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Editorial

Doubtless, Middle Eastern Neolithic/ Early Holocene foreign field research witnesses these times a crises of perspectives and self-conception, especially since progress of research was based on a high momentum and dynamics of field results. Field work halted in many countries, and access to stored finds became impossible or restricted. Remaining working areas suffered from finding team members due to security fears. Only in a few countries has work continued essentially normally, even becoming potentially more promising (e.g. Iran). We can expect that fewer students will decide for Near Eastern archaeology/ anthropology, and those finishing their theses question their professional perspectives. Subjects may disappear at some institutions, and over time funding organisations will see other emphases if the discipline does not explain its future path.

In this situation, isn't there a somehow paralyzed reaction to be seen by those who are in the position to guide research perspectives? Hasn't our understanding – that field work promotes Neolithic research – adapted, acknowledging the various and hopefully interim political and security frameworks? Doesn't our research situation offer the chance to reconsider some colonial ingredients of field research, to re-define the subject and areas of research? Can't we, at least in the short term, move forward by explicitly returning to the hitherto ignored responsibilities concerning the many archived and stored Neolithic data and samples shipped abroad, excavating the shelves for the overlooked but necessary follow-through to work on final publications? Shouldn't the discipline in crises now be managed by concentrating on shelf research, thereby maintaining and satisfying our responsibilities to the Neolithic family's offspring and to the host countries in which we have worked?

We warmly welcome Maysoon al-Nahar and Bernd Müller-Neuhof, replacing Hans J. Nissen, on the board of this newsletter. From its beginning Hans J. Nissen was supportive and encouraging for this newsletter and ex oriente. We heartily wish him a relaxed while involved retirement.

Hans Georg K. Gebel, Marion Benz, Dörte Rokitta-Krumnow, and Gary Rollefson

Shkārat Msaied, the 2014 and 2015 Seasons

Moritz Kinzel, Lena Bakkar, Konrad Nuka Godtfredsen, Anne Mette Harpelund, Jakob Kaasgaard Hellum, Khaled Hwawra, Marie Louise Schjellerup Jørvkov, Pia Wistoft Nielsen, Christoph Purschwitz, Ingolf Thuesen, Mette Bangsberg Thuesen, and Anna Hilton Soria

Introduction

The Neolithic Site of Shkārat Msaied (30°26'38"N, 35°26'21"E) is situated approx. 16 km north of Petra/Wadi Musa in Southern Jordan; in the neighbourhood of several other Neolithic sites, *e.g.* Ba'ja and Beidha. The site was excavated from 1999 to 2001 as a field school project (under the Carsten Niebuhr Institute) and from 2002 to 2005 and later in 2010 as a research excavation project carried out by the Department of Cross-Cultural and Regional Studies-ToRS, University of Copenhagen and funded by the Carlsberg Foundation.

The site dates to the Middle Pre-Pottery Neolithic B and shows clusters of circular house structures (for the ¹⁴C dates see *e.g.* Hermansen *et al.* 2006). The building structures are well preserved and the archaeological and architectural context shows complex modifications (Jensen *et al.* 2005; Kinzel 2013).

During a visit in 2013 severe illegal digging activities were observed in Unit B and R that called for ad hoc salvage activities to record the damages and the state of conservation as well as to undertake targeted stabilization works. In addition heavy winter rainfall had resulted in some collapse of wall segments.

The 2014 and 2015 Field Work

The aim of the 2014 season was to document, clean and extend the trench illegally dug in Unit R, which was reported in 2013, and to get a better understanding of the stratigraphy underlying the visible architecture and to clarify the functional and spatial relations of the area south of Unit F (Kinzel *et al.* 2015).

The 2015 season had two main aims: 1) to proceed with the work from the 2014 season and to reach the earliest occupation layers in the sounding in Unit R, and this included taking ¹⁴C samples; 2) to continue the excavation of Unit F, where all except one burial were found so far, to gain further clarification to the stratigraphic relations in Unit F and to uncover the burials inside the building (Fig. 1).

Southern Areas

In 2014 we continued the excavation in the southern area between the Units F, G, H, J, K, "g", and Y (Area VI). After the initial investigation of Area VI in 2010 (Kinzel *et al.* 2011) this area shows several compartments with plaster floors, and pavement, but

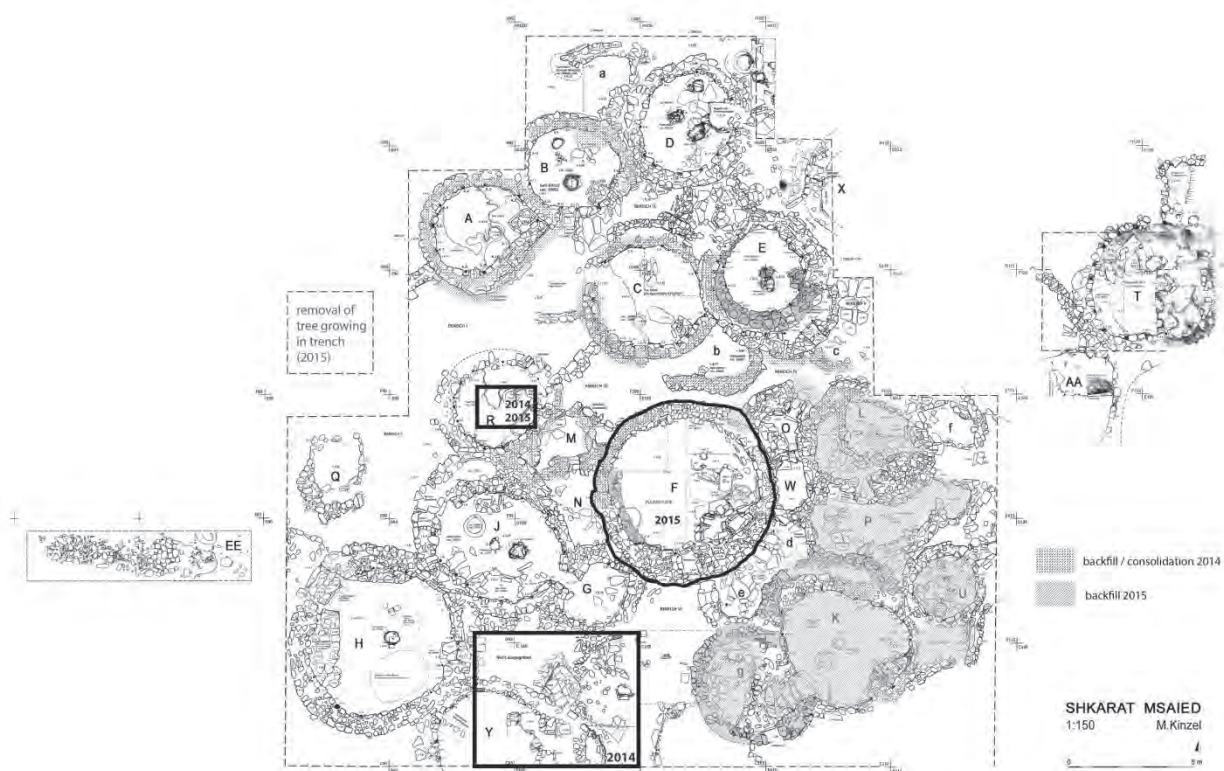


Fig. 1 Site plan Shkārat Msaied 2015 (Moritz Kinzel/Shkārat Msaied Neolithic project/ University of Copenhagen).



Fig. 2 Southern Area (2014) with central posthole and various surfaces (Moritz Kinzel/ Shkārat Msaied Neolithic project/ University of Copenhagen).

no clear structure. Additionally a pit (Loc. 90.307) filled with production waste from the reduction of 9 to 11 bidirectional blade cores was found (Purschwitz in prep.). However, our understanding of use, function, architectural configuration and internal stratigraphic relation as well as the fine-scaled stratigraphical connection to adjacent buildings were still limited. In 2014 a potential posthole (Loc. 100.203; approx. 45 cm in diameter) was discovered in the area (Loc. 100.208/212) between Unit Y and “g” (Fig. 2). The area – which was previously defined as an open space (Area VI) – could possibly have been roofed. Shape and dimensions suggest that the post was formed by more than one “trunk”, which indicates that the roof could have been quite substantial, following the construction we know from Unit K. Some upright placed stone slabs could be remains of a possibly earlier round house structure. The findings here clearly show a series of modifications and adjustments due to changed functions and needs.

Unit R

The findings in the area of Unit R turned out to be even more complex than what was indicated in the first observations in 2013. Due to the *ad hoc* backfill of most of the material by the Petra Park Authority, the dense occupation layers, and the high density of finds the bottom of the illegal “trench” was not reached in the 2014 season. The rich find density of the mixed

soil created by the illegal digging and “backfill” is also reflected in these occupation layers. Some of the finds can actually be linked to specific layers with similar in situ finds, e.g. a possible sandstone bead production workshop with finished and unfinished beads. After the removal of the backfill the excavation of the former illegal trench was continued. The mixed material from the trench was sieved throughout the season and offered a very find rich content; mainly flint fragments, bones – both worked and unworked (especially of birds); as well as a number of land snails, and marine mollusc shells. The analyses of these finds are currently on-going.

In 2015 we excavated the entire 2013-illegal trench and also a considerable amount of various occupation layers in the southern part of this small trench (Fig. 3). Several very significant layers with a clear sequence are visible in the section profile. The partly quite thin layers show a number of irregularities and disturbances by among others pits and refilling.

The work in Unit R has added considerably to the understanding of the site history. The layers below the latest plaster floor of Unit R have revealed very complex and dense occupation deposits as the density of finds was quite high. Some Jericho-points were found in the mixed soil from below the plaster floors, but they cannot be linked to a specific layer. On the bottom of the illegal trench a layer with a dense concentration of land snails and a few marine mollusc shells were found embedded in a greyish-white ashy layer. A series of light brownish-reddish hard packed surfaces could be



Fig. 3 Excavations in Unit R, southern section (2015) (Moritz Kinzel/Shkārat Msaied Neolithic project/ University of Copenhagen).



Fig. 4 Excavations in Unit F (2015) (Moritz Kinzel/ Shkārat Msaied Neolithic project/University of Copenhagen).

traced between the various layers of heterogenic roof (?) collapse material. The ^{14}C dates from the series of samples extracted from the profile are still pending.

