

New petroglyph sites in the Southern Libyan Desert (Sudan-Chad)

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During the annual geoscientific field missions in the Eastern Sahara of Western Egypt, Northwest Sudan and Northeast Chad conducted since the early 1980s, a number of rock art sites have been observed which were not reported before. Some examples from Sudan, where rock art is relatively scarce with the exception of Jebel Uweinat, and Chad shall be shortly presented here.

Dry Selima

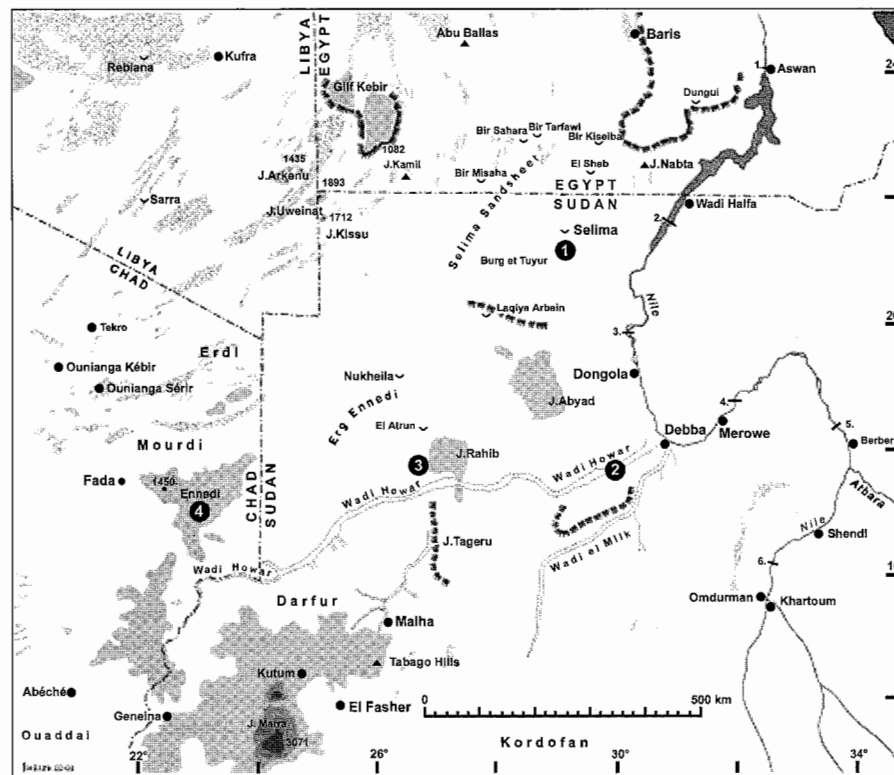
The so-called «Dry Selima» is a deflational depression beneath an escarpment about 60 km south of Selima oasis, in the far north of Sudan. We named it that way because of its vicinity to Selima, and the lack of a well or near-surface groundwater and any vegetation (Fig. 1). Surprisingly enough, Dry Selima remained unnoticed until 1990 although the fairy-tale oasis of Selima was known to Europeans at least since Charles Poncet's and the Bavarian Pater Krump's visits in 1698/1700. Maybe the powdery *feshfesh* that covers the southern

slope of the depression prevented camel people and vehicle drivers to proceed to the site.

According to the geological evidence, consisting of 4 metres of thinly laminated diatomaceous sediments, a relatively large

groundwater-supported freshwater lake existed here during the early Holocene humid phase about 8970-6700 BP (Pachur and Wünnemann, 1996). It filled the lower parts of the wind-carved basin, which is dissected by elon-

Fig. 1. Map of the Southern Libyan Desert with location of rock art sites. (1) Dry Selima, (2) Lower Wadi Howar, (3) Zolat el Hammad, (4) Central Ennedi.



