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The civilization role of the TadrartAcacus region in the central sahara during Neolithic period

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Abstract:
Most regions of the Central Sahara during the Neolithic period received numerous and diverse studies by researchers and specialists in the field of prehistory. However, at the same time, we do not see the necessary attention given to the region of Tadrart Acacus despite its distinguished cultural heritage and its civilizational role, which provides an important record in the history of Saharan societies at that time.
Most specialists in the field of Saharan prehistory agree that the Tadrart Acacus region was a place of settlement for the human groups that inhabited the Central Sahara (currently Algeria and Libya), leaving behind several cultural manifestations. Although writing did not exist during that period, rock art enabled us to infer the general reality of Tadrart Acacus during the period of climatic moderation. This was reflected in the communities' focus on daily life activities that provided food and basic necessities of living. They were also creative in their cultures, as they developed the idea of building houses and decorating them with colors. Inside these dwellings, places designated for cooking with fire were found, along with a diversified diet based on plant and animal sources.
It is also not unlikely, according to what rock paintings reveal, that these Saharan societies developed the idea of tailoring clothes, which evolved from simplicity into numerous and diverse innovations. We should also not forget the effective role of women during that period, as their status was distinguished. Most daily activities represented in the Sahara prominently depict women, and sometimes they appear as the central element, since they were concerned with aesthetics (such as hairstyles and jewelry), child-rearing, herding, cooking, and sharing with their husbands the burdens of agriculture, herding, and even hunting.
Keywords: Tadrart Acacus; Central Sahara; Rock Art; Neolithic Period; Herding.

Introduction:

It seems that anyone studying the issue of the prehistoric Sahara will inevitably encounter difficulty in determining the identity of the people who created the civilization of Tadrart Acacus. However, most of the material evidence available to us indicates that this region witnessed a cultural interaction between Black African peoples coming from Sub-Saharan Africa and White peoples coming from the Mediterranean

world. This human mixture contributed to the emergence of a new human element in the region known, according to researchers in Garamantian studies, as the ancient Garamantian man (Paléo-Garamantiens). It appears that this same population contributed to the establishment of their famous civilization in Wadi al-Ajal, known as the Garamantes.

These Garamantes were also responsible for some of the material remains in the Tadrart Acacus region, which constituted part of their geographical sphere of influence. They produced cultural imprints through scenes of rock art, whether engraved or painted on cave walls, through which it became possible to identify the daily life of Saharan people in the Tadrart Acacus region. This region represented an important point of cultural communication between the Mediterranean world and the African interior.

Accordingly, we chose this topic because it sheds light on the civilizational dimension of Tadrart Acacus in the Central Sahara during the Neolithic period, and because it allows the interpretation of various rock paintings and the extraction of aspects related to the cultural, social, and economic life of the Saharan people in the Tadrart Acacus region. On this basis, we formulated a research problem suited to the nature of the study: Can we say that the Tadrart Acacus region played civilizational roles in the Central Sahara?

To answer this problem, we raise the following questions: What are the main rock art stations found in the Tadrart Acacus region? Does this art indicate the existence of human settlement in the Sahara? How did Saharan people practice their daily life through the scenes represented in rock art?

This topic is considered among the studies that still lack fieldwork covering the Neolithic period in order to reconstruct its events within a coherent framework linked to the meanings of newly discovered archaeological remains, according to a scientific archaeological and historical methodology.

First: Research on the Geography and Toponymy of Tadrart Acacus

I. The Geographical Location of Tadrart Acacus:

This region is located specifically in the southwest of the Fezzan region and east of the Ghat region. It consists of two parts: the first is Acacus, which is identified by (Huard.P) between latitude (24°) and longitude (11°–45°), with an elevation reaching about 1200 m. As for the Tadrart area, its width reaches about 25 km, while its length does not exceed 120 km.

This mountain massif, located in the southwest of Fezzan, separates the regions of Messak, Mellet, and the Murzuq dunes. To those arriving from Serdeles, the western-facing side appears as a continuous gray-colored chain rich in peaks and valleys (Figure 02).

The Tadrart Acacus region lies northeast of the city of Ghat at a distance of 150 km². The Acacus appears rectangular in shape, generally due to the length of its sides extending from north to south, and it lies between (24°–30°) north of the Equator, while to its east are the lands of Messak (see Figure 01).