The trench was backfilled at the end of the season.

Further excavation of Unit R will take place in the upcoming seasons as we see a potential insight in the formation history of the settlement; this is also a chance to reach the bottom layers and thus the bedrock.

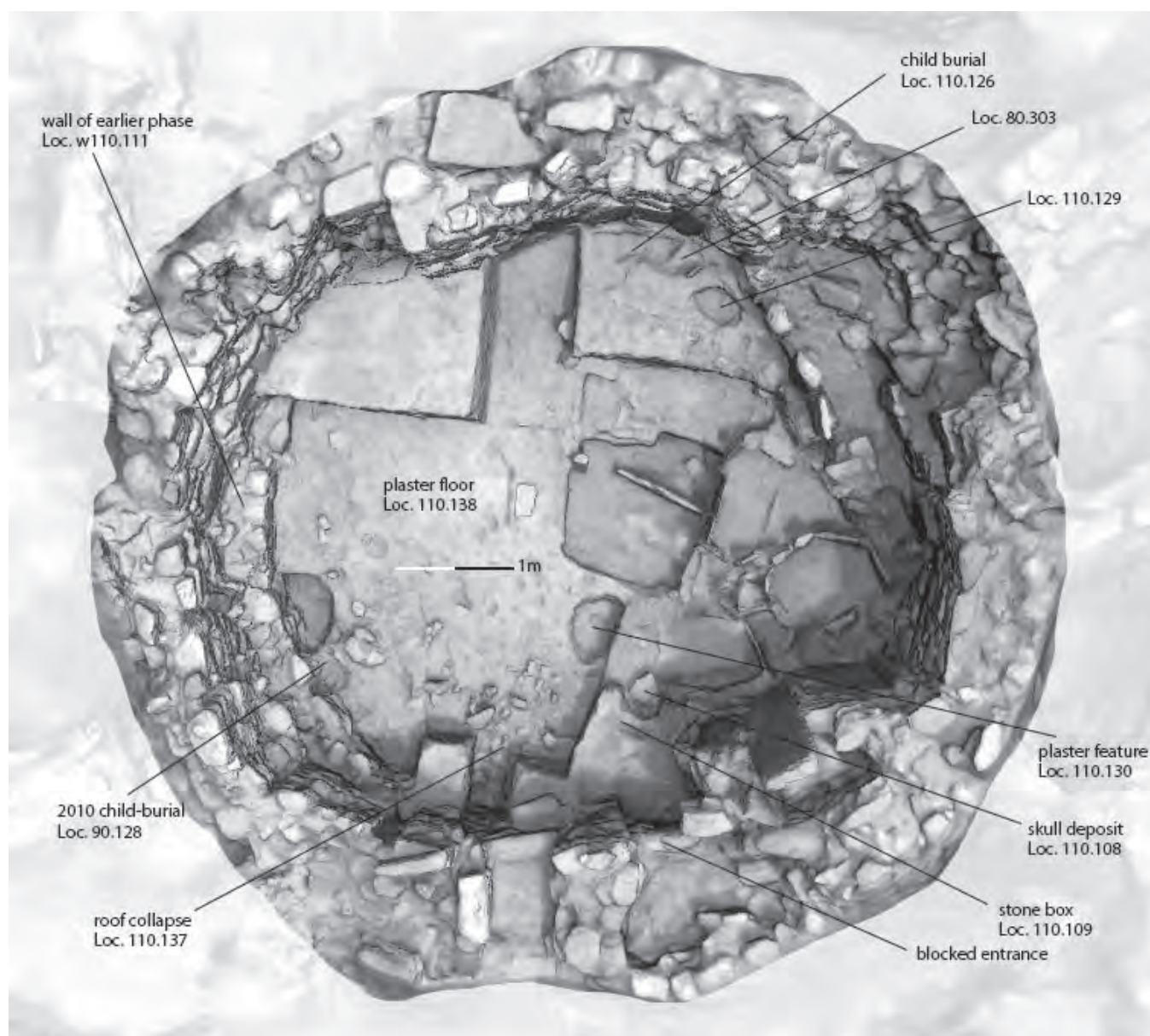


Fig. 5 3D-model of Unit F with Loci mentioned in text (2015) (Moritz Kinzel/ Shkārat Msaied Neolithic project/ University of Copenhagen).

Unit F

After five years we returned to Unit F for further investigations (Figs. 4 and 5). This year's work focused on the identification of potential additional burials. Another aim was to clarify the stratigraphic relationships and modifications of the building. Therefore it was decided to remove later floors, walls and fill-material to expose the rest of the burials.

The investigations revealed a number of burials of primary, secondary and tertiary nature. A preliminary report on the human remains follows below. Of interest is that there is a very close relationship between human and animal remains. In Unit F several animal bones were found – partly articulated, partly heavily processed – in very close association with human remains, and the rest was discarded in different areas of the buildings. The wall of an earlier building (W Loc. 110.111) could be traced further along the later walls

northwards, but no foundation of the wall has been reached so far. Therefore any phasing has preliminary character.

Just east of the entrance to Unit F at the bottom of wall Loc. 70.209 a stone cist (Loc. 110.108) containing three skulls was recovered. For the construction of the stone cists one of the later plaster floors was cut in order to place this stone cist in and below it. South of the skull deposit another stone box (Loc. 110.109) was discovered, containing remains of more than one fox (*Vulpes sp*) (Fig. 6). By removing the wall (W 70209/110.107) not only the stone box feature (Loc. 110.109) became visible; also an entrance (approx. 65 cm wide) to an earlier phase of Unit F could be identified. This entrance was blocked later and became part of a niche feature (Loc. 110.107).

It seems that the lime plaster floor (Loc. 110.138), which was exposed throughout the unit – belonging to an earlier building phase – is related to this en-



Fig. 6 Jaw of a small fox (*Vulpes* sp) found on the floor surface (Loc. 110.138) (Moritz Kinzel/ Shkārat Msaied Neolithic project/ University of Copenhagen).



Fig. 7 Plaster feature (Loc. 110.130) with flint cache under excavation (2015) (Moritz Kinzel/ Shkārat Msaied Neolithic project/ University of Copenhagen).



Fig. 8 Flint artefacts from the cache (Loc. 110.133) with scale (Photo: Anna Hilton/ Shkārat Msaied Neolithic project/ University of Copenhagen).

trance. In this floor (Loc. 110.138) a plaster feature (Loc. 110.130) was uncovered placed in the axis of the newly recovered entrance. The plaster feature contained a white-greyish powdery material which was



Fig. 9 Excavation of Skull #2 by Marie Louise Jørkov (2015) (Shkārat Msaied Neolithic project/ University of Copenhagen).

rather chalky (Loc. 110.132). No traces of charcoal or charred material could be identified. At the northern tip of the plaster feature (Loc. 110.130) a flint cache (Loc. 110.133) was excavated (Fig. 7). It is the first blade cache found at Shkārat Msaied. The cache consists of seven bidirectional blades; three out of them have been tooled into Jericho-points (Fig. 8). All blades and points belong to the same Raw Material Group (FRMG 6), which is not attested within the geological environment of the Greater Petra Region (Purschwitz 2013), but which is commonly used for core reduction at Shkārat Msaied and contemporary Beidha (Purschwitz in prep.). Caching and hiding is a common practice among the PPNB groups all over the southern Levant (*cf.* Gebel 2002; Barzilai and Goring-Morris 2007) and also attested at contemporary Beidha (Mortensen 1988; *cf.* Barzilai 2010). The plaster feature (Loc. 110.130) was sealed with clayish mortar material (Loc. 110.131) at a later point.

At the moment it seems that all burial cists were cut into this plaster floor (Loc. 110.138) at one point in time. In the southern part of the room the collapse of a roof was resting on the very same floor. Two pestles and a hammerstone were found *in situ* on the floor surface.

Preliminary Results from the Unit F: Human Remains

Three areas containing human remains were excavated in Unit F. In total a minimum number of 12 individuals (10 sub-adults and 2 adults) were recovered. Up against the northern wall west of stone cist (Loc. 80.303) which was excavated in 2005, infant remains were recovered in the fill. A small stone cist could be identified. The stone cist contained the remains of minimum 3 sub-adults of which two were secondary burials (one was represented by a mandible [6-7 year old child, B 115.102], one was the disarticulated remains of a 38-40 week old foetus/new-born [B 115.104]). The last individual was of a c. 4 year old child buried resting on its left side with flexed arms and legs with the back towards the north wall (B 115.103). The head and first cervical vertebra were miss-

ing. No pathology could be observed on the remains.

To the south east of Locus 80.303, a deposit of inter-mixed remains was uncovered lying in a very hard soil. The deposit contained completely mixed up sub-adult remains of minimum 6 individuals: 1 juvenile 8 years (represented by a mandible), 1 child 5 years, 1 child 3-4 years, 1 child 2-3 years, 1 child 2-2,5 years, and 1 child 1,5-2 years. They have been placed at the same time and are likely a tertiary deposit. No pathology could be observed on these remains.

The third excavated area was a stone cist (Loc. 110.108) in the southern part of the house, immediately north of stone cist Locus 110.109 and next to Locus 110.128. The stone cist contained three skulls all facing west. Skull #1 had been placed while soft tissue was still partly present. This was evident from the first neck vertebrae (cervical 1 and 2) still articulating to the base of the skull. Furthermore, the mandible was articulating with teeth in occlusion. The skull belonged to a male aged ca. 30-45. He had suffered periodontal disease and had calculus on molar teeth. He had lost the second and third molar ante mortem. In their place a large abscess (healed) was seen, hence the little wear observed on the occluding mandibular molars. Skull #2 and #3 had their left side of the head up against and partly underneath the southern stone slab separating Locus 110.108 from Locus 110.109. The stone slab had been pushed down after burial and after the construction of the stone cist (Loc. 110.109) as well as the erection of wall locus W70.209/110.107. This had resulted in crushing of the left parietal bones of both crania. Skull #2 was located south west of Skull #1 (Fig. 9). There was no mandible, but it had all its maxillary teeth present. It belonged to a 3 year old child. No pathology could be observed on this individual. The third skull (Skull #3) belonged to a 6-7 year old child. Enamel hypoplasia could be identified on the permanent maxillary incisors, indicating a disturbance in the enamel production as a consequence of malnutrition or other stress related instances around the age of 3-3,5 years.

