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PRELIMINARY RESULTS ABOUT PREHISTORIC SITES IN EAST OF EL-OBIED AREAS- NORTH KORDOFAN STATE- OCT. 2015

INTRODUCTION

Looking intensively at the clear distribution of the antiquities of the early man in the Sudan it can be noted that they exist in the whole territory. This leads to the claim that most of the regions of Sudan and its old and new geographic boundaries were appropriate for ancient man to live, whether during the Prehistoric period, the Protohistoric, or during the Historical periods. The field studies are the main source which provide us with new discoveries of the regions where the ancient human evidences emerged.

Since the beginning of the twentieth century till today, field studies provide the archaeological map of Sudan with more archaeological sites. This suggests inspiring new ideas; and visions may change some of the interpretations of the geographical distribution of the ancient man. Definitely we aspire and look forward to investigating the different parts of Sudan and we are eager to fathom the reality of the spread of ancient human in terms of his archaeological identity. It is known that this can be achieved only by specialized field research.

Most of the districts in western Sudan have not been archaeologically studied similar to some other regions of Sudan. This may be due to some reasons which are related to funding, logistical support, and the security aspects representing a significant impact in stimulating researchers to traverse the various regions in order to study them. We see that there is a major reason of delaying the archaeological studies in western Sudan in the first period, when the research of Sudanese archaeology has flourished guiding the archaeological missions to rescue the archaeological sites which were threatened by development projects in Sudan. In any case, the Archaeological and Heritage Survey of North Kordofan State Project represents one of the doorways through which we can understand some of the cultural achievements of the ancient human in this region. The climatic, environmental and topographic factors have main effects on the demographic characteristics during

Prehistory, especially the later Prehistory. In this season - October 2016, 20 archaeological sites dating to the Neolithic period were investigated as well as some Mesolithic attributes, such as wavy line and dotted wavy line pottery were located.

PREVIOUS FIELD RESEARCH IN WESTERN SUDAN

There are field studies conducted in some areas of western Sudan, including field research carried out by Seligman in North Kordofan (Seligman 1914-16). Anthony Arkell studied some areas of Darfur such as Farah (Arkell 1936: 301-311; 1946: 185-202). We also know the research of Balfour-Paulin the areas of Darfur, which dealt with two branches of knowledge represented in the archaeology and folklore. These studies gave some information about the ancient human culture in western of Sudan, especially Darfur (Balfour-Paul 1954; 1955; 1956) in addition to some studies in Kordofan (Penn 1931; Shaw 1936). There were the studies conducted in later periods of the mid-twentieth century such as German expeditions of University of Cologne in Wadi Hawar areas (Jesse 2006: 187-196) and the French mission of Lille University in "Znkur" area (Gratien. et al 2015) As well as the joint research between the Polish Mission of Adam Mickiewicz University (Adam Mickiewicz) and the Sudanese General Corporation of Antiquities and Museums in "Sodari" and its environs (Ahmed. et al 2011). These studies have a significant impact on enriching our knowledge of the heritage of those areas.

The project of Archaeological and Heritage Survey of the State of North Kordofan belongs to the Department of Archaeology - University of Khartoum, played a role in uncovering the archaeology of "Sodari" area and Wadi El-Malik (Adam 2011). The survey of the areas that are located around the town of "Khowi" performed by (Adam, 2012). These studies have revealed some signs of Neolithic culture, consisting of the remains of pottery and stone tools



with the grinding stone (Adam 2011: 7). This survey revealed the extension of Meroitic culture represented in Meroitic graves, with the evidences of iron industry (Adam 2011; Adam 2012). All these explorations resulted in the existence of ancient Sudanese human cultural patterns in those areas, with the knowledge that there are many parts of these regions still waiting for exploration and discovery.

ENVIRONMENTAL CONDITIONS IN NORTH KORDOFAN

Through the current climatic and environmental conditions, we find that Kordofan region is located within a geographic context that includes three types of climatic regions covering the Sudanese territories. The first is a desert region including the northern buffer zone of Kordofan which is adjacent to the northern border of Sudan. The second one is the Central Kordofan region located within the semi-desert region. The third is the southern and western areas which are found within the savanna region. Whenever we go towards the south, the climate turns from low rainfall savanna (Faqeira savanna) to high rainfall savanna (Guinea savanna) (Van Noordwijk 1984: 31) In addition to shrinking of rainy space in central Sudan, which includes a large part of Kordofan region, especially the eastern part of it (Hulme 1990: 22-23).

According to recent readings of the climate conditions, it is apparent that the North Kordofan region is located within the semi-arid belt in Sudan, which is located between latitudes: ° 12- ° 16 (Hulme 1990: 23). It is estimated that the average annual of rainfall is between 400 - 340 mm. (Hulme 1990: 24). Studies have shown that North Kordofan region has been affected by the wind and the formation of sand dunes since the end of the late quaternary, but it was not as the average of drought happening now. Moreover, the area was characterized by moisture and medium rate of rain (Wickens 1982: 24, 30).

In the early Holocene, this area was under water; the annual rainfall was up to 1000 mm, and the forest region in Sudan extended to about 400 km to the north of its current location. The Manson winds saturated by rain reached the outskirts of the mid-Saharan Africa during the early Holocene in the period between 8000-7000 BC. This area represents the southern side of the Sahara, especially the northern outskirts of Kordofan region, although it was characterized by the natural wealth represented by moisture that created suitable environment for living of various animals that stimulated human to live in

this region (Kuper and Kropelin 2006: 805). Thus, this region was a home of several types of mammals that stimulated human for hunting, such as multiple types antelopes and wild buffalo (Wickens 1982: 27).

