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## Technical Characteristics of the Mesolithic Pottery in El Goz Sites (Central Sudan)

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### Introduction

Pottery industry represents the greatest achievements of human in the Mesolithic. It emerged during the Late Paleolithic in Asia before 12700 years ago (Rice 1999: 14); and appeared in Europe during the eighth millennium BP, shortly before the agriculture (Elizabeth and Barry 1988: 216). Pottery has been associated with cultural changes and daily activities. Paleolithic man did not know pottery commonly which means that he did not rely on it. Pottery have spread on settlement sites during the Mesolithic (Elamin and Mohammed-Ali 2004: 103-104) and if we want to follow up pottery industry in the Sudan during that period, we find that all the sites which witnessed the emergence of this industry were located near streams or pools, whether on the banks of the Nile or the valleys. Sites with pottery appeared during the early Holocene rainfalls (Hoelzmann *et al.* 2001: 193) in the tenth millennium BP and this is a date of the beginning of the pottery industry in Sudan (Khabir 1987: 378).

### 1. El Goz Sites

The British diplomat H. Glencarin Balfour-Poul who worked as an employee in the period of English government was the first who mentioned the term (the Goz Culture). During his stay in Sudan he visited a number of regions in Central

and Western Sudan and between the years 1945-1954 he was in the area of the Gezira, on the eastern and western banks of the Blue Nile (Balfour-Poul 1952). He used *Goz culture* term for mound shape sites that were found in that area.

In the framework of this study we will focus on the Mesolithic pottery from a number of sites, namely: Wad Shanaina, Shekaira Al-Wadi, Goz Abdul Salam, Goz Kabaro, Goz Al-Rehaid, and Wad Egaibish (Fig. 1). Through the pottery samples collected from these sites it became clear that there is a diversity of forms as well as similarities.

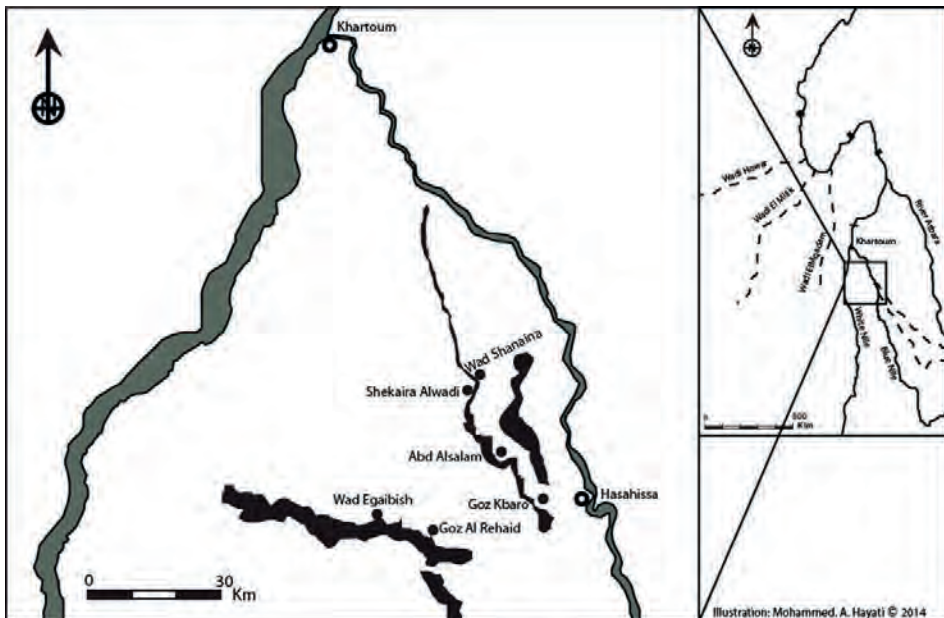


Fig. 1. Map showing the location of sites mentioned in the text

## 2. El Goz Pottery

### Pottery paste

A paste is the important feature of the pottery. Obviously the environment and the nature of the soil are reflected in the pottery. The Gezira area is characterized by gray clay soil that tend to black. This soil is the basic component of the paste (El-Hassan and Mohammed Ali 2008: 12), however, there were some other organic and inorganic elements added to the mud to make it sticky and solid. Within organic materials we found animal dung, bones, crushed shells and plant seeds.