A complete animal humerus (*Vulpes* sp) was found east of Skull #3. An epiphysis of an animal tibia which may have been from a smaller cat was found as a secondary deposit in Skull #1. In the fill of locus 110.108 a foot bone (a metatarsal) was found from a juvenile c. 6-11 years old. In the fill of locus 110.128 an adult knee cap (a patella) was recovered. It showed initial stages of arthritis.

As the human remains of the 2015 season are mainly coming from the very same contexts excavated back in 2005 we will re-assess all the human remains to clarify the minimum number of individuals; especially in the case of Loc. 80.303.

Conservation and Protection Activities

In addition to the above presented archaeological investigations the state of conservation of each building unit was assessed and documented. To improve the appear-

ance of the site and also to protect the architectural remains plants and litter was removed from all buildings. A comprehensive state of conservation report was handed over to the Department of Antiquities in 2014. In general the site was (in 2014) in relatively good condition. The fence around the site is also in a good condition. Most damage seems to be related to the intense rainfall in winter 2013/2014, but also due to vandalism. However, the exposure of the archaeological remains to weathering, including intense sun and wind, has resulted in the loss of bonding of the historic Neolithic wall mortars as well as the disintegration of the (sand-) stone material itself; especially the sand stone slabs show flaking and detachment of layers.

The backfill executed in 2010 and 2014 seems to fulfil its purpose to stabilize the structures. The surface run-off water in relation to the heavy winter rainfall has created some drainage gullies in the backfill material. In Unit J, K, P, single wall segments between the post channels (sockets) have collapsed due to the loss of bonding and rainwater penetrating the wall core. To reduce the risk of wall collapse some stabilization and consolidation works were executed in 2014 and 2015 (Fig. 1). In Unit A, C, E, F, K, L, and M joints were re-pointed and voids filled using a (simple) soil mortar. This mortar is made out of the sieved spoil heap soil and water. Due to the high content of calcite (lime) in the soil the mortar is relatively stable but softer than the stone material and the Neolithic mortars containing partly burned lime. The same mortar was used to complete some wall capping to prevent water penetrating the wall core. The repair mortar has to be seen as a so-called sacrificial layer that will need to be renewed on a regular basis. Regular monitoring will help to define maintenance cycles necessary to maintain the current state. In case of Unit L, P and K substantial backfilling was carried out to prevent collapse and minimize water penetration. In Unit F and R only limited areas were backfilled to allow an easy continuation of our work again in 2016.

Compared to the number of damages reported in 2013/2014 only little additional damages could be observed in 2015. The soil mortar used for the consolidation of some walls in 2014 seems to be efficient, but will need some maintenance works in the coming year.

We plan to rise additional funding for conservation and site presentation measures. The self-guiding track around the excavation area has proven to be a very good way of keeping visitors out of the actual trenches. Additional info panels could add considerably to the understanding of the site, but also more innovative techniques as mobile apps could help explain the various features with AR-3D-reconstructions of the buildings (Kinzel and Tanaka 2015).

Future Plans

In preparation of a final publication, covering the works from 1999 to 2016, additional field work is planned to be carried out in 2016/17, to fully excavate Unit F, and

to complete the investigation into the deep sounding in Unit R. During the 2015 season we were joined in the field by the Greenlandic artist Nuka Godtfredsen who will produce visualisation of interpretational (graphic novel) scenarios in the future to discuss findings and contexts. In addition to the presentation of scientific results it is planned to undertake further preservation measures and to prepare the site for visitors and to promote the concept of the Neolithic Heritage Trail.

Acknowledgment: The 2014 and 2015 work was supported by the generous grants from the Danish Institute in Damascus and the Danish Palestine Foundation. We also wish to thank Bo Dahl Hermansen, Charlott Hofmann Jensen, and Aiysha Abu Laban for comments and on-going discussion; Khaled and Lena – our Department representatives – for their help and support; and Mohammed Almrähleh and the Petra Park Authority for their hospitality. We also would like to thank the local Bedouin tribes for their interest and support of our project.

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Kharaysin: A PPNA and PPNB Site by the Zarqa River 2014 and 2015 Field Seasons

Juan José Ibáñez, Juan Muñiz, Eneko Iriarte, Martin Monik, Jonathan Santana, Luis Teira, Marta Corrada, Manuel Ángel Lagüera, Zuzana Lendakova, Encarnación Regalado, and Rafael Rosillo

Abstract

Kharaysin is a Pre-Pottery Neolithic site located in the village of Quneya, in the Zarqa River valley, over 25 ha in size and dating from the 9th millennium cal BC. Two occupation levels have been documented. In excavation area IJ100, two oval semi-sunken houses with plaster floors were excavated; these dated from the beginning of the 9th millennium cal BC, the late phase of the PPNA. Over this architectural level, a straight stone wall and a burial correspond to the beginning of the Middle PPNB, at the end of the 9th millennium cal BC. Further south, down the slope of the site, in trenches CDEFG-55 and TUVX-60, a Middle PPNB occupation has also been documented, with rectangular buildings built on the surface, stone walls and plastered floors. In Area U60, paintings were discovered on the plastered floor of one building. Bipolar technology, Jericho and Amuq points and bent sickle blades are observed in the Middle PPNB occupation phase. The PPNA material culture, which is still poorly documented, seems to be characterized by unipolar knapping, blades with double pairs of notches and decorated grooved stones.



Fig. 1 Excavation areas at Kharaysin in 2014 and 2015 field seasons (Luis Teira).

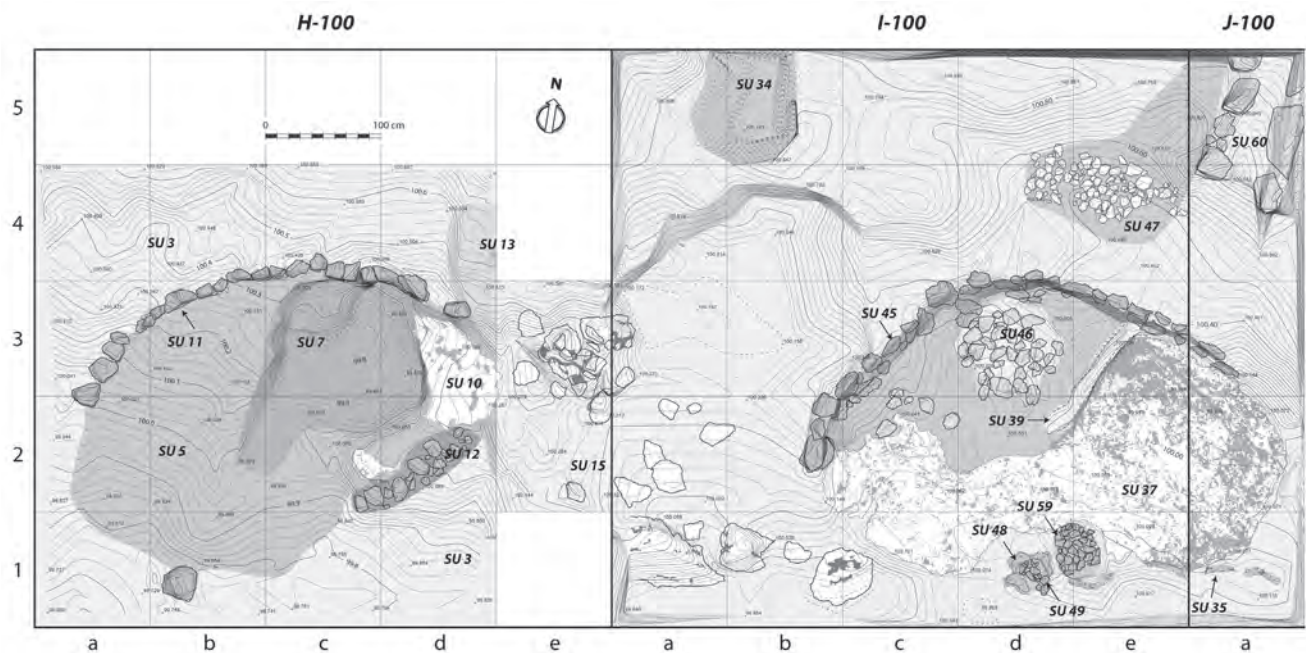


Fig. 2 Semi-sunken dwellings in HIJ/100 area (Luis Teira).

Introduction

The site of Kharaysin (Quneya, Zarqa) was discovered in 1984 by Hanbury-Tenison (1986) and colleagues during the Jerash Region Survey (Edwards and Thorpe, 1986). It was considered a large PPNB site of about 36 ha in size. We calculate it could have an extension of, at least, 25 ha, showing some flat areas and other zones with relatively steep slope. The goal of our research was to confirm or reject the mentioned dating of the site and, if possible, reconstruct the settlement structure and the way the local population dealt with slope and water erosion. After prospecting the site in 2014, it was excavated in 2015 (Fig. 1).

Method

The excavation area was divided into 5x5m areas, divided internally into 1m² squares. We have worked in three zones of the site: HIJ/100, CDEFG/55 and TUVX/60 (Fig. 1). The excavation was conducted by following natural layers, often of variable cohesion and consistency. All settlement structures and other archaeological features were 3D-located with a total station (Leica TCRM 1205) or with photogrammetric techniques. The 3D models were generated with n4ce (Applications In Cadd) and Photomodeler Scanner 2015. All the 3D models, one for each stratigraphic unit, were assembled in a CAD environment (MicroStation). Final thematic illustrations were created in Adobe Suite. Burial finds were documented by physical anthropologists according to the standard approach (Mays 1998). At the same time, geophysical prospection was conducted to indicate potential areas of location and clustering of further settlement fea-

tures. Lithic, micromorphological and palaeobotanical samples have been recovered for further analysis.

