



# ARCHAEOZOOLOGY OF THE NEAR EAST

V

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archaeozoology of southwestern Asia and adjacent areas

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**H. Buitenhuis, A.M. Choyke, M. Mashkour and A.H. Al-Shiyab**



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## Preface

When I participated in the IV<sup>th</sup> International Conference of ASWA, held in the summer of 1998 in Paris, I was gratified to learn that the Scientific committee had unanimously agreed to hold the next meeting in Jordan. Thus, on 2 April 2000, the V<sup>th</sup> International Conference of the Archaeozoology of Southwest Asia and Adjacent Areas was held for the first time within the region at Yarmouk University in Irbid, Jordan after being held on the past four occasions in Europe.

The themes of this conference were divided into five areas including:

- Paleo-environment and biogeography
- Domestication and animal management
- Ancient subsistence economies
- Man/animal interactions in the past
- Ongoing research projects in the field and related areas

I wish to thank all those who helped make this conference such a success. In particular, I would like to express my appreciation to the Director of the Institute of Archaeology and anthropology at Yarmouk University. Special thanks are due to his excellency, the President of Yarmouk University, Professor Khasawneh, who gave his full support and encouragement to the convening of this conference at Yarmouk University and to all those who contributed the working papers which made the conference possible.

I also wish to thank members of the organizing committee who worked very hard for many months in preparing the venue for this conference.

Abdel Halim Al-Shiyab  
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Note from the editors:

The editors wish to thank Dr. László Bartosiewicz for his excellent assistance in preparing and checking the contributions to this volume.



Participants at the 5<sup>th</sup> ASWA Conference, held at the Yarmouk University in Irbid, Jordan, 2000

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# EARLY FARMERS IN JORDAN: SETTLED ZONES AND SOCIAL ORGANIZATIONS

Z. A. Kafafi<sup>1</sup>

## Abstract

How do the interrelationships between different types of settled zones and stylistic patterning in the material culture tell us something about the sociocultural systems that produced or used these objects. Here, published material from sites in three ecozones in Jordan, marking the very beginnings of agriculture in the area, are examined. Environmental, zoological and paleobotanical data are used.

## Resumé

Comment les relations entre différents types de zones d'occupations et les schémas stylistiques dans la culture matérielle, nous renseignent-elles sur les systèmes socio-culturels qui produisaient ou utilisaient ces objets. Ce papier examine le matériel publié des sites de ces trois écozones en Jordanie qui marquent les débuts de l'agriculture dans la région. Les données environnementales, zoologiques et paléobotaniques sont utilisées.

Keywords: Early farming societies, Jordan, Subsistence economies

Mots Clés: Premières sociétés agricoles, Jordanie, Économies de subsistance

## Introduction

This paper deals with an important problem in archaeology today, the explanation for and understanding of the interrelationships between the settled zones, stylistic patterning in the material culture and the structure of the sociocultural systems within which these objects were produced or found.

In studying the changes in intergroup relations deduced from the analysis of stylistic variability, population expansion, in turn the result of certain changes in the subsistence base, has been mentioned as a possible causal factor.

In this paper, however, I have tried to illustrate how archaeologists can make inferences about social organization, rather than provide a source of basic data on the prehistory of Jordan. I have drawn my information from a wide range of published data from recent excavations, especially from the southern part of Jordan including: Ba'aja (Gebel and Bienert 1997; Bienert and Gebel 1998: 75-91), Basta (Nissen *et al.* 1991), 'Ain el-Jamam (Waheeb and Fino 1997), Al-Basit (Fino 1998: 103-113), and es-Sfiyyah (Mahasneh 1997) and from the central part of Ain Ghazal (Rollefson and Kafafi 1994, 1996, 1997; Kafafi and Rollefson 1995), Wadi Shu'eib (Simmons *et al.* 1989), eh-Sayyeh (Kafafi *et al.* 1997: 9-27; Kafafi, Caneva and Palumbo 1999) and Jebel Abu Thawwab (Kafafi 1988, 1993).

Archaeologists have distinguished early farming communities from those of hunters and gatherers by their use of cultivation and herding.