The inorganic admixtures contain crushed stones, mainly quartz, clearly visible on the surface of pottery. Quartz was crushed and grinded, and added to the mud in order to increase the hardness of the paste, to make vessel construction easier, to increase high temperature resistance and to prevent the absorption of liquids (Klein *et al.* 2004: 248). Sand was added to the paste rarely in the Mesolithic and addition of sand to the paste was one of the main characteristics of pottery industry during the Neolithic (Mohammed-Ali 1987: 128).

### Vessel forming and surface treatment

As the Mesolithic pottery was hand-made, the traditional methods played a key role in the formation of the pot. Among the collection, we have never found a complete vessel or even a large sherd dated to the Mesolithic in El Goz sites, however the prints of hands produced during the manufacturing process are very clear on the surface of the pottery sherds.

During the study of pottery we observed that:

1. Pottery walls tend to be very thick ranging from 1.5 cm to 3.0 cm;
2. The surface was treated by hand or by rag. Polishing of pottery surface was usually made with hands;
3. Most of the samples were characterized by rough and non-polished surface;
4. There are some cases when the surface was painted with a layer of animal dung paste, perhaps to increase the cohesion;
5. Except of some wavy-line decorated vessels, no colorants have been used on the surface, and the colors that appeared on the pottery reflect the multiple processes of the firing.

### Decoration

Pottery decoration is one of the issues that preoccupied the thought of the researchers due to its importance and position for the pot-maker as well as its usefulness in reading the technical memory of the manufacturer (chain operator). Decoration is one of the main variables in pottery and perhaps one of the first variables that attract the beholder before any other variable.

The Mesolithic pottery has been decorated with some type of tools such as combs, incising tools and other decorative ways (El-Hassan and Mohammed-Ali 2008: 22). Ancient man used various tools such as wood combs, catfish spines and shell combs (Arnell 1949: 81; El-Hassan and Mohammed-Ali 2008: 22).

There were few methods for the implementation of the decoration, including impressions on the surface of the pot by a stick, rod or finger print. In the second

method incising was performed by placing the tool on the surface of the pot and it was towed to keep a shallow incising on the wall of the pot, varied in size and shape. The pressuring and incising are the oldest methods of decoration (El-Hasan and Mohammed-Ali 2008: 23). Other techniques of decoration include: (a) combing (passing the comb made of wood or catfish spine, on the surface of the pot before it becomes full dry); (b) carving and cutting with the help of a simple wooden tool (El-Hassan and Mohammed-Ali 2008: 24); (c) rocker technology. In this case relatively long, teeth-like comb tool was used, moved in a swing mode on the surface of the pot to produce continuous zigzag or dotted lines.

### 3. The main characteristics of Mesolithic pottery decoration

#### Wavy Line motifs

This type of decoration is present in various forms (Hayati 2011: 44-48) and this decorative pattern had been formed in different ways. Pottery decorated with *classic waves* are the most prevalent in the Central Nile (Mohammed-Ali and Khabir 2003: 38). *Angular wavy line* variety is rare, being reported from sporadic Mesolithic sites. Together with *mild waves*, it gives the impression of carelessly made work (Mohammed-Ali and Khabir 2003: 38), like the pattern of *wavy lines with arch-shaped motifs*



Fig. 2. Pottery with Wavy Line motifs from Wad Shanaina

(Fig. 2-3), occasionally non continuous, in addition to *serpentine waves*. This wavy line variety was occasionally coated with a bright red slip made with a type of red ochre (Fig. 4). Finally, we found composite motifs, where the comb was used for making more or less straight lines which meet other sets of wavy lines at an angle. However all these motifs are sporadic in most of the study sites.



