

Agriculture, domestication and the rock-art

The great treasures of the Saharan rock-art are filled with problems still awaiting further analysis. The main problem is the dating of the different styles but it is also felt that we need more research on the information contained in the rock-art pertaining to the economy of the peoples of the Sahara who created it. The majority of the researchers study the rock-art only as pieces of art and mostly neglect the fact that they also contain an amount of data on the different aspects of life of a given society, including those of economic importance.

This situation has also affected the accuracy of dating the rock-art. The most productive work in this field was accomplished by Mori (1979) who found the first definitive proof in favor for an "earlier" chronology of the style of the Cattle Breeders period. At the bottom of the cave at Uan Muhuggiag he found a piece of rock with the figures of two oxen painted in typical style; the stone was found under a fireplace dated by $14C$ to $2,780 \pm 310$ B.C. This date is in agreement with several other $14C$ determinations from the same cave of $5,488 \pm 220$ to $3,455 \pm 180$ B.C. which pertain to the deposit left by the presumed Cattle Breeders. Other sites of this cultural entity are giving similar dates thus enabling us, *e.g.* to date this style of rock-art found in the Tassili by Lhote (Lajoux, 1962). Mori's chronology could be, therefore, accepted as true and valid for a greater part of North Africa and not only to the Acacus Mountains. The most recently presented chronological and cultural sequence by Mori (1979: 261) known to this writer is indicating on Table 1.

This sequence is based on radiocarbon dates and on instances of superimposition as well as on cultural and historical arguments such as the frequency of a given domestic animal in the art of the period. An interesting point is that the change of the ethnic type is apparent with each period, and that there is almost a lack of small domestic animals (sheep and goat) which are thought to have played a considerable role in the early period of animal husbandry, similarly to some African societies investigated by ethnographers. The development of animal husbandry from 5th-4th millennium B.C. to 1st millennium A.D. seems here to have been mirrored, more or less, in contemporary rock-art; the question remains, however, if we also have evidence in the Sahara of semi-nomadic groups of herders of sheep and goat, such a characteristic feature of the Middle East in the 10th-7th millennia B.C.

Table 1

Chronological and cultural sequence in the rock-art of the Acacus Mountains

Chronology		Cultural and stylistic traits
Calendar B.C.	14 - C B.C. (uncal.)	
100	—	Camel Period. Paintings and engravings
1,500	—	Horse Period. Mediterranean peoples. Paintings and engravings
—	2,780	— later phase: tall Cattle Breeders of Ti-n-Lalan type
—	3,455	Cattle Breeders — middle phase: Negroid breeders of the Uan-Tabu type
—	4,002	Paintings and — early phase: Mediterranean breeders
	4,804	
	5,095	Engravings of the Uan Hamil type
—	6,122	— end: polychrome paintings. Negroid peoples
		Round-Head
		Period/Style — beginnings: paintings in lines or plain in yellow, green and red
		Mainly Paintings
—	—	<i>Bubalus antiquus</i> or Big Game Style/Period. Engravings.

The infiltration of cattle breeders into North Africa did not take place before 6,000 B.C. This phenomenon brought to an end the Round-Head style in the Sahara. We should thus accept two pre-cattle phases in the development of the Saharan rock-art, but how they should be dated and with what precise kind of style should the periods be associated? Let us try to explain this development against the background of contemporary natural conditions in the Sahara. The detailed chronodiagram from the Tibesti area published by Jäkel (1979: 396) is very helpful in this respect. It is based on the study of levels of sedimentation in the fluvial system in Zoumri-Bardaqué-Arayé. The following fluctuations of wet and dry phases in the Tibesti may help us in understanding local conditions:

1. In the wet phase lasting from 16,500 B.C. until 5,300 B.C., the Tibesti area had a cool and wet climate with sharply marked fluctuations: 14,000-12,500 B.C. — wet; 12,500-12,000 B.C. — dry; 12,000-11,000 B.C. — wet; 11,000-10,800 B.C. — dry; 10,800-9,500 B.C. — wet; 9,500-9,200 B.C. — dry; 9,200-8,850 B.C. — wet; 8,850-8,700 B.C. — mixed conditions; 8,700-8,400 B.C. — wet; 8,400-8,300 B.C. — mixed conditions; 8,300-8,100 B.C. — dry; 8,100-7,150 B.C. — wet optimum; 7,150-7,000 B.C. — increasing aridity; 7,000-6,550 B.C. — wet; 6,550-6,400 B.C. — dry; 6,400-6,100 B.C. — wet; 6,100-ca 4,000 B.C. — increasingly dry with wetter intervals; ca 4,000-2,100 B.C. — wet. Therefore, two main wet periods can be distinguished in this area: in 14,000-5,000 B.C. (wet and cool) and 4,000-2,100 B.C. (wet and warm). The earlier part of the first wet phase was the natural background to both the pre-

-cattle periods of the Saharan rock-art, when humidity was brought into the then dry desert. The "Ethiopian" fauna moved northwards with the then moving Sahel zone – and was followed by the Negroid hunters who developed the first phase of rock-art in the Sahara – the *Bubalus antiquus* or "Big Game" style engravings. To this period the Qadan culture is dated, the first step towards the agriculture on the Middle Nile (Wendorf, 1968).