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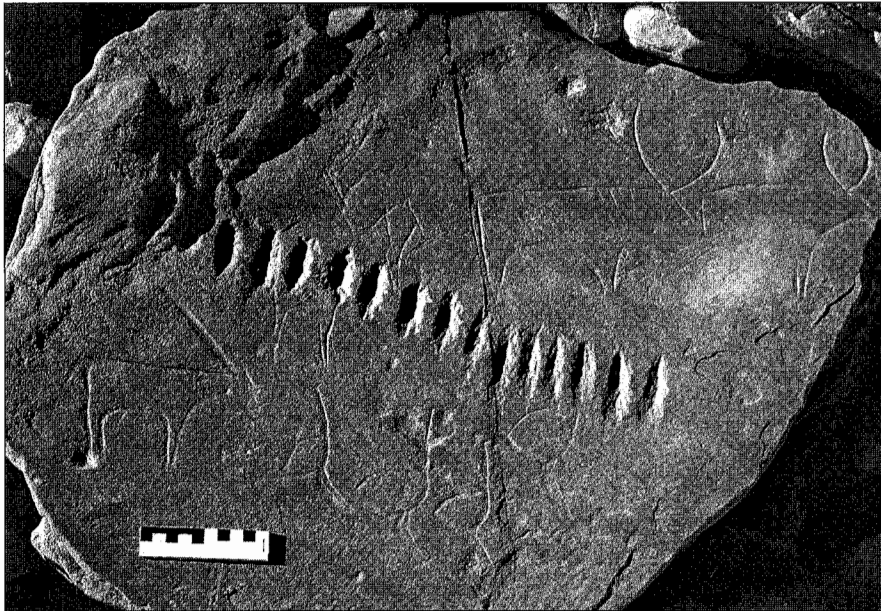


Fig. 2. Dry Selima. Long-horned cattle, ostriches and human figure. Superposed grooves were possibly used for counting. Scale 10 cm.

gated NE-SW trending sandstone ridges (Pl. R). About 6500 BP, the lake became more saline, ultimately turning into a *sebkha*. Since its still undated final desiccation, most of the lake deposits except a few remnants have been deflated.

During the lake phases, in particular during seasonal or episodic high-stands of the lake level, Dry Selima provided island and peninsula-type settings to prehistoric settlers and visitors who left a few most interesting occupation sites and graves that were not subjected to any archaeological study up till now. Middle Palaeolithic and Neolithic occupation scatter and hut structures occur at many more elevated positions. Milling stones are frequent. The potsherds include mat impressed ware and geometrical

patterns (det. Rudolph Kuper, Köln, on the basis of photographs). Some decorations are very similar to C-Group ceramics from the 2nd millennium BC from Ancient Kerma (190 km to the southeast) and to the pottery found in Wadi Shaw (230 km to the west). At at least one site, a human burial is associated with the skull of a cow or bull. The only signs of prehistoric activity on the floor of the former lake basin are circular structures that probably indicate wells dug during or after the *sebkha* stage.

At several locations along the slopes and on the top of the ridges, petroglyphs have been carved, cut or picked into the rather friable Jurassic sandstone. It is obvious that much, if not most, of the original rock art has already been removed by the con-

siderable wind erosion that is driven by the almost constantly blowing trade winds. The engravings include wild animals such as giraffes, antelopes (including *Oryx* and possibly *Addax*), ostriches and probably barbary sheep (*Ammotragus lervia*). According to their patina and state of weathering, the giraffes appear to belong to the oldest generation. Some engravings may be asses or donkeys because of their distinctly short necks compared to the giraffes next to them. Long-horned cattle with curved or spirally twisted horns, some very elegantly designed, and goats represent the domestic species. Men are dressed in various fashion, some are carrying spears or sticks. Human footprints and sandals are frequent and engraved in various styles, scales and techniques. Spirals also occur. Some superposed parallel grooves are distinct from also present grinding marks and may be mute accounts for unknown purposes, possibly day counts (Fig. 2).