Results

Zone HIJ/100

Two oval semi-sunken dwellings have been documented in this zone (Fig. 2). Both of their northern boundaries consist of a stone wall which reinforces the sides of the pit, while the southern boundaries of the structures are mostly lost due to slope erosion. In Dwelling 1, located in H100, the southern wall (SU 11) is partially preserved in the Square cd/2. A fragment of plastered floor has been observed in the eastern part of the structure. The center of this Dwelling 1 is affected by a MPPNB pit (SU 7). The excavation of this structure will continue in 2016 to confirm whether there was an older phase of the dwelling or not.

In IJ/100, Dwelling 2 (Fig. 3) is divided into two rooms by a narrow wall made of mud (SU 39). The eastern room possesses a plaster floor (SU 37) which still retains some of its red color in the south. The floor joins the wall plastering which covers the northern boundary of the dwelling. In the south, the plaster floor defines a round pit with its northern edge still covered by plaster (SU 59), forming a kind of lip. The floor in the smaller western room is covered with pebbles and is yet to be excavated, but it may have been used as a kitchen, as indicated by the presence of a fireplace. Two ¹⁴C dates have been obtained from two fragments of charred *Quercus* wood from the level directly overlying the plastered floor, 9464 ± 36 BP¹ and 9523 ± 36 BP², indicating that this structure dates to the last phase of the PPNA, in the early 9th millennium cal BC.

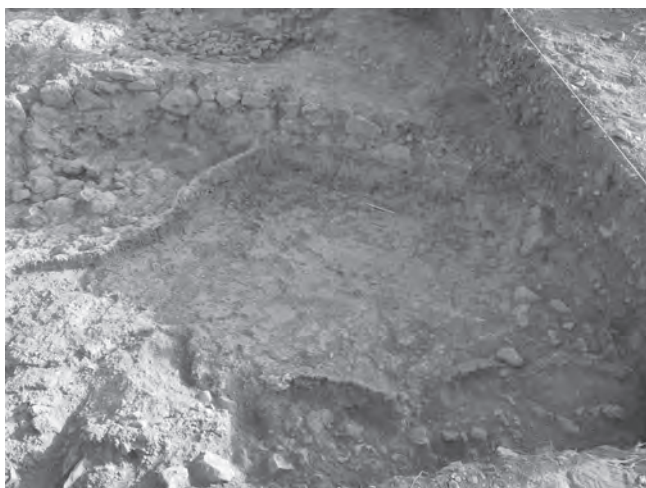


Fig. 3 Dwelling 2 in area IJ/100 (photo: Luis Teira).

Above this PPNA phase, further remains date to the Middle PPNB. They consist of a stone wall (SU 60) located in the NE of the trench (a4 and 5 of J100), which is slope-eroded in its southern part. This architecture was based on a level of angular stones, around 5 cm in diameter, and on grey sediment which covers the depressions in the underlying PPNA structures in order to flatten the surface. The MPPNB level has been dated to 9092 ± 35 BP,³ at the beginning of the Middle PPNB period.

A burial in a pit (SU 34), located in I100 b2, probably also corresponds to the MPPNB, although its chronological attribution to the PPNA cannot be ruled out. It is a primary burial of two adult individuals simultaneously deposited and oriented from north to south (Fig. 4). The pit borders were defined on its west, east and south sides. It continues to the north, where the section of Area I-100 is located, so the complete morphology of the grave cannot be determined. The femurs of both individuals are inserted in this northern section. The west side of the pit is formed by a large block of limestone and a stone and lime conglomerate. The south side is determined by a facing of lime mortar adhered to stones. The east side is a conglomerate of lime mortar and stones. Individual 1 is an adult who was placed in a sitting position. This individual has a poorly-preserved skeletal representation with such significant absences as the cranium and the mandible. There is also evidence that the grave was opened in the post-depositional phase, probably in order to extract certain skeletal regions, such as the skulls. According to the appearance of the pubic symphysis of the left pelvis, age-of-death of this individual would have been between 27 and 66 years old although given the appearance of the skeleton preserved, it probably corresponds to an adult with an age-of-death between 30 and 40 years. Individual 2 was placed on his/her left side on the bottom of the grave. His/her lower extremities were not excavated because of their position in the north section of the area. Skeletal representation and conservation of this individual is better than in Individual 1. However, the cranium is also absent although



Fig. 4 Pit burial in I100 (photo: Luis Teira).

in this case the mandible is present. The body lay on its left side. The clavicles also have a lateralized position and retain their primary position. Other skeletal elements such as the mandible and forearms have been partially disturbed by post-depositional processes and their position is not strictly primary. Dental wear of the teeth from the right hemi-mandible corresponds to an individual 25-35 years old.

The analysis of funerary practices observed in this grave allows us to establish a time sequence. In the first phase, Individual 2 was deposited on the bottom of the grave. In the second stage, shortly afterwards, Individual 1 was placed inside the grave in a seated or semi-seated position leaning against the west side of the pit above Individual 2. These two individuals were therefore buried simultaneously and later covered by sediment. In the third stage, probably when the decomposition of the corpses had been completed or was advanced, the grave was opened to remove the cranium of Individual 2 and cranium and mandible of Individual 1. Then the grave was refilled with sediment.

Zone CDEFG-55

In the SW part of the site, an artificial cut had been exposed by a road-construction bulldozer some years ago. In 2015, a continuous part of this section, 25 meters in length, was cleared in sectors C55, D55, E55, F55 and G55 (Fig. 5).

This section is divided into two zones. In C55, D55, E55 and the western part of F55, a large structure with several walls and plastered floors has been documented. In the eastern half of F55 and G55, we observed an exterior area, where pits filled with thermally altered limestone had been probably used as kilns to make quicklime.

The structures in the western part of the section start, from west to east (Fig. 6), with Wall 504 and the associated plaster floor 514. Further east, an oval room is defined by Walls 511 and 513, associated with the plaster floor 508. Between Walls 513 and 517, another room is defined by plaster floor 515. No plaster floor

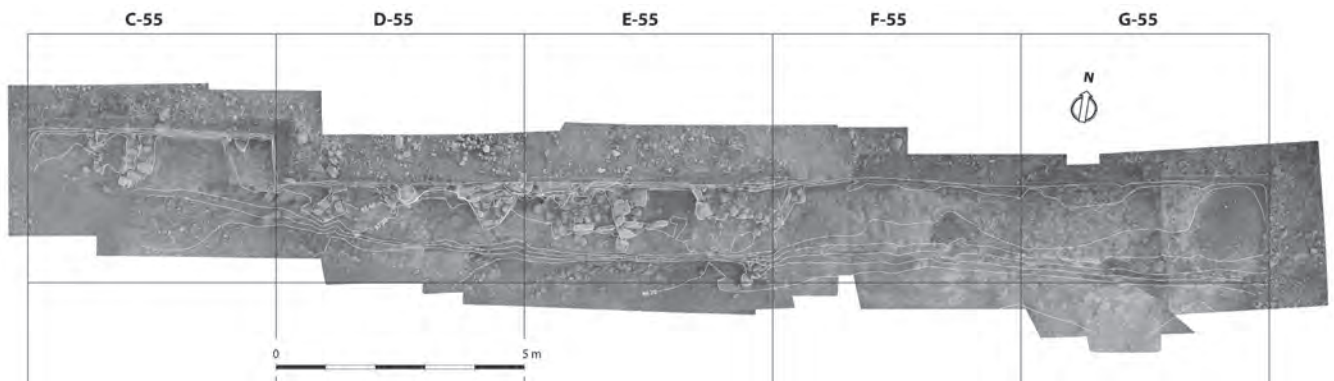


Fig. 5 Zenithal view of the section excavated in zone CDEFG-55 (Luis Teira).

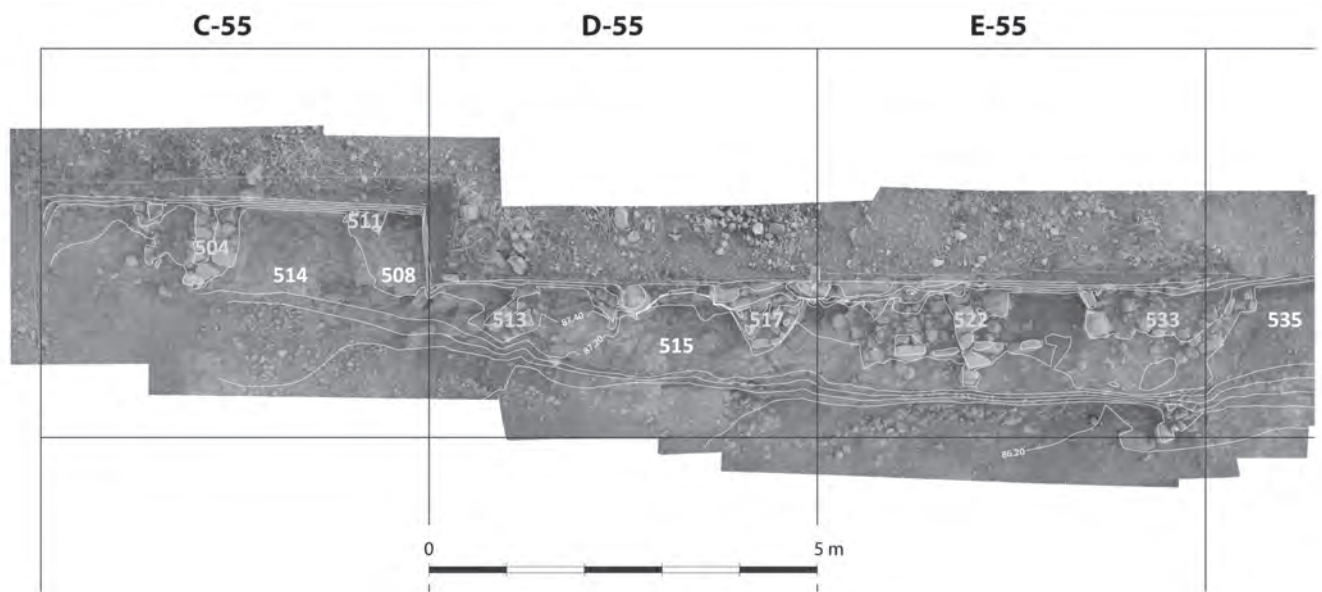


Fig. 6 The CDE-55 section with the main structures (Luis Teira).

has been observed between Walls 517 and 533, but two square stone structures are seen. East of Wall 533 another plaster floor has suffered the loss of its eastern part by slope erosion. This architectural level has not been dated yet although the characteristics of the buildings and the material culture indicate that it most probably dates from the MPPNB. One ^{14}C date for a sample recovered in the section under this building was dated to 9501 ± 37 BP,⁴ the PPNA phase.