During the Mid-Holocene, the rainfall decreased to less than 400 mm. The area was filled with spinal trees which are known in dry areas (Wickens 1982: 40-42, fig. 3-5, 3-6). Then, the climatic conditions in the Sahara region and the Nile Valley and the vast stretches in central Sudan changed during the Mid-Holocene, in the period between 7000-5300 BC, and the rain retreated towards the south, which led to economic and technical changes. Sheep and goats have arrived to the northern outskirts of sub-Saharan Africa, to the Egyptian desert, and then to the Sudan (Kuper and Kropelin 2006: 805). At this stage, the Neolithic human has taken this area as refuge to move inside it with his seasonal camps that according to environmental factors were available at that time.

EVIDENCES OF NEOLITHIC IN NORTH KORDOFAN

The survey which was done in this area proved the existence of evidences of the Neolithic period. Therefore, the material proves human presence, who lived during the later Prehistory. Most of the evidence referring to the existence of Neolithic humans are represented in various types of microlithic and its debitage, as well as multiple forms of grinding stone, in addition to pottery sherds which are distinctive to the Neolithic culture, however, there are some evidences of pottery pieces that resemble the Mesolithic culture, but they were not widely scattered. Twenty sites belong to the Neolithic were recorded as follows (fig. 1):

EL-EKSEER 1: N 13° 00' 6.9", E 30° 24' 6.7"

It is located in the north of El-Ekseer Mountain, in an area intervened with small streams that descend from the mountains. It contains the remains of Neolithic pottery, the remains of non-distinctive Microlithic, as well as various grinding stones, made of granite and quartz.

EL-EKSEER 2: N 13° 00' 6.35", E 30° 24' 6.48"

It contains a large amount of stone tools and bad-made pottery remains which appear on the surface. The pottery sherds contain geometric motifs. The distribution of hammers leads us to claim that the site was a workshop for manufacturing stone tools during the Neolithic.

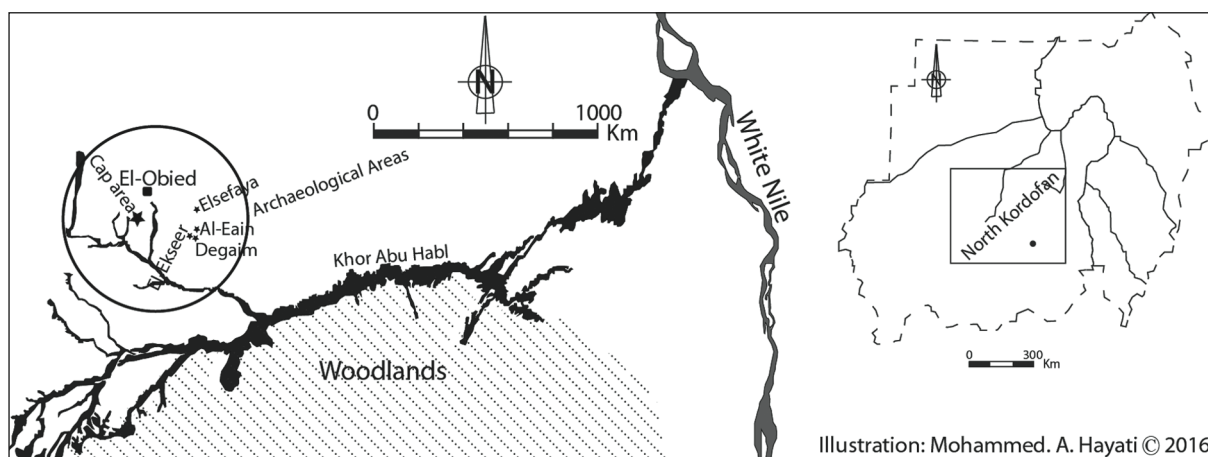


Illustration: Mohammed. A. Hayati © 2016

Fig. 1: General view of North Kordofan region, showing the Archaeological area.

EL-EKSEER 3: N 13° 00' 53.5", E 30° 24' 38.6"

It is situated in the west of EL-Ekseer Mountain. It contains the remains of Neolithic settlement such as pottery affected by erosion. In addition, we find the remains of stone tools and grinding stones.

EL-EKSEER 4: N 13° 00' 34.7", E 30° 24' 46.2"

It is one of the sites which are characterized by continuity in the settlement as it contains the remains of pottery that belongs to different periods stretching from the Neolithic period up to the Islamic period. Rough stone tools and some diverse forms of grinding tools are scattered on the site surface.

DEGAIM: N 12° 59' 7.1", E 30° 25' 07"

It is positioned in the southeast of Degaim Mountain in the sloping part from the top of the hill. It contains hollow grinding on outcrop in addition to Neolithic pottery.

AL-EAIN 1: N 13° 01' 1.27", E 30° 25' 57.9"

This site consists of Neolithic settlement. Pottery is decorated by the wavy lines dating back to the Mesolithic era. There are also types of wavy lines pottery dating to the Neolithic period. A few grinding stone tools are also found. In addition, a mace head made of granite and some rough stone implements are also found in the site.

AL-EAIN 2: N 13° 00' 10.7", E 30° 25' 55"

This site contains a settlement of wavy line pottery in addition to types of wavy lines dating to the Neolithic. A few milling tools, a mace head made of granite stone, some non-well-made stone tools are also present in this site.

AL-EAIN 3: N 13° 01' 54.5", E 30° 25' 7.6"

AL-Eain 3 stretches on the eastern foot of the Al-Eain Mountain. Neolithic and Islamic pottery are scattered over the surface. This site was largely destroyed by citizens and official bodies.