The Acacus region is divided into two parts: the northern section, characterized by its high elevation and abundance of mountains, lies within Libyan borders and is called

Tadrart Acacus; while the southern section is known as the "Southern Tadrart," which is lower compared to Acacus and forms part of Tassili.

In general, the Southern Tadrart region is rich in engravings and paintings and contains many cultural sites. This area is crossed by three main valleys: from the north, Wadi Takarkori located in the southern part of Acacus; Wadi Erikin in the center; and in the south, Wadi Injeran.

II. The Toponymy of Tadrart Acacus:

Many questions arise concerning the origin of the name Tadrart Acacus. The word "Tadrart" in the Tamahaq language of the Tuareg, in its feminine form, refers to large rocky masses. It is derived from the word "Adrar" (Tifinagh), which is masculine and means mountain, that is, the mountain of Acacus.

The Italian archaeologist Fabrizio Mori defines the Tadrart Acacus region by saying: "The name Acacus is given to the edge of the rocky massif visible from Ghat and from Wadi Tanezrouft, and it also refers to the western-facing part, including the steep slope bordering the Serdeles road. As for the name Tadrart, it refers to the remainder of the mountain connected to the eastern dunes."

This region is considered rich in rock art stations and was among the first regions in North Africa where rock engravings and paintings were discovered in 1850 by the German researcher Heinrich Barth.

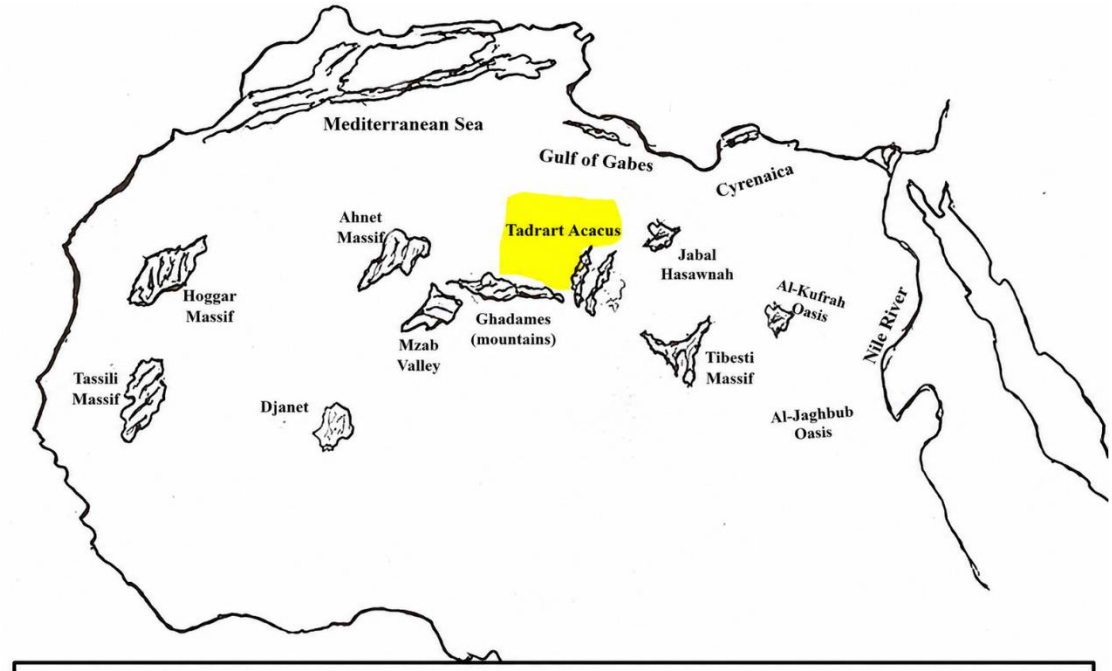

Figure (01): The location of Tadrart Acacus highlighted in yellow relative to the major Saharan regions.

Second: The History of Research in the Tadrart Acacus Region

If the study of rock art in Tassili n'Ajjer is associated with the scientific figure Henri Lhote, then archaeological research in Tadrart Acacus is associated with the figure of Fabrizio Mori.