In the eastern part of the section, several pits can be observed. The sediment in this area is white because of the presence of abundant quicklime and thermally altered limestone clasts. The pits were probably used as quicklime kilns, as their walls contain some intensely thermo-altered limestone clasts. These pits are stratigraphically located under the building described above and therefore they could be dated in the PPNA.

Zone TUVX-60

The section cut by a bulldozer was also examined in 2014. The excavation was conducted in Square W60 and Bands d and e of Square V60, where the remains of

a square building (number 3) with plastered floor were documented (Fig. 7). Two burials partially destroyed by the bulldozer were found in this building, inside pits excavated under the plastered floors (Fig. 8). In Burial 1, only parts of lower extremities were preserved. The individual was placed in a flexed position on his/her left side. Burial number 2 is a secondary deposit inside a pit.

In Squares T, U and V 55, a long stone alignment at the base of the road next to the section most probably indicates the existence of a wall running from SW to NE.

In 2015, the excavation was extended to Squares T60, U60 and V60 (Fig. 9). An earlier phase of Building 3 was discovered, while in U60 the remains of another building were documented. This corresponds to an upper architectural level, Building 4, oriented roughly parallel to Building 3. A plastered surface covers the floor of this Building 4, and continues under the N section, indicating that the building has not been completely uncovered on the northern side. This plaster floor is decorated with paintings in red, which will be described below (see the section on the paintings). In T60, several pits damaged the architectural structures, as in Building 4, the one with the painted plaster floor.

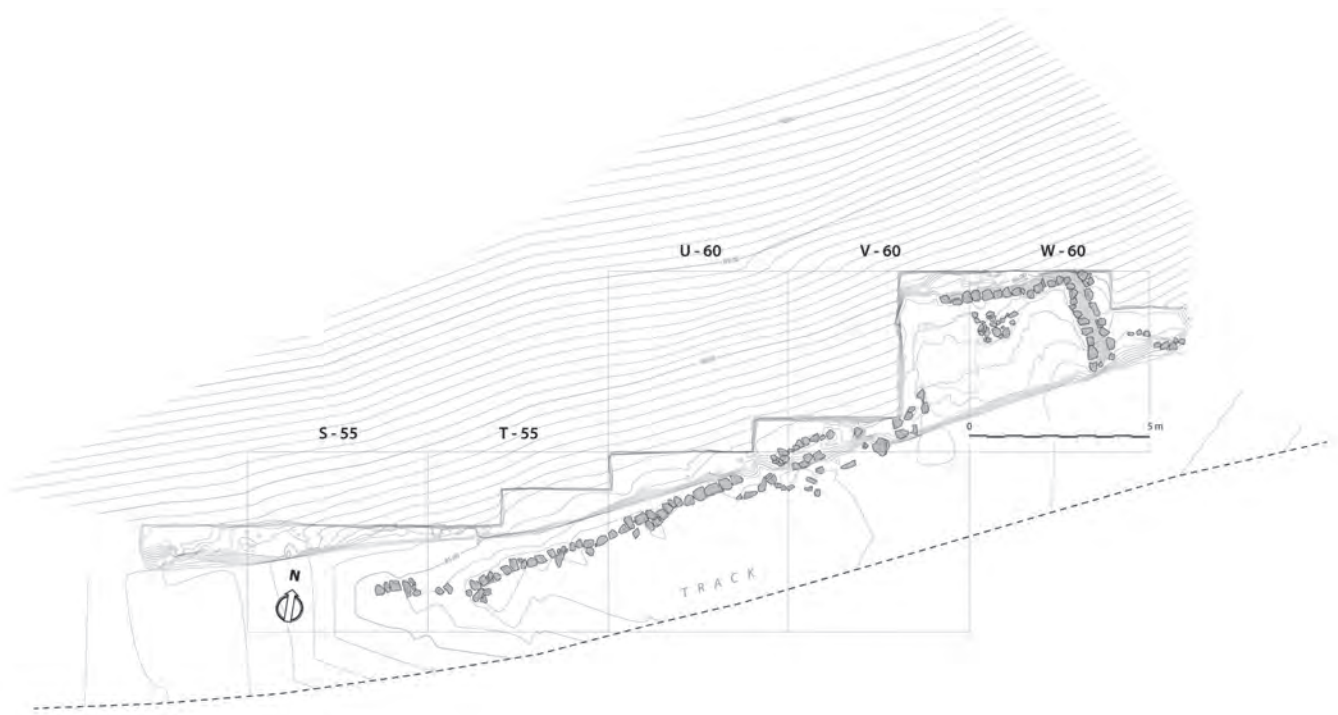


Fig. 7 The area TUVX-60 excavated in 2014 (Luis Teira).

The Paintings in U60

Paintings have been observed on the plaster floor of the building excavated in Square U60. These fresco-type decorations were painted with a red colorant, probably iron oxide. They have not been completely uncovered, as the plaster floor continues to the north, under the N section of U60. The paintings were thoroughly cleaned *in situ*, by gently scraping their surface with a spatula in order to remove the layer of clay attached to the floor and cleaning then with a liquid mixture of water, alcohol and acetone, applied with cotton swabs.

It is too soon to offer an interpretation of the motifs identified in the paintings. Dots and lines are clearly present. However, the floor is in poor condition, irregular by deformation and only partially preserved. Thus we should wait for to the complete excavation

and restoration of the floor before attempting an interpretation. However, a preliminary analysis of the paintings has determined that the red colorant is not continuous and that some motifs are present in the fresco. No regular distribution of color can be observed, so the presence of geometric motifs can be ruled out. It is likely that figurative motifs are present in the paintings, although they should be deciphered after a more detailed scientific analysis of the restored frescoes. A rescue excavation of the painted floor is planned for the 2016 fieldwork season and this work is being funded by the Gerda Henkel Foundation.

Geophysical Survey

Geophysical surveying of the site was conducted with two different methods: ground penetrating radar (*georadar*; GPR; SIR3000, GSSI Inc.) and electric resistivity tomography (ERT; Ares system, Gf. Instruments Inc.). GPR measurements were conducted with a 400 MHz antenna and processed with RADAN 6.5 software. ERT measurements were conducted using multielectrode cables of 8 electrodes each and were processed in RES2DINV and RES3DINV software (Geotomo Inc.). Both types of measurements were performed by combining parallel and perpendicular profiles spaced at 0.5 to 1m to reconstruct a quasi-3D situation.

Three sectors have been surveyed with both GPR and ERT, corresponding to the three excavated areas (Fig. 10). The GPR (*georadar*) has given relatively poor results, probably due to weak contrast between different natural and artificial layers and features. On



Fig. 8 Burials pits excavated in the plastered floor of dwelling 3, in W60 (Luis Teira).

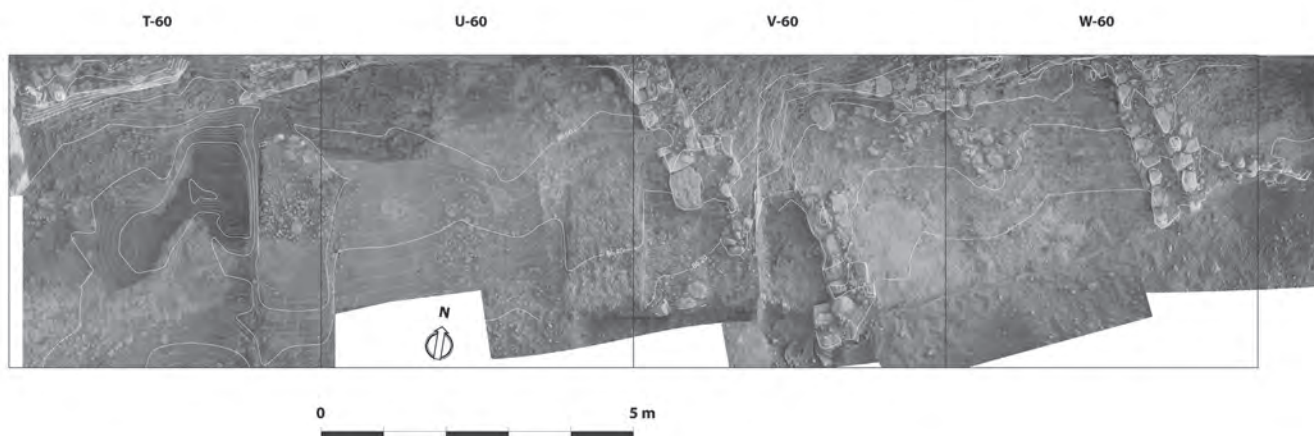


Fig. 9 The TUVX-60 zone (Luis Teira).

the contrary, ERT has provided good results thanks to significant contrast between natural (lower resistivity) and artificial (higher resistivity) subsurface layers and features. It has indicated the existence of architectural remains in all three excavated areas. These can be interpreted as both huts and possibly walls protecting

the settlement against landslides and water flows. Interestingly, to the north of Area TUVX-60 there is a zone of low resistivity (Fig. XY), suggesting that some areas within the settlement were not overbuilt. The geophysical survey will be continued in forthcoming fieldwork.



Fig. 10 ERT geophysical analysis at Kharaysin. Higher-resistivity anomalies contrast with lower-resistivity ones (Luis Teira).

