

*Field Reports*

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González Urquijo & Teira, Homs Gap  
SAPPO, Tell Halula, Tell Amarna, and Chagar Bazar  
Hansen, Mirtskhulava & Bastert-Lamprichs, Aruchlo  
Fujii, Wadi Badda  
Gebel & Kinzel, Ba'ja 2007

*Contributions*

Borrell, Chipped Stone Industries, Middle Euphrates Valley  
Müller-Neuhof, Tell Fakhariyah Statuettes

*Museum Report*

Stordeur & Abbès, National Museum of Damascus

*Workshops*

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# NEO-LITHICS 1/07

The Newsletter of  
Southwest Asian Neolithic Research

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## Editorial

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The cancellation of the 6th Conference of PPN Chipped and Ground Stone Industries, originally scheduled for March this year, reminds us not to forget the reality of our research conditions and the direct links between research agendas and political issues. Is the Neolithic Family well beyond political situations when it wants to gather with all its members in the countries we are excavating the Neolithic? We are. And this should lead us to try it again, even if the 6th Conference has had to shift to Manchester (March 2008, *cf.* this issue). We thank Elisabeth Healey for taking up the momentum, and we express our gratitude to all the Jordanian colleagues who did so well in preparing the conference.

*Neo-Lithics* is planning to have two future dialogue/forum issues on the topics organized by guest editors. The first is “The Domestication of Water” and the second is “Landslides in the Eastern Mediterranean Neolithic”, for which preparations have started. Invitations will be circulated in the near future.

At this time we would like to thank all authors who have contributed to *Neo-Lithics*: our newsletter is flourishing, and the editor-author feedback is developing amazingly well. Neolithic research in the Near East is doing splendidly, despite all the clamour and distraction.

Hans Georg K. Gebel and Gary O. Rollefson

## New Data on the Epipalaeolithic and Neolithic of the Homs Gap: Three Campaigns of Archaeological Survey (2004-2006)

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### Introduction

Three campaigns of archaeological survey (2004, 2005, and 2006) carried out by a Syrian-Lebanese-Spanish Mission working to the west of Homs have resulted in the discovery of 162 archaeological sites. In this paper we deal with the Epipalaeolithic and Neolithic sites, relating the discoveries to the current state of our knowledge on the beginning and development of the Neolithic in this area of the northern Levant.

In order to complete the gaps of our archaeological knowledge to the west of Homs, a joint mission was established in 2004, when the General Directorate of Antiquities and Museums of Syria, the Saint-Joseph University of Beirut and the Spanish University of Cantabria signed an agreement for co-operating in an archaeological survey project. This project is directed by M. Al-Maqdissi, M. Haïdar-Boustani and J.J. Ibáñez. The area of survey lies between the city of Homs to the east, Qala'at al-Hosn (Krak des Chevaliers) to the west, the parallel of latitude 3852.28 to the north and the frontier with Lebanon to the south (Fig. 1). The project area

covers around 560 km<sup>2</sup>, which is composed of different environmental zones: the Orontes River Valley, the basalt landscape (plateau and hills) and the Bouqaia Basin.

The project is especially focused on two main topics: 1) the origin and development of the Neolithic in the area and 2) the urban organization in the region at the end of the Early Bronze Age (middle of the 3rd millennium B.C.).

We chose a survey methodology based on the visual detection of the main sites and on a selective survey of those areas where last hunter-gatherers and first farmers could have most probably been settled down, such as small hills dominating the landscape, near water sources or flint outcrops, etc. (Haïdar-Boustani *et al.* 2005; in press). The localization of the archaeological sites was based on an analysis of the Corona satellite photography (Philip *et al.* 2002), the study of the topographic maps, the toponymy, direct archaeological survey, and inquiry among the villagers. In this paper we deal with the Epipalaeolithic and the Neolithic data revealed during three survey campaigns (2004, 2005, 2006).

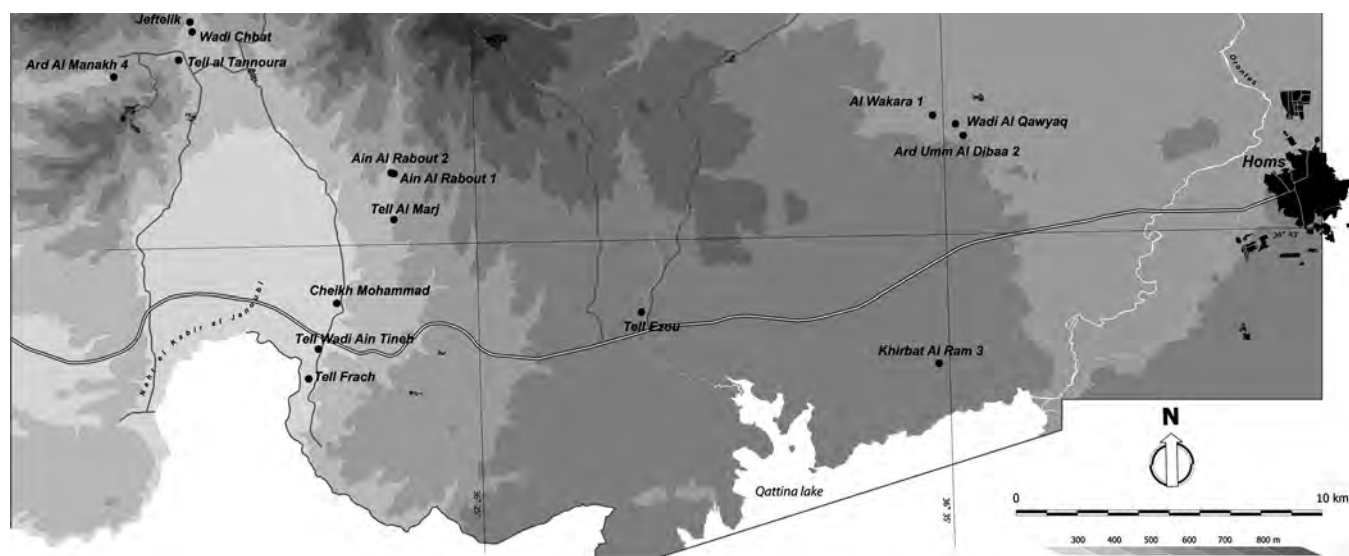


Fig. 1 Map with the Epipalaeolithic and Neolithic sites in the survey area.

## The Epipalaeolithic-Neolithic Gap in the Area

The neolithization process is well documented in certain regions of the Levant, such as the Middle Euphrates and the Jordan Valley (Aurenche and Kozłowski 1999). However, we have very scarce information on how this process took place in the extended geographical area that lies down between the two rivers. The recent excavations in Tell Aswad have shown that the older levels that had been previously attributed to the PPNA correspond in fact to the Early PPNB (Stordeur 2003). This evidence has deepened the gap of knowledge for the earliest Neolithic in the central Levant, stressing what apparently seems to be a mutual isolation between the Jordan and the Euphrates during the PPNA. New data on Tell 'Ain el-Kerkh would indicate that the site, located in the Rouj Basin, was first occupied during the Early PPNB (Tsuneki *et al.* 2006).

Does this mean that the cultural changes associated with the PPNA only took place along the two river valleys, being later spread to the other zones of the Levant? This could be the case, but some evidence does not fit well with this explanation. Cultural changes taking place in the Jordan and Euphrates valleys from the Natufian to the Late PPNB show clear similarities, both in the nature of the cultural changes and in their chronological appearance. This would indicate that some cultural contacts between the two regions existed. These contacts would be very difficult to explain if the extended geographical area lying between the two rivers would not have experienced similar cultural novelties. Moreover, the archaeological sequence observed in Nachcharini Cave (northern Anti-Lebanon highlands) (Schroeder 1976) seems to point out that a similar process of cultural change was taking place in other regions of the Levant outside of the Jordan and Euphrates valleys.

The lack of knowledge on the earliest Neolithic in the extended region between the Euphrates and the Jordan makes it very difficult to offer a global explanation for the origin and development of the Neolithic in the Levant. The area concerned in our survey is part of a natural communication route between the northern and southern Levantine areas, so this research may help to shed some light on the relationship between the two zones of Neolithic origin.

Knowledge on the development of the Pottery Neolithic in the area is also very scarce. Compared with the PPN, we have some more data on the Orontes Valley (Arjoune; Parr 2003), the northern Beqa' Valley (Tell Labwe; Kirkbride 1969), the Syrian coast (Tabbat Al Hammam; Hole 1959) and the Lebanese coast (Byblos; Dunand 1973), but there is a void of information for the area west of Homs.

The results of three survey campaigns have allowed us to collect some data on the Epipalaeolithic and the Neolithic in this area, which are discussed in this paper,

though there are still many open questions that should be dealt with in future work.

## The Sites

Most of the Epipalaeolithic and Neolithic sites recovered during our survey are located around the Bouqaia Basin (Fig. 1). This valley is part of the Rift Fault and seems to be a basin that was deeply filled with Holocene sediments. This is probably the reason why no sites older than the Hellenistic period have been found inside the valley itself. The Epipalaeolithic and Neolithic sites are situated in the hills surrounding the Bouqaia Basin to the north and to the east. Nowadays, and surely it was also in the past, it is a fertile and humid area, drained by the Nahr Al-Kebir river. Most of our survey area, between the Orontes river and the Bouqaia Basin, shows a volcanic geology, so flint outcrops are lacking. However, at the northwestern hills surrounding the Bouqaia Basin, in the Marmarita area, there are limestone outcrops rich in flint veins. The presence of this flint source must have conditioned the prehistoric occupation of the area. In the Nahr 'Ain Al-Aajouz valley, which is transversal to the Bouqaia and is located at the base of the Marmarita hills, several open-air sites show abundant flint-knapped mate-

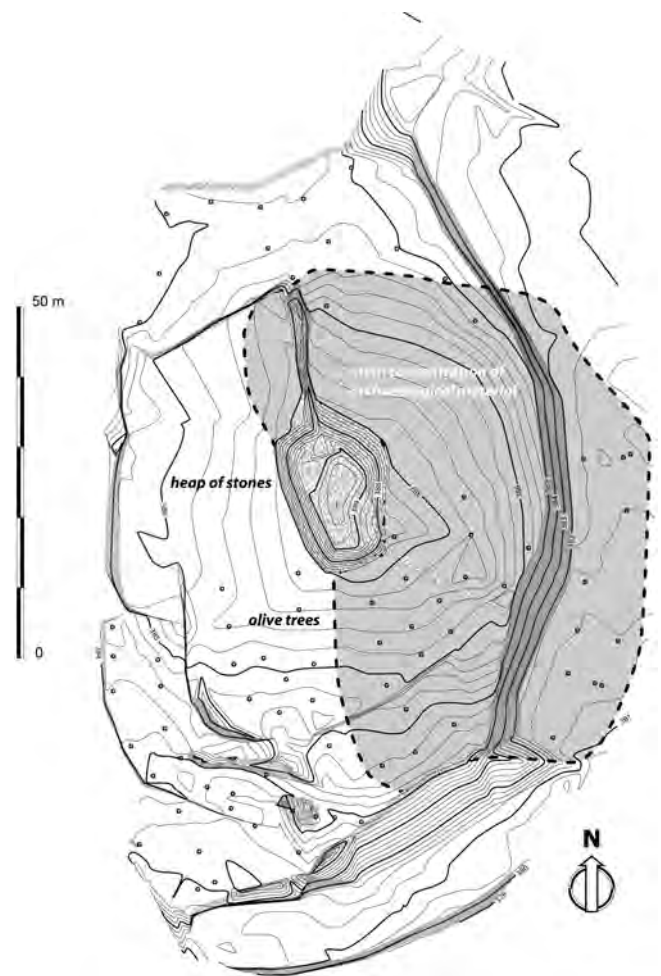


Fig. 2 Topography of the upper part of Jeftelik.

rial. We found handaxes, Levallois cores and products, unipolar blades and blade-cores and one bipolar core. In these sites, cores and unretouched blades and flakes are very abundant, while retouched tools are scarce. They resemble what have traditionally been called “flint workshops,” and they were used all through the Palaeolithic and even during the Neolithic.

The site of Jeftelik (Fig. 2), dating from the Epipalaeolithic period, is located at the Western bank of the Nahr Al-Kebir River, at the north of the Bouqaia Valley. The site spreads across the southeastern slope of a hill, which is terraced for the cultivation of olive trees. The total surface of the site is nearly 1 ha. We found on the surface an abundant flint industry and some ground stone tools (Fig. 3). Lithic technology is dominated by flake and bladelet cores. The use of the microburin technique is documented. Among the retouched tools we found many endscrapers and burins and one glossed blade-like flake. Microlithic tools are present, although they are probably underrepresented in our sample due to the fact that we collected the objects from surface and we did not sieve the sediments. Among this microlithic industry, we can mention backed bladelets and one segment with Helwan retouch. Some fragments of obsidian bladelets have also appeared. The ground stone industry, made on

basaltic stones, is also quite abundant. Many broken or complete objects exist among the stones used for building the terraces. We found one mortar, three pestles, one grinding slab, one milling stone base and five handstones. The mortar consists of a deep ovoid receptacle broken in the middle. The grinding slab was made using a big natural boulder where only the grinding surface was made, while the milling stone base was made by shaping the whole volume of the tool. We also found two discoidal pierced objects made of basalt, which are usually interpreted as stone weights intended to fit into wooden ground-digging sticks. Similar objects are known in the PPNB levels of Çayönü (Davis 1982) and Tell Ramad (Contenson 2000). It is difficult to say if these two objects correspond to the Epipalaeolithic occupation or whether they are the result of the ephemeral use of the area during the Neolithic. In fact, two other objects found at the site could be dated to the Neolithic: one bipolar blade and one chisel with a polished cutting edge.

One kilometer south of Jeftelik we found the site of Wadi Chbat. The characteristics of the lithic industry are similar to those observed in Jeftelik, with a technology based on the production of flakes and bladelets. Some isolated tools should be dated in the Neolithic, including one bifacial adze, some sickle elements, and one pressure-

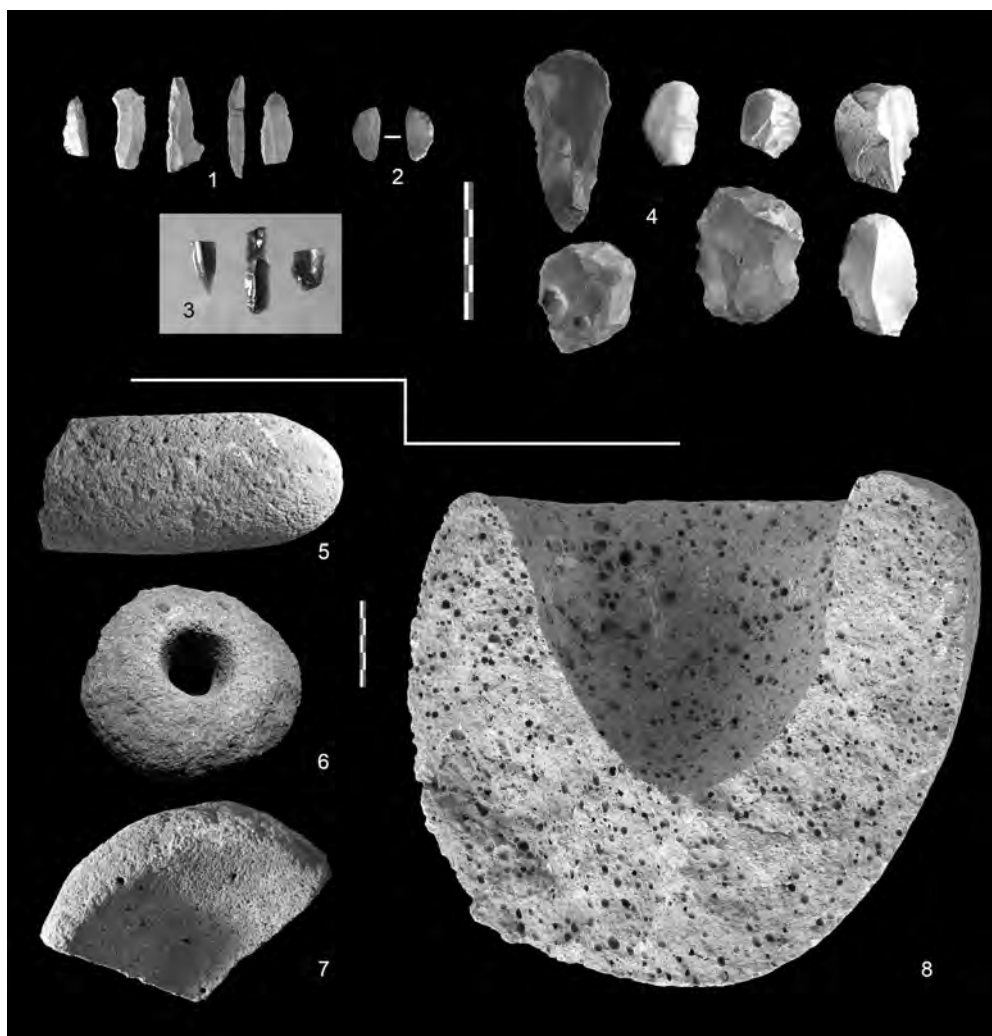


Fig. 3 Archaeological material from Jeftelik.  
 3.1. Backed bladelets.  
 3.2. Segment.  
 3.3. Obsidian bladelets  
 3.4. End-scrapers.  
 3.5. Pestle.  
 3.6. Stone pierced disk.  
 3.7. Fragment of milling stone.  
 3.8. Mortar.

flaked obsidian bladelet. Although the recovered material is not as diagnostic as the one recovered in Jeftelik, it seems that this is also an Epipalaeolithic site with some ephemeral use during the Neolithic.

Tell Al-Marj is located on top of a hill dominating the Bouqaia, in the central-western area of the basin. The

existence of a long trench cutting the site has allowed us to recover many archaeological materials (Fig. 4). The site seems to have an extension of around four hectares. The small arrowheads with wings and tang correspond to the Ha-Parsa, Nizzanim and Herzliya types, which are common in the Southern Levant

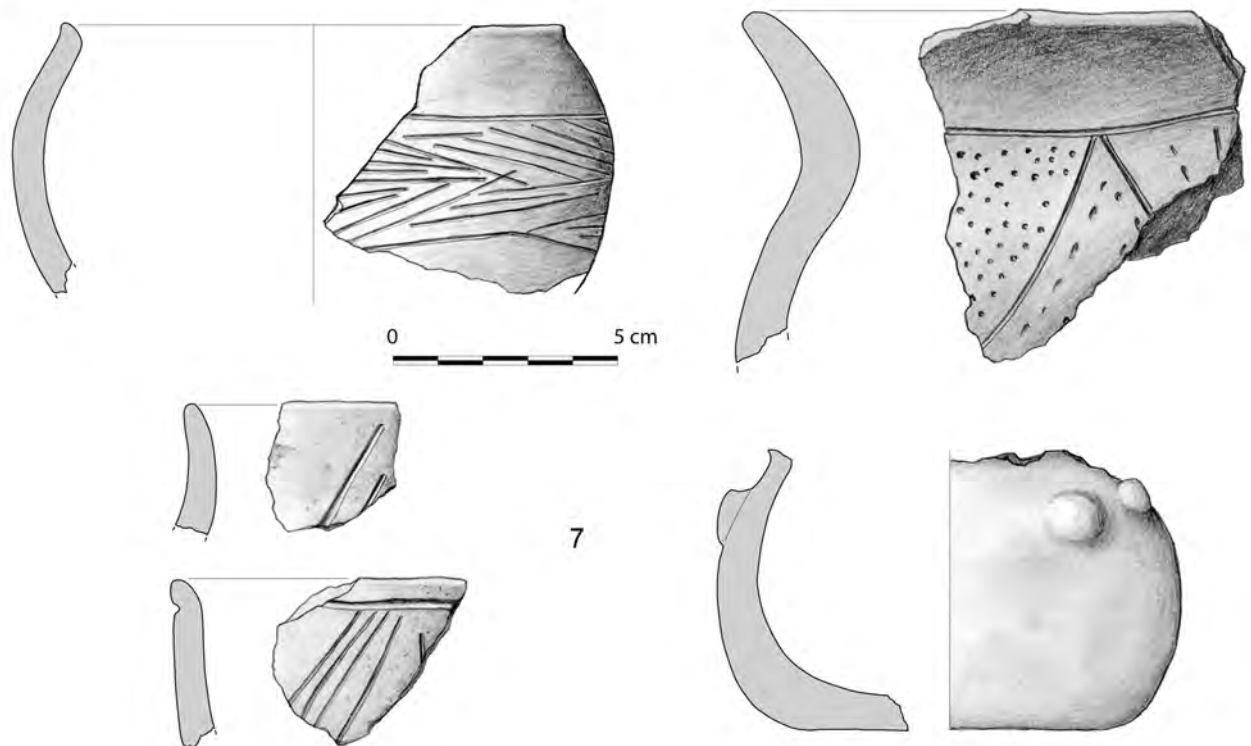
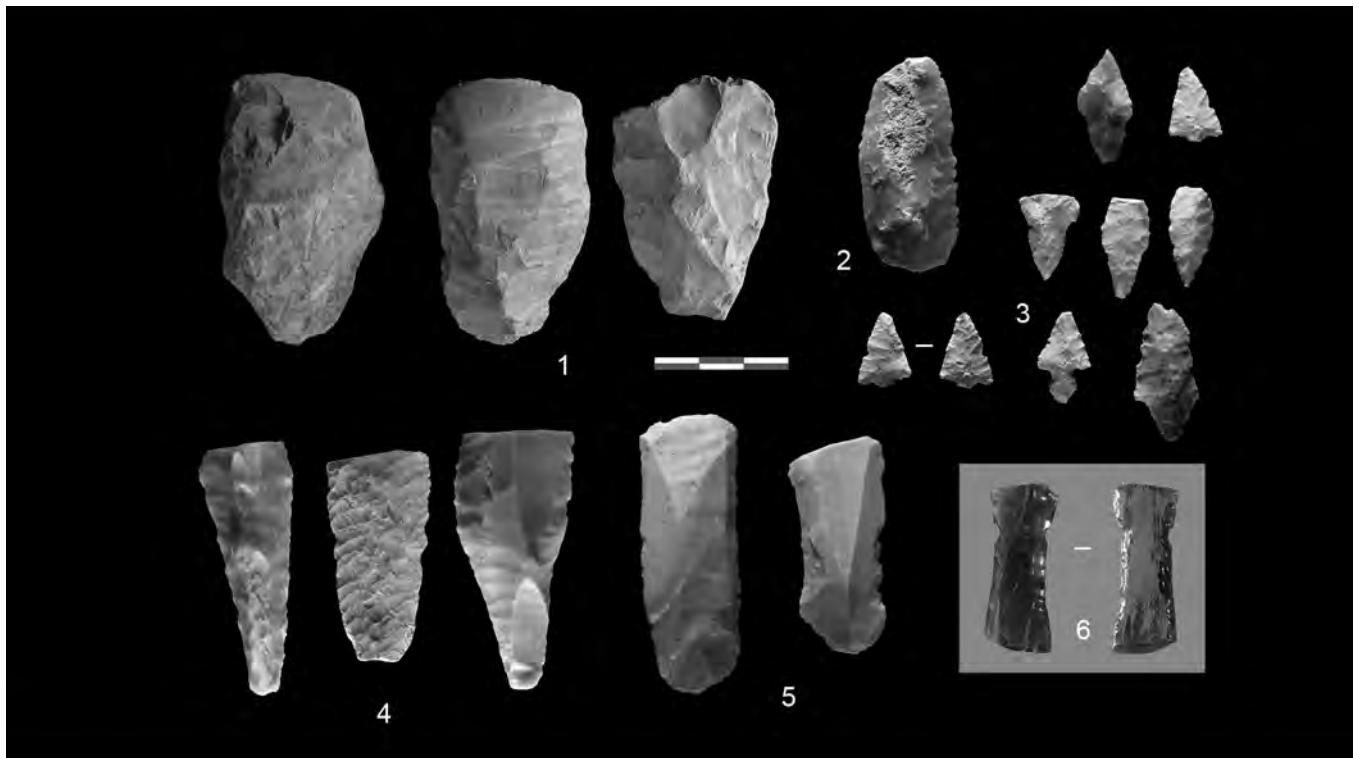


Fig. 4 Archaeological material from Tell Al Marj. 4.1. Polished adzes/axes. 4.2. Sickle element. 4.3. Arrowheads. 4.4. Basal fragments of projectile points. 4.5. Bipolar blades. 4.6. Obsidian bladelet with abrasive use-traces. 4.7. Pottery.

