the provisional terms, *Epipalaeolithic* and *Mesolithic*, recently used. The Pastoral culture (also in this case trying to discard the term *Neolithic*) has been deeply re-studied. Excavations of old and new sites, but especially the survey data, provide an articulated succession of cultural phases, as testified to by settlement system, economic strategies, pottery and lithics. Different patterns of pastoralism seem to emerge: from the early emergence of cattle herding (*Early Pastoral*), to the vertical mobility with an East to West transhumance mostly of sheep and goats (*Middle Pastoral*), up to the large scale mono-specific *nomadic* pastoralism (*Late Pastoral*). Much has to be done in this very promising field of research, but the foundations for a better understanding of this particularly African economy have been laid.
Beyond field work, laboratory research involved pollen analyses, paleontological determinations, isotopic measures, micromorphological analyses on soil and sediments, chemical analyses on pottery, petrographical studies of lithics for provenance identification. A strategic choice surely was to do as many datings as possible: more than one hundred radiocarbon datings was done on charcoal, wood, bones, dung, organic sediments and mollusc shells. Furthermore, good results were obtained by U /Th measurements on travertine, as well as OSL and TL datings on aeolian sand which first allowed in central Sahara to date the Late Pleistocene desert ingression and associated Aterian occupation. Throughout the book, BP and millennia refer to uncalibrated radiocarbon dates before present; calibration has been adopted in some cases, and methods are specified in the individual papers.
Since its beginning, the mission was a Joint Mission, and the successful results of the research greatly benefit from the tight co-operation and sincere friendship between Libyan and Italian teams. The common work did not exclusively involve field research, but also data elaboration, as well as the restoration of materials and their museum utilisation, recently accomplished in setting up a room dedicated to the scientific results of our Mission in the *Museum of Archaeology* at Germa.
The complex network of human relations , necessary to the life of the mission, was woven for a long time by Fabrizio Mori. We are deeply indebted to him and, as editors, we are particularly glad to be interpreters of the will of all the members of the Mission to dedicate this book to Fabrizio Mori, who initiated most of us to the study of the civilisations and environment of the Acacus, and for his pioneer work in the Central Sahara.

Milano and Roma, 31 marzo 1998

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The Italo-Libyan Joint Mission for Prehistory and Rock Art in south-western Fezzan (Libyan Sahara)

Ebrahim Saleh Azzabi

Great Jamahirya is very rich in archaeological features, a treasure for Libyan history and for all humankind as well. The co-operation between the Department of Antiquities of Tripoli and the "*Centro Interuniversitario di Ricerca per le Civiltà e l'Ambiente del Sahara Antico*" (University of Rome "La Sapienza", University of Milan and University of Modena) has accomplished such a collection of data as could have never been possible if any of these Institutions had worked alone. Some of these data are now put together in the present book, which is the main result of the cycle of research which began in 1990.

However, the Joint mission, under the direction of prof. F. Mori, had started already in 1955. It consisted of many years of field work dealing with investigation on rock art and archaeological excavations. The results collected were published in many papers and presented in a number of international meetings (e.g. Mori 1965; Lupacciolu 1992).

Since l990, the Italo-Libyan group has involved a larger number of participants. The activity has a multidisciplinary perspective, focused on Archaeology, Anthropology, Geoarchaeology and Rock Art: if we try to understand the life of human groups and their culture, we must understand the environment where human groups lived.

The area of the fieldwork is located in the Fezzan, namely in the Tadrart Acacus mountain range and in the Messak Settafet plateau, including the surrounding ergs: the erg Uan Kasa and the northern edge of the edeyen of Murzuq. The relationships among humankind, environment and culture are the main purpose of our research. Our aim is to reconstruct the cultural history in these areas, and, furthermore, the cultural dynamics in neighbouring regions. Another goal of the research was the preparation of archaeological maps and a systematic inventory of rock art evidence. The perspective of these works is to improve the knowledge of Libyan cultural heritage and to protect it from natural and human damage.

Human presence in the area dates back to the Middle Pleistocene with the Acheulean and Aterian cultures. It experienced several wet/dry cycles. But the Holocene record is the best preserved and the more significant to understand the cultural evolution of North Africa during the Prehistory.

"Epipalaeolithic" and "Mesolithic" hunter-gatherers spread in the area in concomitance to the wet environment which developed during the Early Holocene. Domestication appeared around seven thousands years before present, even if some evidence of animal taming did exist around a thousand years earlier in the mountain shelters. The whole area was deeply inhabited both in the mountains and along the lakes which existed inside the ergs during the whole Pastoral period. The environment dried out at about five thousand years before present, and pushed animals and humans to the main wadis, in which water supply still existed (Garcea 1992; Di Lernia 1996; Cremaschi and Di Lernia 1996).

Rock art was produced all along the development of the prehistoric cultures. Thousands of engravings and paintings are testimony of beliefs and spiritual reflection as of the Late Pleistocene – Early Holocene ("Wild Fauna" and "Round Head" styles), during the Pastoral period ("Uan Amil" style), until Protohistoric ("Horse" style) and historical period ("Camel" style) (Mori 1965).

The significant success of the concerted effort encouraged us to go deeper into the co-operation between Libyan and Italian scientists and to develop the research in the area for the future. The results obtained will also be devoted to stimulating the local interest in Cultural Heritage and to responding to the growing request of tourist activities. Data and archaeological material collected by the Joint Mission are now a part of the permanent exhibition in the *Museum of Archaeology* at Germa.

The activity of the Joint Mission would not have