Most striking in a present-day desert environment are several depictions of sickle-shaped boats which were found on former islands in the palaeolake (Fig. 3, 4). In contrast to other occurrences along the banks of the Nile, e.g. at Elkab (Huyge, 2002), the boats at Dry Selima are situated more than 100 km west of it. The ques-

Fig. 3. Engraved boat at Dry Selima. Scale 10 cm.

Fig. 4. Engraved vessel at Dry Selima. Scale 10 cm.

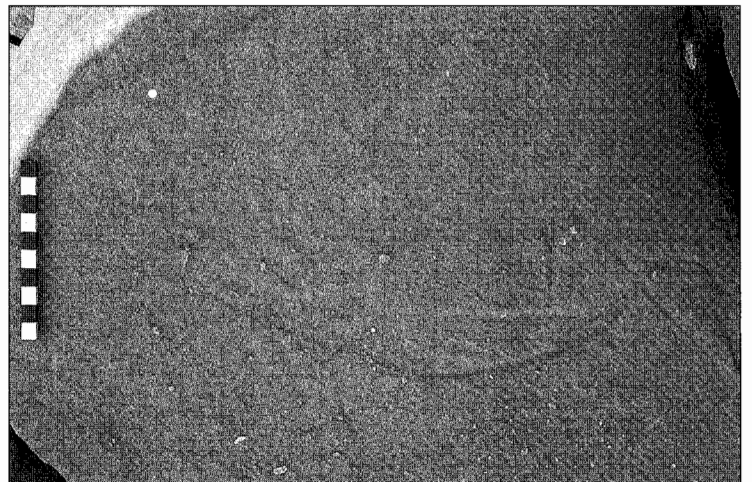


Fig. 5. Quartzite beds covered with engravings and milling moulds at the banks of Lower Wadi Howar. Fortress in the background left.

tion is whether they reflect vessels that were built locally and used in the palaeolake of Dry Selima, or whether they were reproduced from memories from the Nile River or elsewhere. Their relatively simple design and their distance from the river or any major lake may suggest that they were based on observations on location. The apparent end of the freshwater-lake stage at about 6500 BP and the yet undated, but presumably not significantly later desiccation of the salt lake would imply a very old age, unless considering extreme rainfall events that caused short-lived (playa) lakes at later times. Palaeoclimatological reasoning and the degree of weathering of the depictions, however, suggest that they are significantly older than the painted reed boat reported from Bodhoué in northwestern Ennedi (Jacquet, 2000: pl. K).

Lower Wadi Howar

The Wadi Howar valley has been called the most remarkable natural feature of the Southern Libyan Desert. It proved to be a key area for the reconstruction of past environments and climates. Field evidence obtained along the almost 1100 km long and up to 10 km wide dry valley has corroborated the existence of a now de-



funct watercourse which 10,000 - 2000 years ago was the Nile's largest tributary from the Sahara (Kröpelin, 1993a).

In 1995, the first rock art along the 400 km long Lower Wadi Howar was detected about 100 km west of its former junction with the Nile opposite Old Dongola (Fig. 1). The engravings have been incised on horizontal beds of darkly coated and very resistant quartzite at the northern banks of one of the channels which mark the eastern section of Lower Wadi Howar (Fig. 5). The motifs include simply outlined animals, human foot prints, and female genitals. There are also tens of decimetre-long hollows obviously used for milling or crushing. Most conspicuous, however, are geometrical net-like figures of yet unknown

meaning (Fig. 6 and 7). They have been incised into the rock in different shapes and scales. Some resemble nets possibly used for hunting, while others look like ears, e.g. spikes of millet that may relate to the milling moulds. Some might also represent pancakes of *Spirulina* saltwater algae such as the ones prepared and consumed by the Ounia people of Northeast Chad (cf. Cornelius, 1972). Similar enigmatic depictions have been reported from other Saharan locations, for example near the southern margin of the Mourdi depression about

Fig. 6, 7, 8. Lower Wadi Howar. a. Enigmatic engravings, lengths ca. 30 cm; b. Net-like figure, length 60 cm; c. Ankh sign, length 12 cm.



