

Neolithic Era Cultures In Ahaggar

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Abstract:

Prehistoric research in the Ahaggar region has revealed it as an ancient cultural center, with archaeological evidence spanning various eras. Several civilizations and cultural aspects flourished during the Late Stone Age, coinciding with Holocene climate and environmental changes across the desert. The people of this era left behind a variety of remains, including human and animal bones and plants that they benefited from their existence. They sought to harness their environmental resources and used them as materials for their bone and wooden artifacts at the sites they occupied during their movements and settlements.¹

They also benefited from the region's terrain in building their homes and securing shelter for their livestock, a venue for early farming, and a support in embodying their art. Researchers identified local features and traditions from other imported ones in their analysis of the archaeological evidence collected and extracted from the excavation of Ahaggar sites. These were somewhat explicit sources about the interactions that took place between various parts of the continent, their study helped in distinguishing cultural aspects according to the variation of public life manifestations and their living patterns over time and space.

Keywords: Cultures, Late Stone Age, Ahaggar.

Introduction:

Ahaggar is classified among the geographical regions with terrain diversity, which made it among the ancient cultural centers. Its sites retain remains and archaeological landmarks that testify to this, thus it became a subject of interest for prehistoric studies like the rest of the central desert. The central mountainous highlands and the areas surrounding Ahaggar provided stone and bone industries dating back to an ancient stage of the Late Stone Age based on the dating of pottery remains extracted from the excavations of the Amkni site in 1963, radiocarbon dated to around 8450±250 BC, thus rivaling the civilizations of Persia, China, and the Middle East. The plant cover and animal diversity formed the environment of the groups of that period, they derived their creativity from it and flourished to mimic their counterparts in the vicinity like the Sudanese, Nubian, and Egyptian groups to the east, the Capsian to the north, and the coastal pastoral Sudanese to the west through successive time stages, the aspects of public life and living patterns varied as a result of qualifying animals of local origin and others imported, the degrees of practicing agriculture and building housing varied, and the achievements of rock art varied, which became the most clear evidence in conveying images about their lives from social, economic, and religious aspects. So what are the conditions and manifestations of cultural diversity during the Late Stone Age in Ahaggar and what are the most prominent areas of civilizational influence according to archaeological studies? The research topic aims to identify the forms and images of cultural diversity in Ahaggar based on the analysis of archaeological evidence resulting from the excavation of the region's sites, thus presenting a journey of research that documents the history of its groups during the Late Stone Age according to the interpretation of the evidence and the truncated sources about the climate and

environment of those groups and their resources, their living patterns and their civilizational achievements and the existing communication bridges between them over time and space.

1. History of prehistoric research in Ahaggar:

The publications of Father Richard in 1869 about the highlands of the central desert had a great impact in attracting prehistoric research and studies coinciding with its emergence as an independent science in itself,² Ahaggar became as a result a subject of interest for the exploratory missions sent by R. Furon in 1876 and which reached its peak between 1898 and 1900 AD despite the scarcity of it due to the urgent interest in considering prehistory at that time as an auxiliary science within the interests of the missions that were roaming the desert. The journey of studies and research over decades established a database and important knowledge for what it led to specialists like G. M. Flamand (years 1902- 1921) and the researcher L. Frobenius in 1937 and others, after it was entrusted to military amateurs and specialists in other matters, this trend achieved unique study results, revealed remains and remnants of prehistoric civilizations according to their temporal sequence and geographical spread in Ahaggar, starting from inventory works to the excavation of many of the region's sites like Amkni in 1936, Munit in 1956, Tafedest 1965 and Adrar An Teiyein.³

2. Holocene Climate:

Many specialists in ancient climate have focused on the issue of the desert turning into a barren land by searching for the impact of the phenomenon in the layers of archaeological sites and intending to build the historical sequence of these changes. It was not easy to extrapolate them in the mountainous highlands of Ahaggar, where erosion factors play their role in demolishing the layers of sites rich in bio stratigraphic remains quickly, while the plains areas on the banks of the major valleys and ancient lakes remained less sloping and a suitable environment available on suitable stratigraphic structures.

The issue was of interest to the research by F-A. Gauthier in 1928, L. Balout in 1952, J. Chavaillon in 1964, who concluded through it the role of the seasonal currents coming to a desert that was habitable over a period of prehistory. Specialists in ancient climate concluded that the desert's dryness was due to causes that prevented the continued arrival of seasonal currents coming from the Guinea Gulf and the polar side, which were sending the element of humidity to the desert during the Holocene.⁴

The desert began before the Holocene era with a decline in humidity alternating with drought, and the courses of valleys, lowland swamps, and small lakes were affected by the dynamics of the winds that created environments for erosion and sedimentation.