AL-EAIN 4: N 13° 01' 42.8", E 30° 25' 7.9"

It is located on the northeast side of Al-Eain Mountain and to the north of the Al-Eain 3. The site contains the remains of pottery dating to the Neolithic period and Islamic pottery. There is also a pond at the foot of the mountain inside this site to store water. This site was exposed to destruction.

AL-EAIN 5: N 13° 01' 6.60", E 30° 25' 6.8"

It is in the Northeast of Al-Eain Mountain and it is located to the northwest of the Al-Eain 4. This site contains Neolithic settlement remains such as pottery, with grinding stones and microlithes.

AL-EAIN 6: N 13° 01' 6.8", E 30° 25' 6.8"

It is on northwest of Al-Eain Mountain and west of Al-Eain 5 site. It contains Neolithic pottery, stone implements and grinding stones with a variety of shapes and manufacturing and a variety of raw materials.

AL-EAIN 7: N 13° 01' 6.7", E 30° 25' 54.7"

It is situated on the northwest of Al-Eain Mountain and to the west of Al-Eain 6. It contains stone implements, but most of them are debitage. It is notable that there is frequent existence of Islamic pottery on the surface with lack of the Neolithic pottery.

AL-EAIN 8: N 13° 01' 51.9", E 30° 25' 36.5"

This site is found in the northwest of Al-Eain Mountain and on the southwest of Al-Eain 7 site. The site contains cemeteries similar to the Islamic form, but



this may be only in structure, so this is not clear. A few remains of Neolithic pottery with stone tools appear on the surface.

AL-EAIN 9: N $13^{\circ} 01' 6.47''$, E $30^{\circ} 25' 36.5''$

It is placed in the west of Al-Eain Mountain and to the south of Al-Eain 8 site. There is Mesolithic wavy line pottery on the surface as well as Neolithic pottery. In addition, there are some stone tools.

AL-EAIN 10: N $13^{\circ} 01' 51.9''$, E $30^{\circ} 25' 36.5''$

Al-Eain 10 is located directly to the west of Al-Eain Mountain and to the south of Al-Eain 9. The site contains the remains of Neolithic and microlithic pottery as well as grinding stones.

AL-EAIN 11: N $13^{\circ} 01' 32.5''$, E $30^{\circ} 25' 26.9''$

It is located on the west of Al-Eain Mountain and on South of Al-Eain 10. Neolithic pottery and some stone implements were found on the surface of the site.

AL-EAIN 12: N $13^{\circ} 01' 15.8''$, E $30^{\circ} 25' 15.9''$

The site is found to the west of Al-Eain Mountain and to the south of Al-Eain 11 site. It contains Neolithic habitation remains consisting of pottery sherds and microlithic grinding tools. This site is characterized by density of scattering of Archaeological remains.

AL-EAIN 13: N $13^{\circ} 00' 9''$, E $30^{\circ} 25' 0.41''$

It is located in the southwest to Al-Eain Mountain and to the south of Al-Eain 12 site. Neolithic remains appear on the surface of the site, mainly the microlithic and their debitage. This indicates that this site was a workshop for manufacturing stone tools. Pottery is also found in the site. The remains of milling tools also appeared in multiple formats. "This site must be excavated".

AL-EAIN 14: N $13^{\circ} 00' 8''$, E $30^{\circ} 25' 0.53''$

This site is also located to the southwest of Al-Eain Mountain. On its surface, the remains of Neolithic are found. They are represented by distinctive pottery with its multi decorations. The remains of stone tools and grinding tools also appeared with multiple shapes. Density of the archaeological residues appear on the surface. There are remains of some buildings with square shapes in the southern part of the site, they may date back to the Islamic period. "This site needs more excavation".

CAP: N $13^{\circ} 06' 29.8''$, E $30^{\circ} 11' 27.2''$

It is located in the south of El-Obied town and on El-Obied-Edalange road. It contains the remains of

Neolithic pottery and grinding tools. There is also a big Baobab tree "Tabaldi". Some novels said that El-Imam al-Mahdi camped in it after the Shikan battle.

POTTERY IN THE STUDY AREA

It is noted that pottery sherds disclosed in northern Kordofan region vary in their structure and the degree of burning as well as decoration. It is known that the Neolithic, when this pottery was made, was prosperous during the early and middle Holocene, as was the impact of demographic factors in the spread of pottery manufacturing in that area.

Hence it is possible to summarize the main features that characterize the pottery in the region within the following points:

1. Through the survey completed pottery have not been found as all the pieces are small sherds.
2. Generally, it is noticed that the pottery is poor in polishing and smoothing, and most of the sherds are thick and they were not carefully burned.
3. The quantity of the pottery belonging to Mesolithic is fewer than that belonging to Neolithic.
4. There is a diversity of the decorative styles of pottery dating to the Neolithic. However, the Mesolithic pottery is mainly characterized by the spread of wavy line patterns, while the dotted wavy lines and zigzag patterns are rare.

Types of pottery decoration spread in the study area probably refer to the diversity of labors as well as cultural interaction in this region which is located in the western part of central Sudan (fig. 2). The wavy line found in this region represents a typical feature of the Mesolithic culture. It has clearly spread in central and northern Sudan about 9,000 years ago, (Khabir 1987: 378). Otherwise this type of decoration is scarce, we found only two in the sites. It is varied in forms of decoration between the classical wavy lines and shape with sharp angles that appear in the form of triangle ripples. The dotted wavy lines style was very rare, just one piece has been found in Al-Eain 1, as well as the scarcity of zigzag motifs.