2. A second climatic phase can be distinguished in the Sahara when both climatic trends met in the mountainous region, such as the massives of Tibesti; this occurred between 8,000 and 6,000 B.C. The contemporary cultural development is known as the Saharan Neolithic (Kuper, 1979) or Aqualithic (Sutton, 1977), based on hunting, fishing and, perhaps, also on gathering and planting of millet (Kuper, 1979: 68) but without the presence of domestic goat and sheep, *i.e.* animals which did not have their wild progenitors in Africa available for potential domestication. The sites of the Saharan Neolithic were found recently mainly in such areas as Tibesti (Gabriel, 1979) and Hoggar (Camps, 1979) but Sutton (1977) extends them as far as the Nile and Niger.

The rise of aridity in the late 7th millennium B.C., which caused the desertification of the steppes and ramification of hunting areas, intensified the process of increased exploitation of plants and, subsequently, led to an incipient agriculture. Some animals of the Sahara like the *Bubalus antiquus* even became extinct, others moved to the south. In the higher massives of the Sahara where cooler and more humid conditions still prevailed, people of African origin (Negroids) may, however, have continued their settlement.

The 5th millennium B. C. again witnessed a rapid increase of humidity in the Sahara; this period was marked by the infiltration of cattle breeders, Europoid in the physical type who were moving both into the mountainous areas and into the lowlands, as can be seen from the distribution of the camp sites found by Gabriel (1979) in the now desert areas of Egypt, Libya and Algeria. Two periods of this occupation are evident: Neolithic and Medieval. The Neolithic is divided in three phases: early of 5,500-3,700 B.C., middle of 3,700-3,400 B.C. and late lasting until 2,000 B.C. This Neolithic covers the whole period of time of Cattle Breeders style of the rock-art. It is interesting to note that in the middle phase the intensity of occupation was 6-7 times larger than in the two other phases; it was also the time of the main humidity in the Sahara. This Neolithic development was terminated by a new rise of aridity about 2,000 B.C.

With the Europoid invaders (Fig. 1) a new economy also spread over North Africa – the cultivation of barley which, however, may have earlier originated independently in North-West Africa. The newcomers developed a new art style which form the bulk of the famous art of Tassili and Acacus. But the indigenous inhabitants (Fig. 2) of these massives who quickly adopted the new economy and seem to have defended, for a quite a long time, these mountainous areas also created an excellent art style which is visible in the rock-art of Tassili, Hoggar and even in the



FIG. 1. Sefar, Tassili. Cattle-rider with child (after Preußner, 1979: No. 20)

Tadrart Acacus. In general, these indigenous groups seem to have been forced to move — together with some of the invaders — to the south, west and east in 3rd-2nd millennium B.C., and to take refuge in the most remote parts of the massives.



FIG. 2. African type in Algerian rock-art. Late Round-Head period (after Brentjes, 1965: Pl. 21)

A new phase of humidity which occurred in the 2nd millennium B.C. enabled the groups of the Horse Breeders to roam across the Sahara and, since the climate was still deteriorating, forced them in the 1st millennium B.C. to adopt the camel as the main beast burden (Fig. 3); it soon became also a theme of the rock-art of these human groups.

This writer believes that a discussion on the problem of sheep and goat in the rock-art of the Sahara should follow in the final part of this paper. As was already

mentioned, there was no sheep/goat-breeders period in the development of the Saharan rock-art, although the presence of these domestic animals on the North African littoral, in Cyrenaica, is confirmed by the bones of these species found in the cave of Haua Fteah and dated to 6,400-4,750 B.C.; no cattle bones were found with them (Smith, 1979). It is clear that animal domestication came to the Sahara with the domestic cattle. There have been many attempts to argue for an independent centre of cattle domestication in North Africa based on the fact that *Bos primigenius* was a part



FIG. 3. Thagit. Camel rider. Recent rock drawing (after Brentjes, 1965: No. 56)

of the local wild fauna since the Pleistocene. However, all sources available at present date the earliest domestic cattle in North Africa to about one thousand years later than in South-Eastern Europe and South-Western Asia, where it was present by about 7,000 B.C. I am inclined to see the expansion of the domestic cattle from its centre in South-West Asia towards Europe, Central Asia and North Africa as virtually concomitant (Brentjes, 1968). One of the main arguments in favor of an Asiatic origin of the domesticated sheep and goat are their representations in rock paintings of the Cattle Breeders style in the Tassili in such localities as Iheren (Fig. 4), Rhardes and elsewhere (Lhote, after Mensching, 1979: Fig. 8, 10, 16 u.a.o.)