The first plants to show signs of domestication were registered in several parts of Southwest Asia. It has been argued that the presence of domestic emmer wheat at Tell Aswad near Damascus came from levels dated to 7800 bc (uncalibrated) (van Zeist and Bakker-Heeres 1982). Meanwhile, the earliest evidence of domestic einkorn wheat is rather late, and had been attested in levels at Jericho dated to 7300-6500 bc (Hopf 1983). The earliest evidence for domestic barley has been noted at Gilgal and Netiv Hagdud in the Jordan Valley and dated back to ca. 8000-7800 bc (Kislev *et al.* 1986). There is also evidence for pulse cultivation in the eighth millennium bc (Garrard, Colledge and Martin 1996: 207).

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As is well known, the first evidence for the domestication of ungulates in the Levant occurred several hundred years after plant agriculture became established. Sheep and goat were the first ungulates to be domesticated.

The territory of wild goats seems to have overlapped with that of ibex (*Capra ibex*). It has already been stated that remains of both ibex and wild goat were found at Beidha, near Petra (Hecker 1975, 1982). It is also argued, that, within the Levant, evidence for goat domestication earlier than 6500 bc is very limited (Garrard, Colledge and Martin 1996: 208). Archaeozoologists studying the faunal material at Jericho in the Jordan Valley and Ain Ghazal near Amman concluded that the inhabitants of these two sites during the so-called Middle Pre-Pottery Neolithic B (ca. 7200-6500 bc) were herd managers (Clutton-Brock 1979; Köhler-Rollefson *et al.* 1988). Moreover, based on the results from excavations, it has been agreed that during the Late Pre-Pottery Neolithic B (ca. 6500-6000 bc) the geographical distribution of goat exploitation expanded in the Levant (Davis 1978; Ducos 1978; Horwitz and Tchernov 1987).

It has been stated that the bones of wild sheep (*Ovis orientalis*) were found at an Epipalaeolithic and Pre-Pottery Neolithic site in Wadi Judayid in Jordan (Henry and Turnbull 1985). In the mean time, it is clear that no wild sheep remains earlier than 6500 bc were recovered from the site of Ain Ghazal although they become abundant after 6000 bc (Von den Driesch and Wodtke 1997: 515-519; Wasse 1997).

However, scientists have argued that animal domestication would have been forced on the increasingly sedentary farmers living in restricted territories. In addition, there is no clear evidence for exploitation of milk products earlier than the 5th millennium bc (Horwitz and Smith 1991). Churns made of clay and dated to the 5th millennium came to light at the site of Abu Hamid in the Jordan Valley (Dollfus and Kafafi 1993).

## Settled Zones

Jordan is located to the east of the Jordan Rift Valley. Geographically speaking, it can be divided vertically into three zones consisting of (from west to east):

1. The Jordan Rift Valley (Jordan Valley, Dead Sea and Wadi Araba).
2. The hilly-mountainous ranges that parallel the rift along its eastern margin (Irbid, Ajlun, Balqa, Moab and Al-Sharah).
3. The Badia extending east of the mountainous belt.

Moreover, the natural environment to the south is variable with differences in elevation from west to east, ranging from below sea level on the floor of the Rift Valley to altitudes of over 1000 m, then slopes down gently to around 600 m in the easternmost Badia Zone. The changes in elevation resulted in significant differences in temperature and precipitation patterns in the three geographical zones, in turn, resulting in important environmental distinctions.

A survey of prehistoric research in Jordan reveals a marked increase in the number of projects over the last twenty years. They are widely distributed and represent time frames ranging from the Lower Paleolithic to the Chalcolithic (Gebel, Kafafi and Rollefson 1997). Unfortunately, only a few of these projects have reached the stage of final publication, while many are still on-going. However, the published preliminary results may assist researchers in making an initial assessment of the early farmers in Jordan, the settled zones and the nature of social organizations from the end of the ninth through the end of the seventh millennia BC.

Below we present a study of each geographic zone, concentrating on excavated sites and trying to explain the relationship between the material culture and the reconstructed social organization.