Fig. 3. Pottery with Wavy Line motifs from Shekaira Al-Wadi



Fig. 4. Pottery with Wavy Line and Dotted Wavy line motifs from Goz Al-Rehaid

### Dotted Wavy Line motifs

*Dotted wavy lines* resulted from the development of *wavy line* pattern. That type of decoration spread in the Central and Northern Sudan as well as in the valleys connected to the Nile such as Wadi Howar (Jesse 2003: 101-103). *Dotted wavy lines* had different patterns and shapes (Fig. 5-6), but they were similar in different regions of Central Sudan (Marks *et al.* 1968: 321; Haaland 1995: 161). Three types of motifs were distinguished (Mohammed-Ali and Khabir: 2003: 43)

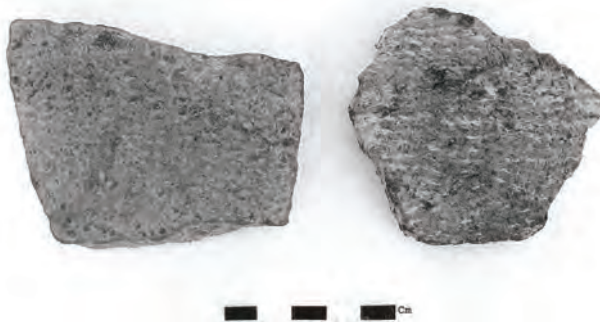


Fig. 5. Pottery with Dotted Wavy Line motifs from Wad Shanaina

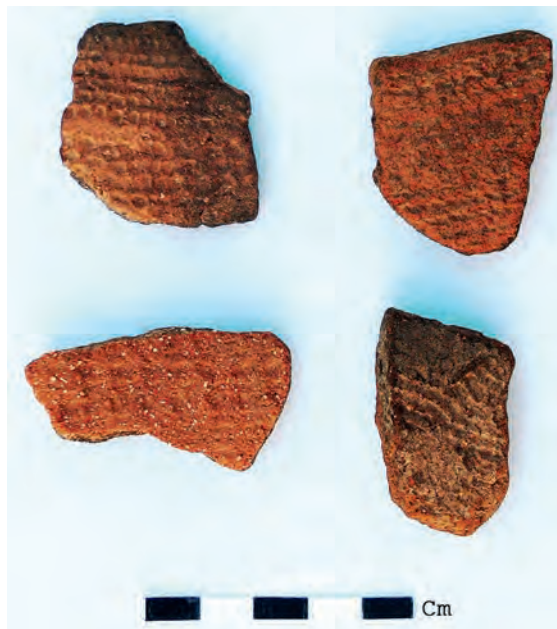


Fig. 6. Pottery with Dotted Wavy Line motifs

which spread in different areas in Central Sudan (Arkell 1949, Plate: 72; Caneva 1983, Fig. 15: 1-13; Mohammed-Ali 1991: 69, Fig. 3-5: d-f): (1) *deep dotted lines* with same spacing of waves. Examples come from the Mesolithic sites of Saggai (Caneva 1983, fig. 15: 1-13); (2) *shallow dotted waves*. This motif was found on Khartoum Hospital site (Arkell 1949, plate 72); (3) *dotted wavy lines with sharp angles*. It has been identified on a few sites from the Central Nile and the Sahara (Mohammed-Ali and Khabir: 2003: 45).

### Zigzag Motifs

This type of decoration, chronologically late, was done by a rocker technique (Fernandez *et al.* 2003: 206). It appeared during the second phase of the Mesolithic and represents the stage of basic transition from the Mesolithic to the Neolithic. This type of decoration has two basic variants: *continuous zigzag lines* and *dotted zigzag lines*. Both motifs were spread in El Goz area (Fig. 7).



Fig. 7. Pottery with Zigzag and Dotted Wavy Line motifs from Goz

## Conclusion

It seems that pottery of El Goz area carry the same features that characterized Mesolithic pottery of Central Sudan. It is clear that pottery production was impacted by local raw material as the paste contained local materials (clay, impurities, etc.) available in the area at that time.

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