Accordingly, the Tadrart Acacus area is considered one of the most important regions that received scientific attention in the Central Sahara. The initial discoveries of rock art in the Tadrart Acacus region date back to 1955 by the archaeologist Paolo Graziosi

in both the areas of Arkeni (Arkni) and Tafist and Slvouvit on the southern borders of Tadrart (Graziosi, P., *Guide to Rock Art in the Libyan Sahara*, translated by Dr. Ibrahim Ahmed Imhamed Al-Mahdawi, Publications of Garyounis University, Libya, p.13).

Italian scientific missions led by Fabrizio Mori since 1982 and continuing until today have achieved many remarkable scientific results that opened new horizons in the field of rock art. The Italian missions documented certain rock arts and conducted scientific studies on ancient plants, animals, and human remains (Mori, F., *On the History of Rock Paintings in the Great Sahara*, translated by Imad al-Din Ghanem, Publications of the Center for the Struggle of Libyans against the Italian Invasion, 1979, p.2).

Five phases of rock art have been identified in this region: the phase of large wild animals, the phase of the Round Heads (Les Tête Rondes), the pastoral phase, the horse phase, and finally the camel phase which continues to the present day. Excavations supervised by Barich revealed the oldest layer containing human remains discovered so far at the Tin Torha site, dated by radiocarbon to approximately 9000 years before present. The excavations also identified the transitional stage toward the Neolithic period, chronologically dated to around 7000 years before present.

In general, this region is considered among the most extensively studied areas, attracting hundreds of researchers specialized in various fields related to prehistoric archaeology, such as Heinrich Barth, Muzzolini, and Fabrizio Mori.

In recent years, the work of the joint Libyan-Italian mission moved to the Messak site adjacent to Acacus under the leadership of the researchers De Lerna, Cremaschi, and Suleiman Ayoub. Their exploratory work produced very important results concerning rock art and archaeological discoveries. Models of engravings representing wild animals were discovered, unlike any previously found throughout the Sahara. In addition, field excavations revealed highly important archaeological deposits dating back to the early Holocene period, and perhaps even earlier (Ibid., p.35).

Figure (02): Excavations by the "Libyan-Italian Joint Mission" for Research into Prehistory in the Sahara, "Wadi Haygigag - Wadi Teshwinat." (Mori, 2000)

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Third: Research on Human Presence in the Tadrart Acacus Sahara

I. Climate and Human Beings:

Studies conducted by researchers in the Acacus Mountains and the Messak Plateau have made it possible to identify the various environmental changes that occurred in the region during the Upper Pleistocene. The area experienced a humid phase, and conditions were favorable in the Sahara until approximately (33,000 years before present), when the situation shifted toward aridity.

It is evident that this dry phase ended around (10,000 years ago). This date represents the beginning of the Holocene according to Jean-Loïc Le Quellec (Le Quellec.J.). This period was characterized by heavy rainfall reaching approximately (500 mm) per year, which led to the formation of wetlands and the arrival of various animal species, as well as the migration of human groups of Black, White, and mixed origins, according to the studies of (Chamla), who focused his anthropological research on fifty-eight sites in Fezzan, Tadrart Acacus, and Ghat.

This very humid phase lasted for approximately five thousand years, interrupted by short dry periods that did not significantly affect the vegetal, animal, or human reality. Meanwhile, Meriem Hachid states that "humidity returned to the Sahara between (13,000 and 12,000 years ago), varying according to regions, and she confirmed that the Sahara nearly became depopulated due to a drought that lasted several thousand years" (Hachid).

This may explain the absence of human and animal remains in archaeological layers preceding the Neolithic level in two important sites in Acacus and Tassili, namely the cave of Tin Hanakaten, where Yves Gauthier states that the archaeological layer below the Neolithic level is completely devoid of human and animal remains.

Researchers have not been able to confirm this claim; future archaeological research may provide answers. In any case, rainfall returned and stability came back to the Sahara, with a favorable climate around (7500 BC). According to Gabriella Aumassip and Monique Tauveron, this humid phase was characterized by moisture and cooler conditions, and the fauna was Mediterranean or tropical depending on altitude. It lasted until (5000 BC) with acknowledged short interruptions.

The Sahara then experienced another phase of aridity, but this dry episode did not exceed one thousand years and varied from one region to another. Rainfall returned again around (4500 BC) with relatively stable climatic conditions. This dry period lasted about one thousand years (from 5500 to 4500 BC).