The drought at the end of the Pleistocene during 20,000 BC reached its peak until it became closer to it than the current south of the desert,⁵ its range expanded to above latitude 5°, and most parts of the desert were then vacant,⁶ the drought continued at the end of the Pleistocene until just before 12,000 BC to fade with the return of the wet bouts.⁷

Humidity began to return gradually between 12,500-12,000 BC, as a result of which the southern eastern borders then the western half of the desert shrank,⁸ the humidity continued for about two millennia in the Ahaggar highlands at a time when drought was still rampant in a large part of the neighboring areas⁹ and the humidity stabilized as it is in

² RICHARD. (Abbé). 1869. "On the discovery of flint tools in the south of Algeria", Materials for the Primitive History of Man 4: 74-5 (23), p75.

³ CAMPS. G., 1974. The prehistoric civilizations of North Africa and the Sahara. Doin, Paris, p238.

⁴ DUBIEF. J., 1947. Les pluies au Sahara central. L'I.R.S., n°4, Alger, p13

⁵ HUGOT. H -J., 1981. Prehistory of the Sahara, General History of Africa. Vol. I, Jeune Afrique, UNESCO, Paris, p592.

⁶ LE QUELLEC. J-L., 1999. Distribution of large wild fauna in North Africa during the Holocene. Anthropology, Vol.103, 1, p164.

⁷ MUZZOLINI. A., 1985. The climates in the Sahara and on its edges, From the final Pleistocene to the current arid, Extract from Empiries, No. 47, Barcelona, p8.

⁸ LE QUELLEC. J-L., 1999. Op.cit., p164.

⁹ ROGNON. P., 1967. The Atakor massif and its borders. Ed. C.N.R.S., p246.

most parts of the desert until 10,000 BC,¹⁰ but soon the humidity declined after a short drought within 9,000 to 8,000 BC on the outskirts of the central highlands under unprecedented wind activity, which led to the growth of sand dune deposits for the eastern and western veins, resulting in environmental and cultural repercussions from movements and migrations towards the highlands,¹¹ although a state of climatic recovery prevailed in North Africa during 8,500 BC, allowing for temporary settlement of Stone Age cultures within what resembles tropical forests in southern Libya and Algeria.¹²

The signs of mid-Holocene drought began during 7,500 BC in an uneven manner, affecting the water level of lakes and basins like Lake Chad, to return the Neolithic humidity during 6,500 BC allowing the growth of Sahelian grasses and the spread of livestock breeding, but it was only an extension of the major humidity, no sooner had the great drought loomed again between 5,500 to 4,500 BC causing a recession in the waters of the ancient lakes in Adrar Bous and leaving organic remains within its limestone formations, then the central desert witnessed the Neolithic wet bouts (4,500 to 2,500 ± 500 BC) which left behind remains of turtles and hippos in lake sites in Tidikelt and Munit north of Ahaggar.¹³

The drought after the Neolithic represents the last of the climatic roles in the central desert, it was preceded by post-Neolithic humidity during 3,500 BC which helped to stabilize the groups of the southern desert at a time when desertification was definitive in the eastern and northern part of it, to renew the activity of the deposits by the wind during (2,500 to 1,000 ± 500 BC) with the return of humidity from time to time late Holocene (1,500 ± 500 BC) where the last wet bout was recorded before the current drought.¹⁴

3. The Ancient Environment:

The highlands of Ahaggar in the central desert were not under the cloak of drought until the beginning of the seventh millennium BC, the areas of Ahaggar,¹⁵ like Tassili n'Ajjer and Toubesti and large parts of the highlands of southern Mauritania were available on lakes and swamps submerged in water depths of tens of meters fed by the courses of ancient rivers and valleys, which made them habitable with animal and plant species, groups of the Late Stone Age were established in their surroundings, before the vibrant scene disappeared with the onset of drought and the accumulation of sand dunes and veins in its field.

1.3 Plants:

Paleontological samples of aquatic and terrestrial plant shells were found in low levels north of Ahaggar between Ahnet and Amdider. These samples, fossilized within the limestone, gave dates between 33,700 BC and 18,800 BC.¹⁶ Their analysis showed that the area was characterized by a humid, rainy climate during the late Pleistocene.¹⁷ These fossils merged into the lake sediments around 39,000 BC and ended around 18,000 BC. Salt flats replaced the swamps of the Late Stone Age during the Holocene, followed by the formation of veins from the accumulation of sandy sediments. The mountain ranges of Ahaggar were covered with trees during the wet periods from the Upper Pleistocene to the beginning of the Holocene, according to Girardon in 1987, while the plains and hammadas were covered with dense steppes or even savannah grasses before the warming began around 40,000-30,000 BC.¹⁸

¹⁰ MUZZOLINI. A., 1985. Op.cit., p8

¹¹ CORNEVIN. M., 1982. The Neolithic of the central Sahara and the general history of Africa. B.S.P.F., Vol. 79, 10-12, p433.

¹² LE QUELLEC. J-L., 1999. Op.cit., p164.

¹³ MUZZOLINI. A., 1985. Op.cit., p13-19

¹⁴ LE QUELLEC. J-L., 1999. Op.cit., p164

¹⁵ CAMPS. G., 1974. Op.cit., Paris, p211.