(Gopher 1994). Some arrowheads are similar to the type 6 (the lozenge shape) of Byblos (Cauvin 1968). Beside these types there are also some broken Amuq points. Glossed tools, most probably used as sickle elements, are usually made on blade fragments that often show the ends truncated by retouch and the edges thoroughly denticulated. Some of the sickle elements and the projectile points were shaped by pressure retouch. We also recovered two small polished axes and some blades showing the use of bipolar knapping techniques. Obsidian bladelets, knapped by pressure, are present in the site. One of them is similar to the Çayönü tools, as it shows a continuous retouch in both sides which is deeper in the central area of the edge. The abrasive longitudinal use-wear traces, which are typical of this type of tool, can be observed in the ventral face of the bladelet. The pottery of Tell Al-Marj (preliminary comments of Marie Le Mière) (Fig. 4) is more comparable in its shape and decoration to the pottery of Byblos (Dunand 1973) and to the Yarmukian Culture of the southern Levant (Garfinkel 1993) than to the northern sites such as Ras Shamra (Contenson 1992). Vessel shapes are globular with rounded or straight sides, and rims are vertical or reverted. Decoration consists of incised lines and triangles, and one sherd shows *Cardium* impressions.

Three Neolithic sites (Tell Frach, Cheikh Mohammad and Tell Wadi 'Ain Tineh) are situated on the top of small basaltic promontories at the western limit of the Bouqaia. They are relatively small, with an extension of between one to three hectares. The abundant flint material shows the use of simple methods for obtaining flakes. The most diagnostic objects are sickle elements, pressure-knapped obsidian bladelets and some bifacially knapped adzes. Some handmade pottery sherds found in these sites could correspond to the Neolithic occupations.

Tell Ezou is another interesting Neolithic site located in the central zone of our survey area. The abundant archaeological material spreads along the slope of a hill, covering more than five hectares. The characteristics of the material indicate that the site was occupied during several Neolithic periods (Fig. 5). What we have called Zone 3 was probably occupied during the end of the PPNB. In this area no pottery sherds can be found. Among lithic tools we can point out the presence of Byblos and Amuq points and one basal fragment of an Ugarit point. In this area, obsidian bladelets knapped by pressure are very abundant. Other areas of the site would have been occupied during the Pottery Neolithic. There, pottery sherds are common. Pots were made by hand and most of them show the use of chaff temper. One small arrowhead on flint with wings and a tang is comparable to

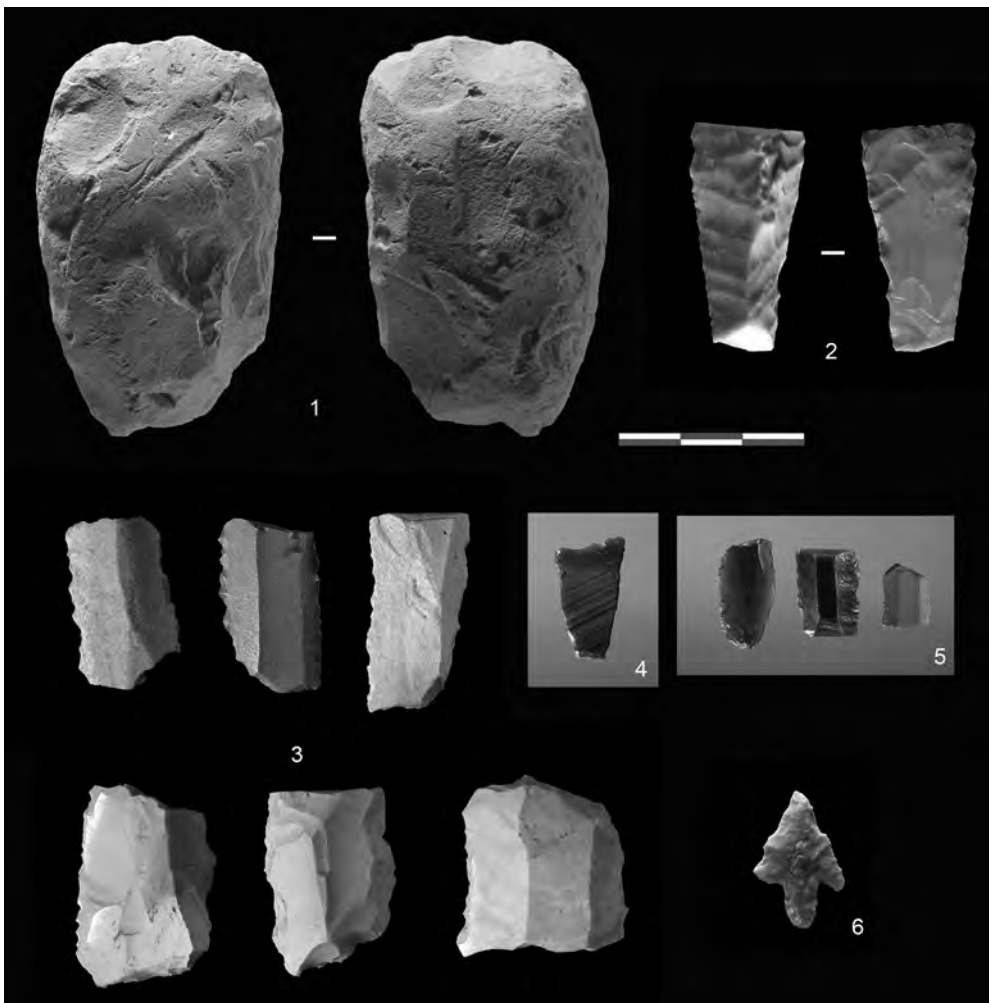


Fig. 5 Archaeological material from Tell Ezou.  
 5.1. Polished adze/axe.  
 5.2. Basal fragments of projectile points.  
 5.3. Sickle elements.  
 5.4. Transversal obsidian arrowhead.  
 5.5. Obsidian bladelets.  
 5.6. Arrowhead.

those described in Tell Al-Marj. One transverse arrowhead, made in obsidian, is similar to the flint exemplar, which was found in the *néolithique récent* levels of Byblos (Cauvin 1968). Obsidian bladelets from Tell Ezou bear black, grey and green colours, probably indicating their provenance from different sources.

## Discussion

Natufian sites are well known in the southern Levant around the Jordan Valley (Bar-Yosef 1998). Regional varieties of the Natufian culture have been identified in the Negev (Goring-Morris 1991) and in the Middle Euphrates (Cauvin 1991; Moore *et al.*, 2000). Some Epipalaeolithic sites attributed to the Natufian have been found in the central Levant, more precisely, in the Beqa' Valley (Schroeder 1991), the northern Anti-Lebanon highlands (Schroeder 1976), and the Yabroud region (Conard 2002). Jeftelik shares some of the characteristics of these sites, and we think that it can also be attributed to the Natufian. The extension of the site, the quantity and diversity of the lithic industry, and the presence of heavy duty tools suggests that this is an important and probably long-lasting occupation. Up to now, Natufian sites were not known in our survey area or in the nearby regions. The presence of Jeftelik at the west of Homs fills an important gap with respect to the Natufian, reinforcing the image of this culture as a phenomenon prior to the Neolithic and characterizing the whole Levant.

There is no evidence in our survey area of the earliest stages of the Neolithic. No PPNA site has been discovered until now. Only some of the archaeological levels of Tell Ezou would date from the PPNB; most probably this place was occupied since the end of this period. On the other hand, twelve Pottery Neolithic sites have been found. There is a lack of information from the Natufian to the Late PPNB, while in the Pottery Neolithic the number of sites clearly increases. This fact, observed in our survey area, seems to reproduce, at a minor scale, what can be observed in a more extended area comprising northern Lebanon and western Syria. No PPNA sites are known, while several Neolithic sites begin to be occupied during the Late PPNB. This is the case of Tell Labwe, in the northern Beqa'; Byblos, on the Lebanese coast; and Ras Shamra on the Syrian coast. During the Pottery Neolithic this extended region seems to be more populated as the quantity of sites grows, including, beside the three aforementioned, Arjouna and Tabbat Hammam (Hole 1959).

Taking into account that we have not found Neolithic sites older than the Late PPNB, our current data seem to support the hypothesis suggesting that the origin of the Neolithic in this part of the northern Levant is tributary of other areas (Jordan and/or Euphrates valleys). The spread of the Neolithic in this area would have taken place in the Late PPNB, at the end of the 8th millenni-

um cal BC (Cauvin 1997). However, we are dealing with preliminary information and the survey will go on, trying to fill the gap corresponding to the period dating from the PPNA to the Late PPNB.

The results of our survey may also suggest some reflexions on the nature of the Pottery Neolithic in the area. The typology of the majority of arrowheads and the pottery is more related to the south than to the north. These objects look similar to the ones found in Byblos (Dunand 1973) and to the Yarmukian Culture of the southern Levant (Garfinkel 1993). These data could be a result of more intensive cultural contacts taking place to the south than to the northern sites, like Ras Shamra or Amuq.

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## Field Report

# Sixteen Years of Archaeological Investigations in the Euphrates Valley and the Djezireh: Tell Halula, Tell Amarna, and Chagar Bazar

## SAPPO\*

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In 1991, a new line of investigation concerning the study of the first agricultural societies in northern Syria was begun by the Autonomous University of Barcelona (UAB). After working in the Syrian arid steppic region (El Kowm –Palmyra area) during the 1980s, our main objectives were to investigate the process of Neolithisation in the more arboreal steppic region. The excavations at Tell Halula (middle Euphrates Valley), carried out within the framework of the rescue archaeological works of the cultural heritage threatened by the con-

struction of the Tishrin Dam (Euphrates Valley), have allowed us to develop different research projects that mix both the archaeological excavations and the analysis and historical interpretation of the site from the archaeological remains. Later, we expanded our archaeological works to other sites from northern Syria including Tell Amarna (Euphrates Valley), from 1996 to 1998, and Chagar Bazar (Djezireh), from 1999 to present, both of them in the framework of our cooperation between the UAB and the University of Liège (Prof. O. Tunçca).

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\* SAPPO is a research group of the Universitat Autònoma de Barcelona, focused on the study of the Neolithic period in the Near East. The group is coordinated by Professor Miquel Molist and composed by the following research affiliates: J. Anfruns, J. Bosch, F. Borrell, R. Buxó, X. Clop, W. Cruells, J.M. Faura, A. Ferrer, A. Gómez, M. González, E. Guerrero, M. Saña, C. Tornero and O. Vicente.

## The PPNB Period – Tell Halula

Concerning the scientific research carried out and the results obtained so far at a chronological level, we first emphasize the PPNB. For this period the main results come exclusively from the site of Tell Halula (levels 1 to 20, with a chronology from 7,600 to 7,000 calBC), where it has been possible to develop extensive excavation and extensive research in order to make an approach to the historical and archaeological description of the site. Consequently, it has been possible to characterize the prehistoric occupation in terms of the standardization of the houses, with one house close to another and all of them arranged on an east-west axis, with the door on the south and with little paths between them. At the same time, in front of each of the houses there is a large open space where most of the production activities (such as animal butchering, lithic tool manufacturing, cereal drying, etc.) were carried out. Very significantly, during the last few archaeological seasons we also increased our understanding of the domestic buildings. In general, they are houses with a rectangular plan, three or more rooms and with a total area from 30 to 50 m<sup>2</sup>. The construction techniques used (walls made with mudbrick or pisé, stone or mudbrick foundation depending on the surface, lime plastering of the walls, *etc.*) suggest both the homogeneity of the domestic buildings and the skills of the builders. As the excavated areas have been enlarged, we have also corroborated the presence of paintings on some of the floors and on some of the walls of the houses that combine geometric and more schematic but figurative motifs (Fig. 1).

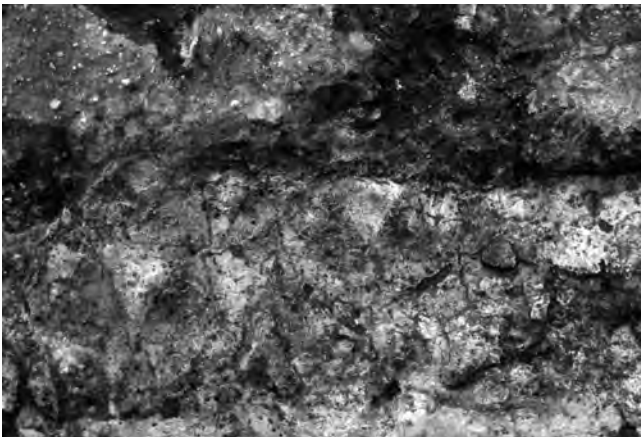


Fig. 1 Detailed view of geometric motifs of the paintings documented on the southern wall of a PPNB house at Tell Halula.

In the last few years at Tell Halula, we have made an important effort to excavate and to study the mortuary practices, and we have now documented more than 130 burials belonging to the PPNB period, which reflect an unchanging mortuary ritual that connects the living space with the space of the dead. Most of the graves are indi-

vidual and primary burials, and all of them are located inside the houses. The current excavation has shown us how the treatment of the dead is equal among all the houses, and that both the mortuary practices and ritual are very homogeneous: The burials are pits directly under the floors of the main room of the houses, where the skeleton is in a flexed position and wrapped in a kind of mat; we have documented in some of the burial pits the linen textile that was used (Fig.2). More than 50% of the burials have grave goods; their composition is variable, including lithic and bone tools or personal ornaments depending on age, sex, or specific houses. The forthcoming definitive study of the burial practices, will allow us to make an approach not only to the population characteristics, but also to the social organization of the inhabitants of the site. Concerning the population at Halula, we have made important progress on the anthropological study, including some DNA analyses and, finally, we have carried out an analysis in the framework of a more general paleodemographic study in the whole of the Levant.



Fig. 2 View of one of the PPNB burials from Tell Halula, showing the burial pit and the skeleton within it in a seated and flexed position.

One of the most investigated subjects regarding the first agricultural societies in Near East is the economic practices and the subsistence. The continuity in the paleobotanical analysis suggests the existence of well established domestic agriculture at the site, where the most exploited species are cereals and pulses from the earli-

est occupation phases. The incorporation and development of stable isotope analysis has allowed us to know the environmental and productive conditions of the crops. Additionally, the study of the animal resource management has helped us to know and to understand the animal domestication process all along the continuous stratigraphic sequence on the site.

### **The Late Neolithic or Pre-Halaf and the Halaf Periods – Tell Halula, Chagar Bazar, and Tell Amarna**

The second main goal of our archaeological and analytical works is the period of the so-called ceramic Neolithic, including both the “Late Neolithic” or Pre-Halaf period, and the Halaf period, with a chronology from the 7th to the 6th millennia. In this case, the information comes from three sites where we have developed our archaeological research: Tell Halula, with a continuous chronological sequence from the first pottery production to the Late Halaf (levels 20 to 36, from 7000 to 5500 calBC); the prehistoric levels from Chagar Bazar, in eastern Syria, with more than 9 meters of stratigraphic sequence and more than 15 archaeological levels from the Proto-Halaf period to the Late Halaf; and, finally, the site of Tell Amarna, in the Euphrates Valley, where our archaeological work allowed us to document the remains of a settlement belonging to the Middle Halaf period.

The main results obtained in relation to these periods so far contribute significant insights. The intrasite spatial organization at Halula differs from the one defined for the Pre-Pottery periods: during the Pottery Neolithic we can observe evidence of large open areas where most of the domestic structures (mainly cooking and storage structures) are found, while houses are dispersed and spread all over these areas. Although some of the houses continue to be rectangular and pluricellular, some buildings with circular plan, traditionally so-called *tholoi*, are found and used as domestic spaces. One of the innovations of the site has been the discovery of this kind of building, normally associated with the Halaf period, in one of the earliest levels of the Pre-Halaf period (Fig. 3).

Another of the subjects intensively investigated are the technological differences between the Late PPNB and the earliest levels of the “Late Neolithic”. The findings at Tell Halula have allowed us to recognize a very different lithic raw material management between them, with important changes ranging from the raw material supply to the knapping system and the tools manufacturing techniques. But the most important technological innovation during these periods is the appearance of pottery. The excavation of Tell Halula has shown us the progressive technological stages of the first pottery production, and the analysis currently being carried out suggests that most of the ceramics are produced at the

same site, although some of them are the result of foreign production. The archaeological and paleobotanical analyses show the consolidation of the new economic practices during the Pre-Halaf period. Currently, the emphasis on the paleoeconomic studies is focused on the establishment of the vegetal and animal resources management. Concerning the animal resources, we are working on the application of the stable isotope methodology in the analysis of the faunal remains from Tell Halula in order to make an approach to such topics as animal nourishment, seasonal movements, *etc.*



Fig. 3 General view of Tell Halula, showing the coexistence of houses with both rectangular and circular plan (*tholoi*) belonging to the Pre-Halaf period.

Our efforts for the Halaf period have been very significant too, especially because we have excavated, as mentioned above, three different sites that give us a wider spatial view to our research. These excavations have allowed us to document different and successive occupation phases and their chronological and stratigraphic correlations, both within each of the sites and among all of them regarding morphological and typological features of the archaeological record and, basically, of pottery.

At a historical level, we would like to underscore the findings and studies carried out concerning two different significant stages for this period. On one hand, the origins and development of the Halaf pottery manufacture clearly show the progressive transition to the high quality and decorated standard production that characterize the Halaf pottery. This brief period, the so-called “Proto-Halaf”, has been archaeologically documented both in the middle valley of the Euphrates (Tell Halula) and in the Djezireh (Chagar Bazar), so, it would be a good indicator of a larger geographical area in relation to the one previously defined as the area where the Halaf culture began. Moreover, the origins of this culture are reaffirmed as an evolutionary process within the Late Neolithic communities from north-eastern Syria themselves, with some external contributions as a result of exchange and contact with other more Mesopotamian communities.

On the other hand, we are also presently working on the Late Halaf period, a period, in general quite unknown and poorly defined archaeologically. For this analysis, the information and findings in process of study and excavation in Chagar Bazar are exceptional: the stratigraphic sequence defined from more than 15 occupation levels has allowed us to make an approach to the architecture and, more importantly, to the analysis of the artefactual record from this period, and this represents a unique documentation for the northern area of Syria.

In fact, for the study of the Halaf period, we have paid attention in the definition of some pottery production, only poorly known in this area, from a more interdisciplinary analytical perspective, including raw material, technology, morphology and use. This methodological aspect of our work can be applied not only to this kind of more “classic” record, as pottery, but also to others such as the lithic industry, paleobotanical and faunal remains, grave goods, and others in order to know the economic, social and cultural aspects of this “classic cultural human group” belonging to the historical period characterized by the full consolidation of agriculture and animal husbandry.

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## Aruchlo: A Neolithic Settlement Mound in the Caucasus

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### Introduction

The process of dissemination of the agricultural form of economy can be followed relatively clearly onwards from the seventh millennium BC in its spread westwards from core areas in the Fertile Crescent. By contrast, modern research in areas to the north and east of the Fertile Crescent is lacking. As a result, this vast geographic area which includes the Caucasus as well as Central Asia is often omitted in distribution maps. Thus, even more scientific research must be carried out, particularly in these regions, in order to attain a comparative perspective, and in this respect the excavations in Aruchlo should be seen as a part of this endeavour.

### State of Research

In the south of the Republic of Georgia a specific group of settlement mounds situated along the Chrami River is representative of an agricultural subsistence economy that was practised during the sixth millennium BC (Lordkipanidze 1991: 29f.; Dsaparidze 2003: 272ff.). In the west of Georgia there seems to be an older phase of the Neolithic, but thus far evidence of the earliest Neolithic has been found only in the south in Kvemo-

Kartli, with the settlements Šulaveris-Gora, Imiris-Gora, Chramis Didi-Gora and Aruchlo (Masson and Merpert 1982: 100ff.). These and other settlements in Azerbaijan, for example Šomutepe and Toirtepe, can be joined together under the designation “Šulaveri-Šomutepe-Group”. An authoritative source on the state of research there is supplied by the monograph of T. Kiguradze (1986).

As of the 1960s and onwards excavations were conducted in several settlement sites in the south and west of Georgia. According to the results, relatively small circular structures built of mudbrick are typical; rectangular structures were seldom found. The small structures stood unusually close together, and the walls often overlapped. Apparently an internal division of the structures has not been observed so far. Structures in the settlement of Šulaveris-Gora could be ordered into three groups, as follows: the largest buildings with a diameter of 2.5-5 m, medium-sized buildings with a diameter of 1.25-2 m, and small ones measuring less than one meter in diameter. The small structures have been interpreted as a means for water storage, the middle-sized ones as buildings for working activities, and the large buildings as dwellings (Kiguradze 1986: 14). In comparison, circular structures disclosed in Aruchlo measure between 1.80 and 4.60 meters in diameter (Chelidze/Gogelia 2004: 46).

The circular structures are without doubt the outstanding characteristic of settlements of the Šulaveri-Šomutepe type. In the sixth millennium BC they had long lost their predominance and were relatively rare. Researchers sought analogies in various geographical directions, for example in pre-ceramic Cyprus. However, circular structures are closer at hand in the Fikirtepe culture, even though they are built in a different way (Bittel 1969/70: 6). Most favoured is the suggested connection to the Halaf culture, where a great many circular structures are known. Yet, there rectangular buildings are prevalent as well. One aspect that should be investigated is the possibility of any closer ties with the Halaf settlement Khirbet esh-Shenef, where numerous circular structures were excavated. The settlement Khirbet esh-Shenef dates between 5600 and 5500 BC (Akkermans and Wittmann 1993: 143ff.; Akkermans and Schwartz 2003: 119, fig. 4.11). However, a supra-regional classification is problematic, due to the inconsistent state of research and publication. Results of research in Iran are almost completely lacking. Similarly, research in northeastern Turkey is insufficient (TAY 1998). In Armenia as well only few distinct settlements are known. It can be stated in general that research on the ceramic Neolithic during the last decades has been in no way intensive, as studies have concentrated on settlements of the aceramic Neolithic.

### Excavations in Aruchlo

Excavators in Aruchlo were able to identify two ditches that encircled the settlement hill. T.N. Čubinišvili interpreted the inner circular ditch, measuring up to 11 m in width and 3.5-5 m in depth, as a defense ditch. He saw the outer ditch as a reservoir for the spring floodwaters and in association with an early form of irrigation (Kiguradze 1986: 65f). The inner ditch, at least, seems to be securely dated to the Neolithic period, whereas the out ditch could be later. One may not wish to follow this interpretation of the ditches, in particular that of the water reservoir; however, the mere presence of one or two ditches encircling the settlement is noteworthy evidence in itself.

Clay vessels found in Aruchlo are usually decorated with knobs; red-polished or even painted pottery is quite rare (Kušnareva and Čubinišvili 1970: 40, fig. 12). Painted pottery with recognisable features of Halaf pottery seems essentially limited to sites in Azerbaijan, such as Kültepe I (Masson and Merpert 1982: 100ff., 156 plate 44). Artefacts bone and antler include mainly awls, axes and hammers, while diverse forms of obsidian tools were utilised. Clay figurines, as found in abundance in contemporary settlements in northern Mesopotamia and the Zagros region, are, by contrast, quite rare in Aruchlo. Botanical and zoological analyses have revealed a broad spectrum of species, but these cannot be associated with

settlement layers, functional contexts or an adequately fine network of radiocarbon dates. The few <sup>14</sup>C dates available for Aruchlo are scattered between the 60th and the 54th centuries BC. Thus, they cover only a relatively late stage of the Neolithisation process, a time span which is designated as the Late Neolithic or Early Copper Age in the Near East and the Early and Middle Neolithic in southeastern Europe.

Since 2005, in cooperation with the Archaeological Institute "Otar Lordkipanize" of the Academy of Sciences of Georgia, the Eurasia Department of the German Archaeological Institute (Berlin) has conducted additional excavations in one of the tell settlements, Aruchlo I, which had already been investigated in earlier years. The primary goal of the new excavations in Aruchlo is to collect as much data as possible in order to reconstruct the original environment of the settlement.