The Neolithic pottery have been found in multiple types of decoration, such as the decoration of straight lines that appear in two forms, either to be connected straight lines, or dotted straight lines (fig. 3). Also, these forms were found overlapping together on some pieces. These forms are found in some sites, but they are not with wide spread. We found forms of dots decoration represented by dif-



ferent dots on the surface of the pot, or filling all the surface with regular technique although they appear sometimes in an irregular manner. The implementation of this type of decoration appears through the comb of wood, catfish spine, or a single rod to put the points on the surface of the vessel. This figure is found in most of the archaeological sites in the study area. In addition, it was also found in the form of geometric motifs represented by triangles or squares and other component forms, so these motifs have spread significantly during the Neolithic. A decorative figure which is known as mat stamp was found. It is implemented by pressing the straw mat or in a systematic technique on the surface of the pot before it dries. In addition, a form of random stamps was found. This type of decoration spread during the Neolithic as it was often done by rod.

It is worth noting a similarity between the pottery styles in this region and the one in the Middle Nile, the distance between it and the White Nile is about 220 km. The similarities are also clear in the construction and composition as well as decorative patterns. The possibility of occurrence of this decorative similarity, and the reasons that linked the Nile region to Kordofan must be detected. Here it can be argued that the Wadies such as the Wadi El-Malik, Wadi El-Maqadam and Khor Abu Habil have a profound impact on creating this cultural interaction. They facilitated the movements during the early and middle Holocene proving that they were active during that era (Wickens 1982: 24). The wavy lines pottery has spread substantially in the extension of the Sudanese Nile starting from the Blue Nile in the inside area of Gezira (Hayati 2011: 194), as well as on the east bank of the Blue Nile (Fernandez et al. 2003: 240-41). We also found signs of forms of wavy lines with sharp angles in central Sudan, in Khartoum area, Atbara River, and Shaqadud area (Caneva 1983, fig. 10; Mohammed-Ali 1991, fig. 5-2: eh; Haaland and AbdulMagid 1995, fig. 16: d; Mohammed-Ali and Khabir 2003: 37, fig. 2, cd). Also, this form is found in Tibesti area in Western Sahara (Gabriel 1981, plate 1: e). This indicates for a wide distribution of this type of decoration in the Nile Valley and to the west of it up to Kordofan region, especially it mediates the movement of people between the Nile and western Africa.

The Neolithic has witnessed a diffusion of human beings in central Sudan, specifically during the domestication stage. The cultural evolution contemporary to the food production stage has impacted the pottery industry. Doubtless that the north Kordofan region has gained some of these decorative features characterizing the pottery along the Nile. The

decorations that were found in the study exist in the Middle Nile region, specifically Khartoum area. The decoration is represented by straight lines sometimes made in limited number with bundles containing two or three lines, or it gives frequent lines, so it covers all the surface of the pot without limited number. This form has been found in Shaheinab, Kadero, El-Geili, and other sites in Khartoum area (Arkell 1953: 33; Hays 1974: 28; Caneva 1991; Chlodnicki 1984).

The decoration of the dots is found in multiple areas in central Sudan in Kadero (Chlodnicki 1984: 342) and Zakiab, where the dots are near the rim (Haaland 1987: 164). The form also exists in the Third Cataract area (Sadig 2005: 52-53) and in Halaween district in Gezira reach, where it was found in Al Qoz sites (Hayati 2011: 208). Regarding the geometric motifs, we found that it is scattered broadly in various regions of Sudan, such as Kadero (Chlodnicki 1984: 342) and Kadada, near Shendi (Geus 1984: 367). We also find the forms of stamps were commonly used during the Neolithic in central Sudan, including what is known as "V" stamp, as well as stamps of the fingernails. This form is found in Shaheinab. This suggests that it was used since the fifth millennium B.C. (Arkell 1953, Pl. 31). Parts of this form are extensively located in Jebel Moya area, Rabak and Jebel Tomat in the White Nile region (Addison 1949; Elmahi and Haaland 1984: 31; Haaland 1987: 46-47).

STONE TOOLS

There was no difficulty to exploit the raw material in this region for stone manufacturing. This produced a diversity of stone tools in the forms and functions. Some industrial waste and stone tools were found. The quartz has a high percentage in manufacturing of these tools. This derives from the availability of its quarries in nearby areas. The quartzite is the second-most raw material available in the study area, while the granite and rhyolite are less scattered on the surface of the sites.

Stone tools in the study area are not characterized by quality industry, both in terms of serrating and control of the formation of the tool, and it is clear that they have been affected by environmental factors that led to erosion. This probably refers to the fact that people in this region could not reach the quality prevailed in many areas in central Sudan such as in Khartoum, Shendi (Arkell 1953: 25; Geus 1984: 369) and northern Sudan, (Wendorf 1968). However, if we compare it to what is found in the Nile region, we note similarities in the overall shapes, although