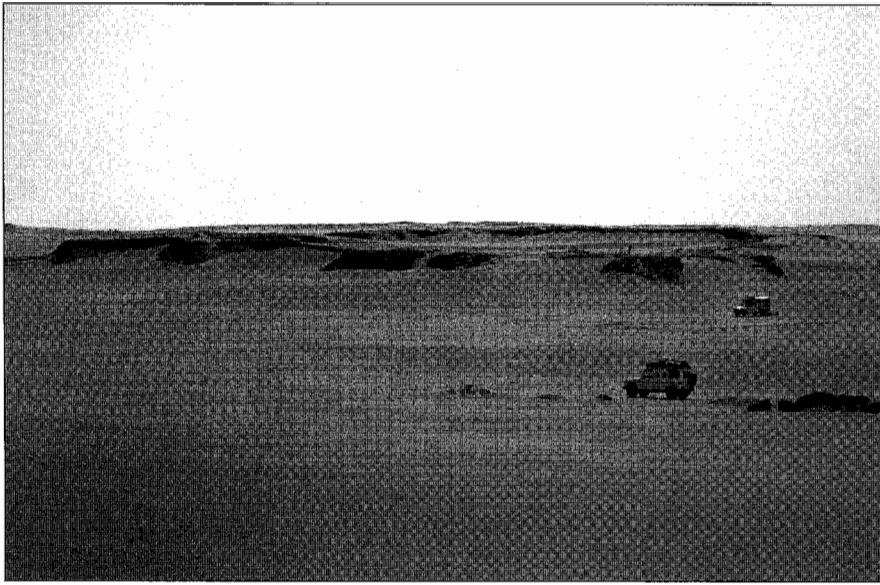


Fig. 9. The fortress at Lower Wadi Howar.

Howar about 450 km from the Nile (Fig. 1). Zolat el Hammad (Arabic for «praiseworthy rock») is a conspicuous group of sandstone hills and pillars west of Jebel Rahib and comprises the most important concentration of rock engravings in Northwest Sudan (Fig. 10).

While the petroglyphs at the western side that include an elephant, giraffes, antelopes, monkeys and possibly lions as well as cattle and phallic portrayals of humans, were already mentioned by Newbold (1924) and especially by Rhotert (1952) in his pioneering book on the rock art of the Libyan desert, the engravings at the eastern side of Zolat el Hammad have only been recorded during a geological survey in 1985.

Among the many rock art sites of Zolat el Hammad-East, barbary sheep and goats seem to represent the most recent engravings, judging on their least developed patina (Fig. 11). They may be taken as a sign of the onset of the final desiccation of the region. Thereafter, at least since the beginning of the camel period, no more petroglyphs were incised, apart from an Arabic writing.

The most eye-catching engravings are relatively schematically portrayed herds of presumably domestic long and short-horned cattle that date from the preceding phase (Fig. 12). Possibly also

650 km further west (Simonis, 1996: 85; Rossi, 2000: 151, fig. 4).

Another remarkable find was an Ankh sign (Fig. 8). It provides the first direct reference to Dynastic Egypt. The engravings show clearly distinguishable patinas that can be attributed to different periods. In comparison to the rather fresh appearance of the Ankh sign, the geometrical net-like figures appear to be much older, probably by several millennia.

The new finds are close to the fortress which was discovered in early 1984 (Kuper, 1988). Even after more than two decades of surveys and field research in Northwest Sudan, this monumental trapezoid construction with its 100-180 m long and 5-6 m wide walls remains the only known large construction in the Sudanese Sahara west of the Nile (Fig. 9). Its position is not accidental but was probably selected because of hydrologically favourable conditions (Kröpelin, 1993a). Nearby travertines indicate ancient spring horizons at the surface. An adjacent impermeable basalt sheet must have acted as a rainfall collector so that even the minor amounts of precipitation during the late Holocene should have resulted in seasonal or episodic pools in front of the fortress, and recharge of near-surface groundwater layers at the wadi bottom which allowed the use of wells.