This includes botanical and zoological remains and sediment analysis among many other investigative aspects, which together with a chronological framework confirmed by radiocarbon dates can assist in reconstructing the economic development of a Neolithic village. The aim of the present excavations is to enable a comprehensive understanding of the environment of an early farming community in the Caucasus.

### The Tell Settlement Aruchlo I

The tell settlement known in archaeological literature as Aruchlo I lies some 50 km southwest of Tbilisi on the main highway to Bolnisi, at the western end of the village Nachiduri. The site (Fig. 1) itself is situated only a few hundred meters north of the terrace edging on a broad river meadow. There the rivers Chrami and Mašavera join to flow farther east to their confluence into the Kura River at the Georgia-Azerbaijan border. The Kura River, in turn, drains into the Caspian Sea in the southeast. The present-day form of the approximately 6-meter high tell settlement emerged only later in time. All of the Neolithic contexts are superimposed by the



Fig. 1 The settlement mound of Aruchlo I, seen from the northeast. (photo: I. Gambaschidse)

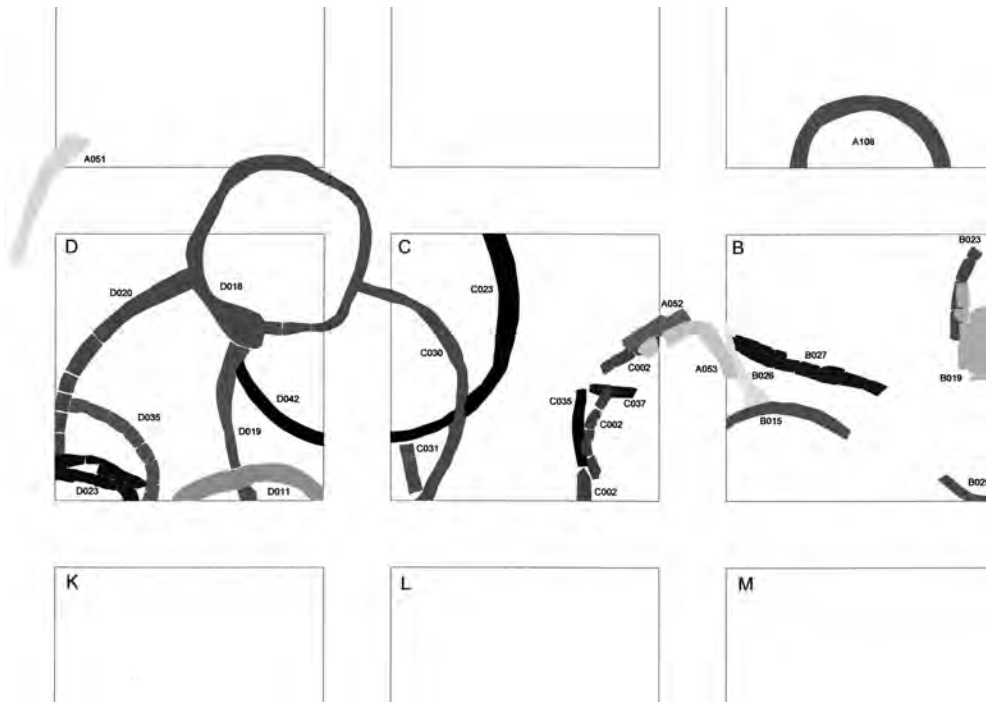


Fig. 2 Entire plan of the new excavations in Aruchlo in 2005 and 2006, showing the remains of Neolithic buildings. (plan: M. Ullrich)

remains of later settlements, whose deep storage pits have disturbed and destroyed the Neolithic layers.

Previous excavations took place between 1966 and 1985, first under the direction of T.N. Čubinišvili and as of 1978, after his death, under D. Gogelia. One central trench was opened, and several long trenches were made to explore the two ditches. A total of 936 square meters was excavated. Regular reports were made about the excavation (published in *Poleveje Archeologičeskie Issledovania* in Tbilisi), and in addition a summary account appeared in the monograph of T. Kiguradze. Finally, a review of all of the excavations was made in

an article (Chelidze/Gogelia 2004). Unfortunately, the documentation made in the years 1966-1985 as well as many of the finds were almost completely destroyed by a fire in the excavation house.

The aim of the renewed excavations in Aruchlo that commenced in September 2005 was to gain an impression of the state and extent of preservation of the architecture in general. Furthermore, by means of a stratigraphic sequence, as deep as possible, the aim was to gather sufficient samples for the zoological and botanical assessment as well as for <sup>14</sup>C dating. So far, other undisturbed areas in the tell settlement were not opened



Fig. 3 View of the excavation area of 2005, from the northeast. (photo: S. Hansen)



Fig. 4 Circular structure AR06D018 with the adjoining curved wall AR06D020. (photo: S. Hansen)



Fig. 5 Straight wall AR06C031, superimposed by ring-wall AR06C030. (photo: S. Hansen)

for this purpose. Instead, in order to handle the substance of this archaeological site with special care, one of the profiles from an older excavation was investigated anew.

In 2006 three trenches, each 4 x 4 m in size, were opened, with a profile baulk 1 meter in width between each (Fig. 2). The excavation of 2005 had already shown that only through an approach controlled by small profiles could the sequence in the frequent overlapping of structures be determined. These structures did not, of course, appear solely as complete circular walls, but only as short segments, collapsed walls, individual mudbricks, *etc.* In this confusion of densely superimposed structures only a small-scale advance has any hope of clarifying the sequence.

As a result, within the limited area of the excavation in 2005, a complete structure slightly oval in plan (designated AR06D018 in the plan) with a maximum inner diameter of 2.30 m was revealed (Fig. 3). In order to understand the reason for its abandonment, the accumulated rubble inside the structure was carefully removed until the collapsed walls and roof of the building itself were reached. The fill consisted of several compact layers of ash, in which pottery and tools of obsidian and bone were found. Below this lay the mudbrick rubble of the actual collapsed structure, and under that, finally, the original floor level. Very few objects were found on the floor, among others an antler axe directly next to the wall. Below this upper floor level was another floor that was almost devoid of any finds. Thus, it could be determined that before it collapsed, the building had been cleared out and later filled with ash, rubble, *etc.*

In 2006 the original mudbrick walls of the building were exposed. The wall of the circular structure AR06D018 were composed of large, yellow mudbricks of irregular form and size that had been set in mortar (Fig. 4). The thickness of the walls measured about 20 cm, but they became markedly thicker near the entrance to the structure. The walls were still preserved up to a

height of 1.2 m. The mudbricks are usually plano-convex in form; and although there is no consistency in measurement, bricks from this structure could be measured at 41 x 20 x 8 cm. This is close to the measurements made during the older excavations (Kiguradze 1986: 63: mudbricks measured 42 x 17 x 8 cm or 35 x 17 x 8 cm); however, this cannot be applied to all structures in the settlement.

In the west of the circular house, the wall (AR06D018) connects with another curved wall (AR06D020) (Fig. 4), whose preserved height is much lower. In view of the preserved joints it is clear that this curved segment was constructed at the same time as the small circular structure. In Area C to the east of the entrance, another segment of curved wall (Fig. 3) connects with the circular structure (AR06C30). It likewise was built in one course together with the structure, as illustrated by the matching horizontal joints. An interesting detail is that the curved wall segment makes use of part of a straight north-south wall made of dark mudbricks (AR06C031) (Fig. 5). Presumably both of the mudbrick walls adjoining the small round structure form a circle, which however can only be confirmed when the southern excavation area is uncovered. If the curved walls do indeed belong or connect together, this would allow the reconstruction of a ring-wall with a diameter of *c.* 6 m.

At the angle where the small structure and the wall adjoin in the east, an oval hearth was discovered. It consisted of a clay platform, possibly a kind of pavement, which was baked red through-and-through. Several fist-sized stones were embedded in a layer of white ash, and charred firewood still lay next to the hearth (Fig. 6). The small circular structure that had already been unearthed in 2005 is thus part of a larger building, which, however, can be determined with certainty only after further excavation. Directly to the west of the entrance to the circular building AR06D018 was the beginning of another wall (AR06D019). Between these walls ran a verti-





Fig. 6 Hearth located between walls AR06D018 and AR06C030 (photo: S. Hansen)



Fig. 7 Remains of a mudbrick wall in the south profile. (photo: S. Hansen)

cal join of binding material in the form of a 1-2 cm thick strip of clay. In view of the join it is clear that this wall was connected at a later time, and that it did not belong to the original building concept.

As could be recognised in the southern profile, a later circular structure built of dark mudbricks, of which only six are still preserved, is near the circular structure exposed in 2005 (Fig. 7). The dark bricks are of slightly plano-convex shape and set in a light-coloured binding material. The bricks protrude towards the east and are set to form a vaulted structure. Their exterior surfaces are also coated with light-coloured clay. The length of the largest brick is 38.5 cm in profile and it is 10.0 cm thick. The brick below it is 38 cm in length and 9 cm thick. The length is probably less, as the bricks were intersected at a slant.



Fig. 8 South profile and circular structure AR05A108. (photo: S. Hansen)

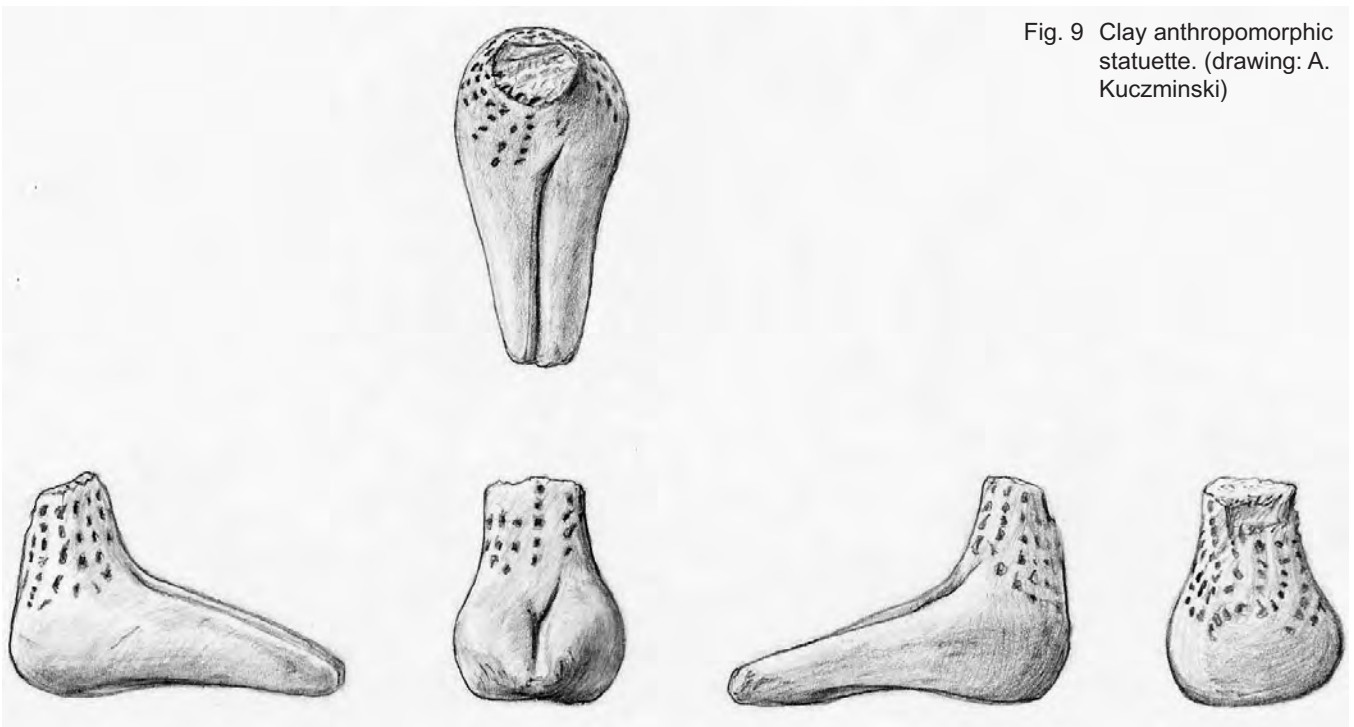


Fig. 9 Clay anthropomorphic statuette. (drawing: A. Kuczminski)



Fig. 10 Knobbed decoration. (photo: S. Hansen)



Fig. 11 Bone spatula. (photo: S. Hansen)

At this particular spot it was possible to expose the dark mudbricks entirely, that is, the light-coloured binding material could be removed (Fig. 7). Of course, this painstaking work required the greatest caution, and it is clear that one learns to recognise these dark mudbricks against an equally dark background only after much experience. In contrast to walls made of yellow bricks, those of dark bricks are much more difficult to identify. Thus, it must be assumed that until now not all corresponding buildings have been recognised and that the density of buildings was quite greater than presumed so far. Several walls constructed with dark mudbricks could

be identified. Part of a circular structure was discovered in the southwest corner of Area D (AR06D023). Three large dark bricks formed a curve in whose interior collapsed bricks, brown in colour, were clearly recognisable.

In order to attain samples for a stratigraphic sequence, in 2005 a 2 x 1.5 m wide trench was laid at the edge of the profile of the older excavation (Fig. 8). However, at a depth of 1.30 m another complete half of the wall of a circular house came to light. In the uppermost preserved fill lay the first clay figurine found in Aruchlo (Fig. 9). Directly below it were two layers of large river pebbles, that displayed traces of fire. When the corresponding level in Area B that adjoins in the south is reached, then this circular structure will have been excavated in its entirety. Thus far there is one  $^{14}\text{C}$  date for this context (A108a): 6850 BP, *i.e.* 5770-5660 calBC. The measurement was made in the  $^{14}\text{C}$  laboratory in Berlin under the direction of Dr. Jochen Görtsdorf. This  $^{14}\text{C}$  date falls within a time frame already outlined by older measurements (Kiguradze 1986: 112).

The pottery is relatively limited in its repertory of forms, and pots with steep walls are typical. The fabric is tempered with large amounts of minerals, such as basalt and other stone particles. In rare cases tiny particles of obsidian were observed. Straw and sand were also used as temper. Particles and/or traces of burnt organic material added as temper are easily recognisable on the pottery's surface. One-fourth of the diagnostic sherds was decorated with small knobs (Fig. 10); by contrast, applied relief decoration of circles and semi-circles with incised serpentine-like lines were notably infrequent. Similarly, well-fired pottery of regular, careful manufacture is rare. The surface of the sherds is smoothed and sometimes even polished to a shine. The surface colour is light red to rose.

The number of small finds is not very high, and the almost complete absence of stone axes is striking. Short pointed awls predominate among the bone artefacts. One unique object is a flat spatula-like artefact (Fig. 11). It is broken on both ends, has two lateral perforations and seems to widen on one side. Direct comparisons are apparently rare; the nearest is an object from Imiris-Gora (Kiguradze 1986: 54 fig. 39). Several axes, hammers and picks of antler were found in both excavation campaigns. They correspond in general with the broad spectrum of heavy tools in the Šulaveri-Šomutepe group.

Small finds that can be considered as jewellery include a drop-shaped pendant of reddish-white marbled carnelian, the perforation of which is broken. Two such pendants were found in older excavations, one in Grave 8 and Grave 9 respectively, which are located at the periphery of the settlement. Relatively few clay figurines are known in the Šulaveri-Šomutepe group. The first anthropomorphic clay statuette was found in Archlo in 2005 in circular structure AR05A108 (Fig. 9). The figurine rep-

resents a person in sitting position, whose pointed legs are extended and closed. Unfortunately, the upper part of the body and the head are missing. The preserved sections of the back and abdomen are decorated with incised dots.

### Future Perspectives

Although conducted within a very limited surface area, the two recent excavation campaigns in Aruchlo have nonetheless provided many new insights into the Neolithic settlement at the site. Detailed documentation of the architecture, in particular, provides an essential factor for the stratigraphic, temporal and function interpretation of the settlement. Even now it can already be stated that the density of buildings on the site was greater than that recognisable in the plans from older excavations. During the campaigns of 2005 and 2006 the remains of thirteen different structures could be attested in the three trenches B – D, that is within a surface area of 54 m<sup>2</sup>. The use of light yellow as well as dark brown mudbricks, also called “checkered” mudbricks, was one of the most surprising results of the campaign in 2006. The dark walls of structures are exceedingly difficult to recognise than those of yellow brick, yet through careful and detailed excavation the history of building in this area could be reconstructed to a great extent. The distinct limits of each unit of buildings will ultimately allow comparison of the inventories from these structures. In association with the analysis of the botanical and zoological remains it will then be possible to determine the function of the different buildings.

*Acknowledgment.* We wish to thank Emily Schalk for her translation of the original manuscript.

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## Field Report

### Wadi Badda:

### A PPNB Settlement below the Fjaje Escarpment near Shawbak

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The site of Wadi Badda is a small PPNB settlement that was found by chance immediately below the Fjaje escarpment in southern Jordan in the course of our one-day excursion on April 7, 2005 (Fig. 1). In order to collect further information, we revisited it during the summer field season of the same year. As a result, it proved to have a key to understanding another (namely, non-agro-pastoral) aspect of the PPNB cultural entity in southern

Jordan. This report summarizes the survey results and briefly discusses the archaeological implications of this unique site.

#### The Site

Wadi Badda, or JF-0502 in our site registration code, lies on a flat-topped basalt hill overlooking (from the

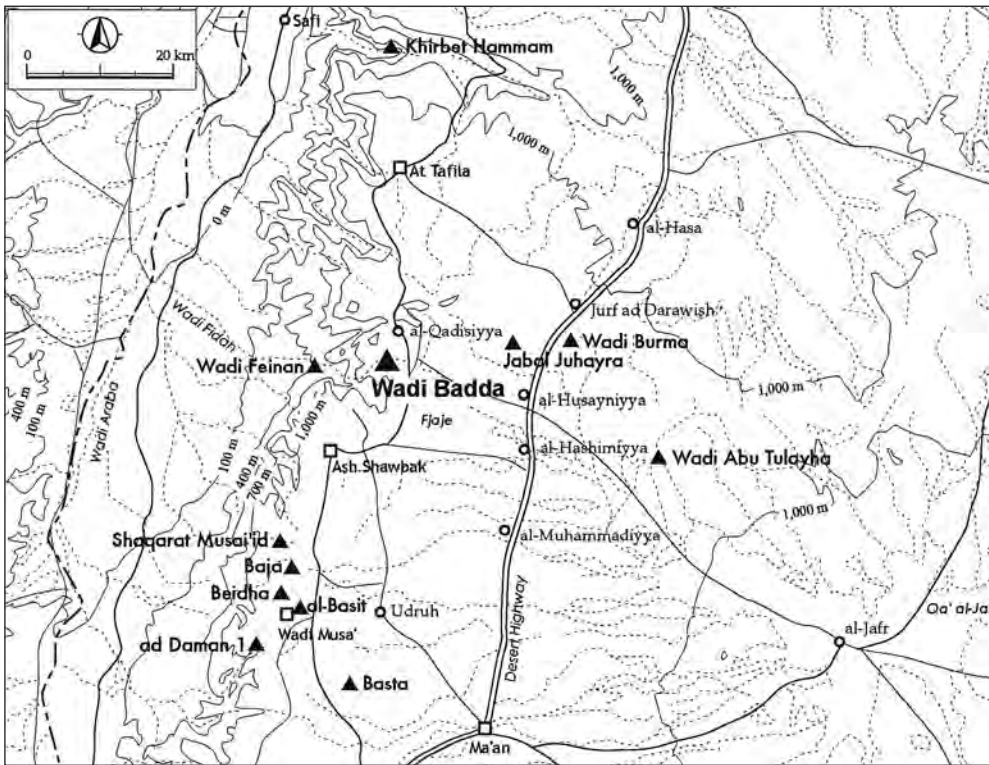


Fig. 1 PPNB sites around the Fjaje escarpment.

north) a small wadi of the same name that originates in the Fjaje escarpment *ca.* 0.5 km to the east and drains westward to merge into Wadi Fidan (Fig. 2). It extends along the southern edge of the hilltop, being estimated to cover an area of about one hectare (*ca.* 200 m from east to west by *ca.* 50 m from north to south). Thus it appears to fall into a hamlet in terms of site size. It should be added, however, that both surface finds and wall alignments thus far confirmed were focused at both ends of the site, being relatively scarce in the middle part.

The site is *ca.* 20 m higher in elevation than the present wadi bed, but the evidence for river terraces referred to below suggests that the elevation gap was at least a few meters smaller than the present state. There is a small perennial spring and consequent waterholes on the wadi bed, both of which probably served as a primary water source for the prehistoric villagers as well as modern

pastoral nomads. The perennial nature of this water source is evidenced by the fact that it provides a habitat for tadpoles in summer. It is also suggestive that evergreen trees are focused only on the basalt hill and few stands can be seen at surrounding limestone hilly terrain. It is no wonder that the PPNB inhabitants chose this hill.

The access to the site is very difficult. The only way is to turn off the Kings Highway between a al-Qadisiyya and ash-Shawbak, or, more precisely, at point *ca.* 0.5 km south of a military communication base or *ca.* 0.2 km south of Khirbet Askali and, then, descend a winding track until the dead end several kilometers ahead and, finally, walk up along the wadi bed for a few kilometers toward the escarpment. Since black of the basalt hill (on which the site lies) and white of the surrounding limestone hilly terrain form a striking contrast, it is not always difficult to notice the site from the downstream of the

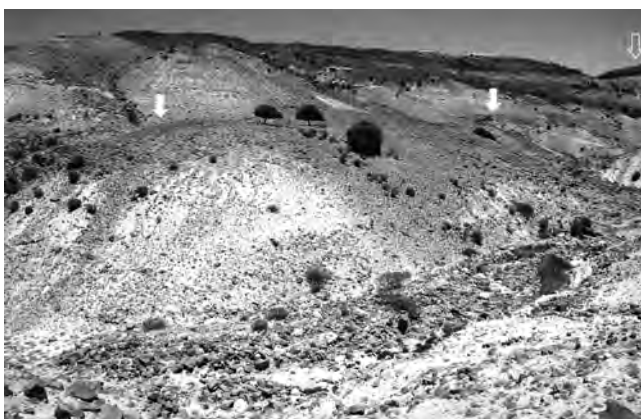


Fig. 2 A general view of Wadi Badda (looking NE). Solid arrow: supposed both ends of the site; Hollow arrow: the Fjaje escarpment.



Fig. 3 An exposed wall alignment (looking N).

wadi. The existence of several evergreen trees dotted on the hilltop and GPS data ((N: 30. 35. 562; E: 035. 37. 268; ELV: *ca.* 1, 020 m) may also serve as a good landmark. Needless to say, a 4-wheel-drive vehicle is indispensable for the ascent and descent of the steep slope below the escarpment.

### Structural Remains

Although the rugged ground surface covered with basalt cobbles made it difficult to distinguish wall alignments, a few exposed wall segments were found along an erosional gully bordering the eastern edge of the site (Fig. 3). They were double-leaf (or *ca.* 0.5 m wide) and still preserved to a height of more than 1 m. The vast majority of construction material was partly dressed flat basalt cobbles that were laid in stretcher bonds with smaller rubble being used as adjustment material. Nonetheless, both stretcher and header bonds were concomitantly used at corners in order to increase strength. In light of their size and alignment, it appears that these walls belong to rectangular structures of substantial dimensions. In addition, evidence for a few hearths and ashy layers was confirmed on eroded sections of the slope, where a large number of animal bones as well as flint artifacts were included. The section showed that archaeological deposits were not less than 0.5 m thick. All these strongly suggest that the site served as a substantial outpost or small settlement rather than a temporary campsite.

What also interested us was evidence for a washed-out barrage, which was confirmed at both banks of the wadi, immediately below the site (Fig. 4). This barrage, estimated to be *ca.* 15-20 m long, was constructed with large basalt cobbles and still preserved to a height of *ca.* 0.8 m, being buried by later deposits *ca.* 1.0-1.3 m thick (Fig. 5). Nothing can be said about its date, but a few meters elevation gap between the barrage base and the present wadi bed seems to indicate that it dates back to a remote past. It is intriguing to hypothesize that it was constructed as a small reservoir for the PPNB outpost

or settlement immediately above. This is all the more likely, firstly because no settlements have been found around the site, and secondly because similar barrage systems were found recently at two PPNB sites in the al-Jafr basin just beyond the Fjaje escarpment (Fujii 2007a).