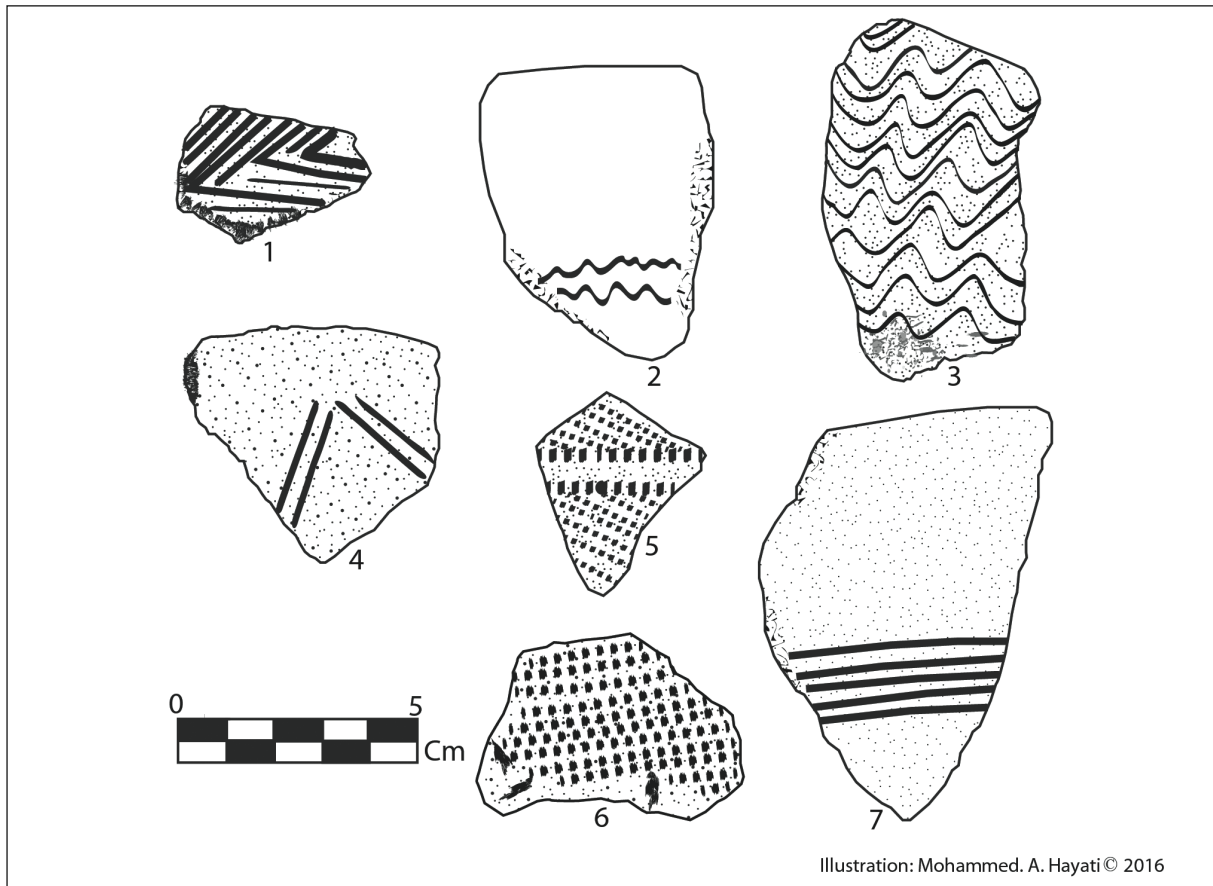


Fig. 2: Several motifs of Mesolithic and Neolithic pottery from the study area. 1,4, incised lines; 2-3, wavy line; 5-6, dotted straight line; 7, straight line.

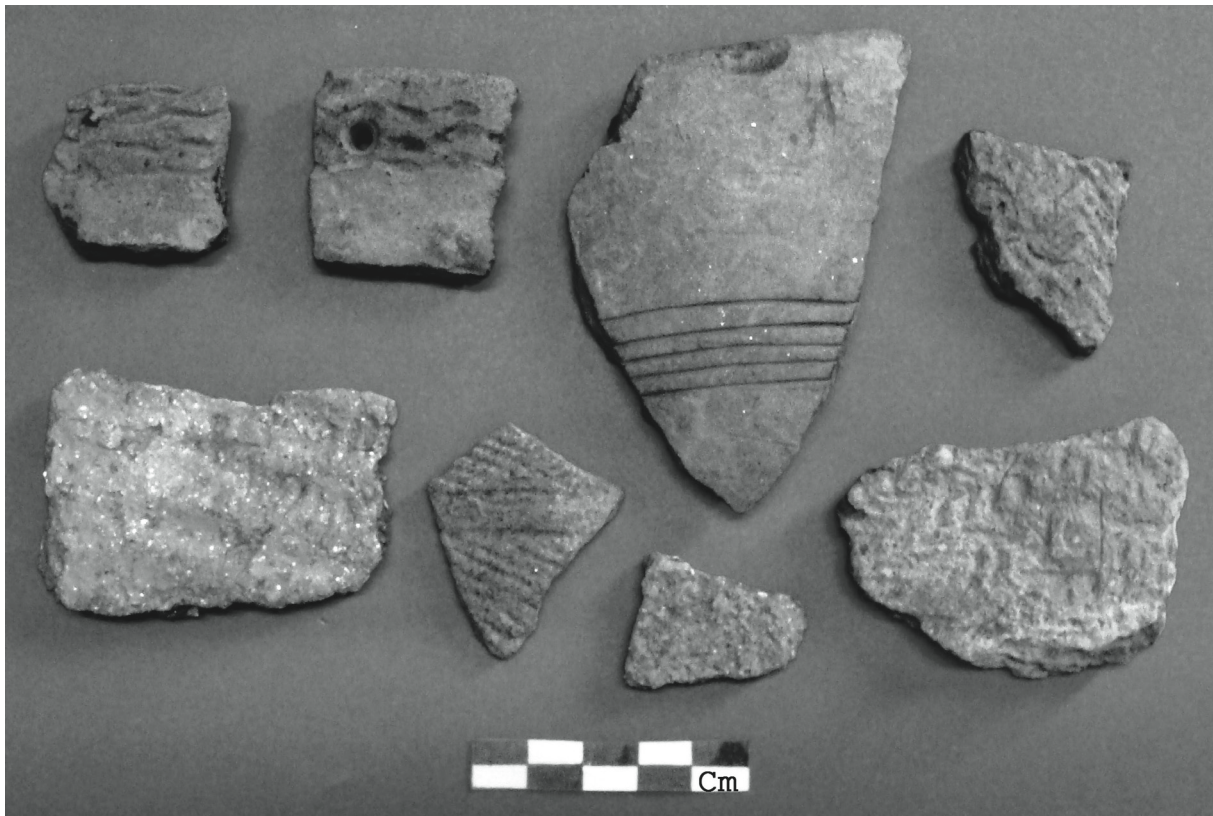


Fig. 3: Some samples of Neolithic pottery in the study area.