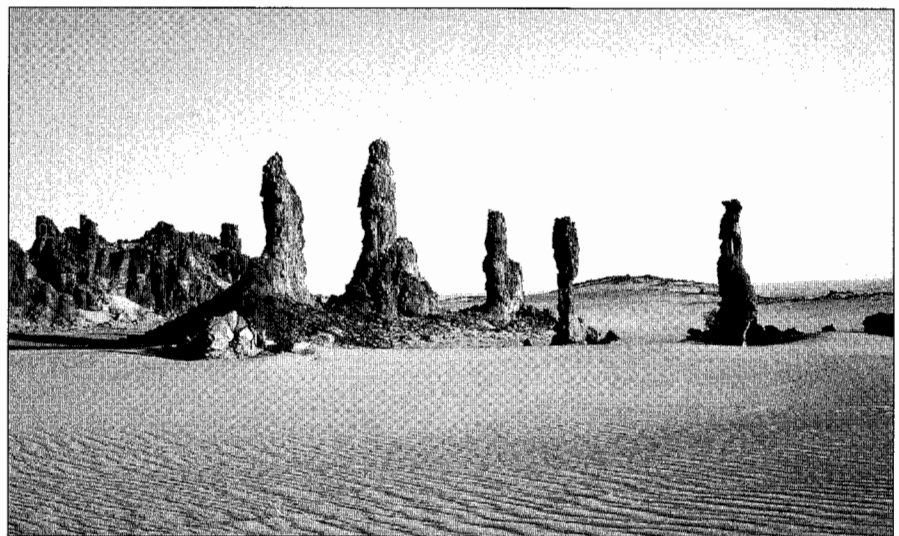
In lack of any systematic excavation, the question remains unanswered whether the fortress was constructed during Meroitic times (c. 400 BC - 350 AD) or earlier. To prevent further illicit col-

lecting of artefacts which might provide clues to its age, the fortress should be put under legal protection as an enclave of the recently declared Wadi Howar National Park (WHNP; Kröpelin, 1993b) as soon as possible. The engravings, in particular the enigmatic networks and the Ankh sign, support the repeatedly stated supra-regional function of Wadi Howar as an east-west oriented prehistoric thoroughfare linking the Nile and the Lake Chad region, and provide evidence possibly related to the fortress. More finds are to be expected that might yield further hints.

Zolat el Hammad-East

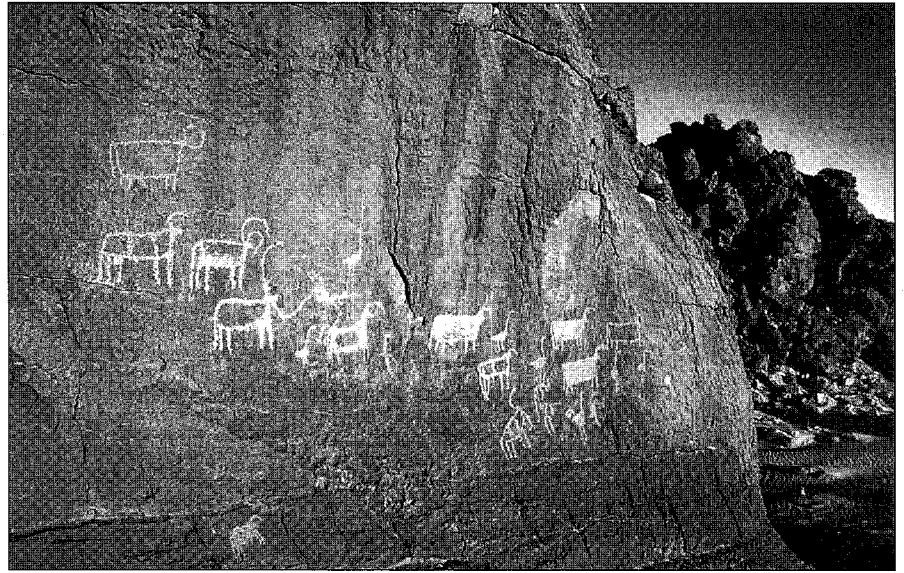
Additional support for wide-reaching connections comes from a location north of Middle Wadi

Fig. 10. Sandstone pillars of Zolat el Hammad-East.