Material Culture

Lithic and bone remains are very abundant at the site. The presence of bipolar knapping technology (Fig. 11), Jericho and Amuq points (Fig. 12 and 13) and sickle elements suggesting the existence of curved sickles (Fig. 14), point to the Middle PPNB. This assemblage has been found in the upper level of Area HIJ/100

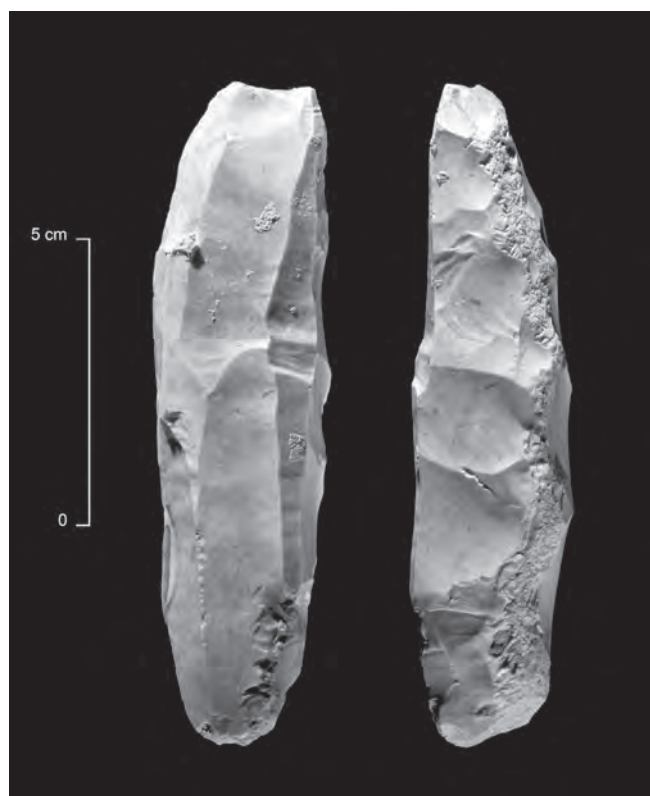


Fig. 11 Bipolar core (Luis Teira).



Fig. 12 Jericho point and Amuq point with Abu Gosh retouch (Luis Teira).

and in Areas TUVX-60 and CDEFG-55. In the lower level of Area HIJ/100, the industry is still not well characterized. Unipolar bladelet knapping seems to dominate the lithic technology. Among retouched tools, bladelets with double pairs of notches (Fig. 15) seem to be characteristic of this PPNA level, which has also yielded two grooved stones, one of them decorated on its reverse side (Fig. 16), and a necklace made of small shells, some of which were perforated.

Provisional Results

The site of Kharaysin is an extensive PPN site. As far as is currently known, two occupation phases can be distinguished here. The older phase dates from the late PPNA at the beginning of the 9th millennium cal BC. This period is characterized by oval semi-sunken dwellings with internal division and plastered floors, which might have been decorated with a red colorant. Decorated grooved stones and bladelets with paired notches are present in the material culture.

The Middle PPNB occupation level, dated to the end of the 9th millennium cal BC, is characterized by the presence of square buildings built on the surface, with stone walls and plastered floors, some of which display paintings, and burials inside the buildings under the plastered floors. Bipolar knapping technology, Jericho and Amuq points, sickle elements for curved sickles, figurines, a rich bone industry and a very scarce quantity of obsidian have been documented in the material culture.

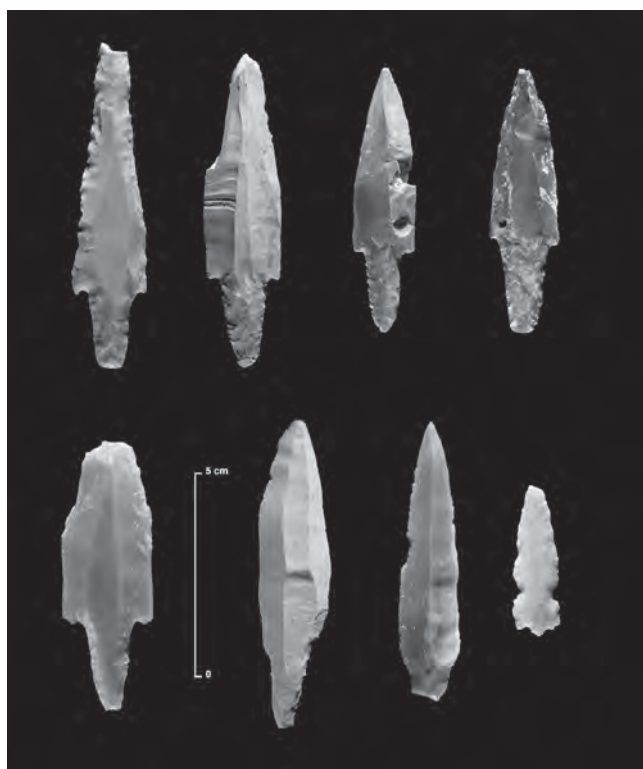


Fig. 13 Jericho, Byblos and Amuq points. Aswad/Helwan point (lower right) was found on surface (Luis Teira).

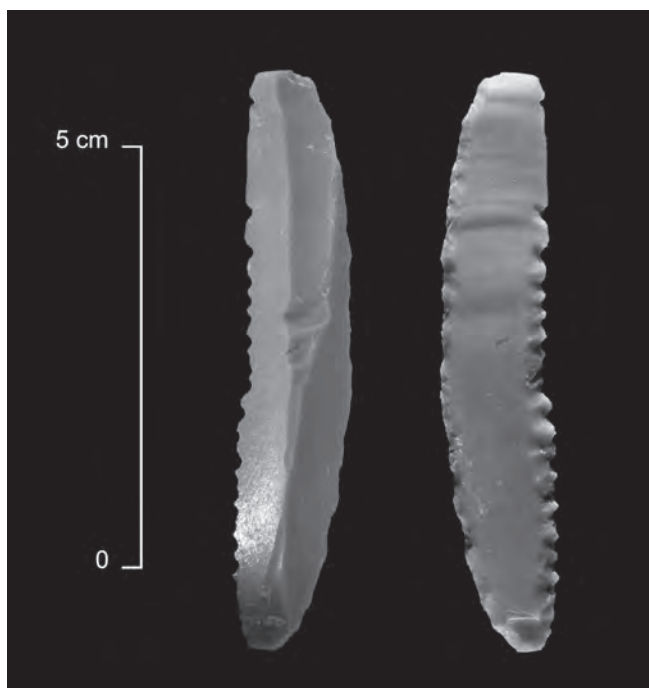


Fig. 14 Sickle blade (Luis Teira).

The archaeological work has revealed several burials and a number of displaced human remains. Four primary graves, three single and one double were located. In addition, bones have been recorded in secondary position in different stratigraphic units. The minimum number of individuals (MNI) is eight, five inside the graves and three in a secondary position. The manipulation of skulls as part of the funerary ritual has been documented.

Both excavation and geophysical prospection indicate that the settlement was probably protected in both its phases by terracing walls against slope movements and water currents, similarly to the nearby PPNB site of 'Ain Ghazal (Rollefson 1997).

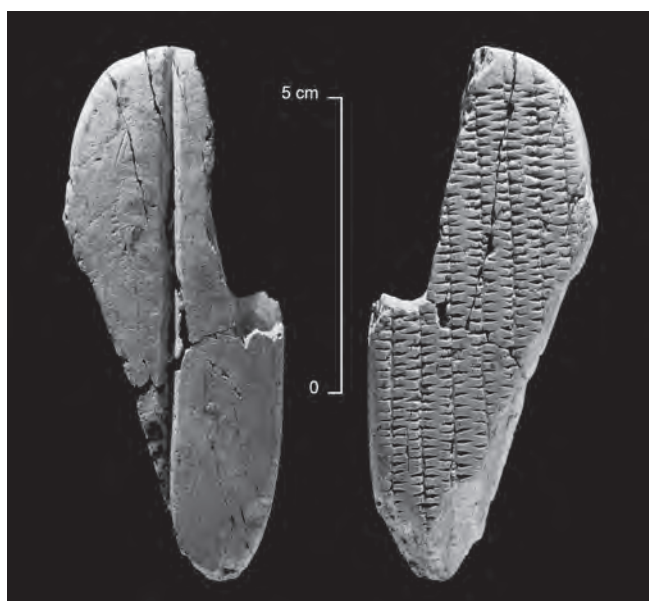


Fig. 16 Grooved and decorated stone.

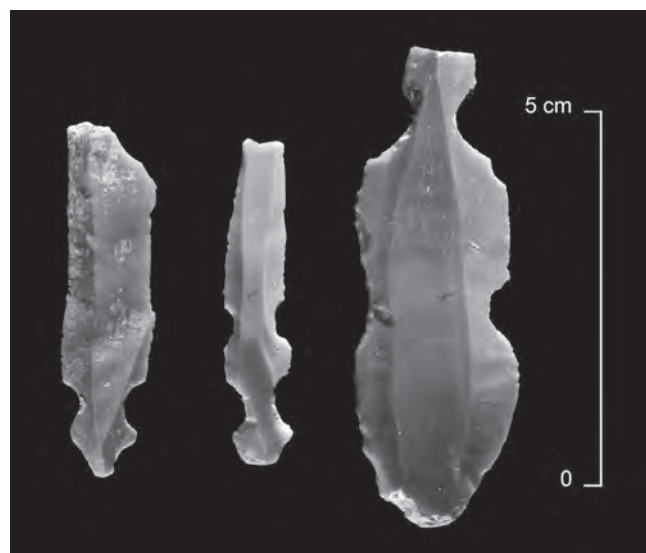


Fig. 15 Bladelets with pairs of notches (Luis Teira).

The presence of very well preserved architecture, including floor paintings, allow the affirmation that Kharaysin is an outstanding Neolithic site, which should be studied in detail in the coming years.

Acknowledgements: We wish to acknowledge the Department of Antiquities and Tourism of the Kingdom of Jordan for their kindness and assistance in processing permission for the excavation and the other paperwork enabling the development of this excavation project. We also wish to express our gratitude to the Spanish Embassy in the person of the Ambassador, His Excellency Mr. Santiago Cabanas Ansorena, for his help and hospitality, to the authorities of the Hashemite University for their confidence in entrusting their students to us and to the workers from the village of Quneya. Inspectors Osama Eid and Romel Ghrayib gave an invaluable support to the Expedition. We would also like to thank the owner of the terrain where the site is located, Mr. Ahmed Al-Issa, for allowing us working on his land. This project has been funded by the Spanish Ministries of Economy (HAR2013-47480-P) and Culture (Spanish Institute of Cultural Heritage) and the Spanish Embassy.

Endnotes

¹ CNA 3466.1.1: 2 σ calibration [cal BC 9110: cal BC 9085] 0.025308, [cal BC 9047: cal BC 9027] 0.01732, [cal BC 8838: cal BC 8633] 0.957372.