¹⁶ ALIMEN. H., 1987. Evolution du climat et des civilisations depuis 40000 ans du nord au sud du Sahara occidental, (Premières conceptions confrontées aux données récentes). B.A.F.E.Q., Vol.24, n°4, p219.

¹⁷ CONRAD. J., 1969. Post-Hercynian continental evolution of the Algerian Sahara. Ed. du CNRS, p293,296.

¹⁸ BARRY. J., 1991. Bioclimate and vegetation of the mountains of the central Sahara and the western Sahara. Alpine Geography Review, Vol.79, No.1, p63.

Most of the mountainous highlands and rocky plateaus of Ahaggar during the Holocene were covered with a forest cover of walnut, jujube, willow, and cedar trees. The open areas in Minit and Amkni were steppes of fenugreek grass.¹⁹ Archaeological excavations in the central highlands by Beucher in 1971, G. Camps in 1968, and P. Rognon between 1980 and 1985 provided biostratigraphic evidence taken from the terraces of Iniker, Outoul, and Terhennant, some of which were dated to around 8,000 BC. Through the analysis of their pollen grains, they found mountain varieties and species adapted to the humid climate such as chestnut, cedar, jujube, and walnut, other species of temperate climate plants such as oak, cedar, and birch, in addition to tropical tree species such as acacia, green oak, and pine in the highlands.²⁰

2.3 Animals:

The analysis of the Holocene biostratigraphic remains dated to the 5th millennium BC in Ahaggar shows that Ethiopian animals remained in the area until the recession of the level of ancient lakes. They migrated afterwards towards the southern fringes of the desert with the disappearance of the fertile plain plants that were nourishing. During the flooding of the valleys and ancient lakes to their highest levels, large wild animals were still present in abundance, which was confirmed through the presence of remains of rhinoceros, elephant, giraffe, ancient buffalo, wild boar, various types of deer, in addition to aquatic animals such as hippopotamus, Nile crocodiles, and freshwater turtles within the human environment, who worked on breeding cattle, sheep, and goats.

Overlapping within the layers of the Amkni site in Ahaggar are bone remains of animal species that are likely to be domesticated with wild species such as predators and large Ethiopian animals. We find within the animal list coming from archaeological excavation works known species and others not specified, including: extinct buffalo, bovine deer, small deer, and an unspecified type of cattle, mountain goat, striped hyena, two types of freshwater fish, three types of birds, three other types of reptiles, in addition to aquatic snails. This list is important in determining environmental indicators in which aquatics only adapt in the presence of permanent rivers, swamps, and flooding.²¹

The study and analysis of the large animal remains extracted from the excavation of the Amkni and Minit sites did not definitively qualify the animals. The matter seems logical considering what has been identified from animal species, as the remains of domesticated animal bones often bear traces indicative of their relationship with humans as a result of butchery works and the practice of ritual mutilations. The issue of domestication remains pending as long as zooarchaeology has not provided enough evidence to make a final judgment. What has been reached about the issue depends on what the representations of rock art have provided, without anything else.

3.3 Humans:

The study of human remains coming from the excavation of sites of the Late Stone Age and the funerary landmarks of early history led to the identification of some structural characteristics of their human groups, although most of them were extracted in a state of preservation that does not allow for the required archaeological measurements due to the fossil environment that did not provide suitable conditions for preserving the bones well. Thus, the study of human fossil remains in Ahaggar did not achieve complete data on the peoples of the desert during the Late Stone Age and beyond, while the study of skeletal structures in the southern section of the central desert concluded that they mostly belong to groups of blacks and two individuals carrying hybrid features and a lesser degree of non-blacks, the settlers of the south of the desert and its east, who represented a homogeneous

¹⁹ HUGOT. H -J., 1981. Prehistory of the Sahara, General History of Africa. Vol. I, Jeune Afrique, UNESCO, Paris, p628.

²⁰ BARRY. J., 1991. Op.cit., p63, 64

²¹ CAMPS. G., 1974. Op.cit., p225, 226.

gathering at times and other times rooted ethnicities.²² Ahaggar and its suburbs represented a gathering of peoples of the dawn of the Mediterranean, hybrid with Zanj elements.²³

Ph, Lefèvre-witier identified the Zanj features on the remains of three individuals extracted from the excavations of the early Late Stone Age site in Amkni in Ahaggar.²⁴ They belong to a woman aged 40 to 50 years and two young individuals, the age of the first is between 2 to 3 years and the second is between the age of 5 to 6 years, all of them belong to a group with Zanj features that fall within the diversity of the Sudanese race according to the results reached by the study of M-C, Chamla, one of the specialists in the science of fossil humans, while an excavation conducted by the researcher J-P, Maitre in 1965 resulted in the extraction of bone remains of two skeletons buried under a rock shelter at a site near Tamanrasset, the results reached by the same specialist indicated that they carry structural features related to the Sudanese race.²⁵