*Fig. 11. Zolat el Hammad-East.
Goats.*



*Fig. 12. Zolat el Hammad-East.
Cattle, ostriches and humans
superposed on giraffes, ostriches and
round-headed figures.*

domesticated ostriches appear in the midst of the herds. Men and dogs stand nearby. Much less conspicuous at first sight, and very difficult to photograph but much more carefully designed, are closely packed giraffes, ostriches and less easily definable

wildlife that often underlie the engravings of the cattle and are undoubtedly significantly older (Fig. 13). Most remarkably, the wild animals are closely associated with elongated human figures with large round heads (Fig. 14). Most of these human figures are

armless and in a static posture, their featureless circular heads are always very large in proportion with their bodies.

In regard of the spectrum of wildlife, it was noted that the petroglyphs of Zolat el Hammad did not include hippos, rhinos, or

*Fig. 13. Giraffes, other wildlife and round-headed figures,
Zolat el Hammad-East.*



Fig. 14. Detail of round-headed figures, Zolat el Hammad-East.





Fig. 15. Hippo (supposed), Zolat el Hammad-East.

crocodiles, though these imposing animals had been identified within the early- and mid-Holocene bone material from nearby palaeolakes, dune habitats and the shores of Wadi Howar (Kröpelin, 1993a).

This gap in observation has been partially filled during a further visit in 2001. While the depiction of a hippo may be questioned (Fig. 15), other evidence is clear. In spite of the general rule that most rock art in the eastern Sahara occurs at more or less easily accessible locations, a find was done at a position somewhat difficult to climb. Here most carefully

worked engravings of rhinos occur in close association with round-headed humans (Fig. 16 and **Pl. S**). Surprisingly, the rhinos stand very close to each other which is quite untypical for these animals that normally live as couples or loners. Judging on the grade of their patina, they belong to the most ancient depictions of Zolat el Hammad.

While the depictions of round-headed humans at Zolat el Hammad-East are unparalleled in the Sahara of Northwest Sudan, in the wider sense similar round-headed figures, even if painted instead of engraved, are well known from the Tibesti, Tassili, Acacus, Borkou and Ennedi (for the latter e.g. Fuchs, 1957; Bailloud, 1997). The criteria established for the classical figures of the Round Head period, for example paintings in flat colours and outlines, often «floating» figures, attributes such as female breasts, spots and chevrons or specific accompanying animals, are, however, not present. This speaks against their attribution to this period which is generally put between the «Bubalus period» and the «cattle period», and thought to predate the 5th millennium BC. In any case the round-headed engrav-

ings do seem to be very ancient and relevant in the context of Nilo-Saharan connections via the central Wadi Howar area, possibly pointing to early cultural and even ethnical relations between the lower Wadi Howar and the Ennedi, and beyond.

The up to 5000 km² large West Nubian Palaeolake northeast of the Ennedi and some 100 km northwest of Zolat el Hammad is the most significant evidence of the humid conditions that ruled during the early Holocene (Hoelzmann *et al.*, 2001). While the lake and its southern tributaries originating in the El Atrun area and the Ennedi plateau may have hampered prehistoric exchange between the two regions to some extent during high lake-level phases, the most favourable ecological environments south of them and along the Middle Wadi Howar have certainly promoted the passage of people.