### Surface Finds

The surface finds consists of some dozens of chipped flint artifacts; several groundstone artifacts made of limestone, sandstone, or basalt; and a number of miscellaneous objects. They are mostly suggestive of a PPNB date, but the sporadic occurrence of Roman or Byzantine pottery sherds hints at a later reoccupation.

The vast majority of flint artifacts were manufactured by means of the naviform core and blade technique, a hallmark of PPNB flint industries (Fig. 6: 1-2). The occurrence of debitage classes attests to the on-site flint production. The tool category is marked by the predominance of points and arrowheads (nos. 3-15), which indicates that hunting played an important role in the subsistence strategy of the outpost or settlement. In contrast to this is the total absence of sickle blades. The absence of reaping tools suggests that plant resources were poorly exploited, although it might be an accident due to the small sample size. The collection also included dihedral burins (nos. 16-17), end-and side-scarpers, borers with an elongated tip (nos. 20-21), bifacial knives (no. 21), and oblong axes/adzes (nos. 22-23).

The groundstone tools contained two shaft straighteners (Fig. 7: 1-2), a semi-prismatic pestle and/or rubbing stone (no. 3), and two polished axes (nos. 4-5). Apart from the first group made of either sandstone or porous basalt, they were made largely of fine-grained limestone. It is noticeable that two complete shaft straighteners were found despite time constraints. This fact, coupled with the frequency of hunting weapons, points to the importance of hunting activities at the site. In addition, two rim fragments of limestone vessels (nos. 9-10) also

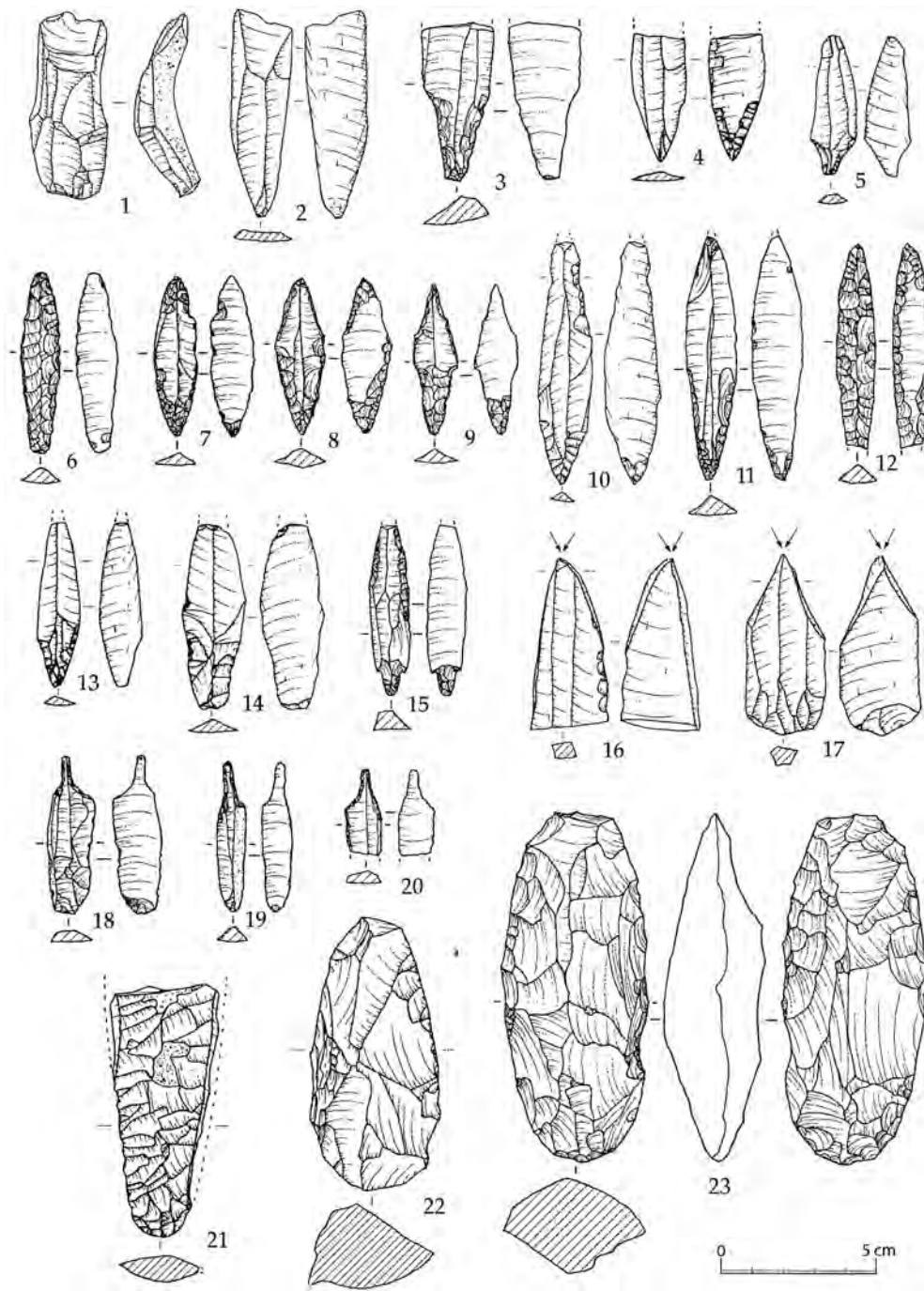


Fig. 4 Evidence for a barrage left at both banks (looking W).



Fig. 5 A close-up view of the barrage wall at the northern bank (looking N).

Fig. 6 Chipped stone artifacts.



occurred. Miscellaneous objects included three small fragments of stone bracelets (no. 6-8), various shell beads, and a fragment of malachite. The latter two groups probably represent material flow from the Aqaba and Faynan areas respectively.

### Summary and Brief Discussion

To conclude, a few remarks should be made about the date and function of the site. As for the first issue, it leaves little doubt that the site can be dated, mainly on the basis of lithic evidence, to the PPNB period. The question is to what phase of the period it is assignable. No clear answer can be given to this question, but the occurrence of Amuq type points and arrowheads (Fig. 6: 10-13),

along with evidence for large rectangular structures, seems to imply a LPPNB date.

A key to understanding the site function is its unique location. What made the inhabitants choose the steep, stony terrain unsuitable for cereal cultivation? Suggestive in this regard is the existence of an extensive Lower Paleolithic flint scatter along the edge of the Fjaje escarpment. Gary Rollefson, the finder and researcher of this site, has claimed that the escarpment was among major seasonal migration routes of wildlife between Wadi Araba to the west and the Transjordanian plateau to the east and, for this reason, induced a number of Paleolithic hunters (Rollefson 1985). The same may apply to Wadi Badda, too, where hunting weapons and shaft straighteners were found in a high frequency. The only differ-

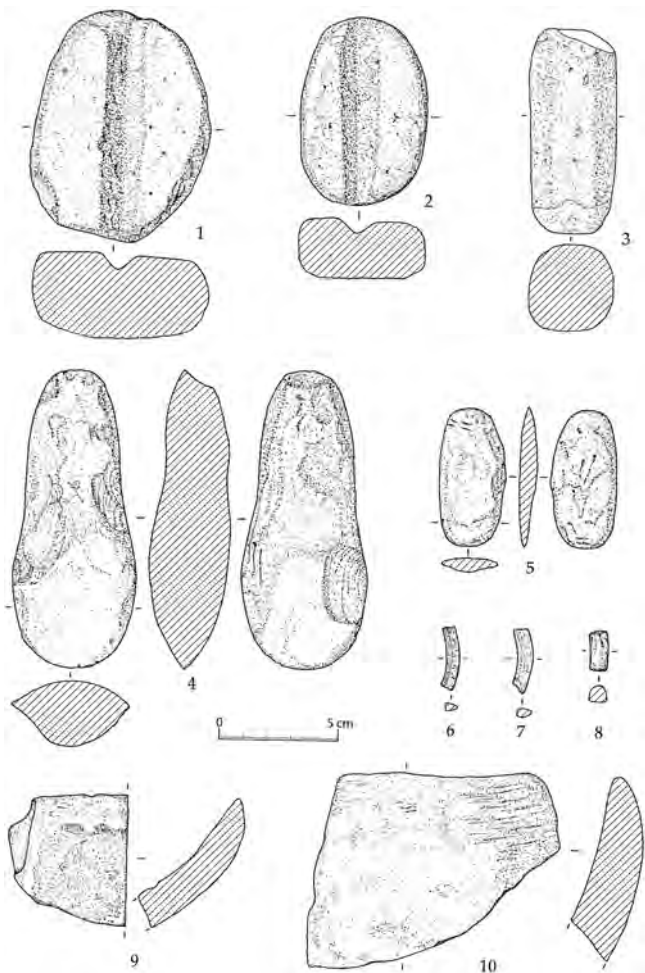


Fig. 7 Groundstone artifacts.

ence between the two is that while Paleolithic hunters occupied the edge of the escarpment and probably employed the tactic of ambush hunting (Rollefson 1985), Neolithic hunters located themselves below it and presumably adopted the strategy of drive hunting, and that while the former left no clear evidence for settlement (though might have formed a large seasonal macroband; Rollefson 1985), the latter did. Nonetheless, both groups made the full use of the unique topography of the escarpment for their subsistence.

The question is, was Wadi Badda occupied all the year round or, as with the Paleolithic site located above, used only on a seasonal basis? It is difficult, however, to discuss this question on the basis of limited evidence now available. All we can say is that, in light of the predominance of hunting weapons in the tool kit, the site may

have served as a seasonal outpost specialized for hunting (and probably herding). It seems that the small site size, the unique site setting, and the absence (or at least scarcity) of reaping tools also argue for this assumption.

### Concluding Remarks

Wadi Badda is the first PPNB outpost or settlement to be identified below the Fjaje escarpment, which has been poorly investigated. This unique site, together with a few outposts recently identified in the al-Jafr basin (Fujii 2002, 2005, 2006a, 2006b, 2007a, 2007b), may provide an insight into another aspect of the LPPNB mega-site phenomenon in southern Jordan (Gebel 2004). Although the difficulty in access is problematic, a brief sounding is scheduled in the near future.

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## Ba'ja 2007: Crawl Spaces, Rich Room Dumps, and High Energy Events. Results of the 7th Season of Excavations

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### Introduction

The seventh season of field work of the Ba'ja Neolithic Project at the Late Pre-Pottery Neolithic site of Ba'ja near Wadi Musa, southern Jordan, was carried out between March 25-April 19, 2007, under the directorship of Hans Georg K. Gebel (assistant director: Moritz Kinzel) in cooperation with the Department of Antiquities of Jordan, and under the auspices of *ex oriente e.V.* at Free University of Berlin. Information concerning earlier research at the site and additional references are provided in Gebel 2001a-b; 2004a-b; 2006; Gebel, Hermansen and Kinzel 2006; Gebel and Hermansen 2004; and Bienert and Gebel 2004.

Aside from the excavation and aims described below, in the seventh season backfilling with sifted material was carried out for rooms in Squares C10, C11, and C21. Based on the understanding as a community-embedded project, work was also devoted to various measures to help sustainable developments in the transformation of the local tribal environment, the continued documentation of its socio-economic changes (Jürgen Baumgarten), modest direct support of local individuals, and the joint preparation for a Neolithic Heritage Trail reaching from Wadi Araba to Basta (a cooperative effort of the Basta, Ba'ja, Beidha, Ghwair, Shkârat Msaied, Wadi Faynan projects and the Department of Antiquities, Amman).

### Fallen Ceilings in Room Dumps, Crawl Spaces in Ground Floors

The operations in B-North in 2007 were aimed to uncover the basements of "Central Rooms" 17 (domestic unit in B22/23/32/33), 22/23 (domestic unit in B12/13/22/23), and the "central room" above basement Rooms 2, 4-6, 37-38 (domestic unit in B21/22) (Fig. 2). In addition, the nature and the stratigraphical positions of the twin strengthening buttresses had to be examined, together with the architectural and contextual relations of the "central rooms" and their neighbouring spaces. The aim to reach the floors of the lowermost storeys was achieved for Room 17.1, 17.3, 22 and 23 (southern parts), 27.1, and 39.

The storey discussion of the split-level rising-floor architecture at LPPNB Ba'ja (Gebel 2006; Gebel, Hermansen and Kinzel 2006; for the specific architectural

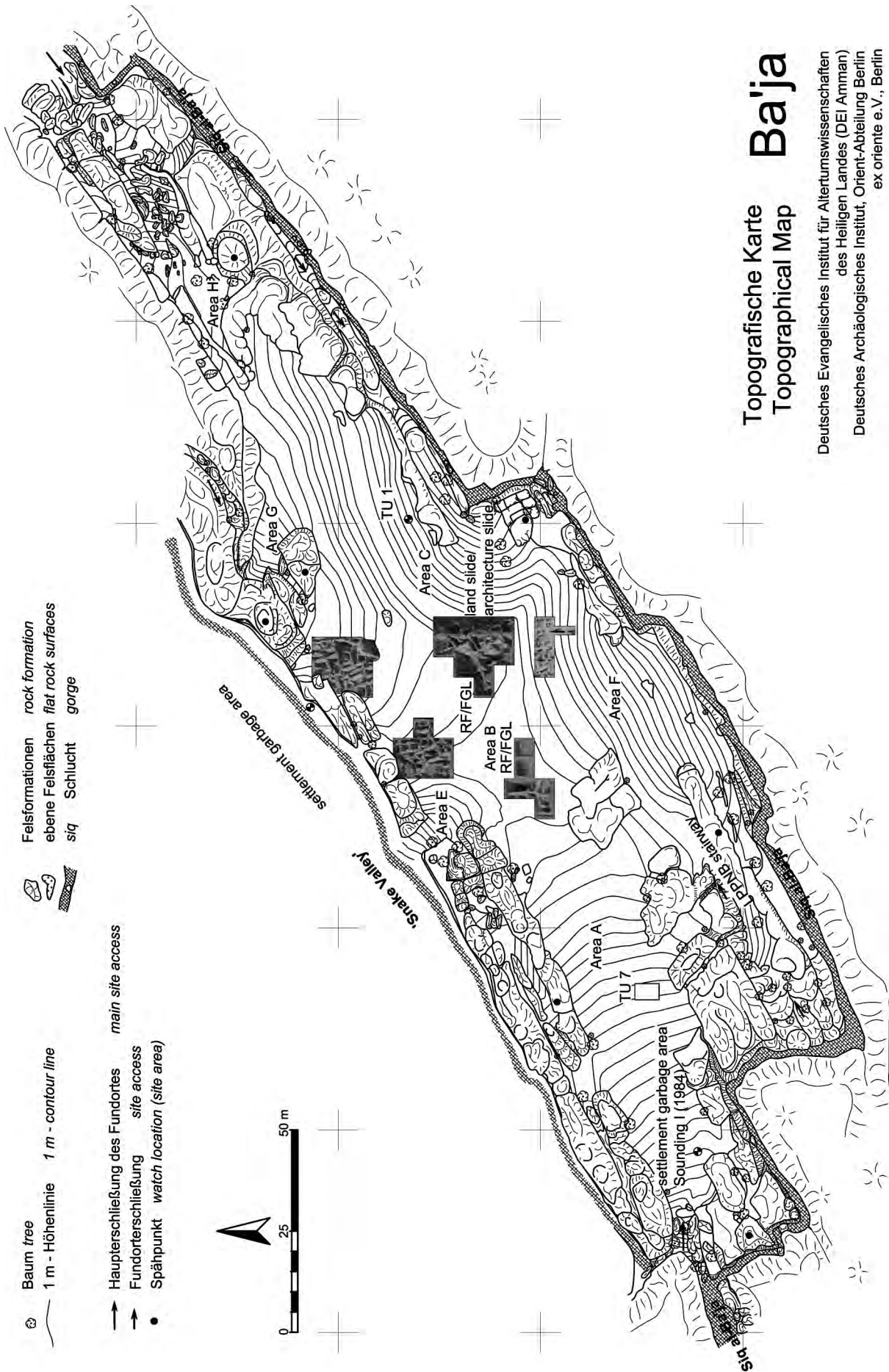
terminology used here, see Gebel 2006: 66) became increasingly complex with the 2007 results. It is obvious that in addition to basements ("created from upper storeys by building a new storey on top of them ..."), we have in Ba'ja ground floors ("neutral term for a lowermost storey ...") with crawl spaces of various heights beneath an upper storey. They may even have a pit-like appearance in substructure-type ground floors if they were established to create an even building level on the sloping bedrock (especially below Room 17). Again our terms: ground floors, basements, raised floors, and others were found to "idealize" what often has an architecturally intermediate appearance. However, the "central rooms" of Area B-North with their twin buttresses, "supporting structure grid"<sup>1</sup> ground floors (Gebel 2006: 71), adjacent stairwells, room fills, and other elements of the LPPNB architectural and sedimentary morphodynamics, remain to be the principal evidence of the terraced two-storeyed architecture in Ba'ja. Its domestic units consisted of smaller rooms in the basements that supported a larger "central room" with smaller rooms around in the upper storey.

### *Area B-North, Rooms 17 and 2 (Figs. 2-3)*

Room 17 (BNR17) measures approximately 3x3 m and is characterized by two interior opposed (twin) buttresses on its northern and southern walls. The earlier excavations of Room 17 were carried out in 2000 and 2001 (Gebel and Hermansen 2001; Bienert and Gebel 2004), and reached a level of some 40 cm below the preserved upper edge of the walls. The cultural layers in Room 17 were cut crosswise in order to gain two sections through the room fill. Room 17 was excavated completely, as well as the Rooms/Spaces 17.1 and 17.3 underneath (reaching bedrock); Room/Space 17.2 remained unexcavated.

Room 17 represents an upper "central room" whose floor and both twin buttresses rested directly on the solidly built "supporting structure grid" of the ground floor. The architectural appearance and plan of this ground floor resembles a substructure system creating rooms or spaces. This ground floor revealed three unconnected smaller room-like spaces (17.1-3) that are only accessible from above through the "central room's" floor, and





## Topografische Karte Topographical Map

# Ba'ja

Deutsches Evangelisches Institut für Altertumswissenschaften  
des Heiligen Landes (DEI Amman)  
Deutsches Archäologisches Institut, Orient-Abteilung Berlin  
ex oriente e.V., Berlin

Fig. 1 Ba'ja site topography: excavation areas and test units in 2007 and site functional aspects. (topogr. map: Hartl-Reiter et al., photos/contents: Ba'ja N.P.)

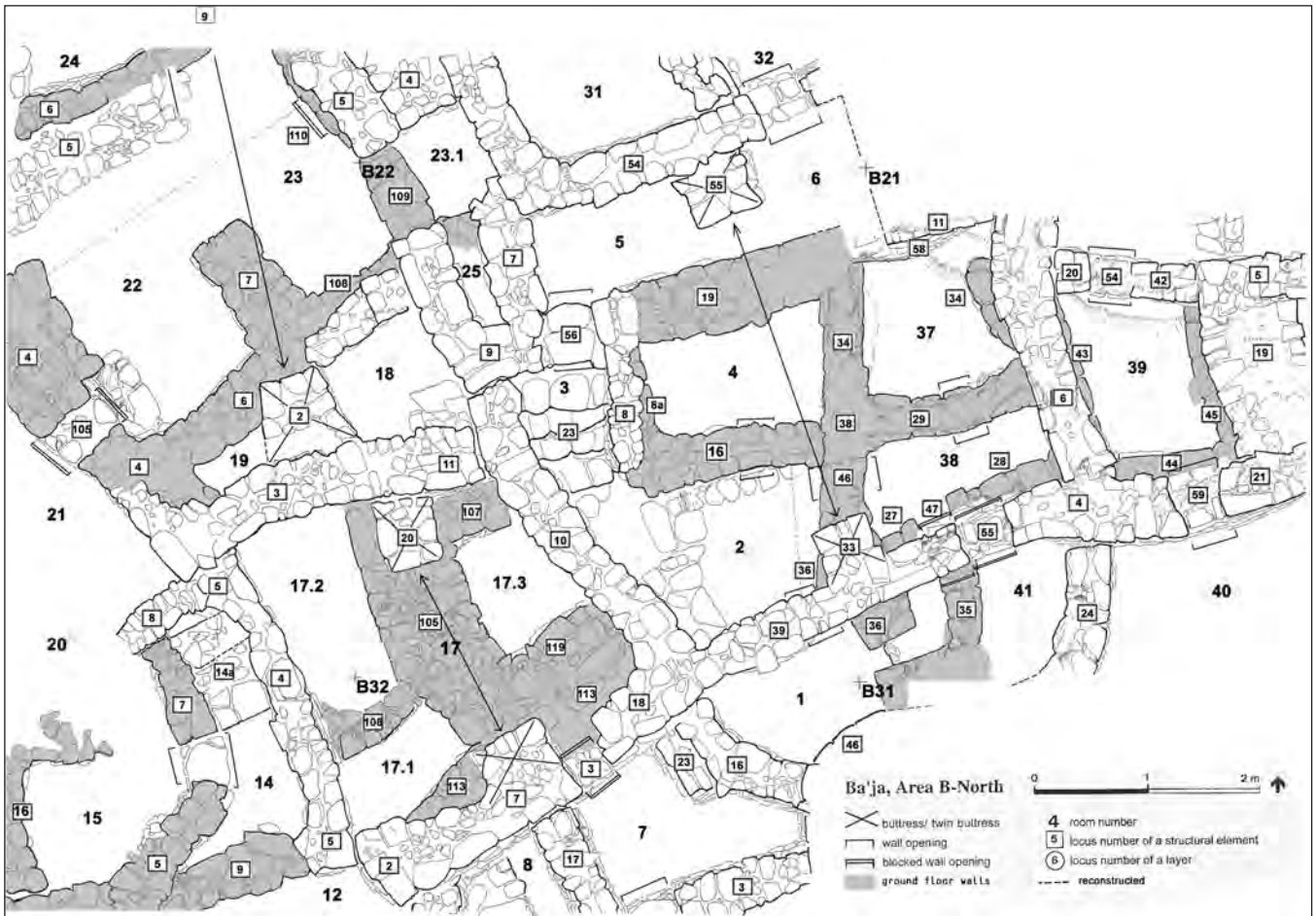


Fig. 2 Ba'ja, Area B-North: "Central Rooms" 17, 22/23, and "central room" above basement Rooms 2, 4-6, 37-38 with adjacent rooms (hatched: walls of basement/ground floors). (drawing.: Moritz Kinzel)

they are separated by an astonishingly thick wall (*ca.* 1 m, Loc. 105). The excavated Rooms/Spaces 17.1 and 17.3 revealed a maximum height of only 75 cm between their floor level and the ground floor's upper edge. Both rooms had a red plaster floor (17.3 including a renewed one). It is interesting that the plaster floors are stratigraphically earlier than all the (interior) ground floor walls, and later than their outer walls. This means that the lower parts of the Room 17 walls were built earlier (except Loc. B32,7) than the erection of the interior "supporting structure grid" (*cf.* Fig 2: shaded walls between 17.1-3). Originally, most of the outer walls belonged to the surrounding rooms, which left the later area of Room 17 as an open space.

Parts of the ceiling material (Loci 104 and 117) were preserved in situ on the ground floor walls. Its non-organic components consist of an extremely hard and patchy layered mortar-like material of *ca.* 15 cm thickness (Loc. 104) upon which a 10 cm thick bed with fine gravel was preserved (Loc. 117). The room fills are characterized by a high content of loam and lime. The stratigraphy of both spaces (17.1 and 17.3) shows a similar pattern. Above the plaster floors were special find associations, some of which still reflect their primary contexts; these finds (articulated animal bone midden, flint artefacts) in

Room/Space 17.3 rested 3 cm above the floor, separated from it by a sediment layer. Above, it was followed by ceiling material (Loci 111 and 114). Artefacts such as grinding tools were embedded particularly in its lower part, with some tendency of concentration close to the room/space corners. The ceiling material itself was sealed by several layers, mainly consisting of compact loamy material mixed with lime and wall stones. These probably represent the collapsed roof material intermixing with the material of dilapidating walls. However, the *in situ* find of an entire and articulated bone necklace (Loc. 118) suggests a fast collapse of the roof after the terminated use of Room 17, and its use as a dump. Furthermore, large quantities of ash mixed with roof and wall materials – particularly in the W half of Room 17 (Loci 106=110=112) – indicate that the burning of parts of the roof caused the end of the room use (or occurring after its abandonment). The findings of Rooms 17, 17.1, 17.3, 22/23 will be subject of a separate publication (Gebel, Kinzel and Purschwitz, in prep.).