² CNA 3465.1.1: 2 σ calibration [cal BC 9128: cal BC 8994] 0.448202, [cal BC 8927: cal BC 8742] 0.551798.

³ CNA 3467.1.1: 2 σ calibration [cal BC 8418: cal BC 8410] 0.007776, [cal BC 8346: cal BC 8244] 0.992224.

⁴ CNA 3463.1.1: 2 σ calibration [cal BC 9121: cal BC 9002] 0.319264, [cal BC 8919: cal BC 8888] 0.037888, [cal BC 8885: cal BC 8708] 0.637752, [cal BC 8666: cal BC 8659] 0.005096.

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The Neolithic Site of eh-Sayyeh near Zarqa. Archaeological Fieldwork 2013-2015

Karin Bartl and Zeidan Kafafi

Introduction

The site of eh-Sayyeh (Lat.: N 32°8'56", Long.: 36°3'3"; grid ref. 249.16 E, 173.14N; UTM 37S 221707.34 m E, 3560795.69 N) is one of the few settlements from the Neolithic Period known so far in Northern Jordan. After its discovery in 1993 during the Wadi az-Zarqa/Wadi adh-Dhulayl survey (Palumbo *et al.* 1996), initial excavations in initial excavations in 1996 (Kafafi *et al.* 1997; Kafafi and Palumbo 1997), 1997 and 1999 revealed a settlement sequence ranging from the 8th to the 6th millennium BCE (Kafafi *et al.* 1999; Caneva *et al.* 2001).¹

The site is located southeast of the Ajlun Mountains, c. 8 km NNW of the city of Zarqa and c. 2 km NNW of the village as-Sukhne, at the edge of the Mediterranean climate zone of Northern Jordan (Fig. 1). Its water supply is extremely favourable, as the settlement is located near the confluence of Wadi adh-Dhulayl with the perennial water-bearing Wadi az-Zarqa (Fig. 1).

The site's size was estimated to more than 10 hectares (Kafafi *et al.* 2000: 703). However, it is questionable whether the site had been permanently occupied over its entire surface or whether it belongs to the category of the so-called "shifting settlements", in which different settlement cores had alternated over different timespans.

The excavations conducted at the western side of the site in 1999 (Kafafi *et al.* 1999: 10-12) revealed LPPNB, PPNC, Yarmoukian, and perhaps Chalcolithic remains. Due to its size and long chronological sequence, the site of eh-Sayyeh opens the possibility to study intra-site developments as well as investigations into stratigraphic-chronological issues, particularly those concerning the yet ill-documented transition throughout Jordan from the Early to the Late Neolithic Period, at the beginning of the 7th millennium BCE.

The huge scientific potential of the site led to the resumption of excavations in 2013 by the Orient Department of the German Archaeological Institute and the Queen Rania Institute of Tourism and Cultural Heritage of the Hashemite University, Zarqa (2013), and their respective continuation by the Institute of Archaeology and Anthropology of the Yarmouk University, Irbid (2014, 2015). The excavations were directed by Karin Bartl and Zeidan Kafafi, while the project was conducted in close cooperation with the Department of Antiquities of Jordan (Bartl and Kafafi 2014a-c, 2015, in press).

During three seasons of fieldwork, several trenches of various sizes were opened in three areas: in the west with squares 1-2, 8-9, and 10 which together form a coherent complex; in the site's centre with squares 3,

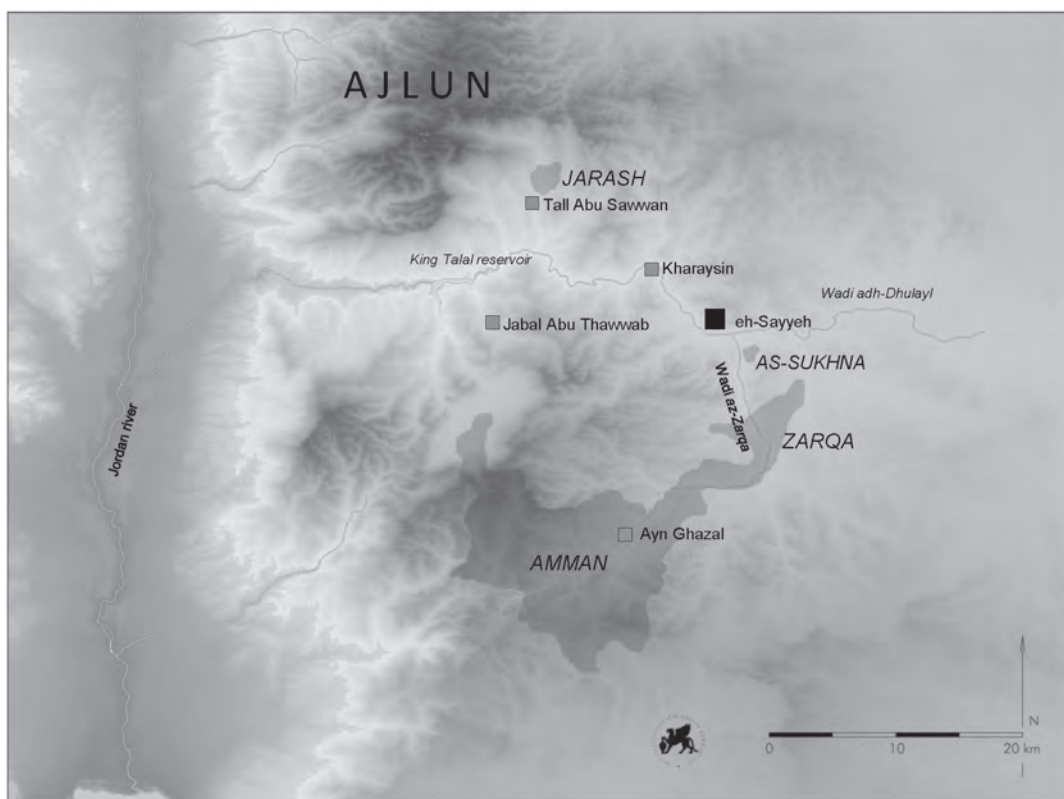


Fig. 1 Neolithic sites in the Wadi az-Zarqa catchment area (map: DAI, Orient Department, Th. Urban, using SRTM data V2 CGIAR-CSI 9 m Database).

4, 5, 6, 7, and 11, and in the east with squares 12 and 13 (Fig. 2). The following presentation focusses on the most important results from the excavations in the western and eastern areas.

Excavations

The Neolithic settlement covers a relatively steep slope at the northern bank of Wadi az-Zarqa over an area of about 400 m E-W x 200 m N-S. The original settlement area is disturbed since 1990s by the road between az-Zarqa/Sukhne and Jarash.

The topography of the settlement is characterised by two wadis (A and B) running N-S into Wadi az-Zarqa. They divide the site into three parts, of which the western part covers *c.* 200 m in an E-W direction, the central part *c.* 150 m, and the eastern part *c.* 50 m.

The Western Area Squares 1-2, 8-9, 10

The excavation areas 1-2, 8-9 (15 m E-W x 3-5 m N-S) are located immediately north of a bulldozer section, near an area that had already been excavated in 1999. Here, several architectural structures with a complex stratigraphy were exposed. Square 10 is situated south

of trenches 2 and 8 on a lower part of the site which was created through terracing (Fig. 3).

Stratigraphy

An approximately 0.50 m thick layer of stone soil has uniformly accumulated over the archaeological remains on the upper terrace. It resulted from erosion of limestone outcrops and agricultural activities. Some Roman and Byzantine pottery shards that had probably washed down from the higher part of the site were collected from the debris. Below this accumulation, the uppermost archaeological level (phase I) produced architectural remains consisting of a lime plaster surface next to a curvilinear wall of very large stones. A fireplace built of stones in upright position and a rectilinear small room (1.20 m x 1.10 m) with a triangular platform attached to it were excavated at the northern side of this courtyard. It seems that at some later stage this curvilinear courtyard had been divided into two parts.

Another rubble layer was encountered below the lime plaster of the courtyard belonging to phase I. After its removal appeared several structures attributed to phase II. Two major complexes were identified, one consisting of an elliptical construction with an opening at the east side that measured approximately 2.60 m E-W x 1.5 m N-S, the other of a building comprising