Climatic fluctuations continued in the Sahara. Around (2500 BC), another dry phase occurred lasting about one thousand years (2500 BC–1500 BC). Between (1500 BC and 1000 BC), a short humid phase of about five hundred years occurred, followed by a progressively intensifying drought that negatively affected daily life in human communities. This climatic phase caused the migration of animals toward more favorable environments and eventually covered nearly 100% of the Central Sahara.

This climatic situation is reflected in rock art, which shows the disappearance of representations of pastoral scenes and herds. Archaeological sites and habitation areas

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also show no evidence of human activity. This period is dated from (2000 BC) and continues to the present day (Figure 03).

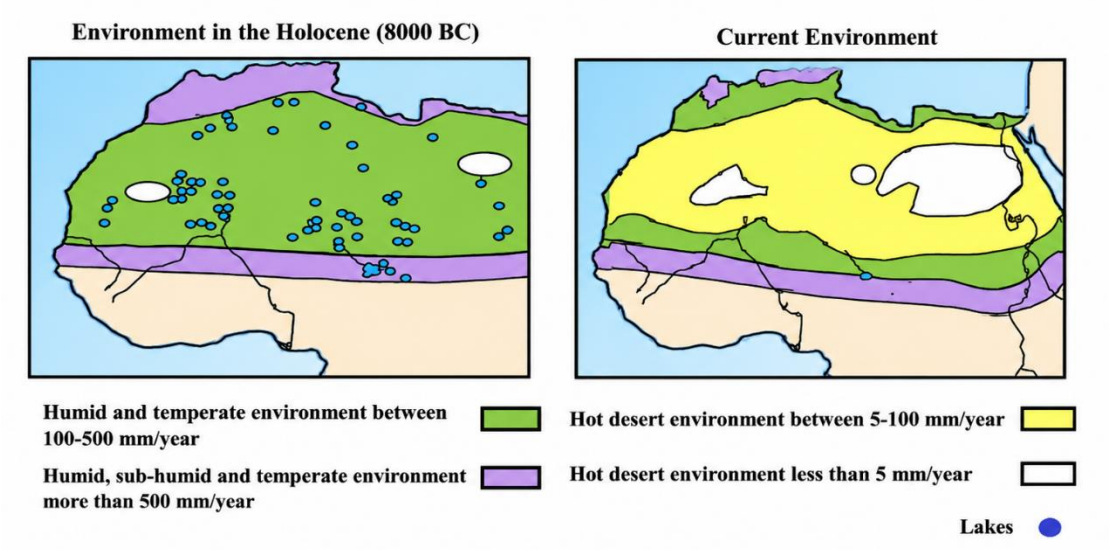

Figure (03): Map representing the ancient and current environment in the Central Sahara.
Source: Ben Youssef Lakhdar, Climatic changes... Previous reference, p. 208.

II. Human Beings and Settlement

Prehistoric historians agree that the beginning of human settlement in the Central Sahara dates back to the Neolithic period, approximately two thousand years before the emergence of social formations in the northern region. Although the Sahara was relatively arid and experienced periods of cultural void following the Aterian period, the southern regions of Tibesti, Fezzan, Tassili n'Ajjer, Ahaggar, and the camps of Amskni, Tin Hanakaten, and Meniet once contained lakes and valleys reaching depths of several tens of meters, which are now covered by dunes of sand and rock

The Italian researcher Marina Lavecchia (Lapacciolu.M.) believes that the initial settlement in the Central Sahara was not exclusively a Neolithic phenomenon, but rather dates back to the Upper Pleistocene period (3800–1800 BP), where engravings and rock paintings were discovered in Acacus, possibly belonging to the "Round Heads" phase. Research into the earliest human settlements in the Sahara is closely linked to climate and its variations. When humidity prevailed, distinct cultural manifestations appeared, whereas during dry periods the Sahara experienced a near absence of cultural expressions. The climate that dominated the Central Sahara, particularly the southern Fezzan region between (10,000 BC) and (5500 BC), was very humid and led to a rich diversity in both flora and fauna This period witnessed remarkable human settlement characterized by mixed populations, producing a highly refined stone-age civilization in which hunters and pastoralists reached a peak of cultural and artistic development.