The excavation of "Central Room" 17 confirmed further the two-storeyed nature of the housing in Area B-North. Its lower fills represent intermixed deposition of roof/ wall collapse with the material used on the roof (dilapidation and eroded original use contexts) and dis-

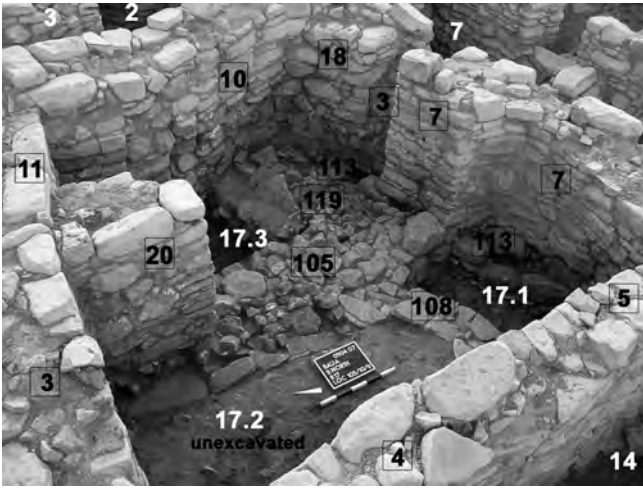


Fig. 3 Ba'ja, Area B-North, "Central Room" 17: Twin Buttresses 7 and 20 of upper storey "Central Room" 17 and exposed ground floor Rooms/Spaces 17.1 and 17.3. (photo: Ba'ja N.P.)

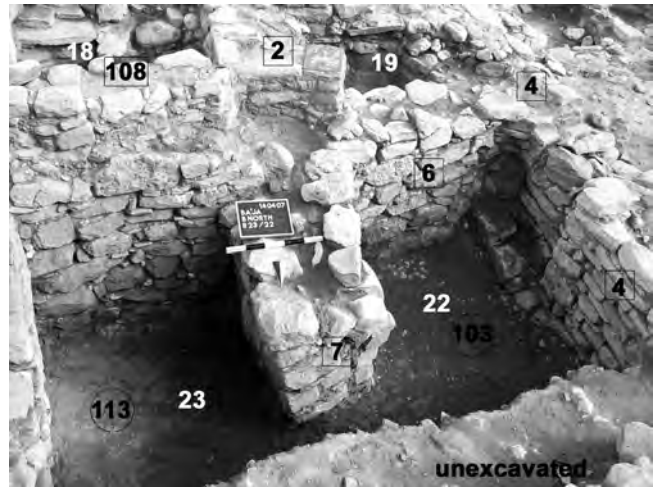


Fig. 4 Ba'ja, Area B-North, below "Central Room" 22/23: early floor exposed in ground floor Rooms 22 and 23. (photo: Ba'ja N.P.)

carded cultural material (use as dump after abandonment). The cause for the abandonment of Room 17 might have been a fire by which part of the roof collapsed. During the process of dilapidation these materials sank further down into the ground floor spaces, mixing here with the materials of the ground floor ceiling/floor of the first storey: The upper parts of the ground floor fills show roof collapse materials, followed by the ground floor ceiling material mixed with grinders underneath. Room 17 represents the core element of a domestic unit in Ba'ja: a "central room" with a ground floor/basement. The artefact assemblages suggest a short re-use of the room as dump area; the associated objects still reflect their original contexts representing food preparation, sandstone ring workshops, household garbage, and discarded personal items.

The excavation of Room 2 resulted in the exposure of a red-stained plaster floor, which was already exposed in the 2005 season. As in Rooms/Spaces 17.1 and 17.3, the "supporting structure grid" was partly erected directly on the previously established plaster floor. The "supporting structure grid" walls themselves are characterized as small juts on which ceiling material was preserved *in situ*. These juts and a small wall created another pit-like space of some 30 cm depth, upon which the Crawl Space/Room 2 gave access to the adjacent Rooms 1, 4 and 38. Ring workshop remains were embedded in the ceiling/ roof material, indicating a ring workshop on the roof.

#### **Area B-North, Rooms 22 and 23, 23.1, 27 and 27.1 (Figs. 2 and 4)**

The excavation of the ground floor Rooms 22 and 23 below the northernmost "Central Room" 22/23 in Area B-North (BNR22/23), located between a system of buttresses (Gebel 2006; Gebel *et al.* 2006)<sup>2</sup> was continued

in 2007 in its southern half. It exposed the base of the room dividing Wall 7, the top of a small wall or a stone row or step (?) below the east of Wall Opening 105, and the room fill stratigraphy. While it is rather clear that the Twin Buttresses 2 and 9 relate to the establishment of the "central room" of the upper storey, the architectural stratigraphy of Loci 4 in B23 and 4 (with its abutting Loc. 5) in B12-13 remained unclear. Do the latter indicate another twin buttress situation for Room 22/23?

Like the operation in Room 17, the ground floor room fills of Rooms 22 and 23 showed an extraordinary high density of finds, representing various depositional processes and events, as well as very different primary, secondary, and tertiary contexts and activities. Excavation in 2007 ended with the exposure of Floor 113 in Room 23 and 103 in Room 22; both loci represent one floor at one level. Its plaster extended onto wall base Locus 7, which continues below Locus 113/103. The room was left clean (free of *in situ* finds) before the deposition of the room fills started. The character of the deposits in Rooms 22 and 23 is quite different. After a deposit containing a high amount of charcoal (on the floor of Room 22), a layer of ceiling material was deposited over the Floor 113/103. This ceiling material contained quite a number of animal bones, especially concentrating in Room 23. In Room 23 also were the remains of a celt workshop, and some eight grinder fragments and other objects were intentionally deposited; another concentration of some 13 complete and fragmentary grinding tools were found in later room fills of Room 23 (Loc. 111). The other finds of the lowermost Room Fill 112 in Room 23 show a high concentration of bone tools, worked stone, bracelets and ornaments, representing a mixture of settlement debris either deriving from upper storeys or being dumped here. The lowermost Room Fill 102 in Room 22 had a high concentration of animal bones and waste collected from a ring workshop. Above this locus

another concentration of ring workshop waste was deposited, followed by a concentration of animal bones.

The remaining parts of the room fills in Rooms 22 and 23 also produced a sequence of find-rich deposits mixed with stone rubble, grinding tool fragments and pestles, numerous but isolated mother-of-peal objects, worked bone, shell ornaments, various classes of personal objects (paillettes, pendants), a few grooved stones, a “statue-shaped” pestle, and odd-shaped natural stones. Especially interesting are the small sling ball assemblages found in Loci 101, 103, 104, 111, and 112 (Gebel in prep.): representing preserved secondary contexts, they testify to the repeated intentional dumping of primary contexts in the ground floor rooms.

We think that the ground floor room fills in 22 and 23 represent a sequence of intermingled depositional events. During intramural decay (collapse of first floor ceiling and roof material, eroding wall plaster, wall rubble) intentional dumping took place, including secondary contexts of material originating from individual primary contexts: food preparation by grinding tools, celt and sandstone ring workshop waste, mixed household garbage, and various other primary contexts; tertiary contexts included materials from surrounding deposits that were washed in. It cannot be excluded that material once used on the roof are in these deposits. Contrary to Room 17 the finds in the ground floor room stratigraphy of 22 and 23 are more fragmentary. While dumped secondary contexts dominate in the lower room fills, tertiary contexts characterize the upper room fills. Together with Room 17, this sequence again argues for the concentration of sealed early Neolithic deposits in the lowermost room fills.

The baulk that remained from earlier excavations in Room 27 was removed. Three events of wall rubble deposition were traced. The lowermost part of the room did not show a preserved floor, but exposed instead a bench-like substructure (Loci 103 and 104) to the south, east and west. The “bench” rests on the bedrock (Loc. 102) and forms with the cut bedrock in the north a pit-like space (Loc. 101, called Room/Space 27.1, 65 cm in depth) under Room 27. The bedrock was clearly cut out to extend this space created by the “substructure” walls to level the bedrock for the first storey. The pit seems – in its latest stage of use – to have been intentionally filled with an almost sterile sandy and loose material. The original use of the pit is unknown (collective burial?, storage?).

#### *Area B-North, Square B21 (Figs. 2, 5-6)*

The opening of B21 extended Area B-North towards the east. The expansion aimed to understand the eastern extension of the two-storied ground plan of the domestic unit in B21-22 that has a “central room” between Buttresses 55 and 33 above the ground floor or basement Rooms 2, 4-6, and 37-38 (Gebel 2006; Gebel, Hermansen and Kinzel 2006).

B21 was found divided E-W by the long Wall 4/21; Wall 6 runs northwards at a right angle from Wall 4/21. The western border of B21 is occupied by Wall 38 (= B22,34 of 2005), the top of which is covered with thick remains of ceiling/floor material. This material was also found on top of Wall 29, located between Walls 6 and 38 and separating Rooms 37 and 38. Close to the east baulk another wall, Locus 19, runs N-S, contacting Wall 4/21. It seems to be a massive wall (1 m wide), with its east face running into the baulk.

Wall 6 turned out to be the east wall of the “central room” in B21-22 that used the Twin Buttresses 33 and 55. The room rested above a “supporting structure grid” formed by the walls of Rooms 2, 4, and 37-38 that were reduced in their heights before establishing the new upper storey with the “central room” (Gebel 2006).

South of Wall 4/21 a curvilinear wall (Loc. 24 of B21; Loc. 46 in B32) bends from N-S to E-W directions, separating Rooms 40 and 41. In Room 41, low walls of a channel-like structure (Loci 35 and 36) are attested, coming out of wall opening in Wall 4/21.

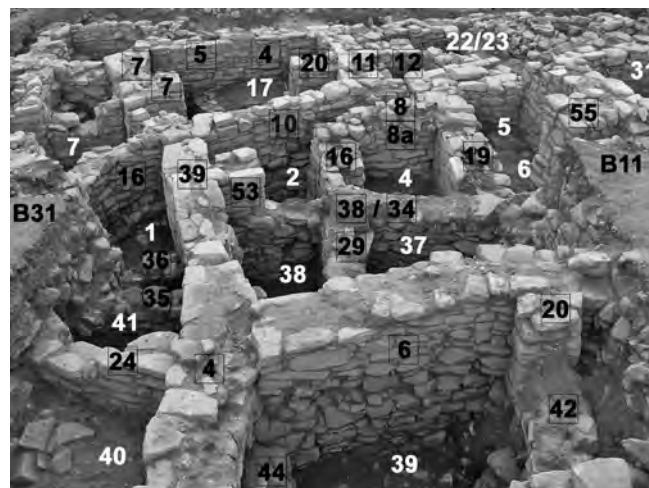


Fig. 5 Ba'ja, Area B-North, B 21: view of B21 (foreground) with western parts of Area B-North. (photo: Ba'ja N.P.)

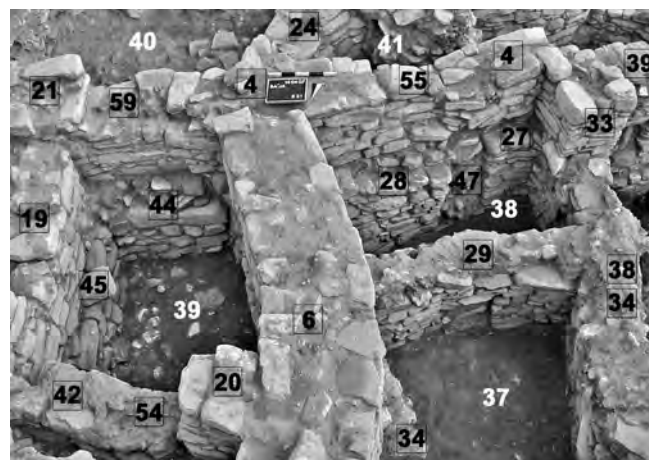


Fig. 6 Ba'ja, Area B-North, B 21: Rooms 37-39 with ground floor walls and *in situ* ceiling material on wall tops. (photo: Ba'ja N.P.)

The building stratigraphy of B21 revealed that the roughly set cobble-faced Walls 44, 45, 43, and 54 of Room 39 and Locus 43 of Rooms 37 and 38 form the first structural remains in the square. They created the foundation level of the first storey's walls (e.g. Walls 6, 21, 19, 42 of Room 39). These rough walls are in contact with the bedrock at the northern sides of Rooms 39 and 37, and probably remained unplastered. B21 shows that basement/ground floor walls close to bedrock tend to be wider, possibly also seen in Test Unit 7 (*cf.* below), and they were erected with the intention to support an upper storey. The construction of both the ground floor and the upper storey in one building process seems to be in evidence with the B21 results for building plots near bedrock.

Entrance/access to the rooms west of Locus 6 was most likely possible through an opening (Loc. 46) in Wall 38 leading to the narrow Room 38 with openings to the neighbouring Rooms 37 and 41. There are no openings in Wall 6 leading to the rooms east of this wall. This may indicate that Locus 6 separated two different housing units. However, the heights of the coarse basal walls of

both houses are similar, suggesting that their first floors rested on similar levels. The room fill in Rooms 39, 38, and 37 showed remains of fallen ceilings with the material still accumulating along the walls and in the corners of the rooms. More layers with patches of floor and ceiling material followed in the room stratigraphy downwards. It is probable that these room fills in the basement/ ground floor rooms have been partly built up by intentional filling before the Floor 33 (equivalent in height with the ceiling/floor remains of Loci 12 and 13) was laid. Above Locus 33 in Room 39 the remains of a ring workshop were deposited from a floor/roof above, found between a sequence of secondary and tertiary deposited wall and ceiling/roof materials. In the ceiling material (Loc. 33) a lintel stone (60 x 20 x 15 cm) and a threshold (30 x 30 x 41 cm) with a depression in the corner of one face were found lying upright. Probably they fell from one of the wall openings related to Loci 20 and 42.

### Huge Rubble and Fine Gravel Flows, Wall Rubble and Air Pockets

#### Area B-South, B72 and B73 (Fig. 7)

The northern halves of both squares located close to the flat central part of Area B were opened in order to trace evidence of the supposed open space in central Area B. After the fine-grained layers (FGM) characteristic for the site's sub-topsoil stratigraphy were removed, excavation was suspended on top of greyish cultural debris layers containing redeposited smaller stones, disintegrated charcoal, and artefacts (at *ca.* 50 cm below the surface). Only in the north half of B73 was excavation continued for about 40 cm deeper into these cultural debris layers. The relationship between the thick fluvial flow of fist-sized stone rubble containing fine gravel lenses (RF/FGL) of B64 and B74 and the greyish cultural debris layers in B73 could not be clarified. It was astonishing to recognize here different layers at similar heights and in close vicinity (Baulk B73/74), which probably do not have the same origins, interact with each other.

#### Area B-South, Lower B64 (Figs. 7-8)

Excavation continued in the southern half of B64 to gain more insights into the huge intrasite rubble and gravel flows (RF/FGL) resting against high walls and on the large wall rubble accumulations, features that presumably result from high energy events like flash floods and earthquakes. The same features are reported from Area C (see below) at a distance of some 20-30 m. Observations and more evidence from this season allow us now to raise the topic of catastrophic impacts on settled life in Ba'ja.

The oldest wall remains exposed so far in southern B64 run roughly E-W (Loc. 26 in the east, Loc. 29 in

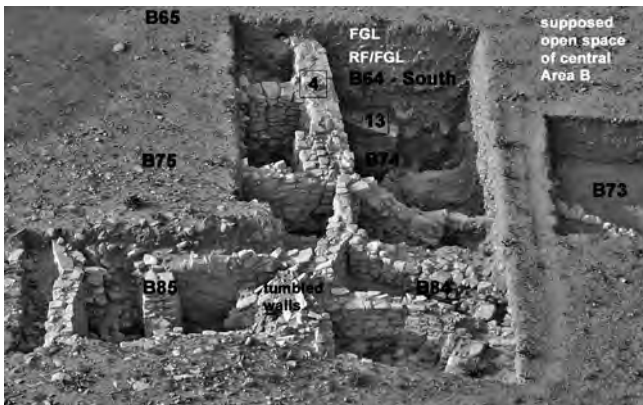


Fig. 7 Ba'ja, Area B-South, southern B64: RF/FGL evidence and tumbled walls in B84/85. (photo: Ba'ja N.P.)

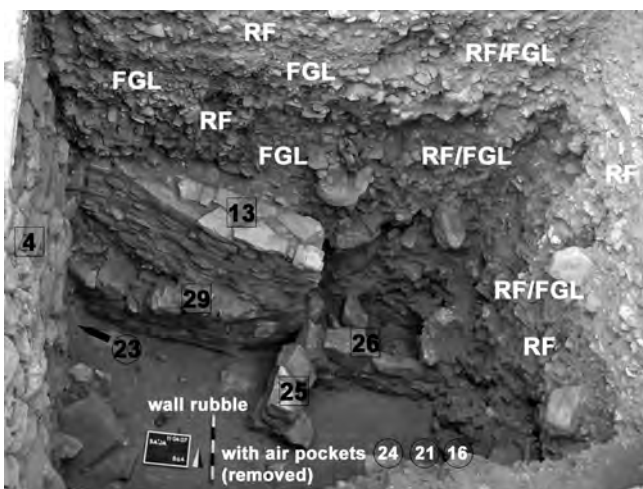


Fig. 8 Ba'ja, Area B-South, southern B64: earliest architectural remains with partly removed wall rubble loci and RF/FGL deposits above earliest architecture. (photo: Ba'ja N.P.)

the west under Wall 13). To the south of these walls extends a huge accumulation of wall rubble and loose sediment with air pockets (Loc. 24) that evince an episode of rapid destruction and/or deconstruction, at any rate representing high energy events or its consequences. It could be the result of a major earthquake followed by the intentional burial of material from deconstructed walls. Above Locus 24, Locus 21 was found to be of similar origin but with quite a number of air pockets between the stones, mixed also with a higher amount of loose, redeposited material including mortar/ plaster/ceiling debris containing charcoal. Locus 21 reaches heights of the basal parts of Wall 13; Locus 21 especially looks like freshly deposited debris of a disastrous event. Above Locus 21 rests Locus 16, again with much wall rubble and air spaces, reaching heights of the central preserved part of Locus 13 wall. Wall Locus 13 runs into the lower cobble-faced phase of Wall 4 that rests on a layer of pure and densely packed ceiling/ mortar/plaster material (Loc. 23). The stratigraphic relation of Layer 23 to Wall 29 is that it is a later fill than Wall 29. Layer 23 must have been deposited while the wall rubble Layers 24, 21, and 16 were accumulated. Only after this rapid deposition of wall rubble Wall 13 was built. It used Wall 29 as a foundation, which still bore patches of red plaster (*e.g.* Loc. 19 in 2007). Wall 13 seems to have been reduced in height, probably during the erection of the upper phase of Wall 4 (= coarse-faced upper part of Wall 4). On top of Wall 13 rests the moraine-type flow of fist-sized rubble/gravel with embedded fine gravel lenses (RF/FGL) that is also attested in the east sections of B64 and B74.

In an interpretation of the events in Area B-South we may identify three major high-energy impacts. The first is related to the wall rubble accumulation with air spaces that has a minimum thickness of 1.5 m (not fully excavated yet) in lowermost B64, which seems to be the result of an earthquake destruction of the lowermost architecture in the area and of subsequent intramural space filling. The second relates to the huge fluvial rubble/gravel flow (RF/FGL) resting against the walls of the next building phase (*cf.* also the fine gravel deposits inside the “gate” in B74), which must have filled also empty spaces in central Area B. The thickness of the flow reaches 1.5 m in spots, and it might represent more than a single event (*e.g.* embedded fire places). The third is represented by the twisted walls in upper B83 and B84 (Fig. 7): The energy made walls lean in all directions and did not follow a specific vector or pattern, which also leads us to conclude that this resulted from an earthquake.

#### **Area C, Square C-10, Baulks C-20/20 and C-10/10 (Fig. 9)**

The operation in C-10 and the baulk removals in C-20/20 and C-10/10 were aimed to clear a stairwell location in C-20/20 that connected two occupational levels in

C-10/10/-20/20/21 in order to understand a later building phase resting on the fist-sized rubble/ gravel flow with embedded fine gravel lenses (RF/FGL), as well as to link the C-10 architecture with that of C10 and C20. Like B64 and B74, western Area C reflects two major impact events: an extensive earlier wall rubble pile with air pockets in C20 (incompletely excavated) in a rather large open space, a huge rubble and gravel flow resting against high standing walls, *e.g.* Walls 10/11 of C-20/20, before the reorganization of space and architecture of the upper architectural phase took place. After six seasons in Ba‘ja, we could distinct a separate and later architectural phase, which is not part of the overall architectural and morphodynamic complexity of succeeding modifications that prevent the identification of clear and general sub-phases.

The operations in western Area C allowed us to connect the building stratigraphy around the open space in C20 with the remains in C-10. After the removal of the baulks it became clear that Wall 5 of C-10 continues in C10; together with Buttress 114 of C10 and Wall 6 of C-10, this E-W running wall represents the latest architectural phase in the area. It runs against the big and reinforced buttressed terrace Wall in C1 and C10-11 (Bienert and Gebel 2004: 125). It is erected on the RF/FGL flow with layers of small fluvially sorted and laid gravel (8-15 mm), and this is also the case for Buttress 114, Wall 6, and Buttress 26 in C-10. These water-laid fine gravels are also found in the north section of C20, where they accumulated against the eastern face of Wall 10 (former Baulk C-20/20). Here these fine gravels appear as lenses and layers inside the upper parts of a rubble/gravel flow, consisting of fist-sized stones, that forms the upper fill of the rooms in C-10 and Baulk C-20/C20.

In the corner east of Walls 6 and 5 a dense and hard greyish layer (Loc. 25) of mainly fist-sized stones was

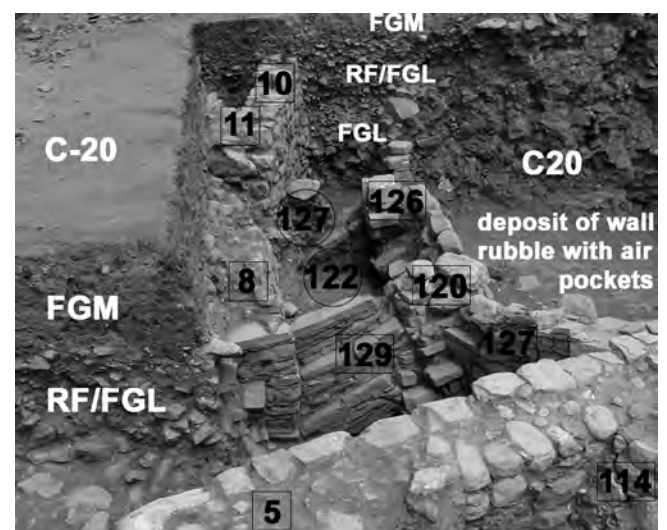


Fig. 9 Ba‘ja, Area C, C10 and C20: tumbled stairwell, open space with wall rubble, RF/FGL and FGM deposits, and latest architectural phase remains. (photo: Ba‘ja N.P.)

found in which a stone-lined box (Loc. 19) was inserted. All the aforementioned wall remains were covered by the light brownish fine-grained material (FGM) forming the sub-topsoil layer in all Areas A and C; its thickness reaches 60 cm.

The RF/FGL rubble/gravel seems to have terminated the earlier architectural occupation in western Area C, causing the reorganization of its space. This earlier occupation is represented in C20 by Walls 120 (with two blocked window-like wall openings = Loc. 127, earlier plastered in red inside), 128 (in the north baulk), 133 (with Wall Opening 134), Staircase 129, and Walls 10 and 11, 7 and 8 in Baulk C-20/20. The destruction of this phase seems to be evidenced by the deposition of the huge wall rubble in the open space of C20 and in the space between the Walls 120 in C20 and 5, 26 and 8 in C-10 (where also many lintel stones were found). The orientations of this wall rubble are mixed; the deposits have a lot of air pockets, revealing a rapid and probably intentional filling of the space. It is assumed that this action relates to the deconstruction of walls that followed a high-energy event like an earthquake. This must also have twisted the complete Stairwell 129, simultaneously leaning it down by the height of one step.