## The Jordan Rift Valley Zone

The first farmers in the Jordan Valley and more precisely at Jericho, built curving houses constructed of mud-brick. An architectural complex consisting of an enclosure and a stone tower was uncovered at Jericho. The excavator ascribed a defensive function to this tower (Kenyon 1957). More sites belonging to the first farmers in the valley have also been identified, for example, soundings at Gilgal (Noy, Schuldenrein and Tchernov 1980) and Netiv Hagdud (Bar-Yosef, Gopher and Goring-Morris 1980), both located north of Jericho. Unfortunately, only one site from the period of Jericho, Gilgal, and Netiv Hagdud, dated to the end of the 9th millennium BC, has been found on the eastern side of the Jordan River.

Three sites, two of which, Dhra and Zahrat edh-Dhra 2, are located in the Dead Sea Lisan area, and the third Ghuwayr I, located on a hillside with a commanding view of Wadi al-Ghuwayr/Faydan, were sounded in the Wadi Araba area. The first, edh-Dhra was considered to be a Khiamian site by the excavators, used as a camp by pastoralists who had settled in that area (Raikes 1980).

The site of Zahrat edh-Dhra 2 is located in a badland region, composed of broad alluvial fans sprinkled with large boulders (Edwards 1999). The excavators have described it as a hamlet dated to ca. 10,000-8,000 bp.

Excavation at the site yielded two oval structures, groundstone querns. The area is littered by debris from a flint industry dated to the PPNB.

No clear picture is available about the beginnings of farming on the eastern side of the Jordan Valley due to the limited information available to us. It is only Jericho, on the western side of the Valley, which suggests the idea that the area was inhabited by a well-organized society. To erect such big and very complicated structures such as a tower, a defensive wall and rounded houses built of mud-bricks it might be expected that many skilled people were involved. The PPNB houses found at Jericho consisted of one single room. This suggests that perhaps many nuclear families lived together, ruled by a leader who organized and managed their work.

The case is completely different on the eastern side of the Wadi Araba where three sites have been visited and excavated. The material culture and the type of architecture indicate that pastoral groups lived in Wadi Araba at the end of the 9th and the beginning of the 8th millennia bc.

During the following period, the Pre-Pottery Neolithic B (ca. 9,500-8,000 bp), many farming villages were built in Jordan and Palestine, some of them founded on the remains of the preceding ones after they were abandoned for a certain period of time (e.g. Jericho). Though many of the PPNB villages (e.g. Sheikh Ali, Munhata and Jericho) were excavated on the western side of the Valley, only one possible site, namely Abu Urabi, was identified on the eastern side (Ibrahim, Sauer and Yassin 1976; Kafafi 1982; Muheisen 1988). Since, no archaeological remains of the PPNB period have been attested in the eastern part of the valley, to date, no suggestions can be made here concerning the social organization of populations living in this area. However, the results from excavations at PPNB sites west of the Jordan River have yielded a lot of information in this regard.

Concerning the Wadi Araba area, some sites have been excavated including: 'edh-Dhra' (Raikes 1980; Kuijt and Mahasneh n.d., Wadi Feinan (Najjar *et al.* 1990) and Al-Ghuwayr I (Simmons *et al.* 1998: 91-103). These settlements are located on wadis and are small in area in comparison with other contemporaneous sites excavated in mountainous regions. The excavators of Ghuwayr I assumed that the architectural sophistication at the site indicates that it was more than a simple "outpost" (Simmons 1998: 99). However, their purpose was to determine whether Ghuwayr I functioned as a "frontier outpost", or whether it was a small but elite center.

About 8,000 years ago something dramatic happened to some of the settlements in the southern part of the Levant forcing the inhabitants to leave. Archaeologists have attributed this abandonment to climatic changes (Kirkbride 1973). Instead of totally disappearing, these people adopted a different settlement strategy in addition to using pottery and other technological changes. These changes have often lead archaeologists to proclaim that this was the dawn of a new culture. The results of recent excavations at several sites in Jordan give us some insight to the kinds of social and economic changes that may have prompted a switch from a nucleated to a much more scattered settlement pattern.