Despite the presence of a group with Mediterranean features among the remains of human skeletal bones, the remains of groups with Sudanese Zanj features are the most present within the sites to form the majority of the inhabitants of Ahaggar during the Late Stone Age according to specialists, and there is no trace of the remains of groups of Arab nomads whose skeletal remains are present within a considerable geographical range extending from Upper Egypt and Sudan between the 9th millennium BC to the 4th millennium BC to northern Mali during the 6th millennium BC and reaching western Mauritania, where they formed the majority of its inhabitants during the 3rd millennium BC and beyond. In general, the races of the people of the Late Stone Age and beyond were not united, they were formed from multiple and different groups of blacks and whites in a way that reminds us of the Egyptians and others from the non-Zanj blacks matching the Fulani group, based on the evidence of the images of Tassili n'Ajjer art, which the researchers Hampaté-Ba and Dieterlen analyzed in 1966 based on the scenes of the Itinan B site and using an ethnographic approach between them and the Fulani group, which confirmed the relationship between prehistoric herders in the central desert and the modern Fulani herders who continued to practice the rituals of worshipping the god Bil Bororo in the manner of the Itinan scene.

4. Civilizations of the Late Stone Age in Ahaggar:

The dating of archaeological pottery pieces from the Amkni site using radiocarbon (C14) gave an age of approximately 8450 BC,²⁶ which roughly corresponds to the Late Stone Age in the Near East. Baked clay or pottery is one of the main indicators within the determinants of the era's cultures, alongside the domestication of animals and early agricultural activity between the 8th and 6th millennia BC,²⁷ in addition to the production of stone jewelry, especially beads of amazonite, chalcedony, and hematite. Sites in northwest Ahaggar, such as Minit and Arak, have remains with influences coming from the north, reaching areas in eastern Mauritania and coinciding with the end of civilizations of groups with a culture similar to the people of Eastern Sudan, characterized by the presence of pottery remains with little to no decorations, while the geometric tendency dominates their stone tools and polished others, especially animal stone statues and stone bracelets.²⁸

In Tassili Teneri, in the eastern to southern part of Ahaggar, there are sites rich in residues of product industries attributed to the culture of the people of Teneri, the polished blades and serrated edges dominate their stone tools, in addition to polished loop axes and

²² CHAMLA. M-C., 1968. The ancient populations of the Sahara and neighboring regions, Study of Neolithic and Protohistoric human bone remains. *Memoirs of CRAPE*, 9, Algiers, p104.

²³ AUMASSIP. G., 1984. The Neolithization in the Sahara: chronological, geographical, and paleoclimatic problems. *Cahiers ORSTOM, Geo Series No.14*, p200.

²⁴ CAMPS. G., 1969. Amekni, ancient Neolithic of Hoggar. *Memoirs of CRAPE*, 10, Algiers, p163.

²⁵ CAMPS. G., 1974. *Op.cit.*, p225, 237

²⁶ LHOTE. H., 1976. Towards other Tassilis. Arthaud, Paris. 259p10.

²⁷ GAUSSEN. M. and J., 1965. A burin workshop at Lagreich-Neo. 1, Oued Tilemsi (Mali). *Anthropology*, 69, p237.

²⁸ HUGOT. H-J., 1962. Scientific documents of the Berlier- Ténééré- Chad missions, Paris, A.M.G., p153.

smooth pottery and various arrowheads.²⁹ The area of presence of civilizations of the Late Stone Age in Ahaggar was determined starting from identifying their traces within the sites of ancient work, starting with the site of Adrar Tiltikin in the highlands of Atkor (4850 BC), the site of Amkni and the site of Hirafok (6430 BC) on the shores of an ancient lake. Several sites were mentioned far from the center of Ahaggar, preserving evidence dating back to cultures of semi-settlers who lived on consuming aquatics, the inhabitants of the plains and plateaus surrounding Ahaggar did not differ from the inhabitants of the heart of the highlands, as the site of Abolgh is one of the models of Neolithic villages according to the results of excavations by J-P, Maitre, in addition to other sites such as Adrar Tiouyen near Silet to Amded, In Qazam and Minit and Dghanblo in the Fashi area to Timisaw, Tjerrifet (2130 BC) and Tamia-Mallet in Tamsna, which are the last strongholds of the era's civilizations.

During the subsequent temporal phases, two contrasting cultures developed east of Ahaggar between the 6th and 2nd millennia BC, the first is known as the culture of the cattle herders (Bovidien) and the other as the culture of Teneri (Ténéréen) semi-settlers, they left archaeological evidence that specialists believe was the result of the development of the culture of the Sahrawis with Sudanese traditions in Ahaggar. The researcher J-P, Maitre distinguished in his study of the sites of Atkor and Tafdest in Ahaggar in 1971, four temporal stages in the development of cultures of the Late Stone Age, namely; the old stage, the middle, the final, and the subsequent stage of the Late Stone Age, within which the following cultures fall in order; the culture of the Sahrawis with Sudanese traditions, the culture of the cattle herders of eastern origin between 3500 BC-2500 BC, the culture of the Adelsians, and the culture of the knights and the Libyan Garamantes.