This high-energy event may not be related to the destructive event represented by the rubble and gravel flows described above. It is rather clear that the destruction of architecture (“earthquake”) and subsequent intramural filling with its wall rubble preceded the rubble/small gravel flows entering, for example, the second room to the north of the stairwell. Water appears to be the agent of transport and movement in this destruction phase before the latest walls in western Area C were erected. This combined evidence of earthquake or earthquake-like destruction<sup>3</sup> and rubble/fine gravel flow is also attested in B-South, especially B64, where similar fine gravel layers inside a major sequence of rubble/gravel flows (ca. 1.5 m) rest against Wall 4, also entering inside the “gate” in that wall in B74.

### Concerning Eroded Architecture and Other Doubts

#### *Area A, Test Unit 7 (Fig. 10)*

The excavation in Test Unit 7 (TU7) was aimed to understand the occupations and function of Area A, the main access area to the site from the gorge leading up to the site (Fig. 1). In 2005, the corner of a building/structure occurred in the southern part of the trench, as well as a contracted burial in the ashy cultural slope rubble, most likely belonging to the Final LPPNB (Gebel, Hermansen and Kinzel 2006: 18-19).

In 2007, TU7 was extended further to the west by another 2 x 6 m. This extension revealed the same upper slope stratigraphy as found in 2005, with again no struc-

tures but charcoal- and ash-rich layers mixed with cultural debris and many fractured animal bones below the upper slope rubble. In order to clarify further the structural remains in the southern part of TU7, a 3 x 4 m sounding, later reduced again to 1.5 x 4 m, was taken down to virgin soil and bedrock near the southern section; no further architecture appeared here.

Walls 7 and 8 of 2005 were exposed down to their foundations, which may also be single-course cobble lining along the wall base (Loci 29 and 30, including stone packing). All structural remains in TU7 used mostly cobble-shaped limestone and sandstone pieces chosen from the *wadi*. This is very reminiscent of the picture presented by the near-bedrock walls in Area B-North: Also here the newly found pattern of cobble-faced rough walls forming the bottom of the architectural occupations is attested.

The situation exposed by TU7 suggests that central Area A may have had structures that, while they may have been eroded in the middle parts of Area A, are only preserved at its vertical rock-lined sides. Here they later experienced the deposition of the aforementioned ashy cultural slope debris deposits (blackish-greyish-brownish patches containing charcoal, bones, flint and sandstone ring artefacts). These patchy layers are roughly horizontally bedded, and they most likely represent slightly redeposited open-air dumps mixed with some gravel and eroded wall materials, using the still terraced nature of (central) Area A, a characteristic of the area observed earlier.

Below the wall foundations/stone linings, Loci 29 and 30 (sandy loamy layers with charcoal, flints, bones, other artefacts, and fist-sized stones) occurred over the sandy loamy virgin soil resting over the unweathered and sharp-edged bedrock. It can be concluded that the walls and the foundations were built here on structural debris layers since they did not touch virgin soil and bedrock.



Fig. 10 Ba'ja, Area A, Test Unit 7. (photo: Ba'ja N.P.)

### Areas A-C (Fig. 1)

A long-standing argument for Ba'ja was the axiom of a long duration for the use of the site, as it was concluded on from a deep architectural stratigraphy and the intensive use of horizontal and vertical space. Evidence after seven seasons of excavations now nourishes doubts. More and more bedrock or virgin soil was reached after exposing more short architectural sequences, and Area A might not have been densely occupied. Area B-North only shows one domestic phase, consisting of ground floors/basements and one upper floor. Area B-South may soon touch bedrock after a sequence of a maximum of two phases, as can also be expected for Area C. It will be the aim of future seasons to concentrate on duration studies of all kinds in order to evaluate how long Ba'ja was likely to have been occupied. However, the understanding that all space, including exposed bedrock and extreme slope settings, was used in Ba'ja is repeatedly confirmed.

### Major Results of the 2007 Season

After seven seasons of excavations, the site of Ba'ja still surprises us with substantial new insights that trigger new questions and hypotheses. Before reconsiderations are presented, we summarize the main results of 2007:

1) Increasing evidence of extreme high energy events that destroyed the settlement's architecture: In addition to the (fluvial?) destruction of eastern Area C by a slope subsidence (Gebel and Bienert *et al.* 1997), there is evidence of (a) massive wall destruction – and deconstruction of walls – in basal Area B-South (B64) and in Area C (C20), followed by (b) thick flows of rubble/gravel (RF, up to 1.5 m in height) with embedded waterlaid fine gravel deposits (FGL) that rest against tall standing walls or were found under a later architectural phase in C-10/10.

Most likely the wall rubble layers result from at least one earthquake (and subsequent instabilities of houses) in the earlier settlement. Another earthquake could be attested by the twisted walls in upper B84-85 (Fig. 7). It is necessary to consider the possibility that the RF/FGL flows result from flash floods reaching the central upper parts of the settlement from the gorge (Siq al-Ba'ja), and that the floor of the *siq* was much higher than today (Fig. 1).

2) Lower storeys near bedrock at Ba'ja must not be true ground floors or basements. Often they are crawl or pit-like spaces established by substructure-type walls that helped to level the sloping bedrock and supported the first floor. The transformation of first floors into basements, described elsewhere (Gebel 2006), is a feature of a later architectural development of a building. Unplastered cobble-faced walls characterize near-bedrock ground floors and are rarely found in the upper architectural stratigraphy.

- 3) Find-rich intra-mural middens can appear in and below “central rooms”, witnessing here a superb sequence of interacting primary, secondary and tertiary deposits/contexts. They provide the best chance to trace the storey use in a house, and they contain ceiling material and roof use evidence. They also may represent the evidence of a spatial reorganization of a building subsequent to a destructive impact: Secondary contexts in the fills may reflect indirectly catastrophic events or severe impacts in neighbouring parts of the settlement.
- 4) The question of water access in Ba'ja needs to be reconsidered, and the ideas of Gebel 2004b have to be followed further. It is quite likely that the *siq* of Ba'ja was much less incised, allowing the catchment of water by simple installations or that natural basins existed storing water, as discussions with hydrologists visiting the site (H. Fahlbusch, Lübeck and others) have suggested.
- 5) Initial pedological investigations by Bernhard Lucke, Cottbus Technical University, revealed – among other results – that the site rests on a well-developed palaeosol. This as well as the less-developed current sandy soils in the vicinity were suitable for mortar and plaster production. A simple test proved that the soils harden without further additives, pointing to a high clay content (estimated to ~25%, texture classified as strongly sandy loam (Ls4) according to the German soil mapping guidelines). (B. Lucke, pers. comm.)

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than 170 guests, among them the participants of two conferences and one university class. Dr. Bernhard Lucke, pedologist of Cottbus Technical University, helped with fruitful discussions on the intra- and off-site paleosols. We thank Christoph Purschwitz for editing the illustrations of this contribution, as well as Boris Borowski who made the original top plan of Area B used in Fig. 2. Our sincere gratitude is extended discretely to the sponsors of the 2007 season.

## Notes

<sup>1</sup> Our problematic term “girder grillage” used in earlier publications (Gebel 2006; Gebel, Hermansen and Kinzel 2006), meaning in LPPNB contexts a loadbearing grid of walls inserted into a larger space to support the floor of an upper storey, is now replaced by the term “supporting structure grid”.

<sup>2</sup> Herein, by mistake the ground floor dividing Wall 7 was considered the twin of Buttress 9. In fact, it is the Buttress 2 between Rooms 18 and 19 which is the counterpart of Buttress 9, cf. Fig. 2.

<sup>3</sup> Of course, other impacts or scenarios can be imagined for Ba’ja, e.g. the collapse of two-storeyed buildings due to neglected maintenance, construction and material deficits, wet walls and ceilings/roofs or slopes after heavy rains/snow etc. (which could have also affected more stable neighbouring buildings in a densely built village). Scenarios of mixed/interacting causes (melting snow/heavy rains, structural instability on steep slopes, earthquake, landslide) have to be assumed, too.

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## Contribution

# From PPNB to PN: Chipped Stone Industries of the Middle Euphrates Valley. New Data, New Interpretations

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The data used in this paper originate from the author’s Ph.D. dissertation, which analyzed a total of 15,862 pieces of chipped stone from Akarçay Tepe (SE Turkey) and Tell Halula (Syria) (Borrell 2006). Both sites are

located in the middle Euphrates valley on the east and west bank, respectively. The chronological sequence of both sites ranges from middle PPNB to PN (Arimura *et al.* 2000; Molist 2000; Özbaşaran and Molist 2006).

Study of the lithic assemblages from Akarçay Tepe and Tell Halula as well as from other contemporary sites in the middle Euphrates valley enables us to update and re-evaluate the current knowledge about the stone tool manufacturing during Neolithic times.

Initial conclusions allow me to propose the existence of significant differences in the process of stone tool production when comparing the contemporary occupations at Akarçay Tepe and Tell Halula during the mid-VIIIth millennium cal B.C. The differences have been documented in raw material usage, the knapping methods and techniques, and tool typology. According to current results, specifics of stone tool production imply the presence of two distinctive production zones in the middle Euphrates valley (Borrell 2006). Beside this difference, some common changes were also observed in stone tool manufacturing in both sites from the mid-VIIIth millennium cal. B.C. until the mid-VIIth millennium cal. B.C.

### **The Middle Euphrates Valley at the End of the Pre-Pottery Neolithic: A View from the Lithics Assemblage**

Some changes occurred in stone tool production in the northern Levant between 7000 and 6800 cal. B.C. (Nishiaki 1993, 2000; Cauvin 1994; Abbès 2003; Molist *et al.* 2001; Astruc 2004). According to prior studies, the major changes can be summarized as:

- 1) A decrease in usage of fine-grained flint types; 2) A decrease in blade production but an increase in flake production; 3) Gradual abandonment of the opposed-platform blade knapping method; 4) Less standardized blanks and retouched tools. Some archaeologists define this phenomenon as a change from “*specialized blade to amorphous flake production*” (Nishiaki 2000) or “*expeditive and non-standardized*” technology (Molist *et al.* 2001); 5) An increase in frequency of the retouched flake tools; 6) Less standardisation in both the morphology and the types of retouched tools. For instance, while projectile points, sickle blades, scrapers and the other most common PPNB tool types lost their importance, some other tools, such as notches, denticulates, sidescrapers, and retouched flakes became common tool types.

The current data and the new results available from Tell Halula and Akarçay Tepe imply the occurrence of such changes also in the middle Euphrates valley. The new data allow us to redefine the chronology, nature, and causes of the changes. This way, these three issues are evaluated below.

First, the chronology of the processes can now be established more accurately. In the northern part of the middle Euphrates region, strong differences were observed between the lithic assemblages of Hayaz Höyük and Kumartepe in SE Turkey (Roodenberg 1989). According to this observation, scholars proposed the occurrence of severe and relatively quick changes at the beginning of

the VIIth millennium cal. B.C. However, based on the new data from Akarçay Tepe, it can be proposed that most of the transformations in stone tool production occurred before 7000 cal. B.C., prior to the appearance of the earliest pottery. What can be documented at the beginning of the VIIth millennium cal. B.C. is the continuation of the above mentioned changes that started during the Late PPNB. While the changes gradually happened between 7500 and 7300 cal. B.C., they began to accelerate after this date in the northern part of the middle Euphrates valley. In the south, significant changes did not occur until 7300 cal. B.C. but after this date they seem to have happened rapidly between 7300 and 7100 cal. B.C. Nevertheless, in both regions, by around 7100 to 7000 cal. B.C., after the appearance of the first pottery production, changes had taken place in the lithics industry and continued with few subsequent variations (Borrell 2006).

The nature and causes of technological traits and features that changed during the LPPNB and PN should be considered. One major aspect is that raw material procurement strategies changed. Not only the relative frequency of non-local fine-grained flint decreased but also the selection of both local and non-local fine-grained flint was also affected. That process would be better defined as a divestment of the use of both local and non-local raw materials. Locally more abundant flint types, usually poor in quality for knapping, were preferred. The same simplification of the raw material procurement strategies was observed also in Cyprus (Astruc 2004). A second aspect that has been fairly documented is that opposed-platform blade knapping method was gradually abandoned at the end of the PPNB (Nishiaki 1993, 2000), although it can be documented, in lower percentages, at many sites like Tell Halula (Borrell 2006), Akarçay Tepe or Mezraa Teleilat (Coşkunsu 2002) during the PN. This phenomenon took place in the context of a strong decrease of the blade production (Nishiaki 2000; Baird 2001; Astruc 2004). In the northern zone of the middle Euphrates valley, especially in Akarçay Tepe, this shift includes the abandonment of the pressure technique to detach unipolar blades (Borrell 2006, 2007). In other words, there seems to be an abandonment of the more complex knapping methods and techniques such as the opposed-platform method (Fig. 1) and the pressure technique (Fig. 2) at the end of the PPNB. At this time, perhaps as a coincidence, the retouched stone tools changed, displaying a decrease in both the morphological and functional standardisation.

Overall, during the second half of the VIIIth millennium cal. B.C., a common phenomenon of divestment in the production of lithic tools is documented in the middle Euphrates valley and other parts of the northern Levant. This phenomenon affected the flint procurement strategies, the knapping techniques and methods, the retouching techniques, and the composition of the “tool kit” of retouched tools.

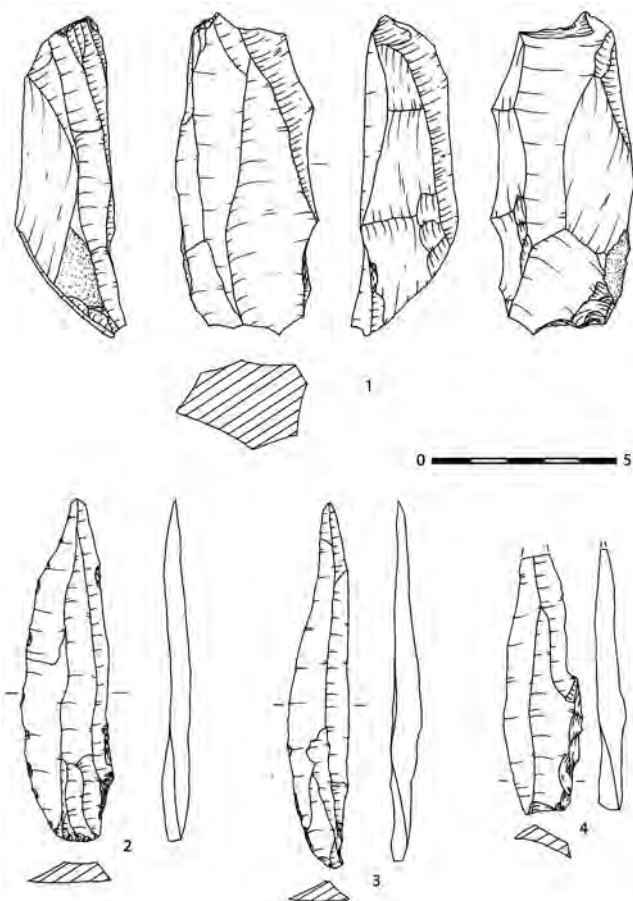


Fig. 1 Opposed-platform blade core and blades from Tell Halula (Syria).

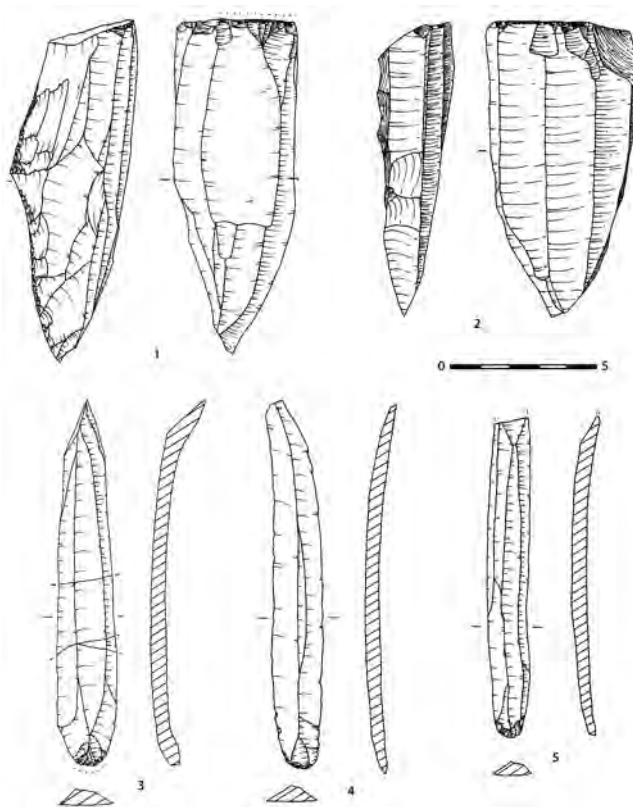


Fig. 2 Single-platform blade cores and blades from Akarçay Tepe (SE Turkey).

## Discussion: Old and New Proposals

Various proposals have been made in order to explain the important changes documented in the stone tool production process between the end of the PPNB and the PN. Some of these proposals have focused on explaining the causes of the abandonment of the opposed-platform method. The abandonment of this method has usually been linked with a decrease in hunting activity and the intensification of agricultural tasks, because that method produces straight blades useful for projectile points (Nishiaki 1992, 2000; Abbès 1997, 2003). This decrease in hunting activity led to a decrease in the “logistic mobility” of the community. As a result of this lessened mobility, access to non-local raw materials used for opposed-platform blade knapping method became more difficult, with the result that the bipolar method was gradually abandoned (Nishiaki 2000). Some considerations may be noted here about this hypothesis. Consolidation and intensification of agricultural tasks was a major phenomenon documented in the northern Levant during the second half of the VIIIth millennium cal. B.C., but there must have been variability both in the chronology and the way this process occurred at different sites. For example, at Tell Halula, recent research has permitted the excavators to propose that the intensification of agriculture was a phenomenon that occurred before the decrease of the use of the bipolar method at this site (Borrell and Molist in press). At the same time, it should also be considered that intensification of agriculture could not automatically instigate the abandonment of hunting activity, because agricultural and hunting activities were focused on obtaining different resources.

Other hypotheses propose that the role of hunting activity was, at the end of the PPNB period, not so important as a means to obtain substantial resources, and that this role of hunting did not change at the beginning of the PN (Baird 2001; Astruc 2004). In this view, it is proposed that the abandonment of hunting activity happened before the technical divestment is documented (Astruc 2004), and before the decline in opposed-platform blade knapping method. In this case, the abandonment of this method seems to be related, at the end of the VIIIth millennium cal. B.C., to the end of the material conditions that permitted the appearance of specialized artisans (Nishiaki 2000; Astruc 2004) who developed a kind of technical specialization (Abbès 2003; Astruc *et al.* 2003). When those particular conditions supporting the technical or artisanal specialization disappeared, the opposed-platform blade knapping method gradually started to disappear too. Discussion of whether those methods of knapping are really the result of any kind of specialized work (Baird 2001; Borrell 2006, 2007) is not the main purpose of the present paper. It does seem that according to this hypothesis, the abandonment of the bipolar

technology or any other specialized method of knapping was the effect and not the cause of the divestment documented in the production of stone tools.

At this point the same question remains: what are the causes for this process of divestment in the production of stone tools? Probably there was not only one cause, but diverse factors which caused the changes, with the evolution of the organization of agricultural tasks and animal husbandry playing an important role. At Tell Halula, around by 7500-7300 cal. B.C., agriculture seems to be completely consolidated and some aspects of stone tools suggest an intensification of agricultural tasks. At the same time, goat and sheep husbandry was completely consolidated. Hunting decreased but still played a major role as a provider of meat (Saña 1999). Was hunting such an unimportant activity during the Late PPNB as has been assumed? Could the shift in the production of stone tools be linked with the later decrease of the hunting activity? Around 7000 cal. B.C. the main changes in the production process of stone tools are well-documented. The lithic tools and the way they were produced have changed. Some other production processes changed, and new ones appeared, as did pottery production. During that period of time, the husbandry of sheep, goat, pig and cattle became intensified so that animals reared in captivity became the main source of meat (Saña 1999). In other words, hunting lost its role as a substantial subsistence activity for the Neolithic community. That process happened between 7300-7100 cal. B.C., at the time when the production process for stone tools changed. In this way, archaeological data suggest that the intensification and consolidation of animal husbandry, combining the exploitation of different species, could have been one of the causes that led to a decrease of hunting activity, a shift in its role, and significant changes in the production of the stone tools.

## Conclusions

The shift in stone tool production was framed within a series of changes documented in the middle Euphrates valley at the very end of the VIIIth and the beginning of the VIIth millennium cal. B.C. These larger societal changes included a transformation in the organization and size of settlements, building techniques, building plans, animal husbandry, and agricultural practices. During the second half of the VIIIth millennium cal. B.C. the adoption and consolidation of a means of subsistence based fully on food production ran parallel to a series of transformations, not only in production processes but also in the social relations governing them. These transformations could also imply an increase in social complexity and a change in the social value of certain production processes. This fact might suggest, as some other researchers have proposed (Binder and Balkan-Atlı 2001; Abbès 2003), the appearance of certain activ-

ities with a prestigious value or social status, incipient social inequality and perhaps a change in access to means of production.

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## Anthropomorphic Statuettes from Tell Fakhariyah: Arguments for Their Possible PPNB Origin

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### Introduction

Sometimes older archaeological publications dealing with the results and finds of earlier excavations contain great surprises that were not acknowledged before. This is the case with the publication on the 1940 excavation season in Tell Fakhariyah, carried out by an American expedition under the direction of Calvin W. McEwan, which was finally published in 1958 in the series *Oriental Institute Publications (OIP)* (McEwan 1958).

During these excavations on Tell Fakhariyah, which is located in the region of the Khabur headwaters, south of the modern town Ras al-‘Ain,<sup>1</sup> the team discovered two anthropomorphic statuettes, which are presently on dis-

play in the museum of the Oriental Institute in Chicago<sup>2</sup>. In the mentioned OIP volume Henri Frankfort published a short description of these statuettes, where he described them as having been “carved by an untutored sculptor” and noted the lack of comparable pieces (Frankfort 1958: 56).

Since the days of discovery it was not possible to date these two statuettes to the Late Bronze Age and Iron Age occupational periods of Tell Fakhariyah that were recognized by the American team and also by later expeditions<sup>3</sup>. And until today no comparisons to these statuettes were found in the manifold examples of sculptured art of the Bronze Age and Iron Age of southwestern Asia.

Due to this lack of comparison, the label on the display of the two sculptures in the Oriental Institute Museum in Chicago, which places their date in the 13th-10th century BC range, should not be overemphasized. However, the lack of any comparison is recognized on this label, as it was also noted by Frankfort (Frankfort 1958: 56)<sup>4</sup>.

Since 1940 archaeology of the Neolithic period in Southwest Asia developed in fundamental ways, especially since Kathleen Kenyon's identification of a Neolithic without pottery, the "Pre-Pottery Neolithic" (PPN), at her excavations in Jericho in the 1950s. Many PPN sites were discovered and excavated in nearly all regions of the "Fertile Crescent" after this identification, resulting in a substantial increase in information about this crucial period of the evolution of human civilisation. These discoveries also brought up a high amount of sculptures made out of stone, unbaked clay or even plaster and reed; some of them depicting humans. In particular, the last *c.* 25 years have witnessed a tremendous increase in finds of such sculptures.

This information were not known to the excavators in 1940 and the different contributors to the publication in the 1950s. With our current knowledge about the Neolithic in Southwest Asia, especially about lithic tech-

nologies and anthropomorphic artworks, we have now a reliable opportunity for a new approach in dating these sculptures.

With this contribution I will offer the results of this new approach in dating these statuettes for discussion. I would like to state that the time of their making can be dated into the PPNB. The arguments for such a date will be discussed following after a description of these two sculptures and the context of their stratigraphic position.