In the Jordan Valley, as well as in other parts of Jordan, several pottery traditions are attested, assigned to the period between ca.7500-6500 bp. These are the Yarmoukian, Pottery Neolithic A and

B, and Ghрубba (Kafafi 1998). The inhabitants of the Jordan Valley lived in very simple structures during the sixth and fifth millennia BC such as those found at Sha'ar Hagolan (Garfinkel 1999). They also built pit-dwellings such as those found at Munhata (Perrot 1964, 1966) or rounded or elliptical buildings such as those at Abu Hamid (Dollfus and Kafafi 1993). It has been argued that the settlers of the Jordan Valley practiced hunting and herding beside agriculture as their means of livelihood. They were agrarian-pastoralists who settled during some parts of the year in the Jordan Valley and perhaps spent the rest of the year somewhere in the neighborhood where life was easier.

## **The Mountainous Zone**

The mountainous regions and in particular the Ajlun Mountains, yielded the earliest evidence of cultivation in Jordan. The site of Iraq ed-Dubb, situated around 7 km northwest of Ajlun city, is a cave overlooking the Wadi al-Rayyan (Yabis) and is the only example related to the Late Natufian/early Pre-Pottery Neolithic uncovered in this part of Jordan (Palumbo, Mabry and Kuijt 1989: 103-109). The architectural remains excavated inside the cave consisted of oval or circular semi-subterranean habitation structures similar to the ones found at the PPNA site of Netiv Hagdud (Bar-Yosef *et al.* 1980), Gilgal 1 (Noy *et al.* 1980) and Jericho (Kenyon 1960). Palaeobotanical samples from inside the PPNA stone structure included grains and chaff from domestic barley and spikelet forks as well as remains of what was probably emmer wheat rather than einkorn, wild or domestic lentils and other legumes (Harris 1998: 7).

Fowl, hare, gazelle, boar, possibly aurochs, and wild sheep and goat (Palumbo, Mabry and Kuijt 1989: 105) remains were found during the preliminary analysis of the faunal remains. The excavators of the site, based on the study of the recovered archaeological data, suggested that the site was used occasionally by prehistoric groups. Thus, Bar-Yosef deduced that "dwelling structures, therefore, are not indicative of sedentism, which can be determined solely on the basis of biological information" (Bar-Yosef 1998: 193).

In contrast to the PPNA, the next phase of the Pre-Pottery Neolithic, the PPNB, is well represented with sites especially in the central and southern parts of Jordan. But the most important are: Ain Ghazal, Wadi Shu'eib (Simmons *et al.* 1989), es-Sifiyeh, Basta, Beidha, Ba'ja, Ain Jammam, and Basit. The radiocarbon dates from some of these sites indicate they lasted from ca. 9,500 to 7,000 bp, with the site of Beidha perhaps the earliest of all. These sites are all located on wadis and some have springs and are over 10 hectares in size. Several types of architecture have been noticed at the excavated PPNB sites in the Jordanian Mountains. For example, at Beidha, semi-subterranean houses are gradually replaced by rectangular forms which culminate in multi-room, two story buildings. Meanwhile, at Ain Ghazal the rectangular MPPNB houses developed into multi-room two storied buildings. In addition, round ritual buildings dated to the LPPNB were excavated. The matter of the multiple story buildings has been studied by several scholars (Eichmann 1991: 45; Molist and Cauvin 1991: 106-109; Nissen *et al.* 1991: 15) as well as, by G. Rollefson (1997) for Ain Ghazal. These scholars have agreed that it is obvious that during the LPPNB period one is no longer dealing with the nuclear families of the MPPNB. Instead, these large buildings were perhaps used by big extended families based on the principle of parents and one or more married children (Rollefson 1997: 303).

Von den Driesch and Wodtke (1997: 535-536) have published that the species variability was reduced after the close of the MPPNB, with the change becoming dramatic by the beginning of the LPPNB period (Köhler-Rollefson and Rollefson 1990). Also, it has been stated that long distance pastoralism may have begun by the middle of the LPPNB (Baird *et al.* 1992: 25-27).