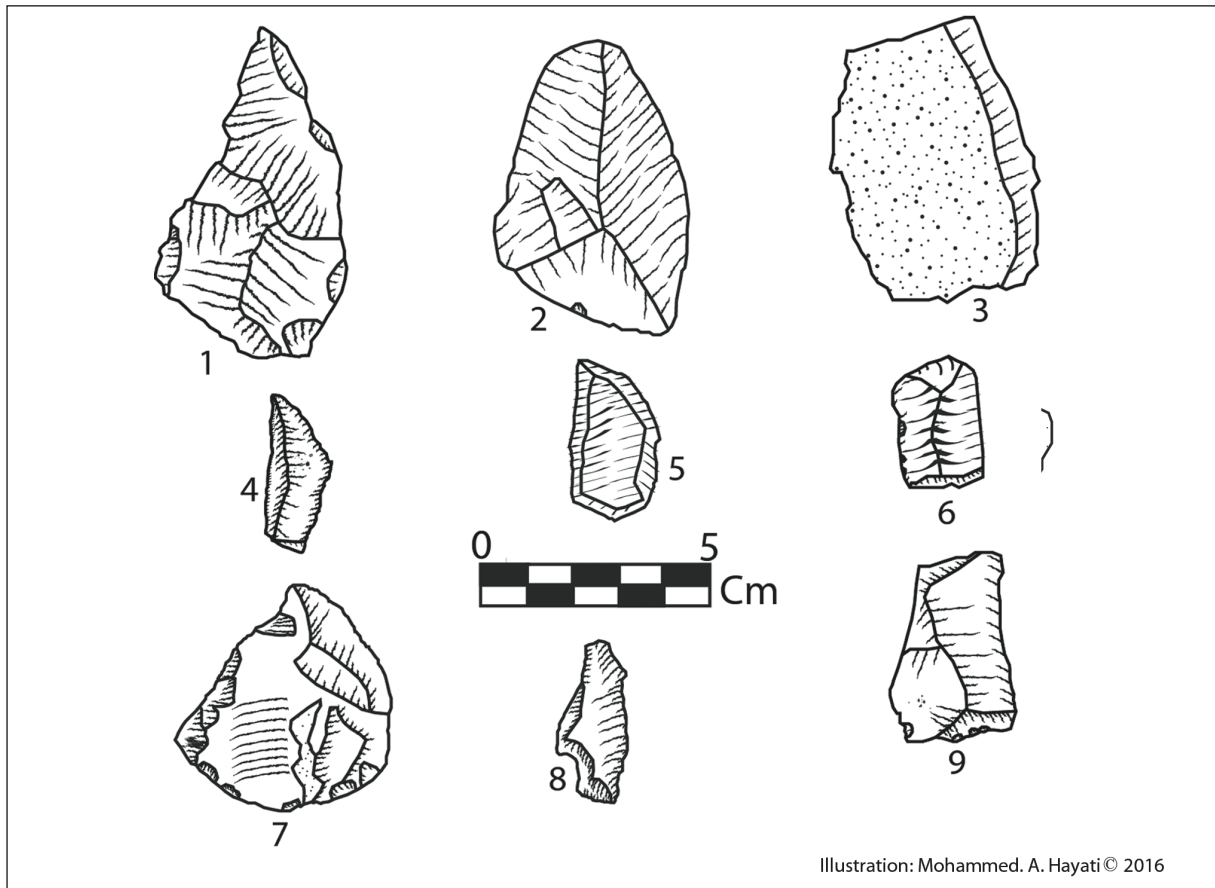


Fig. 4: Several sizes and types of stone tools: 1, borer; 2-3,9, scrapers; 4-6,8, blades; 7, crescent.



Fig. 5: Microlithic and debitage from the study area.



it is normal to occur during Prehistory that there is a similarity in the stone tools. Thus, it is evident between Kordofan region and the White Nile, especially quartz which is more prevalent in both regions (Clark 1989: 395-399).

A number of types of stone tools were collected through this survey. They are represented in the cores reflecting the possibility of the industry in the study area. This means that these tools were not imported from another area, but they were made in the study area. Flakes resulting from industry operations are found, in addition to good flakes used as tools (utilized flakes). Blades and bladelets are also found representing a live model for the spread of microlithes in the study area. They vary in size in terms of length, which ranges to 2-5 cm. These tools have been found in some of the sites (fig. 4). There is a large amount of industry waste (debitage) (fig. 5) in some sites resulting in these sites containing intensive spread of the debitage. This indicates that the sites may have been workshops for stone tools manufacturing.

Several kinds of scrapers such as side scraper, end scraper and convex scraper are found in a number of archaeological sites. Also, we found borers in a number of archaeological sites, evidences of crescents tools which came from other sites, in addition to denticulate or sickles, but they are a few. Few notched are found. Truncates, one of the tools that has spread significantly, especially during the later Prehistory, which was used in slaughtering, skinning and cutting were found. It is noticeable that axes, chisels and gouges are not found in this region. This could lead to the assumption that they were only restricted to the Nile region. If this is correct, it will support the hypothesis that the gouges were used in boats industry, near the Nile, during the Neolithic.