Since climate played a crucial role in shaping human presence, important climatic changes in the Sahara can be summarized chronologically according to Jean-Loïc Le Quellec as follows:

- Starting from (18,000 BC): a severe dry phase extending from North Africa to approximately the 5th southern latitude.
- Between (10,500 BC and 10,000 BC): a return of heavy rainfall.
- Around (8500 BC): a more moderate and favorable climate for human settlement.
- Around (6500 BC): a very humid phase.
- At the beginning of the Neolithic in the Sahara: the first real human settlements appeared, accompanied by dense vegetation and forests.
- Around (5500 BC): a short dry phase lasting approximately 500 years.
- Around (4500 BC): the beginning of a second humid Neolithic phase, associated with the domestication of animals.
- Around (2500 BC): the beginning of desertification trends.
- Around (1500 BC): a return to humid conditions.
- Around (1000 BC): the Sahara experienced a climate similar to that of today

Returning to the Neolithic period, a clear transformation can be observed in North Africa, where a gradual movement of populations toward the south along the Atlantic coasts is noted. As for the Central Sahara, it was inhabited mainly by populations described as "proto-Negroid groups," whose human remains have been found south of latitude 25°–27°.

In this natural context, the first civilization emerged with pottery production. It does not appear to have been influenced by external cultural components. Georges Camps emphasizes that this civilization predates the Neolithic cultures of the Nile Basin. In all cases, the earliest Acacus civilization had no Mediterranean origins, and its population was mainly composed of proto-Negroid groups

Moreover: Human Populations in the Central Sahara

What further supports this view is that the Central Sahara, particularly the high regions of Fezzan, Tibesti, and Tassili, witnessed diverse human settlements starting from around (8000 BC). According to Pierre Trousset (Tousset.P), three main human groups were identified. The first consisted of Black African populations who settled along river valleys and lake margins, such as Ethiopian and Sudanese groups, generally occupying the highlands between Aïr, Tibesti, and westward toward Tassili. The third group consisted of Mediterranean populations with white physical characteristics, who settled in both mountainous and plain regions

Based on ceramic evidence, Jean-Loïc Le Quellec suggests that the emergence of human settlements in the Central Sahara can be outlined as follows:

- Amskni site (pottery industry): around 8250 BC
- Silet and Ahaggar: around 7750 BC
- Ténéré region and Air Plateau (Niger): around 9150 BC, considered among the oldest in the Sahara
- Tadrart Acacus and Tassili n'Ajjer: around 7950 BC

Meanwhile, Georges Camps, through excavations at Amskni, proposes that human settlement may have begun around 6700 BC and continued until approximately 3550

BC. The Tassili region may be dated to around 7000 BC, making it slightly earlier than Amskni

In this context, researcher Wabel notes that the Central Sahara experienced multiple waves of migration. It received populations from North Africa (Oranian and Aterian cultures), which are considered white groups, as well as eastern-origin populations. At the beginning of the Holocene, human groups also moved from the south of the Nile, alongside other Black African populations from the Sub-Saharan region. As a result, the Central Sahara became a vast meeting zone of mixed populations

In studying these communities, M.C. Chamla conducted an anthropological analysis across fifty-eight sites, concluding that human settlements were concentrated in the southern Central Sahara due to the availability of watercourses, which encouraged habitation along their banks. Her findings show that most skulls did not exceed forty years of age. The population distribution was as follows: White populations (36.8%), characterized by medium-sized skulls; Black populations (23.6%), characterized by elongated skulls; and mixed populations with combined features (36.6%)

These figures are considered relatively consistent when compared to another site regarded as a stronghold of Black populations in Sudan, where Black groups represent 40%, non-Black groups 12%, and mixed groups 32% Further anthropological studies suggest additional subtypes within Black African populations, such as northern Sudanese, indigenous, and robust variants.