### Appearance of the Statuettes

Representing standing persons, both statuettes have a height of *c.* 30 cm. The material of these sculptures is a marble-like stone; remains of red colour are also visible (Frankfort 1958: 56). It is important to note that both statuettes have the same general shape, and the only difference hinting to their sex are breasts depicted on the female statuette. The first statuette depicts a woman holding her breasts (Fig. 1a), while the other statuette represents a man with hanging arms (Fig. 2a). The male statuette stands on a *c.* 4 cm high four-legged table-like base carved out of one stone. Therefore, the whole sculpture has a height of *c.* 34 cm. It is highly possible that originally the female figure was standing on a comparable



Fig. 1 Female statuette from Tell Fakhariyah (McEwan *et al.* 1958. Fig. 1a: plate 55; Fig. 1b-d: plate 57).

base that broke off in the past. Characteristic for both statuettes is a square trunk with slender waists, and all body parts including legs and buttocks are sculpted. On both sculptures spine and shoulder-blades are indicated by a groove running up the middle of the back and curving out to the left and right (Frankfort 1958: 56).

Heads and faces are similarly sculpted too, characterised by eye sockets in which green stone as well as serpentine and bitumen were inserted; remains of such materials were discovered near the statuettes (Frankfort 1958: 56). Flat disc-like shaped ears, oblong engravings representing the mouths, and long, thin and projecting noses are characteristic features of both heads. The nose and forehead form a projecting T-shaped part of the face. Above their foreheads, ears, and neck both heads are characterised by a step, which together with remains of bitumen on the upper part of the head, indicates the former existence of a cover by a headdress or hair, probably made out of another material (Frankfort 1958: 56).

The female statuette (Fig. 1a-d) has the largest width in the area at the elbows, which is *c.* 11.2 cm. This sculpture has raised shoulders and flexed arms in *c.* 90°, leaving a gap between the trunk and the arms. Her hands are grasping the ends of her pendulous breasts, and the navel is indicated by a small hole. The lower end of the tho-

rax is represented by shallow grooves. There are no indications of sculptured clothing, but remains of red paint and bitumen on this sculpture were probably part of a depiction of clothing. Frankfort assumed that this statuette was wearing shoes, indicated by bitumen painting on the ankles and feet (Frankfort 1958: 56).

The male statuette (Fig. 2a-d) has hanging arms, with hands clinging to the outer sides of the thighs. The greatest width of this figure at the level of the upper arms is *c.* 8.4 cm. Due to the inner curved sides of the trunk and the wide shoulders, the arms and the trunk are separated by a gap. Except for a loincloth, which is depicted by a shallow groove on the front side and a knot on the back side, the male statuette is naked too. The lower end of the thorax is also represented by shallow grooves.

### Description of the Stratigraphic Position

The American excavations in 1940 were carried out in nine soundings (I-IX) distributed all over the upper part of the site. The statuettes were discovered in a deep trench in the northern extension of sounding no. IX below the level of the foundation walls of a Neo-Assyrian palace, a “Hilani-building” (Kraeling and Haines 1958: 20). This northern extension formed a 3 m wide deep trench cut-



Fig. 2a

Fig. 2b

Fig. 2c

Fig. 2d

Fig. 2 Male statuette from Tell Fakhariyah (McEwan *et al.* 1958. Fig. 2a: plate 55; Fig. 2b-d: plate 56).

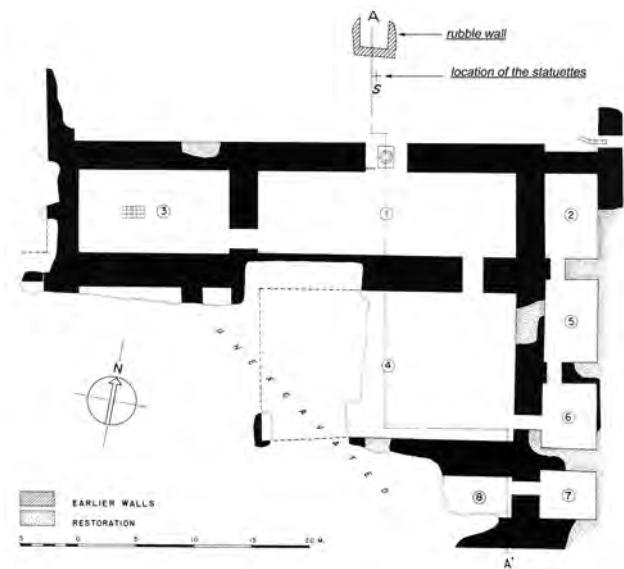


Fig. 3a Plan of the „Hilani building“ with the northern extension of the sounding (McEwan *et al.* 1958: plate 7 (textual indication of the rubble wall and the find-spot by the author, B. M.-N.).

ting the northern flank of the tell (Fig. 3a). On the northern end of this trench, below the layers of the Iron Age occupation, a small rubble wall enclosing a rectangle on three sides was located, identified by the excavators as remains of foundation stones for walls (McEwan 1958: 10). The two statuettes lay a short distance south of the wall and *c.* 1 m above the preserved upper edge of this wall (Fig. 3b). According to the excavators, no floor was associated with them (McEwan 1958: 10), and other architectural features were all located south and well above the statuettes' find spot.

### Stratigraphic Arguments for a PPNB Date

As mentioned in end note 3, the oldest pottery discovered during the varied excavations in different areas of the tell dates into the Late Bronze Age. But earlier periods are proven by the existence of lithic artefacts, identified by Linda Braidwood in her short contribution on these finds in the final publication as artefacts of a “Halafian” or “Pre-Halafian” culture (Braidwood 1958:

55). However, the published lithic artefacts (McEwan 1958, pl. 53- 54), like a long crested obsidian blade, so called “Çayönü tools”, projectile points of “Byblos-type” and pedunculated projectile points clearly date to the PPNB. It must be stated that the wrong identification of these artefacts as “Halafian” or “Pre-Halafian” by Braidwood is obvious, but this can be attributed to the fact that the existence of earlier Neolithic periods and the characteristics of their material culture was not known at that time<sup>5</sup>.

Nevertheless, even such a (“Halafian”) phase in the occupation sequence of the tell was not realised by the excavators, probably due to the fact that lithic artefacts were also discovered embedded in the mud-bricks of the walls of the Iron Age architecture. This refers to mud-quarrying out of older (Neolithic) occupation layers or other areas (the location of which are disputed as to whether they existed on the tell itself or in the vicinity of the tell; Braidwood 1958: 54f.). Therefore the opportunity to define a Neolithic occupation phase on Tell Fakhariyah was missed, although it was observed that foundation trenches of the Iron Age building cut into layers with lithic artefacts, according to Braidwood (1958: 54)<sup>6</sup>.

A date for the statuettes from a period earlier than those defined by pottery is supported by the stratigraphic position of the statuettes (described above), although some pottery was found in their vicinity. But the multi-period character (Late Bronze Age, Iron Age, Byzantine period) (Kantor 1958a: 40-41; 1958b: 47) of these few pottery sherds refers to an intrusion of them, mixed with small finds of a PPN date, such as a red stone bracelet, another stone bracelet fragment, and a small bone pendant (Kantor 1958b: 47, pl. 46.24-26).

Unfortunately, unlike the accurate description of the location of small-finds and pottery, the location of the lithic artefacts in sounding no. IX was not described with any precision. A short note on their location refers only to discoveries in the “palace” (Hilani building) between the floors 3 and 5 and in the deeper cuts below the oldest floor 6 (Braidwood 1958: 53). It is reasonable that the description of the last mentioned location also refers to the finds of lithic material from the extension trench in the debris around the statuettes and the small rubble wall.

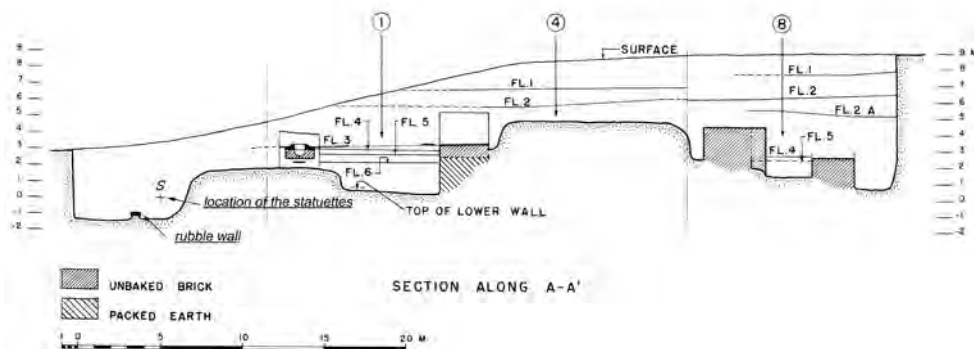


Fig. 3b Tell Fakhariyah, sounding no. IX: north-south section (McEwan *et al.* 1958: plate 7 (textual indication of the rubble wall and the find-spot by the author, B. M.-N.).



Although no floor was associated with the statuettes (McEwan 1958: 10), which hampers an exact stratigraphic determination, this circumstance does not support a date in the periods represented by the architectural remains in the upper parts of sounding no. IX due to the later floors' location south and well above the statuettes' find spot. More interesting is the comparable close location of the statuettes to the above mentioned U-shaped rubble wall. Contrary to the excavator's identification of this wall as remains of a foundation wall (McEwan 1958: 10), this wall has to be regarded as a proper wall, most probably dating to the PPNB phase of the occupation sequence of the tell. This conclusion is supported 1) by the fact that all foundation walls of the other (younger) architectural remains in sounding no. IX are made of mud-brick; 2) the low stratigraphic position of the U-shaped wall; and 3) the observation that no pottery remains were discovered in its close vicinity<sup>7</sup>.

### Iconographical Evidence for a PPNB Date

Many iconographical parallels come to mind when viewing the statuettes in the light of all periods of the art history of ancient southwestern Asia. These parallels mainly can be found in the gestures of the statuettes.

It is especially the gestures of these two sculptures that are very well known for different periods. In particular, the breast-holding woman is an imagery known as recently as the Achaemenid period in Babylonia. But this form of representation already existed at least as far back as the PPNB. Examples of such gestures in PPN sculptured art are known for example from Mureybet phase III. Here two statuettes dating to the late PPNA/EPPNB were discovered, one of them made of unfired clay, the other carved out of limestone (*cf.* Cauvin 1979: figs. 15.3, 16.7). The same form of representation is known from Nevalı Çori, where one statuette made of clay dating to the PPNB was found (*cf.* Hauptmann 1991/1992: fig. 27). At 'Ain Ghazal another example of such a representation is a statue made of reed and plaster dating to the PPNB was discovered (Rollefson 1984: 187f.; Schmandt-Besserat 1998: fig. 1).

The representation of a man with hanging arms clinging to the outer sides of the legs already exists in PPNB sculptured art. A comparable statue was found at 'Ain Ghazal (Schmandt-Besserat 1998: fig. 4). A statue larger than life sized, with hanging arms and hands partly covering its genitals, is known from Urfa and dates into the PPN (Schmidt 2006a: fig. 93)<sup>8</sup>. Variations on the representation of standing male statuettes, which are characterised by standing poses with flexed arms, are known from a PPNB building at Göbekli Tepe (Schmidt 2000: fig. 14b) and from PPNB layers of Tell Sheikh Hassan (Müller-Neuhof 2006: fig. 1.2).

Like the gestures and the bodily appearance of these two sculptures, which have their parallels in PPNB art-

work, parallels to other PPN sculptures are visible in the facial features of the two statuettes. A prominent example of such parallels is the T-shaped connection between the forehead and the long nose. Comparisons can be found in two sculptured heads from Göbekli Tepe, one discovered on the surface (Peters and Schmidt 2004: fig. 24), the other discovered in a PPNB layer (Exhibition Catalogue 2007: 274). A head with this typical T-shaped connection between forehead and nose was also depicted on a stone bead found in PPNB layers of Göbekli Tepe (Exhibition Catalogue 2007: 312)<sup>9</sup>. From Nevalı Çori several anthropomorphic heads sculptured in such a manner are known, and here I mention two well known examples one belonged to a hybrid creature (Hauptmann 1999: fig. 12a-b), and another one is part of a pillar with a female head and a bird (Hauptmann 1999: fig. 13a). Besides the T-shaped connection between forehead and long nose, the facial expression of the two Tell Fakhariyah sculptures is also characterised by an oblong and rectangular engraving representing the mouth, which gives the face a mask-like expression. A similar expression can be found on a small head made out of polished stone originating from the PPNB layer of Mureybet phase IVB (Cauvin 1979: fig. 20.4). Certain parallels to such an expression are visible on the stone mask from Nahal Hemar (Bienert 1991: fig. 12).

Although comparisons to the stylistic features on these statuettes can also be found in sculptured artwork from later (historical) periods, such a dating will become difficult when comparing their whole stylistic appearance and not just different components of their appearance. Additionally, it has to be stated that the stratigraphy of the site described above makes such an approach much more difficult, because the possible time frame for dating these statuettes into historical periods is reduced to the 1st and 2nd millennia B.C. But the sculptured artwork of these periods does not show any similarities with the two figures, and there are also no similarities to sculpture in the millennia between the PPNB and the 2nd millennium.

### Conclusion

Finally I would like to repeat my initial proposal for a PPNB date for the crafting of the statuettes from Tell Fakhariyah. In my opinion such a date is supported by stratigraphic evidence, especially the abundant amount of typical PPNB lithic artefacts, referring to a PPNB phase in the occupational sequence of Tell Fakhariyah. Additionally, a hiatus of occupation between the PPNB and the Late Bronze Age can most probably be assumed, according to the earliest pottery finds, which date into the Late Bronze Age (Mitanni period). Connecting this stratigraphic information with the iconography of the two statuettes, the time frame in which both items can be dated becomes very narrow.

Comparisons to such statuettes cannot be found in the sculptured art from the 2nd and 1st millennia B.C. in southwestern Asia nor in the millennia between the PPN and the 2nd millennium. Although specific gestures have their parallels in the art of historical periods, the whole appearance of the two sculptures has strong links to PPNB sculptured art. However, it has to be considered that these two sculptures show such a highly developed quality in their work, which was unknown from PPNB artwork before now, that a lack of confidence in such a date is understandable at first sight. But such doubts will vanish when we acknowledge that in terms of technology and skill requirements the creation of such masterworks was already practiced in the PPNB and even before. Examples for such masterpieces can be found in the extraordinary findings of sculptures from Göbekli Tepe, where naturalistic representations of lions and other animals were discovered. The sculptured lion discovered on a T-shaped pillar on Göbekli Tepe in the 2006 season has to be mentioned especially (Schmidt 2006b: fig. 1a, 1b), for it shows a high standard in technology and skills in early Neolithic sculpture.

The coming seasons of excavations on Tell Fakhariyah by a joint German-Syrian team under the direction of Dominik Bonatz (Free University Berlin) and ‘Abd al-Masih Bagdo (Department of Antiquities of Syria) will hopefully find more evidence for a PPNB occupation at this site, which would be the first known PPNB site in this area around Tell Fakhariyah and Tell Halaf, a region whose environment must have been very attractive to people in the Neolithic.

## Notes

<sup>1</sup> In 1899 Baron Max von Oppenheim was the first known archaeological visitor on the site. Later during his excavations on the neighbored site Tell Halaf he visited Tell Fakhariyah several times in 1911-1913, 1927 and 1929. In 1929 Felix Langenegger and Hans Lehmann carried out a survey on the site under the direction of Oppenheim. In 1940 an American team of the Theodor Marriner Memorial Expedition, directed by Calvin W. McEwan (Oriental Institute Chicago), undertook a short excavation (McEwan 1958). In 1955 a German team under the direction of Anton Moortgat (Free University Berlin) continued the archaeological work on the tell (Moortgat 1959). In 1979 and 1996 the Syrian Department of Antiquities carried out rescue excavations. In 2001 archaeological investigations were started again by a joint Syrian-German team under the direction of ‘Abd al-Masih Bagdo (Department of Antiquities of Syria) and Gunnar Brands (Martin Luther University, Halle-Wittenberg) (Pruß and al-Mashi Bagdo 2002). Since 2005 another joint German-Syrian excavation project is excavating the site, directed by Dominik Bonatz (Free University Berlin) and ‘Abd al-Masih Bagdo (Department of Antiquities of Syria).

<sup>2</sup> My thanks are going to Johannes Boese (Berlin), who drew my attention to these two statuettes.

<sup>3</sup> Proven periods of occupation identified at Tell Fakhariyah by pottery from the American excavations, as well as from later excavations, range from the mid 2nd millennium B.C. Late Bronze Age (Mitanni period) to the Islamic period (Kantor 1958a: 21; Moortgat 1959: 12; Pruß and Bagdo 2002: 318-328). No pottery

finds dating into earlier periods were discovered, so there is no Early/Middle Bronze Age or Chalcolithic occupation attested on the tell.

<sup>4</sup> I thank Nicole Brish for this information; unfortunately, I was not able to examine these statuettes personally. All of the following descriptions are based on the contribution of Frankfort (1958) and the black-and-white photos of the published report on the excavation in OIP volume 79.

<sup>5</sup> As mentioned earlier, the existence of a Neolithic culture without pottery – the Pre-Pottery Neolithic – was not identified until the first half of the 1950s by Kathleen Kenyon during her excavations in Jericho.

<sup>6</sup> Another possible explanation of why the existence of such an early occupation phase was not realized is probably the sudden exit of the team of the site in 1940, forced by the Syrian authorities instigated by the German and the Vichy government in France (Kraeling 1958: V), which didn’t give much time for a precise observation of the stratigraphy.

<sup>7</sup> In Kantor’s catalogue of pottery finds (Kantor 1958a: 29ff.) she differentiated the material according to its location of discovery. Referring to the extension trench of sounding no. IX, she just mentioned pottery finds between the “column base” and the “statuettes” but not the area north of the statuettes and below. Therefore it is possible that no pottery finds were associated with the remains of the small rubble wall.

<sup>8</sup> For another photo of this statue see Müller-Neuhof in *Neo-Lithics* 2/06: 35.

<sup>9</sup> Catalogue-No. 187.

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## From the First Villages to the First Cities: A Permanent Exhibition at the National Museum of Damascus

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Recently our knowledge concerning the prehistory of Syria has expanded dramatically, in particular in the regions where large rescue expeditions have been organised because of the constructions of dams. This new information especially concerns the period of 4,000 years (between 12,000 and 8000 years ago), which corresponds to Neolithisation and the Neolithic. Several teams have contributed to this effort and have built up a rich body of data and an exceptional reservoir of archaeological material of high scientific quality and often high aesthetic quality. All the conditions were thus joined for a vivid museum presentation to illustrate this major phase in the history of mankind. The project appeared all the more possible in that understanding of the phenomenon

of Neolithisation had reached a stage of maturity satisfactory enough to be explained to a varied public in a clear and relatively simple manner.

Several material factors came together to make possible the permanent exhibition that we created in 2004. The necessary official agreement was immediately granted, as the General Directorate of the Antiquities and Museums of Syria perfectly understands the important role of Syrian lands in the Neolithic revolution. Funds were necessary for the project, and these were generously provided by the European Community. Premises were necessary, and they were made available: three fine adjoining exhibition halls at the national Museum of Damascus, which the Directorate entrusted to us – they

had served before for temporary exhibitions. A title was necessary. The idea of the “Neolithic revolution” is not familiar to everyone and yet our exhibition is intended to provide an understanding of this period for everyone. This is why we prefer to call it “*From the first villages to the first cities*”, a title which has the double advantage of being immediately understandable and of indicating to the public that we propose following a process. Finally, strong participation by the international teams responsible for the sites was necessary, as well as strong involvement on the part of the Museums Services of Damascus, and direct investment by a local and European team. All these conditions were fulfilled and this project was finished in less than a year<sup>1</sup>.

The objective was to present the phenomenon of Neolithisation in the most complete and dynamic way possible. It was thus necessary to show the progression over time not only of the technical inventions, but also of the socio-economic and ideological transformations that went with them. And it was necessary to provide an understanding of how the emergence of more and more complex societies led in the end to the building of cities and states. This objective guided the choice of the sites (all excavated in the last ten years) and of the illustrations, in order that the visitor may easily understand the themes presented, whether they concern daily life, the organisation of the societies, or the imaginary world. The visitor is thus guided through the stages which we introduce here<sup>2</sup>. Each stage includes explanatory panels, archaeological objects (none of which have been previously exhibited) and experimental reproductions of objects. We also wished to present reconstructions of habitations and areas of activity identical to the originals (1/1 scale), as well as models, in the knowledge that this type of presentation provides much more direct and comprehensible access to the information<sup>3</sup>.

### **Introduction to the Visit**

The visitor is welcomed by panels that prepare him to follow the main theme of the exhibition. After presentation of the knowledge which had been accumulated throughout the Palaeolithic, knowledge which was the base for the changes to which the halls are devoted, the contents of the halls are introduced. The succession of chrono-cultural phases is presented in association with the great inventions which characterise them. The visitor thus knows that he will follow a main thread that will lead him from one technical advance to another: first houses, first villages, first agriculture, the beginning of herding, fabrication of plaster and lime, then pottery. The visitor also learns that the socio-economic systems and the thought systems, fertile ground for these inventions, will become more and more complex, and that by about 6,000 years ago, the societies were ready to build cities and states.

### **The Natural Environment in Syria and Its Exploitation by Humans**

A satellite map<sup>4</sup> shows the three types of environments in the country: Mediterranean zone, steppes and jebels, great rivers and oases. This map enables us to examine the theme of the impoverishment of the environment since the Neolithic. At that time many wild species were present, some of which had been domesticated for agriculture and herding. These species are presented, each in its natural environment. It is specified that certain species were later adopted in Europe and elsewhere, enabling populations in a large part of the world to share a common food base.

### **From the Last Hunter-gatherers to the First Farmers: Sedentarisation**

Before looking at the stage of the beginnings of agriculture and herding, the visitor must realise that humans first had to settle down in constructed villages, to sedentarise. A panel presents the main innovations of “the sedentary hunter-gatherers” between 12,000 and 10,000, with a distribution map of the Syrian sites, in particular two cave sites: Ba’az<sup>5</sup> and Dederiyeh<sup>6</sup>, and two open-air sites: Mureybet and Abu Hureyra. Two display cases present respectively the Natufian artefacts of Ba’az (tools and ornaments, experimental reproductions of handles for tools), and the moulded representation of a habitation with a round wall in dry stone from this site.

### **The Beginnings of Agriculture and Herding**

The second stage in the process of Neolithisation, with the beginnings of agriculture and herding and their significance, is then taken up. The visitor discovers this theme through a formula full of imagery: “10,000 years ago: humans became the gardeners of the world”, before receiving the explanations and their illustrations.

*Concerning agriculture*<sup>7</sup> three maps show the present distribution of wild cereals (einkorn, emmer, and barley) and the oldest places of cultivation for each of these plants. The process of domestication is explained, as well as the economic consequences of the mastery of plant resources. A display case completes this information with the presentation of the different uses of plants (food, architecture, crafts, etc.: Fig. 1).

*The domestication of animals*<sup>8</sup> is also presented with the aid of maps. The sites where aurochs, mouflons, wild goats and wild boar were hunted in the Neolithic are indicated. The areas where they are still present in the wild are also shown. Finally the areas where they were domesticated are shown (aurochs to cattle, oriental mouflon to sheep, wild goat to goat, wild boar to pig). A display case with characteristic bone remains explains the criteria on which the identification of domestication rests (Fig. 1).

But it must not be forgotten that *the first farmers were hunters*, and the public will discover<sup>9</sup> that hunting remained an essential activity even when animals were first raised in the villages. Hunting decreased gradually, as it became no longer necessary, and changed its role: protection of crops against wild animals, activity of prestige, pleasure or sport as is the case today. A display case presents an experimental reproduction of a bow and a group of arrowheads characteristic of the pre-pottery Neolithic.

### Daily Life, Social Organisation and the Role of Symbolism for the First Farmers

The first agricultural societies (10,000-9200 years ago) are presented through four sites: Jerf el-Ahmar<sup>10</sup>, Tell Qaramel<sup>11</sup>, Tell 'Abr<sup>12</sup>, and Dja'de el-Mughara<sup>13</sup>. The goal is to show that the inhabitants of Syria, who were just beginning to cultivate plants and would soon domesticate animals, also made technological and sociological progress, while at the same time modifying their ways of thinking.

In the centre of the hall, the reconstruction (4x4 m) of one of the rooms of a dismantled house from Jerf el-Ahmar (Fig. 2), containing all the objects found, is the main exhibit<sup>14</sup>. The different aspects of this society are evoked in the display cases and panels that surround it. The visitor discovers the architecture (transition from round houses to square houses) and its materials<sup>15</sup>. He observes the appearance of collective buildings in a model which represents a village with a communal building surrounded by houses<sup>16</sup>. The tools of everyday life are presented with receptacles in stone, unbaked clay and basketry<sup>17</sup>. The techniques of debitage and of adding handles to tools are illustrated by experimental artefacts set side by side with the archaeological artefacts.