1.4 Culture of the Sahrawis with Sudanese Traditions:

The culture of the Sahrawis with Sudanese traditions flourished in a geographically extensive area between Ahaggar to Tassili n'Ajjer and Akakus and from Tebisti to the Azawagh basin at a time when most of the Nile regions were under increasing demographic growth. Its people relied on local poor rocks that are difficult to flake in the manufacture of stone tools with a cut or chipped edge, roughly polished against a small amount of bone industry. Its sites are distributed in most natural areas of Ahaggar, contemporaneous with its counterparts from Tassili n'Ajjer sites such as Tadrart and Tin-Hankatin, while it coincides between 7500 BC and 6500 BC.³⁰ The researcher J-P, Maitre pointed to a relative variation through the study of the effects of this culture in Ahaggar, through which he determined the changes that occurred on the sites of the region over time and space as follows:

- Amkni site: It was referred to by M, Launey initially before his study was taken over by G, Camps. The Amkni site is located south of the Agshoum region, 40 km from the city of Tamanrasset. The spread of the archaeological product on the surface of the site attracted the attention of researchers before conducting excavations that resulted in the extraction of various human, plant, and animal remains within the levels and layers of the site dated to about 7000 BC.
- Louni site: The site is originally called Adrar Tiltikin, discovered in 1961 by M, Launey who took from it the circulated name. It was considered until then the oldest sites of the Late Stone Age before excavation works were carried out in it in 1964 by the researcher J-P, Maitre, who extracted from it various archaeological evidence including ancient hearths dated between 7200 BC and 6400 BC.
- Minit site: The center of the site is called Baguenna, the sector number 8, the first excavation was carried out in it between 1956 and 1957 by the researcher J-H, Hugot who found pottery findings that match in their formal, technical, and decorative features the pottery of the middle level of the Amkni site.
- Adrar Tiouyen site: It is located on the banks of the Amded River overlooking the eastern plain of Tinzoufot, it provided evidence of the culture of aquatic hunters living near the ancient coastal lakes, where considerable quantities of fish remains

²⁹ HUGOT. H-J., 1962, Op.cit., p168, 170

³⁰ CAMPS. G., 1974. Op.cit., p235.

were found dated to about 4000 BC. The researcher G, Camps included its small stone industry within patterns of fishing rods for aquatics or special arrowheads for hunting birds.

- Tamanrasset II site: It is located on the banks of the upper Tamanrasset River, it was cared for by the researcher J-P, Maitre in his studies on the Late Stone Age, he distinguished through it the weakness of the stone industry compared to the sites of the heart of Ahaggar, its archaeological evidence is similar to the evidence of the upper level of the sites of Amkni and Tin Tighert, and it was dated to between 2300 BC and 1000 BC.

2.4 Culture of the Herders (Bovidiens):

G, Camps defined the term “Bovidiens” as a culture associated with the largest number of rock art drawings in Tassili n’Ajjer, who occupied the area and its surroundings between the 6th millennium BC to the 3rd millennium BC. H, Lhote scrutinized its definition and linked it to the civilization of large cattle herders that covered the entire desert from the Red Sea to the Atlantic Ocean,³¹ during which the breeding of bulls flourished in a state where the data of archaeological remains coincide with animal and rock art representations. Researchers agree that these nomads lived in the plains before they moved to the highlands and rocky plateaus around 5300 BC,³² where they mixed with semi-settlers who undoubtedly differed from them. F, Mori justified the spread of this culture from its old homeland Akakus and Tadrart to the neighborhood as a result of environmental developments and mobility imposed by their lifestyle to reach Tafdest in Ahaggar around 5500 BC-2500 BC.³³

The remains of the civilization of the cattle herders are represented in rock art sites alongside distinguished stone industries of two-faced scrapers, which are considered a direct typological indicator that helps to identify their material culture. They produced pottery or rather clay pots with printed and dotted decorations using piercing tools, as well as they left a portable art of stone sculptures of animal heads like cows and deer.³⁴

3.4 Teneri Culture:

The Teneri culture was centered in Tafdest south of Ahaggar to the eastern outskirts of Air and extended to Tassili n’Ajjer to the north, reaching the areas of Borkou in Chad to the south. Its people produced distinguished industries with their richness and diversity of primary materials, which coincide between the 6th millennium BC-3rd millennium BC. They were famous in Adrar Bous (3180 BC) for making two-faced or leaf-like stone tools and long arrowheads and stone knives similar to the known Egyptian sacrificial knives. They excelled in designing stone sculptures in the form of animal heads that rival the civilization of the Bovidiens,³⁵ which allowed the authors to establish theories of communication between the two concurrent entities despite the absence of spatial unity between them. What distinguishes the Teneri culture from their contemporaries, the herders, is their production of a stone industry of discoidal tools and tools with a choke, which resembles the industries of Egypt before the era of the ancient dynasties, as well as they produced an industry with a dwarf tendency from those of triangular shapes, squares, discs, and trapezoids.