According to Georges Camps, human presence in Tadrart Acacus produced the following distribution: White populations represent 48%, while Black and mixed populations share the remaining percentage equally at 26% each. He also argues that Black populations in Fezzan are of Sudanese origin and are older than White populations

Soumaya Hachi believes that settlement in the Central Sahara dates to around 7000 BC, and that African populations were the earliest culturally dominant groups in Fezzan, Tadrart Acacus, and Ahaggar, supported by the oldest skeletal remains. In contrast, Samia Omrani argues that White populations are older than Black populations

Based on rock art and archaeological evidence, it appears that two main populations coexisted: the Black population, which is considered the oldest, and the White population, which arrived later from the north. A third mixed population also appeared during the Round Heads phase, beginning around 6000 BC Thus, both groups coexisted in the Central Sahara. According to Henri Lhote, human groups coexisted in Wadi Djerat in Tassili n'Ajjer before the Round Heads phase, and latitude 24° served as a meeting point between them

To support this hypothesis, Egyptian texts also indicate the presence of two Saharan populations in Libya. Black populations were referred to as "Tehenu," while white populations with blond hair and blue eyes were called Temehu

As a result of this diversity during the Neolithic period, these populations left cultural traces through rock art, pottery remains, and stone tools found in their settlements. This led to the emergence of two cultural traditions: the Neolithic Sudanese tradition, which spread from the Nile Valley to Mauritania, and the Capsian tradition, which spread

across northern Sahara and covered a small part of western Tadrart (as shown in Figure 04).

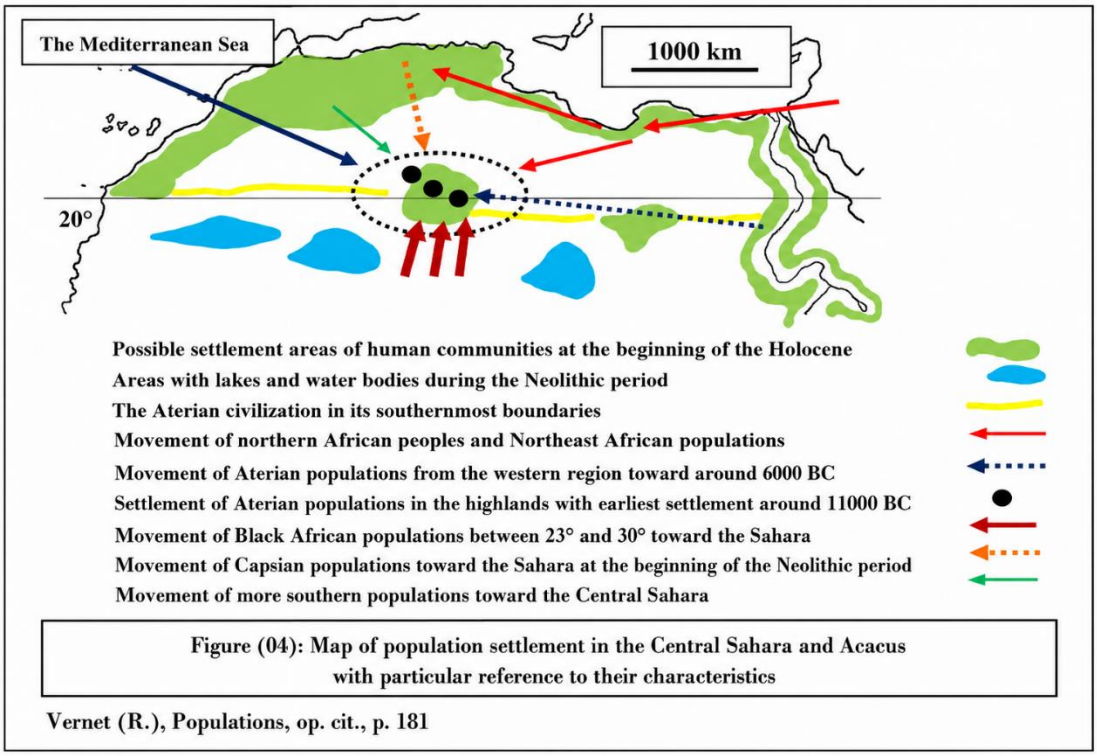

Figure (04): Map of population settlement in the Central Sahara and Acacus with particular reference to their characteristics

Vernet (R.), Populations, op. cit., p. 181

Fourth: Research on Rock Art Sites and the Representation of Daily Life among the Acacus Mountain Communities

Rock art is represented by engravings and mural paintings (scenes) found in the Sahara during the Neolithic period. Some specialists in the semiology of images consider it part of symbolic writing, where an image may represent a complete sentence, express an idea, or refer to an entire subject, and is considered at the same time the fundamental basis of writing

Most researchers classify rock art into four main phases as follows: the Round Heads phase, the Bovidian phase, the Horse and Chariot phase, and the Camel phase. This classification is based on different criteria, mainly the appearance or disappearance of certain animal species.