The opening to the outside world and trade are also evoked through presentation of imported objects and

materials<sup>18</sup>. The visitor discovers that objects such as decorated stone vessels, ornaments, and small engraved stones are not utilitarian in nature.

Finally the world of symbolism is richly illustrated by the exhibited objects from Tell Qaramel, Jerf el-Ahmar and Tell 'Abr 3 and by sculpted stelae from the last site. One discovers the importance of animal themes such as birds of prey, felines, serpents, and bulls, that are associated with the human figure to form an assemblage which is rich in meaning.

The transition to the following periods is achieved by the presentation in a panel of Dja'de el-Mughara where the first signs of animal domestication are detected.

### Large Farming Villages at the End of Prehistory

The visitor will follow the last stages of Neolithisation, from the establishment of large agro-pastoral villages in which plaster and lime were invented, up to the end of prehistory. A bi-partition of the space enables explanation of a parallel development of the societies. In the river valley zones and towards the Mediterranean, sedentary villages develop and pottery is invented. In the steppes and the deserts a new socio-economic model emerges which still exists today, the complementarity between nomads and settled peoples.

*The first large agricultural villages* are found in environments favourable to crops and livestock, such as the Euphrates valley (Halula<sup>19</sup>, Abu Hureyra<sup>20</sup>) or the oasis of Damascus (Aswad<sup>21</sup>). A large display case is devoted to Halula. Divided in two, it presents the objects used by the living (tools, weapons, etc.) and the objects deposited with the dead who were buried in the houses with precious funerary articles, in particular the first objects in copper. And death is again evoked with the exhibition of a plaster-modelled skull from Tell Aswad (Fig. 4), discovered in the foundation deposit of a funerary area. It was thought that this treatment, which dates to



Fig. 1 View of the first exhibition hall: the beginnings of agriculture.



Fig. 2 View of exhibition hall 2: in the centre, a faithful reconstruction of a room in the house destroyed by fire at Jerf el-Ahmar, with all the objects found in place.

8,000 years ago, existed only in the southern Levant. In Syria, near Damascus, Tell Ramad and Aswad are proof to the contrary.

Between 8,000 and 7,500, Syria was increasingly populated and new regions were occupied. Two ways of life correspond to two types of environment:

*In the fertile valleys and on the coast*, strictly organised villages with squares and streets already resemble towns. The first pottery was fired, as at Sabi Abyad<sup>22</sup>, but this invention, which is considered to be a technical advance of the first importance, did not deeply transform these societies, who usually retained their old ways of life. A group of whole pots, some of them very large, are presented to the public (Fig. 3).

*In the steppes and the deserts*, neglected for four millennia, human groups resettled by inventing an adapted economic system, which still exists. Some of these groups founded rare sedentary villages such as El Kowm<sup>23</sup>, while others, more numerous, were pastoral nomads as at Qdeir.<sup>24</sup> None of these groups knew pottery but used plaster for various objects and in their architecture. To offer the public an image of these sedentary installations, a house at El Kowm is presented in the form of a model<sup>25</sup> (Fig. 4). The nomads are illustrated by the representation of a knapping workshop from Qdeir (Fig. 4), including the trace of the probable position of a tent<sup>26</sup>.

### The Close of the Neolithic in Syria

The last Neolithic villages, situated in humid zones and dating to between 7,500 and 5,500 years ago, are presented in panels and a display case devoted to the site of Kashkashok<sup>27</sup>. The period is complex with several autonomous cultures that co-existed: Halaf culture at Halula, Ubaid culture at Kashkashok (Fig. 3) and Kosak Shamali, for example. This complexity is difficult to



Fig. 3 View of exhibition hall 3: the Neolithic with pottery and the end of prehistory. To the left, the display case presents the first pottery (Tell Sabi Abyad) and to the right the Ubaid culture at Kashkashok.

transmit to the general public, thus no details are provided. It is indicated only that the population of Syria becomes denser and denser, that many well-organised small villages are quickly established and quickly abandoned, while pastoral nomadism plays an essential role. In this period, the first indications of property are evoked by the existence of seals. The treatment of the dead becomes individualised and the storage of wealth is controlled by an authority.

All the changes detected for this period announce the end of prehistory and the advent of new socio-economic systems, those of the historical periods. To illustrate these with an example of “mass production”, a display case presents a standardised debitage of obsidian<sup>28</sup>. This was carried out by pressure knapping with copper, evidence of the technical use of metals in these periods.

The visit ends<sup>29</sup> with a text that should stimulate the curiosity of the visitor and perhaps lead him to continue his investigation beyond this period and the halls which illustrate it. In conclusion we cite it here:

“About 6,000 years ago the Neolithic peoples of Syria possessed effective and diversified technical knowledge. They knew how to build houses, raise a large number of animals and cultivate many plants, make and use specialised tools, form all the receptacles necessary in stone, plaster and terra cotta. They were capable of managing many groups in large villages dominated by an authority, of sharing a complex system of thought, of recognizing many routes to sources of raw material. But the history of major discoveries was to be continued. Their descendents were to invent writing, learn to pour metal, build cities, and create states. And for all these new discoveries, Syria would once again be a favoured land.”

*Acknowledgments.* We end this presentation with warm thanks to all those who participated in this creation. It



Fig. 4 Exhibition hall 3. Neolithic sedentary peoples and nomads in the steppe of Palmyra: El Kowm, represented by the model of a house; Qdeir is represented by the reconstitution of a knapping workshop with traces of a tent.

is truly a collective work. The cooperation between students, researchers, site directors, officials of the GDAM and the Museum of Damascus, architects, craftsmen and European and Syrian trainees has been constant and harmonious<sup>30</sup>.

## Notes

<sup>1</sup> We dedicate, as do all our Syrian partners and colleagues, this presentation to the memory of Jacques Cauvin, whose life as a prehistorian was devoted to the Near East. No one will forget that he was the first to demonstrate the importance of the Syrian sites in the “Neolithic Revolution”.

<sup>2</sup> The detail of the composition is presented in a publication: Stordeur D. (in press). *Des premiers villages aux premières villes. Réalisation d'une exposition permanente au Musée national de Damas (Syrie)*. Editions de la Communauté européenne.

<sup>3</sup> We thank here Pr. Colette Tasse (museographer, University of Montreal), whose advice to us was particularly valuable.

<sup>4</sup> Map of Syria: Archaeology from space. GORS. Damascus. Syria GSIM 1000: GSIM SYR S1.

<sup>5</sup> Excavation directed by N. Conard (University of Tübingen, Germany) whom we thank here.

<sup>6</sup> Excavation directed by T. Akazawa (University of Tokyo) and S. Muhesen (University of Damascus) whom we thank here.

<sup>7</sup> Theme conceived and presented by George Willcox (Archéorient, CNRS).

<sup>8</sup> Theme conceived and presented by D. Helmer and L. Gourichon (Archéorient, CNRS).

<sup>9</sup> Theme conceived and presented by F. Abbès (Archeorient, CNRS).

<sup>10</sup> Franco-Syrian excavation co-directed by D. Stordeur (Archéorient, CNRS – El-Kowm-Mureybet Mission of the MAE) and B. Jammous (Director GDAM, Syria).

<sup>11</sup> Syro-Polish excavation co-directed by R. Mazurowski (University of Warsaw, Poland) and Y Kenjo (Aleppo Museum, Syria).

<sup>12</sup> Syrian excavation directed by T. Yartah (GDAM, Syria).

<sup>13</sup> Excavation directed by E. Coqueugniot (Archéorient, CNRS).

<sup>14</sup> This reconstruction was carried out by S. Fornite, J.A. Sanchez-Priego (students) and T. Yartah (GDAM). The dismantling took place on the site, thanks to private financing (O. Aïdi Foundation).

<sup>15</sup> Exhibit created by J.A. Sanchez-Priego.

<sup>16</sup> Model created by G. Der Aprahamian (Archéorient, CNRS).

<sup>17</sup> Exhibit conceived and created by F. Abbès and S. Fornite.

<sup>18</sup> Exhibit conceived and created by S. Delerue (student, CRPAA Bordeaux).

<sup>19</sup> Spanish excavation directed by M. Molist (Autonomous University of Barcelona) whom we thank here.

<sup>20</sup> Excavation directed by A. Moore whom we thank for the photographs which he provided.

<sup>21</sup> Franco-Syrian excavation co-directed by D. Stordeur (Archéorient – El Kowm-Mureybet Mission of the MAE) and B. Jammous (Director GDAM, Syria).

<sup>22</sup> Excavation directed by P. Akkermans (University of Leiden, Netherlands).

<sup>23</sup> Excavation directed by D. Stordeur (El Kowm-Mureybet Mission of the MAE).

<sup>24</sup> Excavation directed successively by O. Aurenche, D. Stordeur, F. Abbès (El Kowm-Mureybet Mission of the MAE).

<sup>25</sup> Made by Fabrice Laliberté.

<sup>26</sup> The excavation at Qdeir is directed by F. Abbès (CNRS, France). The reconstitution was made by F. Abbès, F. Desvauges and H. Arrouk.

<sup>27</sup> Excavation directed by Y. Nishiaki (University of Tokyo, Museum of the University of Tokyo, Japan).

<sup>28</sup> Exhibit created by F. Abbès with experimental objects.

<sup>29</sup> A small video area has been planned so that visitors can add to their information by viewing films on Neolithisation and prehistory in general.

<sup>30</sup> This project is part of the MEDA Program of the European Commission. Training for the conservation of cultural heritage. Project 11: N° SYR/B-4100/IB/990105

## Workshops

### Landscapes in Transition

#### Note on an International Workshop in Jordan, March 26-30, 2007

#### By Graeme Warren and Bill Finlayson

A substantial international workshop, focusing on landscapes at the times of transitions to agriculture took place in Jordan, March 26-30, 2007. *Landscapes in Transition* was organised by Bill Finlayson (Council for British Research in the Levant) and Graeme Warren (School of Archaeology, University College Dublin). The event took as its departure point the fact that the concept of landscape enjoys considerable popularity in archaeological interpretation today. And yet it is uncontroversial to state that the concept is somewhat ill-defined and

inconsistent. In Gosden and Lock's terms this fluidity allows landscape to be a 'usefully ambiguous concept' but at times there is a danger that this very ambiguity affords imprecision in our narratives. This is particularly important where differing traditions of archaeological interpretation meet, as, for example, in the transition from hunting and gathering to farming. This transition has been understood as a major division in archaeological practice and attitudes to 'landscape' across the transition reflect this dichotomy. This in turn creates a weakness in our accounts of the processes involved in the transition.

Given this background, *Landscapes in Transition* therefore focused on hunter-gatherer and farming landscapes in the late Pleistocene/early Holocene, and set out to examine two key questions: *What is it that makes landscapes different?* and *How do we study landscapes in this period?* A workshop format, with precirculated papers



Fig. 1 Participants of the Landscapes in Transition workshop, March 2007. (photo: Graeme Warren)

and extensive discussion was utilised and we took case studies from the contrasting regions of the Levant, where the transition to farming is indigenous, and Northwest Europe (especially Britain and Ireland), where the transformation is initiated externally. The contrast between the two regions provided valuable comparisons between archaeological traditions and bodies of evidence. This workshop played a significant role in bringing together scholars working on material from the British Isles and those in the Levant. At present research in both regions often ignores work in the other, yet models of the transition assume some common elements, such as a major divide between hunter-gather and farmer world views, generally based upon an underlying traditional concept of hunter-gatherers being within nature, and farmers being apart from it. There is often a lack of context in analysis, which treats hunter-gatherer, farmer, and the

transition as if they were universal phenomena. The contrasting perspectives and data sets provided great material for discussion.

The first four days of the conference, which was primarily funded by the CBRL although many institutions supported individual speakers, took place at the Royal Society for the Conservation of Nature's Wadi Faynan Eco-Lodge, whose excellent facilities provided an ideal base. Fieldtrips provided a key aspect of the workshop, and, sites including Dhra', WF16 and Ghuwayr 1 were visited from here. We are especially grateful to Zeidan Kafafi for a tour of 'Ain Ghazal and to Hans Gebel and his research team for the tours of Ba'ja and Shkârat Msaied. A list of attendees at the workshop is provided below. The workshop was a great success, with stimulating and lively discussion. Proceedings of the event will be published in due course.

#### Participants:

Eleni Asouti (University of Liverpool), Anna Belfer-Cohen (The Hebrew University of Jerusalem), Douglas Baird (University of Liverpool), Marion Benz (University of Freiburg), Amy Bogaard (University of Oxford), Dana Campbell (University of Liverpool), Mike Charles (University of Sheffield), Chantal Conneller (University of Manchester), Bill Finlayson (CBRL), Duncan Garrow (Oxford University), Nigel Goring-Morris (The Hebrew University of Jerusalem), Valasia Isaakidou (University of Nottingham), Thomas Kador (University College Dublin), Zeidan

Kafafi (Yarmouk University), Lisa Maher (University of Cambridge), Carole McCartney (University of Cyprus), Nicky Milner (University of York), Gordon Noble (University of Glasgow), Stuart Robinson (University College London), Claire Rambeau (University of Reading), Sandra Rosendal (CBRL), Alison Sheridan (National Museums Scotland), Sam Smith (University of Reading), Fraser Sturt (University of Southampton), Richard Tipping (Stirling University), Graeme Warren (University College Dublin), Trevor Watkins (University of Edinburgh)

#### News on the 6th Conference on PPN Chipped and Ground Stone Industries of the Fertile Crescent

On 21st of March 2007 an informal meeting in the CBRL Amman took place to discuss the situation after the cancellation of the 6th conference. We report here the results of the discussions and issue an invitation for

#### STEPS (Studies in Technology, Environment, Production, and Society of Neolithic Chipped and Ground Stone)

6th Conference on PPN Chipped and Ground Stone Industries of the Fertile Crescent to be held at the University of Manchester, March 2008

#### *First Circular*

#### *Report on the Amman Meeting on 21st of March 2007*

After Z. Kafafi provided some information about the cancellation of the 6th conference, planned to be held in Wadi Musa in March 2007, there was agreement among the colleagues present (Finlayson, Gebel, Healey, Hole, Kafafi, Maher, McCartney, Nahar, Olszewski, Smith and others) that the momentum of the conferences should be kept by having the next meeting in Spring 2008. Manchester University was the best option available, and we are proposing a four or five day gathering in the first half of March 2008. The proposed topic



is Studies in Technology, Environment, Production, and Society (STEPS) of Neolithic Chipped and Ground Stones (proposal by Frank Hole). Basically we expect/suggest a similar programme to the one planned for Wadi Musa.

All of the audience thanked the Jordanian organizing committee of that conference for their efforts, especially Zeidan Kafafi and Bill Finlayson, who had invested considerable time in its preparation.

Zeidan Kafafi handed over on behalf of the previous organizing committee the file with the ready programme and the abstracts to Elizabeth Healey (Fig. 1). Zeidan Kafafi commented that this was a missed chance for Jordan to raise awareness for industries which did not yet play a major role in Jordanian research.

There was considerable concern about the outstanding proceedings of the meetings in Nigde and Frejus, and that it seems that no information is available about the state of publishing these volumes. Among the colleagues present it was mutually understood that the publication of the volumes remains very important. Hans Georg K. Gebel was asked to contact the editors and offer help in publishing the volumes quickly in the SENEPSE series.

In order to avoid further loss of authors' faith, it was agreed that for the Manchester gathering it will be obligatory to have full text pre-conference submissions of the papers, with a short deadline after the conference for those who wished to take into consideration conference discussions.

Over the years, the gatherings have come to be considered as small conferences involving also ground stone industries. This is expressed now in the future title of the meetings: *Conferences on PPN Chipped and Ground Stone Industries of the Fertile Crescent*.

### **STEPS (PPN6) in Manchester, March 2008**

As a next step (no pun intended!), we kindly invite the Neolithic family to the next 6th PPN Chipped and Ground Stone Industries Conference (suggested dates: *March 3rd–6th 2008*). We would first like to ask if there are grave objections against this choice of dates. As the conference topic *Studies in Technology, Environment, Production, and Society (STEPS) of Neolithic Chipped and Ground Stone Industries in the Fertile Crescent* was chosen, allowing to consider all the contributions already announced for the Wadi Musa gathering.



Fig. 1 Zeidan Kafafi hands over the PPN6 file to Elizabeth Healey in CBRL Amman.  
(photo: H.G.K. Gebel)

We propose to hold the meeting at the Chancellors Hotel and Conference Centre which is in very pleasant surroundings and belongs to the University of Manchester over four or five days (hopefully including an excursion – Grimes Graves flint mines, Great Langdale axe factory or Stonehenge have been suggested). It is also hoped that the dates will allow members to extend their stay in the UK to attend the BANEA (British Association for Near Eastern Archaeology) annual conference which is expected to follow PPN6.

Once we have commitment from sufficient members we will clarify the provisional arrangements and set up a website with further information. In order to secure our booking and prepare for the conference it is likely that a conference fee will be needed by early October together with accommodation bookings. Abstracts will be due by the end of December and full texts must be submitted at the Conference to ensure speedy publication.

Please send your comments, expressions of interest, preliminary confirmation of participation, title of paper, etc. to Elizabeth Healey at:

elizabethhealey2004@yahoo.co.uk  
or by post to  
Dr Elizabeth Healey  
School of Arts, Histories and Cultures  
The University of Manchester  
Room 4.4 Mansfield-Cooper Building  
Oxford Road, Manchester, U.K. M13 9PL  
by 15th of August 2007.

## New Books

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### Delage, Christophe (ed.)

- 2007 *Chert Availability and Prehistoric Exploitation in the Near East*.  
(British Archaeological Reports – International Series 1615)  
Oxford: Archaeopress.

### Faerman, Marina, Horvitz, Liora Kolska, Kahana, Tzipi and Zilberman, Uri (eds.)

- 2007 *Faces from the Past: Diachronic Patterns in the Biology of Human Populations from the Eastern Mediterranean. Papers in honour of Patricia Smith*.  
280 pages, illustrated throughout with figures, maps, plans, drawings and photos.  
(British Archaeological Reports – International Series 1603)  
Oxford: Archaeopress.

### Finlayson, Bill and Mithen, Steven (eds.)

- 2007 *The Early Prehistory of Wadi Faynan, Southern Jordan: Archaeological Survey of Wadis Faynan, Ghuwayr and al-Bustan and Evaluation of the Pre-Pottery Neolithic A Site of WF16*.  
xxiv, 600 pages, illustrated throughout with figures, maps, plans, drawings and photos.  
(Wadi Faynan Series, 1; Levant Supplementary Series, 4)  
Oxford: Oxbow Books – CBRL.

### Simmons, Alan H.

- 2007 *The Neolithic Revolution in the Near East: Transforming the Human Landscape*.  
360 pages, 16 photos, 7 ill., 8 maps  
Tucson: University of Arizona Press.

## Ongoing PhD Research

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### David Eitam

*Archaeo-Industry of the Natufian Culture: Installations and Ground Stone Tools in the Late Epipaleolithic in the Southern Levant.*

PhD dissertation, Department of Archaeology,  
Hebrew University, Jerusalem  
Supervisors: Prof. Anna Belfer-Cohen and Prof.  
Nigel Goring-Morris

#### Abstract

The aim of the dissertation is to study different functions of Natufian Archaeo-industrial findings (rock-cut installations and ground stone tools) in food preparation and in other materialistic and spiritual activities. The study is based on first-hand data from 12 sites surveyed by the applicant or excavated by other researchers, and on published or partially published data from 11 past excavations (including thousands of rock-cut installations and ground stone tools). A list of types and definition of artifact classes of stone tools of the late Epipaleolithic to the PPNA in the southern Levant will be presented. The findings will be studied according to three aspects:

- The functional aspect will be learned through observing assemblages of implements in different types of sites and in different contexts within the site. A series of experimental operations will be conducted in order to check some hypotheses concerning the specific functions of installations according historical and ethnographical equivalent evidence.
- The geographical aspect will be investigated through a comprehensive study of implements in different regions in the Southern Levant (*e.g.*, Mediterranean, Jordan Valley, eastern Samaria and Negev Mount regions, altogether 23 regions).
- The chronological aspect will be studied by making a comparison between the installations in different stages of the Natufian culture (early, late, final Natufian, Harifian), and earlier installations (Geometric Kebaran, Kebaran) and later ones (PPNA). Main issues regarding the Natufian culture (staple foods, agriculture versus gathering, social structure and social relations, beliefs and spiritual values) will be considered according the results of the above study.

Contact: [davideitam@yahoo.com](mailto:davideitam@yahoo.com)

## Moritz Kinzel

*Early Neolithic Building in the Southern Levant: The PPNB Architecture of Shkârat Msaied and Ba'ja.*

PhD dissertation, Technical University of Berlin  
Supervisor: Prof. Dr.-Ing. Dorothée Sack

### Abstract

The Pre Pottery Neolithic B (PPNB) sites Shkârat Msaied and Ba'ja in the Greater Petra Area offer the possibility to examine a sequence of the earliest building history in the southern Levant. A regional development of human building technology at the beginning of settledness is shown in a representative way by the archaeological findings. The aim of my PhD research project is to reconstruct the early neolithic architecture of the Greater Petra Area in its phenotype and development in the form of a case study.

Based on a systematic architectural analysis of these two settlements, I will discuss the different building concepts, the changing in building technologies and ground plans in the southern Levant from single-roomed round/curve-linear structures to complex multi-roomed rectangular buildings. Hitherto, general attempts to reconstruct early neolithic architecture refer to two-dimensional, socio-cultural and economical floor plan analysis (Hillier and Henson 1984) and offer a misleading discussion on early households, family/community structures, and functional analysis (Banning and Byrd 1987; Kuijt 2000). My considerations on the reconstruction of neolithic architecture mainly build on the architectural findings and an interdisciplinary discussion of their

archaeological context. The building principles of the LPPNB architecture can only be understood on the basis of a thorough knowledge of the architecture of the preceding PPNA respectively E/MPPNB in the region, because the solid and substantial MPPNB architecture of *e.g.* Shkârat Msaied seems to be the beginning of the later traditional building technology (Kinzel 2004).

A specific reference point for comparison with PPNB architecture, aiming at the reconstruction of neolithic architecture, is the recent traditional village architecture of southern Jordan (Kinzel in: Gebel, Nissen and Zaid 2006). These villages, *e.g.* Old Basta and Rajif, show a wide range of local varieties in ground plan conception and building techniques similar to the neolithic architecture. For more general comparisons on building principles I will focus on the traditional architecture of semi-arid regions along the 30° latitude around the world, *e.g.* the pueblos of southwestern USA, and the steep slope architecture of Afghanistan and Iran.

Finally a broader discussion on PPNB architecture, its roots, its building principles, modifications, concepts and development will compare the architecture of Ba'ja and Shkarat Msaied with other sites in the southern Levant like 'Ain Ghazal, al-Baseet, Basta, Beidha, 'Ain Jammam, Ghwair and es-Sifiya. For this case study it would be insufficient to concentrate on the phenomena of one site only, because each site offers different ideas on the same phenomenon. For such a comparative analysis of different PPNB sites allows a more detailed reconstruction of the neolithic architecture and life for Shkârat Msaied, Ba'ja and the southern Levant in general.

Contact: moritzkinzel@web.de

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## New Websites

The Ain Ghazal website has been moved to another server. The new address is as follows:

<http://menic.utexas.edu/ghazal>

A new website for Tell Aswad has been established by the French Ministry of Foreign Affairs:

[http://www.diplomatie.gouv.fr/fr/actions-france\\_830/archeologie\\_1058/les-carnets-archeologie\\_5064/orient-ancien\\_5067/syrie-tell-aswad\\_5618/index.html](http://www.diplomatie.gouv.fr/fr/actions-france_830/archeologie_1058/les-carnets-archeologie_5064/orient-ancien_5067/syrie-tell-aswad_5618/index.html)

The new, extended website of StoneWatch Germany can be found under:

[www.stonewatch.org](http://www.stonewatch.org)

(data base with new free pdf downloads of the rock art encyclopedia, considering much rock art from the Near East)

## Masthead

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