GRINDING TOOLS

It is clear that Prehistoric man in the study area used diverse forms of stone grinding tools for grinding the grain and pigments. These tools were manufactured of granite, which was dominant in the area, in addition to sandstone, quartz and quartzite. The lower and upper grinding stone are characterized by small size, quality in the industry, and polishing. Hammer stones, which became more obvious (fig. 6), as well as a part of a mace head made of granite are also found. We note that the grinding stones are on the surface of the sites.

DISCUSSION

North Kordofan province is located within geographic space in the middle of Sudan in a sandy plain area. It is interposed by a number of wadies (Lloyd 1910: 521), which gives it a recipe to be a cultural and ethnic convergence zone. This geographical location endowed it characteristics that are rare to find. Perhaps we are fully aware that the wadies and channels that come from Darfur region, passing Kordofan, have a great impact in that correlation and cultural intermingling. There are a number of these wadies feed the Nile, particularly during stages of humidity that prevailed during the early Holocene. Some of these are Wadi El-Melik, which passes through the northern part of Kordofan province, and it covers Umm Badir, Abu Zeima and other villages up to the Nile at the southern part of Ed-Debba region. Wadi El-Maqaddam passes through the land of Kababish tribe, then it connects to the Nile at Kurti area. Khor Abu Hahl that comes from the Nuba Mountains area until it connects to the White Nile in Kosti. Therefore, these channels have worked to control the movement of people between the Nile and Kordofan. Thus, the Neolithic humans relied on them in the movement of herding, trade, all needs that related to subsistence, and various forms of migration resulting from social relations as well as politics (Soghayroun 2010: 23-25). Archaeological evidences revealed by this study inform about that. It is most probable that there are some stations for communication across the plains and wadies that cover the area between the multiple tributaries of the Nile and Kordofan region. Perhaps the White Nile, by virtue of its geographical location, its parallelism to Kordofan region, and its contents of evidences of continuation of settlement was one of the most areas that have cultural exchange with the area of Kordofan.

Pottery stands as a strong prove that cultural interaction was created by the movement of population in the area which was characterized by bushy forests, available preys, and fertile land, and abundance water resources sufficient for life; agriculture, and animals. All these factors contributed to the distribution of pottery distinguished by its decorative compatibility. This refers to cultural horizons consistent together, although they are diverging in terms of geographical location. The archaeological research has demonstrated the heavy spread of pottery making in the White Nile region during the Mesolithic and Neolithic (Clark 1973: 63). If we follow the Nile towards Khartoum area, we will find that it was the epicenter for the emergence of pottery and diffusion in Sudan more than nine thousand