I. Daily Life in Acacus during the Round Heads Phase:

This phase is represented by groups of populations that inhabited the Tadrart Acacus region in particular and the Central Sahara in general. These populations were most likely of diverse origins. The name by which they are known today refers to the artistic style they used in depicting human figures, where the head appears in a circular shape

According to Giovanni Muzzolini, their paintings are characterized by a uniform color surface and a circular technique, with styles ranging from simplified to naturalistic. Human figures appear in the form of discs or circles. Meanwhile, Roger Caillois states that these representations reflect a complete dominance of magical aspects

Fabrizio Mori dates the Round Heads phase in Tadrart Acacus between (8000 and 4500 BC), although the earliest paintings may date back to the Pleistocene period. This classification has been adopted by Michel Tauveron, Gabriella Aumassip, and the

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Italian researcher Marina Lavecchia, who considers that the oldest engravings and paintings in Acacus date back to the Upper Pleistocene between (38,000–18,000 BC).

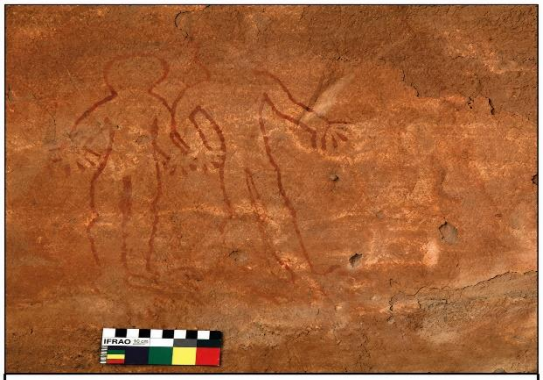

Figure (07): The Two Persons, Messadira, Ashiyah Al-Fadnayn
https://aars.fr/tadrart_fr.html#mori_b.jpg

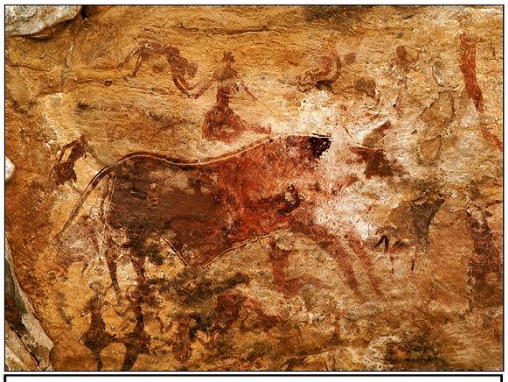

Figure (07): A scene of the Round Head people hunting with bows in the Afâ area.
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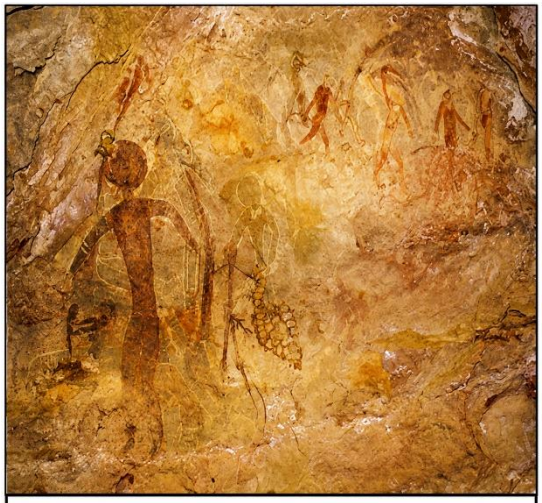

Figure (05): Five Africans returning with personalities, tools, and other individuals.
The Messadira rock paintings depicting free activities.
https://aars.fr/tadrart_fr.html#mori_b.jpg