Wild sheep and goat of the form susceptible for potential domestication are not known to have ever existed in Africa. Therefore, the only place of origin of their domestic forms must be South-West Asia where they are believed to have been tamed in the 10th millennium B.C. and subsequently domesticated by the societies practicing likewise the harvesting of wild cereals leading also to their domestication. The sheep of Iheren and other sites in the Tassili is also of a hairy form with mouflon-like horns – and this creates a new problem. Sheep with mouflon-like horns were not known in Egypt before the Middle Kingdom times (ca 2,000 B.C.) The earlier Egyptian representations depict a hairy sheep with shrewed horns, the form still existing in the Sudan. It originated in Mesopotamia where it was dominant in the



FIG. 4. Iheran, Tassili. Sheep and goat in a camp of cattle breeder (after Lhote, 1979: No. 1)

3rd millennium B.C. Therefore, the source of the Saharan sheep could not be Egypt, and the colours of the sheep from Iheren demonstrate that their domestication was accomplished much earlier.



FIG. 5. Sefar, Tassili. The two-fold protome (after Preußner, 1979: No. 23)

Did this form of the domestic Tassili sheep reach Africa from Crete — via the Mediterranean? If it did this could explain the many astonishing parallels visible between the Saharan rock-art and the Minoan paintings (Brentjes, 1979), such as the Minoan-like demon of Tin Tarleften, the double-cow from Sefar (Fig. 5) and other

motives. Their presence in the Sahara could have been the result of Cretan trade, with the peoples of the African coast, which surely was being developed in the 2nd millennium B.C., *i.e.*, during the Horse Breeders times in the Sahara.

The non-Egyptian origin of the Saharan sheep – being thus contrary to my earlier belief expressed 15 years ago (Brentjes, 1965) – forces me to re-evaluate the problem of the “ram with the sun disc” (Fig. 6), the painting of the ram often depicted in the rock-art of Algeria, in localities like Fedjetel Kheil and elsewhere (Cf. Brentjes, 1965: Pl. 20).

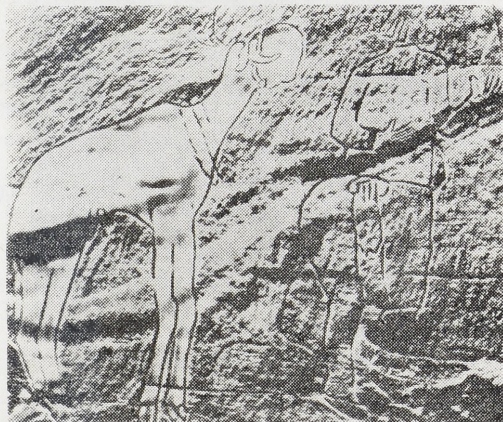


FIG. 6. Fedjetel Kheil, Algeria. Ram with the sun-disc (after Brentjes, 1965: Pl. 20)

The symbolism of the sun-god bearing the disc on his head is typical in Egypt and is not known in Asia, although there were many Asiatic sun gods venerated in antiquity. In Egypt, the Amon-ram with sun disc appears *ca* 2,000 B.C. and is of the shrewed-horned type. This indicated that the pattern of the sun-ram with a disc on its head represented in the Sahara could not be derived from Egypt because it seems to have occurred earlier in the deserts. The symbolics of the horned animal or of a “goddess” could be found even among the best pieces of art from the period of the Round-Head style in the Tassili, *e.g.* the “white lady of Auanrheth” (Fig. 7) (Lhote, 1964: 168); the female carries a bunch of grain, which could be millet, between the horns. In Egypt, similar pictures occur only in scenes of Nubian tribute in the 18th dynasty. In the grave of Merga at Amarna (Frobenius, 1933: Fig. 28) the cattle carry several symbols between their horns, such as a complete garden, a symbol of foreign origin in Egypt, and certainly pointing to the areas to the west (Brentjes, 1962). We should regard the Amon-ram, therefore, as a component of Egyptian art developed in the rock-art of the Sahara.

The following main points can be formulated in conclusion of this paper:

1. The social and economic development in the Sahara, including the development of rock-art, depended greatly on the natural conditions.



FIG. 7. Auanrhet, Tassili. The "white lady"
(after Brentjes, 1965: Pl. 22)

2. Five periods of the development of the Saharan rock-art can be distinguished as related to the corresponding economy:
 - a) earlier phase of hunting economy exploiting the "Ethiopian" fauna; *Bubalus* style,
 - b) later phase of hunting economy mixed with incipient agriculture; Round-Head style,
 - c) introduction of cattle breeding and cultivation of barley; Cattle Breeders style,
 - d) Horse Breeders style,
 - e) Camel Breeders style.

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