Central Ennedi (Chad)

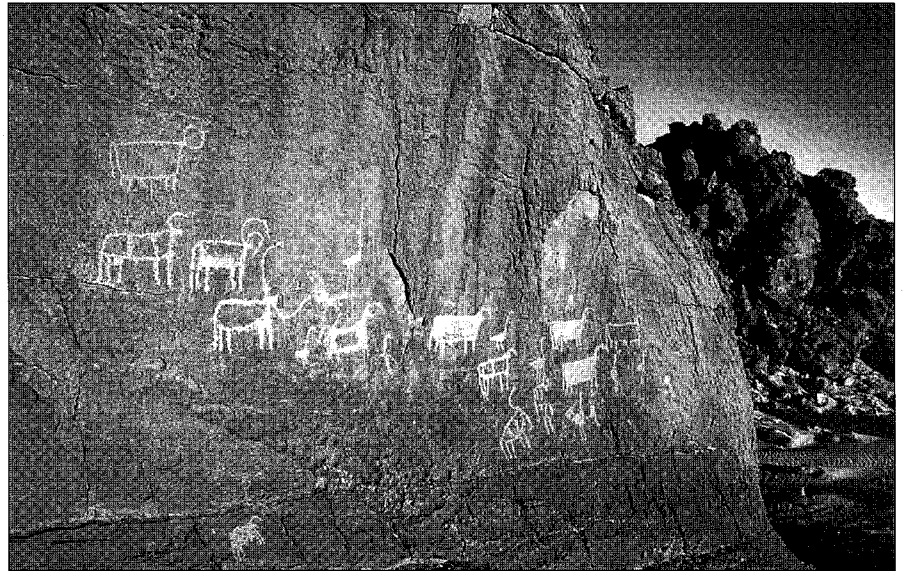
A site discovered on an east-west traverse of the central Ennedi in December 2003 on the way from the Nile to the Ounianga lakes shall be mentioned at last in con-

Fig. 16. Rhinos and round-headed figures, Zolat el Hammad-East. (See also **Pl. S**.)





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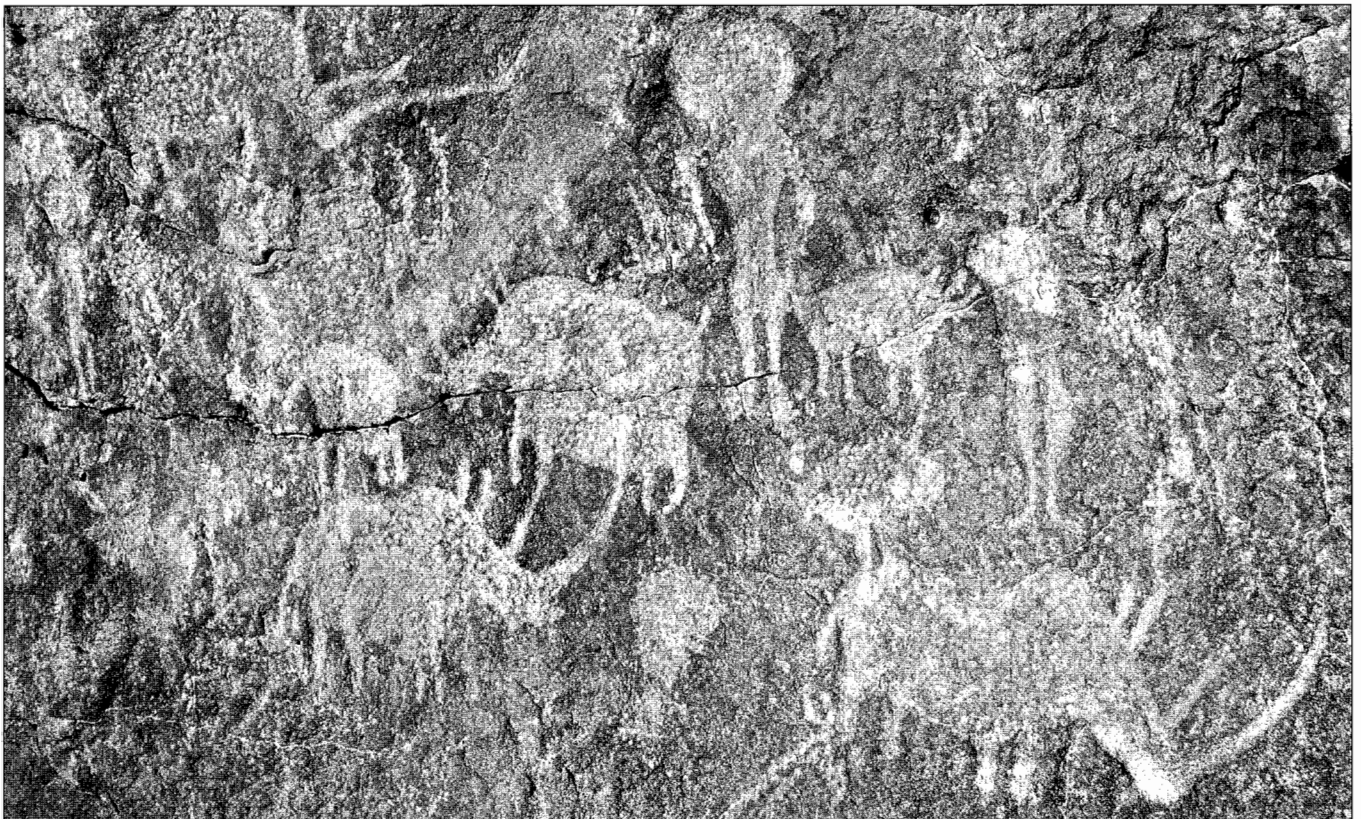