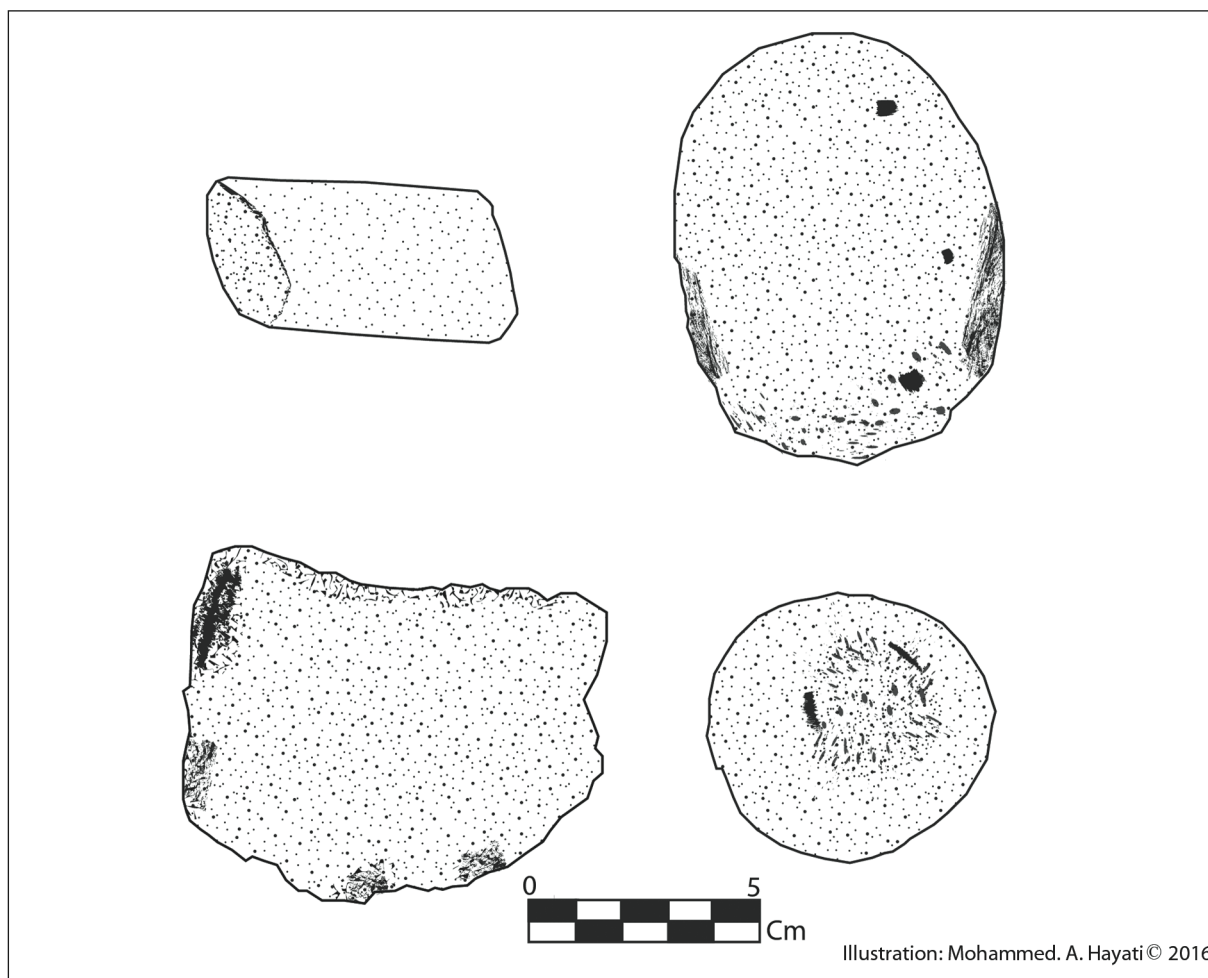


Fig. 6: Grinding stone tools from the study area.

years ago. Perhaps Arkell (1949 and 1953) studies and recent research Hassan (1986), Khabir (1987) and Salvatori (2012) have demonstrated the pioneering of pottery distribution in the area, its diffusion to the rest of the adjacent areas, and its transference through social channels, which lying on the wadis. We note that the decoration of pottery scattered in El-Obied area corresponds to the one in the White Nile area in many features (Hays 1974: 28) and vary in others. This discrepancy may have been controlled by the handicraft issues and the geographical location. Therefore, each area has a number special decorative features, then it takes some of the decorative features of other areas. Kordofan region mediates the area between western Sudan and West Africa, which has witnessed a widespread of pottery industry (Haaland 2009: 218). Nevertheless, there is lack of quality in its industry during the late Prehistory in the territory of North Kordofan.

The nature of the subsistence economy that prevailed during the late Prehistory (from 10.000 to 2.500 BP) had a significant impact on several forms and functions of stone tools. Therefore, on one hand,

humans who relied on hunting and gathering produced a wide variety of these tools, and it was the most important for them. On the other hand, humans who relied on farming and herding, although they did not leave the hunting, produced stone tools for plowing the ground, harvesting the crops, and other events related to subsistence. However, we note the stone tools produced in North Kordofan region are characterized by poor quality in the industry, so they were not well teathed and trimmed.

The most striking finding is the lack of axes and gouges in this region. This may lead us to an important question about the extent to which people relied on agriculture for their subsistence. Axes had spread significantly during the food production stage and they are associated with agriculture on the Nile. Thus, other questions about the reason for their disappearance, whether they were made in this area or not, and whether they disappeared due to environmental and human factors or not. Answers to these questions lead to the understanding of the nature of the sites. These tools might have not been made during the Neolithic period, but this does not mean



lack of knowledge of human in this region of agriculture, as it could have been replaced by other tools, especially there are lengthy tools tend to be sizable in shape, such as utilized flakes and scrapers, and they could do function of axes, particularly with regard to farm of the land. The scrapers can be attached to handles of wood (Arkell 1953: 29), and if they occurred, they will possible contribute to farming.

The disappearance of gouges also can raise some questions relevant to their value for humans in that region during the Neolithic. With knowledge of their existence in some of the Middle Nile regions (Choldinicki et al 2011: 287), we can ask about their importance to the Neolithic humans in northern Kordofan, about the importance of agriculture during the Neolithic in this region, as researcher Haaland pointed out that this tool has been used for tilling the ground (Haaland 1981: 215). It is not easy to sentence on this area and say that agriculture was not known before we study the ancient plant remains, especially the study of this region is still in its start regarding archaeology as general. The researcher Anthony Arkell said that this tool was used in boat industry proving its usefulness for humans who lived near the Nile. This is according to the evidence discovered, which means that these results are not final.

In summary, stone tools were with multiple forms and functions. The grinding tools in the study area are characterized by small size, especially the grinding milling tools made in a good way in general, so most of them were polished. The hammers are widely scattered on the surface of the sites. It could be argued that the frequent presence of these tools indicates the availability of grain in this region due to the appropriate environment for the growth of various grains used in food and to the high numbers of people who lived in this area seasonal or permanent habitation. This high existence indicates the dependency of human on grain, whether during the gathering or the food production stage, but it is clear that the milling tools have spread further during the Neolithic within the stage of food production.

CONCLUSION

The advantage of this study comes from the fact that it added new information about the archeological record in an area away from the Nile, making it a useful place to compare and understand the nature of human life in that area: how was the nature of his relationship to the Nile, socially, culturally and economically, and did this actually happen or not? However, the archaeological evidence collected from this

area has shown that there are some signs of cultural similarities and cultural correlation between the Nile and the plains of North Kordofan. There are also signs of differences and a lack of full compatibility which is clear by the lack of some tools distributed at the Nile and disappeared in this area.

ZUSAMMENFASSUNG

Die Saison Oktober 2015 des Archaeological and Heritage Project in North Kordofan konzentrierte sich auf die Berge östlich von El-Oeied sowie das Gebiet südlich der Straße Khartoum – El-Obied. In diesem Gebiet wurden einige archäologische Sites, alle in die neolithische Periode mit Spuren von mesolithischer Präsenz datierend, untersucht. Die archäologischen Hinterlassenschaften sind Keramikscherben mit unterschiedlicher Dekoration. Außerdem konnten unterschiedliche Techniken der Keramikherstellung sowie die Vorbereitung des Tons. Steingeräte und Abschläge sowie Mahlsteine wurden gefunden. Alle diese Artefakte lassen auf die Anwesenheit von Menschen im mittleren Holozän schließen.

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