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Central Saharan rock art: Considering the kettles and cupules

Jitka Soukopova

University of Bristol, United Kingdom

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ABSTRACT

All the main Central Saharan mountainous massifs present rock art from various periods, stretching from prehistory until the recent historical era. The paintings and engravings have been documented, described, and classified into the chronological-stylistic groups. However, a special group of carvings called kettles and cupules have been given little or no attention in the rock art studies. Since these artificial formations are abundantly present in the Central Sahara their systematic study is needed.

After a short presentation of the Saharan rock art groups, this paper examines kettles and cupules situated in the territory dominated by the earliest paintings called Round Heads, in the mountains of the Algerian Tassili, Algerian Tadrart and the Libyan Acacus. The results of the author's prolonged fieldwork are presented here, namely the quantity and distribution of kettles/cupules in the study area, their presumed relationship to the Round Head paintings, and their possible function.

1. Introduction

Since the first discoveries by Europeans in the nineteenth century, research in the Central Sahara has been precarious, often made by accidental travellers rather than by academics. As a result, after several decades of research no exhaustive inventory has yet been established and not all rock art sites have been discovered, since new images have been reported each year (Hallier and Hallier, 2000; Maestrucci and Gianelli, 2005; Soleilhavoup, 2007; Civrac et al., 2009).

Until 2010 research in this region was quite active including individual surveys (e.g.Hallier and Hallier, 2003; Soukopova, 2011) as well as international projects (Hachid et al., 2010; Le Quellec, 2016). Due to the growing political insecurity since 2011 with entire regions being closed to the public, there has been a stagnation in the Central Saharan research. Consequently, most research has been directed towards other geographical areas.

The results presented here are based on fieldwork undertaken by the author between 2005 and 2008 in the key Central Saharan mountainous regions: the Tassili n'Ajjer, the adjacent Algerian Tadrart and Libyan Acacus which constitute the study area of this research (Map 1). Tassili n'Ajjer is a 1500–2100 m high sandstone plateau covering 80,000 km^2 (Stoppato and Bini, 2001). To the south, the Algerian Tadrart forms a continuous mountain range with the Acacus in Libya, both massifs being divided by a political border. These are sandstone plateaus reaching 1300 m in height; Acacus on the east and Algerian Tadrart on the south slope becoming less and less marked with isolated small massifs surrounded by sandy desert. Ancient riverbeds called wadies cut across the plateaus; they are filled with sandy fluvial sediments including archaeological material (Cremaschi and Trombino, 1998).

The primary objective of the fieldwork was to document the earliest forms of rock art with special attention given to the man-carved holes called kettles and cupules. The term “kettle” is used for larger oval or circular holes carved in horizontal rock support. Cupules are shallow small holes a few centimetres in diameter, carved on horizontal or vertical surfaces. Although abundantly present in the study area, these carvings have rarely been published or studied (Tauveron, 1999). By presenting the quantity and distribution of kettles/cupules, their relationship to other rock art and their possible function, this article aims to promote this neglected field of research and to show the importance of including kettles and cupules into the study of the Saharan rock art.

2. Methodology

The research methodology was based firstly on an evaluation of all published literature, information from the internet and from personal correspondence with other researchers. This information constituted the base for the expansion of the list of all relevant sites in the study area. I also collected all data available concerning the

E-mail address: soukopka@hotmail.com.

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climatic changes in the Sahara during the Pleistocene and Holocene.

Secondly, I collected data *in situ*. During the fieldwork around one hundred sites were investigated which represent a sample of several hundred painted/engraved panels and more than 1300 kettles and cupules (Fig. 1). Around 5000 photographs were taken which constituted the base for the quantitative analysis represented in the Map 1.

3. Climatic changes and archaeological evidence

Over the last 20,000 years, the Sahara has passed through a number of climatic events (Petit-Maire, 2003; Gasse, 2006). Between 20,000 and 13,000 BP the Sahara did not behave as a unitary climatological system; the mountainous areas experienced significantly wetter conditions than the lowlands, resulting in substantial differences in environment. Whilst high altitude regions had significant rainfall causing the formation of lakes, they were surrounded by dry lowlands experiencing extreme aridity. The mountains had enough humidity for people, animals and vegetation to survive in the Late Pleistocene.