5. Life of the Late Stone Age Peoples in Ahaggar:

The Neolithic represents the transition from the lifestyle of the late Old Stone Age to the lifestyle of the New Stone Age, which occurred through a change in the lifestyle of the peoples of the period, starting from the diversification in raw materials, techniques, and

³¹ CAMPS. G., 1975. New remarks on the Neolithic of the central and southern Sahara, Libyca: Anthropology Prehistory Ethnography, Vol. 23, p229.

³² LHOTE. H., 1976. Bovidian period or of shepherds. Berber Encyclopedia, Notebooks No.16, Ed. L.A.P.E.M.O., p6.

³³ MAITRE. J-P., 1971. Contribution to the prehistory of Ahaggar. Central Téféddest. Memoirs of CRAPE, XVII, Algiers, p129.

³⁴ CAMPS. G., 1974. Op.cit., p241.

³⁵ Ibid., p249-250

functions of the product of stone and bone industries. This changed the aspects of public life and lifestyle by exploiting environmental resources from hunting, gathering, and picking to contributing to making livelihood resources through the profession and qualification of animals and plants and settling by building houses.

1.5. Herders' Lifestyle:

It is known that the domestication of cattle and sheep took place in the Faiyum during the 5th millennium BC, although cattle were present in the wilderness of North Africa on two types, *Bos primigenius* and *Bos ibericus*, before this era. Specialists suggest that they represent the ancestors of the domesticated cattle in Egypt, Morocco, and the central desert, while the origin of the known African species *Bos africanus* was not confirmed except through representations of rock art and later Egyptian sculpture. The African cow was from the cattle of the herders in Tafdest in Ahaggar, where it appears with a structure with long horns that are very to slightly twisted and its head is excessively elongated. Some members of its herds witness the practice of intentional horn mutilation in the manner of the herds of the Noir, Dinka, Nandi, and Sok groups near Lake Victoria. It carries mutilations of the appendage under the jaw intentionally in the manner of the current East African herders, while it perfectly matches the inscriptions and drawings of Ahaggar, Ahnet, Aïr, Tebisti, Fezzan, and Jebel Uweinat as a form of the influences of group © in Nubia.³⁶

It is likely that the desert was the first home in the domestication of cattle, especially the eastern part of it under the pressure of temporary drought and what accompanied it from the disappearance of the nourishing savannah and the drying up of water sources. It is known that the qualification of cattle in the desert happened before the 4th millennium BC, and the dating of the stations of rock art that the herders occupied in Ijebaren and Saffar with dense representations of cattle stopped. The civilization of the cattle herders lasted for millennia, the old stage of the Bovidiens dates back to the 6th millennium BC to the beginning of the 4th millennium BC, while the middle extends to the middle of the 6th millennium BC and the final to after the 3rd millennium BC.

H, Lhote confirmed in 1962 that the domestication of cattle in the desert preceded the domestication of sheep and goats, and he bases his judgment on reading the correspondences in rock art, and links the domesticators of large cattle to the Sudanese Zanj race and small cattle from sheep and goats to hybrid groups between the Zanj and white races. The same researcher came in 1969 to important observations about the cattle pens of the Bovidiens at the Tisoukai site in Tassili n'Ajjer, where barriers of stone accumulations not exceeding one meter were erected under the rock shelters and others blocking the courses of the valleys from both sides.

2.5 Farmers' Lifestyle:

It is likely that the beginnings of agriculture were solid with the presence of grinding equipment, which is an indication of the consumption of seeds and kernels of wild plants. It is difficult to know whether these seeds were planted or simply collected from the wild in the manner of harvesting, which was still practiced in the desert during periods of drought. The only group of seeds available at that time was wild, specific to millet? While the origin of wheat in North Africa and the desert oases is still unknown, despite the finding of pollen grains in Minit where it was possible to date them to the 4th millennium BC, as was the millet from the crops of the 5th millennium BC in Amkni where its pollen grains were identified.³⁷

The analysis of pollen grains extracted from the excavation layers of the Amkni site in Ahaggar helped to identify some fossil plant species, where species adapted to the hot and dry environment were found, such as alder trees, cedar, and clubs that spread in the space of Ahaggar sites, to those adapted to the tropical humid environment such as acacia and basil trees and others adapted to the Mediterranean environment such as pine trees, green oak,³⁸ juniper, and southern mistletoe. The plant evidence extracted from the

³⁷ CAMPS. G., 1974. Op.cit., p245-246.