The excavated ritual buildings at Ain Ghazal may also be associated with social behavior as there appears to be a major change in burial customs and religious observances (Rollefson 1997: 303). More than one building excavated at Ain Ghazal were attributed to ritual behavior (Kafafi and Rollefson 1995, Rollefson and Kafafi 1996: 238; Rollefson 1998). If this is the case, it has been already suggested that each building may belong to a different clan living at the site during the LPPNB (Kafafi, n.d). The study dealing with the burial customs at Ain Ghazal showed a single case, where a person was buried in a trash deposit. This suggests that perhaps this individual belonged to a clan of low social ranking. Aside from the architecture and the consistent use of plaster, as mentioned above, there was a wide variation in site size ranging from ca. 14 hectares at Ain Ghazal and Basta to

1.5 hectares at Ba'ja (Kafafi 1999). This matter leads us to the conclusion that populations living at the large sites may have practiced several types of activities such as farming, hunting and manufacturing. In terms of industrial communities, we may argue that during excavations a knapping place was discovered in the LPPNB level and in the East Field at Ain Ghazal. The flint cores were brought from a 2 km distance to the north of the site. Moreover, the excavators of Beidha and Basta registered large numbers of stone utensils for grinding and pounding. Thus, it may be deduced that the high production rate of this vessel type indicates that it was exchanged or exported either to other megasites or to small farming villages located in the regions around the southern part of Jordan. If the people of Basta (one of the megasites) manufactured jewelry made of mother-of-pearl, the inhabitants of Ba'ja (a small site) were an industrial community who established workshops for stone bracelets and anklets.

In conclusion, the archaeological data recovered from these PPNB sites clearly indicate that variability existed in the social structures of ancient Jordan. Communities were mostly formed from nuclear and extended families, although at town sites such as Ain Ghazal, clans consisting of several extended families were also present. The inhabitants of the MPPNB and the LPPNB sites practiced handicrafts while, at the same time, there were priests. Hierarchies seem to have been maintained in both the social and perhaps political spheres. It is also interesting to note that the introduction of herded livestock in the Middle and Late PPNB did not bring about any immediate or obvious changes in social organization.

The decline of the PPNB into the PPNC seems to have been a gradual process (Kafafi, n.d.). Presumably social and economic pressures continued but were not sudden in their effects. During the PPNC and for the first time, a large "boundary wall" was erected (Rollefson, Kafafi and Simmons 1989; Rollefson 1997: 304). This suggests that there were private areas in the settlement to which access was restricted. Other factors which should be mentioned, are the changes in the ritual practices during the PPNC, especially at Ain Ghazal. This is attested by the so-called "temple building", the end of the plastered skulls which indicates the end of the ancestor cult and a change in burial customs. During the PPNC, skulls were left attached to the body and almost half the excavated burials from the same period are secondary.

It is almost certain that people living in Jordan during the first half of the 6th millennium bc had several types of economic strategies. In addition to cultivation, they practiced hunting and herding. Thus, in addition to farmers, agrarian-pastoralists and herders lived side by side during this period. All of this points to the extended family being the dominant source of social organization during this period.

## **The Badia Zone**

Archaeological research conducted in the Jordanian Badia (Garrard *et al.* 1988; Betts 1988) suggests that no farming communities lived in this geographical zone in prehistoric times. According to the material culture excavated at sites in this region, it may be deduced that the social structure was mostly that of a nuclear family. To hunt an animal or even to herd a flock of goat or sheep you need a small number of people. The presence of large numbers of desert 'kites' (long, shallow stone structures designed to funnel herds into a corral) in the Badia area (Helms and Betts 1987) indicated the way of life in this region. Also, the fragmentary and flimsy architectural remains noted at Wadi Jilat indicate that these mobile people were organized around the nuclear family social structure.

Finally, the natural environment within any given geographic zone may affect the economy and the social structure of the human beings living there. As proof of this we have the long history of settlement in Jordan which has included through the ages Bedu (bedouin), Fellahin (agriculturalists) and Midin (town dwellers).

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