The period before 20,000 BP is associated with a so called Aterian culture originally dated between 40,000 and 20,000 BP (Tillet, 1997; Hachid, 1998). However, recent radiocarbon measures have provided dates that support an age from 60,000 to 20,000 (Garcea, 2004).

Although the climatic conditions in the region were humid as early as the 16th - 15th millennium BP (Cremaschi, 1998), the period before 10,000 BP has not yet provided 14C data from shelters. A pre-Epipalaeolithic human presence is attested in the open but the lithic industry outside shelters cannot be dated (Tauveron, 1999).

From 10,000 BP excavated shelters show these sequences:

- the Epipalaeolithic (10,000 to 8800 BP) demonstrating a hunting economy with specialized exploitation of mammals, particularly mouflon, simple stone structures and rare pottery;
- the Mesolithic period (8800 to 7400 BP) with abundant grinding stones and pottery as a result of increasing sedentism and wild plant gathering;
- the successive Pastoral phase, based on cattle herding, dated to 7500 BP (Barich, 1987).

Fig. 1. Two large deep circular kettles associated with smaller oval kettles and several cupules on the top of a large boulder. Two shallow carved grooves are leading from the border of both large kettles towards the outside (Imha shelter, Acacus).

4. Rock art groups

According to the technique of production, patina, anthropological type, fauna, themes depicted, superimpositions and style, Saharan rock art is divided into six large distinct groups:

- Bubaline engravings
- Kel Essuf engravings
- Round Heads paintings
- Pastoral engravings/paintings
- Caballine engravings/paintings
- Cameline engravings/paintings

The Bubaline (called after the *Bubalus antiquus*, an African buffalo, which became extinct at around 5000 BP) rock art group includes large, naturalistic depictions of wild animals engraved with deeply incised and polished lines (Barnett and Mattingly, 2003). The Kel Essuf (literarly 'spirits of dead' in the language of the Tuaregs) rock art group on the contrary, represents extremely stylized small anthropomorphic figures with their body consisting of an oval with short arms, legs and a penis. These are executed by shallow engraved incisions or by very fine pecking. Whilst the Bubaline engravings are present on boulders in the open, Kel Essuf are located often inside rock shelters.

The Round Head paintings are characterized by the representation of anthropomorphic figures and wild animals, mainly mouflon and antelope. Symbolism is perceptible in all the compositions rich in dances, processions, masks and supernatural creatures. Whereas Bubaline engravings are very rare in the area dominated by Round Heads, the Kel Essuf engravings and Round Head paintings share the same territory and sometimes the same shelters.

The paintings of the Pastoral style are distinguishable from the Round Heads through the representation of domesticated cattle represented and the technique used to create them. This clear break between rock art styles has been attributed to the arrival of new people in the Central Sahara (Sereno et al., 2008). Pastoral art is attested all over the Sahara, as well as the Caballine and Cameline rock art groups which reflect the process of desertification in the Sahara. Large wild African fauna disappeared and were replaced by horses and dromedaries.

4.1. Saharan rock art chronologies

The chronology of the Saharan rock art has always been the scholars' most controversial argument (Aumassip, 1993; Muzzolini, 1995; Mori, 2000). The problem relates to the oldest chronological-stylistic groups, namely the Bubaline, the Kel Essuf and the Round Heads, whereas the recent art is chronologically secure because of the depiction of animals introduced to the Sahara in a dated period. The lack of direct dating resulted in two chronologies being established: a high and a low period (Hachid, 1998; Muzzolini, 1995):

Based on the dark shade of the patina, consisting of clay

Styles	High chronology (^{14}C years)	Low chronology (^{14}C years)
Bubaline	10,000–7500 BP	7000–4500 BP
Kel Essuf	before 9800 BP	from 7000 BP
Round Head	9.800–7500 BP	7000–2800 BP
Pastoral	7500–2800 BP	7000–2800 BP
Caballine	from 2800 BP	
Cameline	from 2000 BP	

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