³⁸ AUMASSIP. G., 2001. Algeria of the First Men. House of Human Sciences, Paris, p169.

sediments of the Minit site north of Ahaggar returned the possibility of early agriculture through a considerable distribution of pollen grains of nutritious plant species such as yellow millet, jujube, and jujube fruits, their abundant quantities explain either a state of dependence on picking them or importing them or a state of intervention in qualifying them, although the total of what resulted from the analysis of the archaeological evidence at the sites of the Sahrawi culture did not provide but indicators of dealing with a form of the beginnings of agriculture.³⁹

Agriculture developed as a result of the establishment of irrigation systems on the one hand, and on the other hand as a result of the involvement of animals, especially in plowing and irrigation, which represents a new stage in the development of technologies by replacing human energy with another source that was known then in Egypt, the plow was made from sticks that were dragged in various deposits in Egypt, while we still lack evidence of the plow within the deposits of sites in the Arab Maghreb and the desert. Egypt used a complex irrigation system since two thousand years before Christ, which coincides with the people of Takant in southern Mauritania, who practiced agriculture in the terraces and established systems to recover lost water in archaeological sites in Algeria, although some studies have shown that man used a trick to control water over time, it was possible to discover a canal system in Tikobaouine near Gant at the foot of what was originally a waterfall, where the pile of stones remained standing at an inclined level to support the waterway, as the researcher M, Tauveron pointed to several basins near the shelters of Tadrart where rainwater gathered in the depression of the sandstone.⁴⁰

3.5. Settlers' Lifestyle and Building the House:

The structuring of the space of prehistoric sites in several formally identical units close to each other, is likely to be related to the birth of small villages at the beginning of the 7th millennium BC in the heart of the central desert and during the 6th millennium BC in the north, natural gaps within the granite rocks in Ahaggar, especially in Amkni, provided shelters for housing initially, while excavation works at the Mallali site showed that it consists of several huts spread inside it with various tools related to camping.⁴¹

Archaeological research has led to the discovery of the house of the Late Stone Age in the rocky plateau in Tichitt and Walata in Mauritania, representing Neolithic villages built on the edge of a plateau overlooking a cliff terrace, corridors and passages were designed within it to form villages of tens of houses, their walls were built with dry stones sometimes reaching two meters high in the manner of building the Damus houses in Ahaggar to a recent era, the scope of building villages expanded to unprotected areas on the outskirts of the shores of an ancient lake according to J-P, Munson, representing an aspect of the settlement of a group of settled pastoral farmers, it was dated between 1500 BC -1100 BC, they practiced agriculture in its vicinity, its grains remained printed within the pottery dough before burning, the protective walls of the Neolithic village at the Hajarat site are still standing as a circumference around huts built from sandstone slabs, the floor of the rock dwellings was partially prepared by leveling the areas, important archaeological materials were preserved in it from stone sculptures in the form of animal heads such as sheep, dogs, and deer.⁴²

In addition to its role in securing from environmental factors, the house provides a defensive immunity for the early settlers in the desert, it was possible to determine the traces of wounds as a result of stabs with flint on the remains of bones of several individuals at the site of Jabal Al-Sahaba in Sudan, and G, Camps had reached the same thing in his analysis of the behavior of the people of the Late Stone Age in competing for rich lands with water sources and subterranean eyes at the sites of the era in various regions of Algeria during the 3rd millennium BC to the 1st millennium BC in an aspect of acquiring a sense of land ownership.

³⁹ CAMPS. G., 1974. *Op.cit.*, p218,236.

⁴⁰ HUGOT. H-J., 1963. *Prehistoric research in northwestern Ahaggar, (1950-1957)*. Memoirs of CRAPE, I, Algiers, 207p.

⁴¹ AUMASSIP. G., 2001. *Op.cit.*, p169, 170.

⁴² *Ibid.*, p170-175.

6. Rock Art Language of the Late Stone Age Peoples:

Artistic groups used rock cliffs, stone slabs, rock flats, and rubble in the highlands of Ahaggar as a basis for embodying the art of engravings and rock drawings, which are a means of expression, embodying the idea, symbolism, and the origin of the ancient alphabetical writing (Tifinagh). The engravers relied on supports of granite and sandstone, which are less hard in Ahaggar, from flint and quartz tools to work on carving, polishing, and pecking representations of scenes that express their ideas, and they used media from other materials such as wood, bone, sand, and water,⁴³ while the painters exploited the shelters under the rocks in the plateaus as a shelter for their task and their livestock and a support in embodying scenes in which they used colors that are the result of a very complex technical work,⁴⁴ the results of the analysis showed that it is a mixture of chemical materials based on the production of primary colors such as red and black from ocher iron oxide and white from clay, to which other mineral materials such as zinc oxide and organic ones such as wood and animal charcoal, plant juice, are added to become pigments or dyes ready for use in drawing on the rock with various techniques such as printing or using brushes or spraying.⁴⁵

The researcher P, Huard advocated naming the art of the stage of hunters who accomplished the oldest evidence of the science of images, they embodied scenes of wild animals from their environments with weak indicators of domestication and taming.⁴⁶ The representations of the art of the ancient buffalo spread in the regions of Ahaggar similar to Wadi Gerat and Tassili n'Ajjer, maintaining a style with large dimensions, they belong to hunters adorned with masks and borrowed tails and various clothes alongside elephants, hippos, rhinoceros, lions, and others, A, Muzzolini confirmed in 1986 that the stage cannot be separated from the culture of the herders in the central desert highlands, and it was supported by F, Mori on the grounds of the appearance of millennial animals such as halo rams and cows during an old stage in Wadi Habeter.⁴⁷