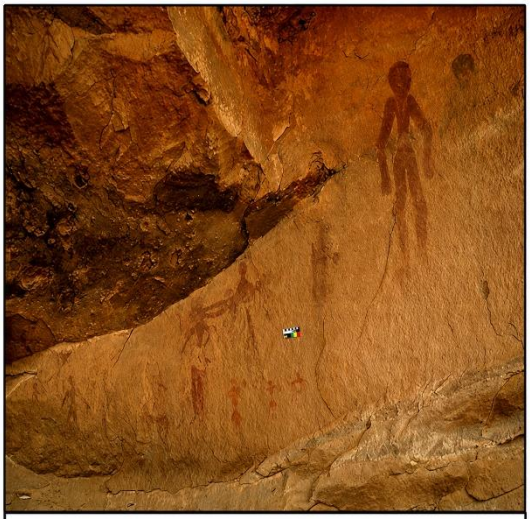

Figure (06): The Two Persons, Messadira and Al-'Ibadah Al-ṭoutimiyah
https://aars.fr/tadrart_fr.html#mori_b.jpg

Figure (08): The Akakus Hunting Station, in the style of the Messadiran (Messadiran Period)

I. Daily Life in the Akakus during the Pastoral (Bovidian) Phase

The scenes depicting the daily activities of herders in the Tadrart Akakus region are diverse, illustrating practices such as grazing and caring for cattle. It is noticeable that the herders were keen to portray cattle in their natural postures. Other scenes depict

herders in their family life; isolated images frequently show men with women or children, men playing with their children, or groups of women listening to an elderly woman. There are also representations of men or women caring for elderly people of advanced age, as well as women gathering near the hearth or the tent. Most of these scenes portray women. Men were generally concerned with pitching tents, milking, or tying cows and calves with ropes, while women took care of the children.

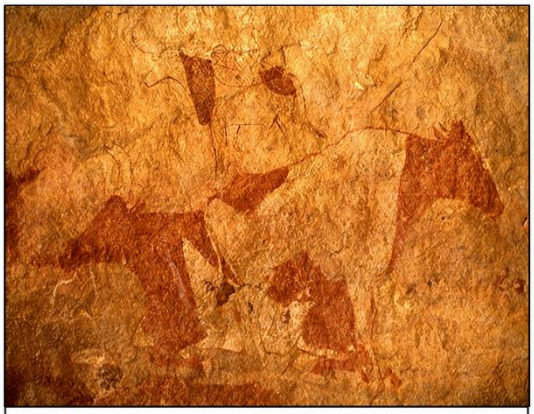

Figure (11): A section of rock paintings
https://aars.fr/tadrart_fr.html#mori_b.jpg

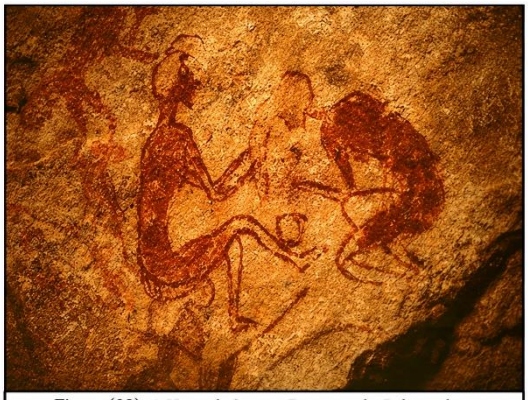

Figure (09): A Hairstyle Session, Depicting the Relationship between the Braiders and the Herdsmen
https://aars.fr/tadrart_fr.html#mori_b.jpg

I. Tadrart Acacus during the Chariot Period

Fabrizio Mori argued that the rock paintings and engravings in Libya can be classified into five historical phases. The fourth phase, known as the **Horse Period**, began in the middle of the second millennium BCE. During this period, scenes depicting horses and chariots became predominant, with chariot scenes being especially widespread in the Tadrart Acacus region

Figure (12): Akakus chariot scenes dating back to the Herodotus period
https://aars.fr/tadrart_fr.html#mori_b.jpg

Conclusion

In conclusion, specialists agree that the Tadrart Acacus region was an important area of settlement for human groups that inhabited the mountains and left behind remarkable cultural evidence. Although writing did not exist during that period, the analysis of rock art sites has enabled researchers to reconstruct the general conditions of the Sahara Desert during the humid climatic phase. These studies reveal that communities were primarily concerned with daily activities that ensured food supply and the necessities of life.

Accordingly, Tadrart Acacus represents a natural archaeological site of exceptional value for studying the interaction between humans and the environment in the Great Sahara. It documents the transition from hunting and gathering to pastoralism, and later to adaptation to increasing desertification. As such, it stands as a fundamental witness to the environmental and cultural transformations that shaped North Africa over thousands of years.

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