Fig. 17. Rock art site, Central Ennedi.

text with the round-headed figures (Fig. 1). The rock shelter (Fig. 17), one of many on the sandstone plateau, is the first known major rock art location west of Zolat el Hammad, at a distance of 400 km, apart from the station reported by Rossi (2000). Its ceiling is covered with very large multi-coloured paintings of cattle and people in the typical Ennedi style of the pastoral period, and partly superposed camel riders in the style of the «dromedary period» (cf. Bailloud, 1997) (Pl. T and Fig. 18). The cattle people still feature almost round heads, while the heads of the camel people are elliptical. There can be little doubt that both periods are significantly younger than the round-headed figures of Zolat el Hammad.

This and other rock art sites are the object of ongoing studies within subproject A6 / Chad of the Collaborative Research Project ACACIA («Arid Climate, Adaptation and Cultural Innovation in Africa») at the University of Cologne. It is left to more specific comparisons to elucidate the origin and evolution of the round-head tradition in the region and the links between the Ennedi and the new site in the central Wadi Howar area that appears to be one of the most ancient.

I am grateful to R. Simonis and G. Negro for their helpful comments on the complicate and delicate question of the «round heads». The decades-long fruitful cooperation with the Geological Research Authority of the

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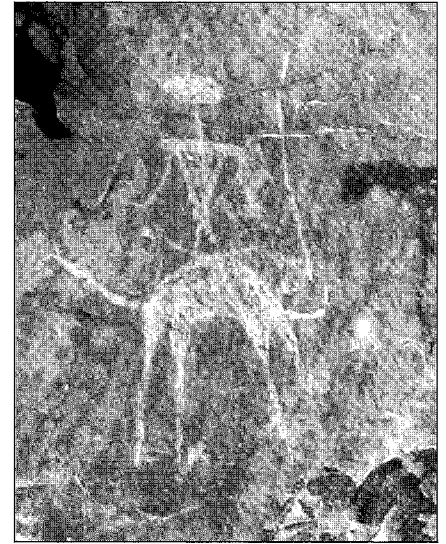


Fig. 18. Camel rider, Central Ennedi.

Pl. R.

Stefan Kröpelin.

Panorama of the extinct oasis of «Dry Selima». The NE-SW trending sandstone ridges provided island-type settings to prehistoric people during the early- to mid-Holocene lake phase.



Pl. S.

Stefan Kröpelin.

Zolat El Hammad East, Sudan.

Rhinos and round-headed figures.

Pl. T.
Stefan Kröpelin.
Central Ennedi, Chad.
Painted cattle and human.