Engravings and rock drawings dominated by scenes of cows in the central desert were included in another later period by researchers, similar to what the researcher Th, Monod presented in 1932 about Adrar-Nahent north of Ahaggar under the name of prehistoric cows, the term pastoral civilization was used to denote this group from North Africa and the desert, in which lambs and goats appear alongside domesticated cows, lacking representations of elephants,⁴⁸ buffaloes, and lions unlike the engravings of Wadi Gerat in Tassili n'Ajjer, which were presented by the Brenans excavation for the first time, classified by M, Reygasse and E-F, Gautier into two artistic groups, the first is concerned with ancient peoples from hunters and the second with herder peoples who portrayed their daily life activities from hunting animals in their environment, they are busy performing ritual dances and their movements accompanied by their loaded herds with furniture from tent stays and tools and utensils for daily use.⁴⁹

Rock art provided evidence about their dwelling from huts and tents in which some of them gather inside, taking various positions around pots and utensils and others busy with the herd impersonating their roles, some men appear naked and others wear breast jackets and aprons from goat and deer skins in the old stages and in the modern long robes and coats, while women wear dresses according to H, Lhote in 1970, women care about the appearance of haircuts and puffed hairstyles and others with shaving the head cover or the balloon in the known manner of the ancient Egyptians, they adorn with bracelets and necklaces of precious stones and ostrich eggshells that they left behind in their settlement sites.

⁴³ CAMPS. G., 1974. Op.cit., p255, 256

⁴⁴ KI-ZERBO. J., 1999. African Prehistoric Art, General History of Africa. Vol. I, 4th reprint Jeune Afrique, UNESCO, p691.

⁴⁵ BERNEZAT. L-J., 2004. Immidir: The Forgotten Tassili. Edi Glénât, Grenoble, Paris, p147

⁴⁶ KI-ZERBO. J., 1999. Op.cit.,p292.

⁴⁷ MUZZOLINI. A., 1995. The Rock Images of the Sahara, Prehistory of the Sahara. 1st Edition by the author, Toulouse, p112.

⁴⁸ LHOTE. H., et al., 1989. "Rock Art". Berber Encyclopedia, 6, Edisud, p922-924.

⁴⁹ LHOTE. H., CAMPS. G., and SOUVILLE. G., 1989. Op.cit., p927, 928.

7. Cultural Communication during the Neolithic:

The mixing of black peoples of Africa south of the Sahara with whites from the north became a certainty because of major movements and migrations according to the propositions of researchers and authors, even though they did not initially rely on archaeological evidence dating back to the Late Stone Age. The cultural communication was proven between settlements that formed what resembled islands of inhabited areas, varying distances between them as well as the areas of their acquisition. The issue of cultural relations became clear by involving the largest amount of archaeological evidence dating back to cultures from various age stages and across different parts of the continent. Analyses of the nature and quality of archaeological materials showed that a considerable amount of them was acquired outside their scope of use, explaining either a state of exchange or movement to places that provided them for import. Amazonite stone is one of the materials that documented the cultural communication of the civilizations of the Late Stone Age beginning from the 4th millennium BC according to prehistoric jewelry studies, some types of precious stones were solid with the granite formations that spread in the regions of Ahaggar, such as the highlands of Tiouyen near Silet and Tihliouine near Ablesa, while sources detected some of these materials from neighboring regions such as Ternat region in Air and Ighi-Zouma region in the highlands of Tebisti and recorded the presence of others within the artifacts of Ahaggar that originate from Eastern Sudan.⁵⁰

Conclusion:

The study of cultural diversity in Ahaggar during the Late Stone Age and beyond has revealed it as a field still fertile for studies in various fields, providing a stimulus for future research prospects to develop the state of data and knowledge about the region. The evidence of past cultures varied over time and place, the ancient environment played a role over the ages that activates civilizational changes, either as a result of mobility or the overlap of various cultural and ethnic groups along a geographical extent that did not isolate Ahaggar from the regions that surrounded it in all directions.

The diversity of cultures of the Late Stone Age was diagnosed at specific temporal stages by specialists, including the early, middle, and final Neolithic, during which archaeological evidence varied according to the commitment to the agreed standards in the field of prehistoric science. The people of the culture of the Sahrawis with Sudanese traditions specialized in producing what suits their natural environment as settlers or semi-settlers around aquatic environments, to interact with it in establishing the first foundations of living on hunting aquatics and wild animals to practice or deal with a form of early agriculture, while Ahaggar was affected by neighboring regions from which civilizations came like the cattle herders who coexisted with the environmental developments that imposed on them and their herds to move according to their living resources, they produced artifacts from rock art which is one of the most sincere evidence of familiarity with aspects of their public life, while Teneri culture has enriched their great interest in jewelry their communication with various parts of the desert, the Nile and regions of Africa south of the desert, while the working tools on plant resources from stone mills and mortars suggest the progress of civilizational transformations and the establishment of the history of communication between the continents of the continent based on the similarity of manufactures or the nature of their materials that confirm the existing civilizational communication bridges, which paved the way for the emergence of exchange centers and paths and ways for the beginnings of ancient trade.:

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