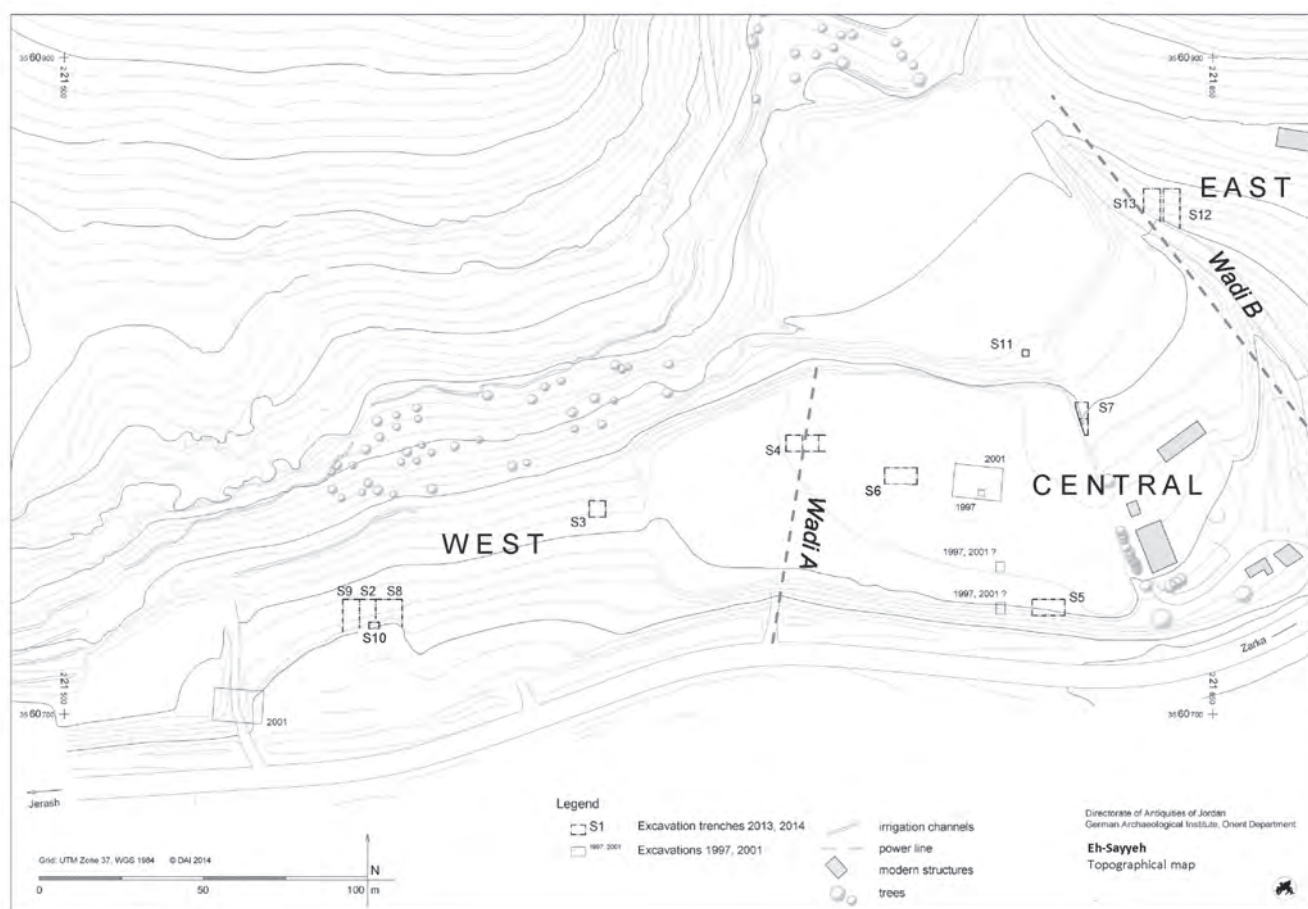


Fig. 2 Eh-Sayyeh, topographical map with excavation areas (map: DAI, Orient Department, Th. Urban).



Fig. 3 Eh-Sayyeh, western area, excavation Squares 1-2, 8-9, 10, final state 2015, view to the east (photo: DAI, Orient Department, Th. Urban).

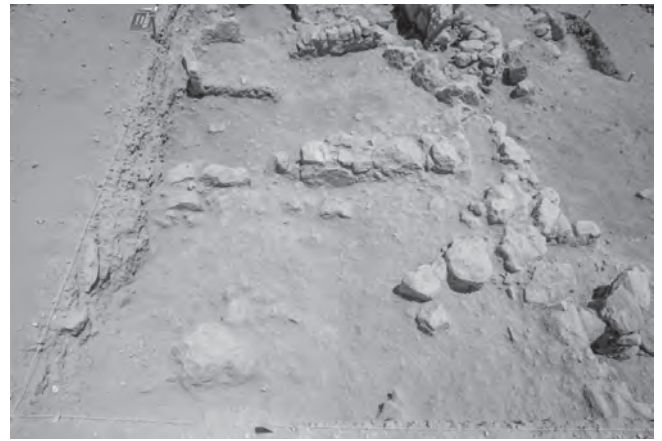


Fig. 4 Eh-Sayyeh, western area, Level I, view to the east (photo: DAI, Orient Department, Z. Kafafi).



Fig. 5 Eh-Sayyeh, western area, Level II, elliptical building (Unit 62), view to the east (photo: DAI, Orient Department, Th. Urban).

two rooms. A fireplace (hearth) filled with charcoal and a pit containing stones and ashy soil had been dug into the floor of one of the rooms. Moreover, a silo was found belonging to this same phase.

The excavation of these levels reveals three rubble layers, each separated by a lime plaster surface. The uppermost one just below the top soil has been washed down from the upper part of the site. Beneath it, however, a lime plaster surface was found over a very hard compact layer made of small stones. This surface or floor was part of a large circle built of large stones covering a large area within squares 2 and 9. A second lime plaster surface was further recorded below another rubble layer. This rubble layer evidently covered several PPNC/Late Neolithic structures.

Among these structures are those found in square 9 and continuing into square 2. The third rubble layer was loose and contained soft soil. Below this layer was another lime plaster surface belonging to the elliptical building that continued into the neighbouring areas. The lime plaster surface in its turn sealed yet another rubble layer.

Upper Levels (Phase I)

After removing the top soil and the pebble stone layer a lime plaster surface, maybe that of a courtyard, next to a curvilinear wall of very large boulders was found. At the northern side of this courtyard, a fireplace built of upright stones and a rectilinear, 1.20 m x 1.10 m small room were uncovered. Apparently, the curvilinear courtyard had been divided into two parts (perhaps at some later stage) by a wall (square 9, unit 6). In addition, wall 41 in square 2 had been lowered at its northern edge and covered by the lime plaster courtyard floor (Fig. 4).

Middle Level (Phase II)

Another rubble layer was uncovered below the lime plaster surface of the courtyard in level I. The architectural remains belonging to level II are completely different in nature than those of the upper level. Two major complexes are recognised and they are as follows:

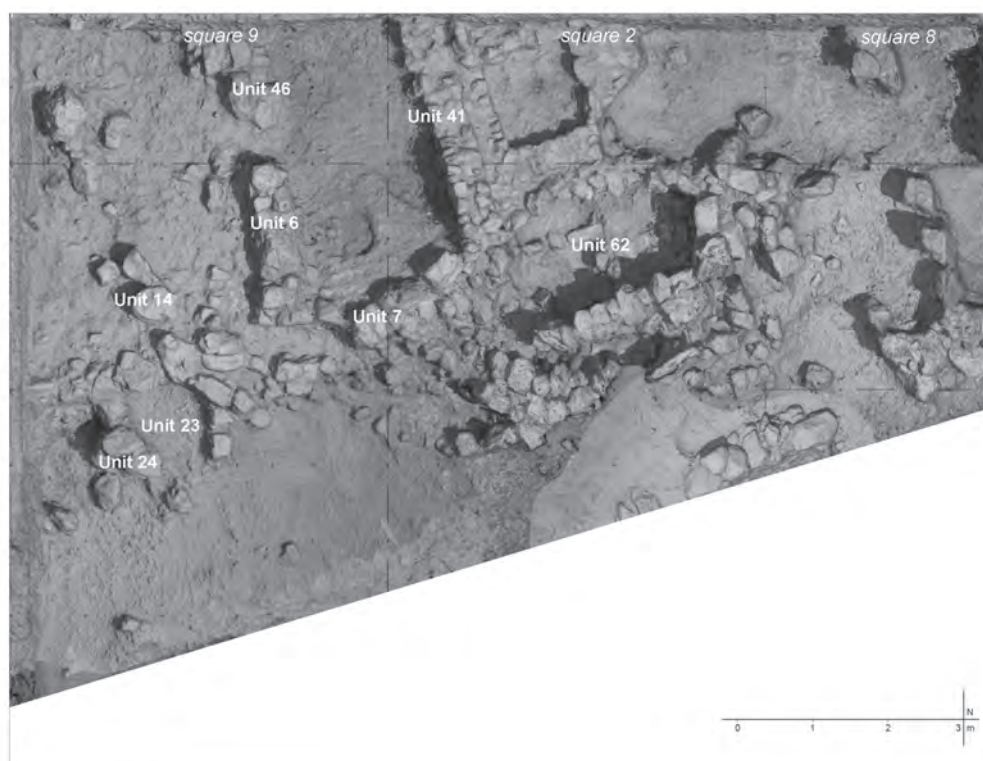


Fig. 6 Eh-Sayyeh, western area, Level II, vertical view (ortho-photo: DAI, Orient Department, Th. Urban).

Complex 1 (Unit 62)

This is an elliptically shaped structure measuring approximately 2.60 m E-W x 1.5 m N-S. It is built of unhewn large and medium boulders. The cleared part of the structure consisted of two stone courses, of which the lower one consisted of upright stones and the upper one of a horizontal ones leaning inwards, thus possibly indicate a corbelled ceiling. It has a “creeping hole” at the east wall (Fig. 5).

The installation has a curvilinear wall going around the western and parts of the southern sides. The wall was destroyed on its eastern end by another wall running SE-NW and was built of very large stones. The space between the walls of the building and the curvilinear wall is narrow, but provides enough space for one person to go through it. It was noticed that the floor of the elliptical building extends below the southern wall (Unit 7) towards the south that and a grinding stone was found inserted into it outside the building. Moreover, a re-used door socket had been integrated to the masonry of the curvilinear wall of the elliptical building. Some Yarmoukian pottery shards were furthermore found on a lime plaster patch (Unit 67) belonging to this floor.

Complex 2 (Units 35, 47 and 48)

As a result of the excavations in square 9, it was remarked that the same courtyard used during the occupation of the upper level sealed another rubble layer that continued below wall 6 but ended near wall 41 in square 2 (Fig. 6).

It was also observed that wall 41 had been built in two structural phases. The upper one attributed to the upper level consists of small stones, whereas the lower courses that continue below the second rubble layer were built of medium-sized stones. After cleaning the rubble, a lime plaster surface was reached. It contained two installations which subsequently were excavated and identified as a fireplace (hearth, Unit 43) filled with charcoal and a pit (Unit 47) packed with stones and ashy soil. The pit was partly supplanted by wall 41 (Fig. 7).

It was also noticed that wall 6 had been lowered at its northern end and that it abutted onto another wall (Unit 46) oriented E-W. It is possible that the gap between the south edge of the lowered wall (Unit 6) and wall 46 had once given access to a room bordered by walls 6 and 7 in square 9 and 41 in square 2. In addition, a silo was uncovered adjacent to the southwest corner of this building (Units 14, 23, 24) (see Fig. 5).

Outdoor Activity Areas

The archaeological excavations conducted at eh-Sayyeh revealed lime plaster surfaces belonging to an outdoor courtyard and several pits used either for storing purposes or firing. For example a large oval pit (Units 40 and 41) was exposed in Square 8, which had been cut into a series of loose and dark, midden-like deposits containing large quantities of lithics, bones, and ashes mixed with other burnt material. Below the midden-like deposits, we uncovered an activity area, which is believed to be outside the buildings because of the absence of enclosing walls.

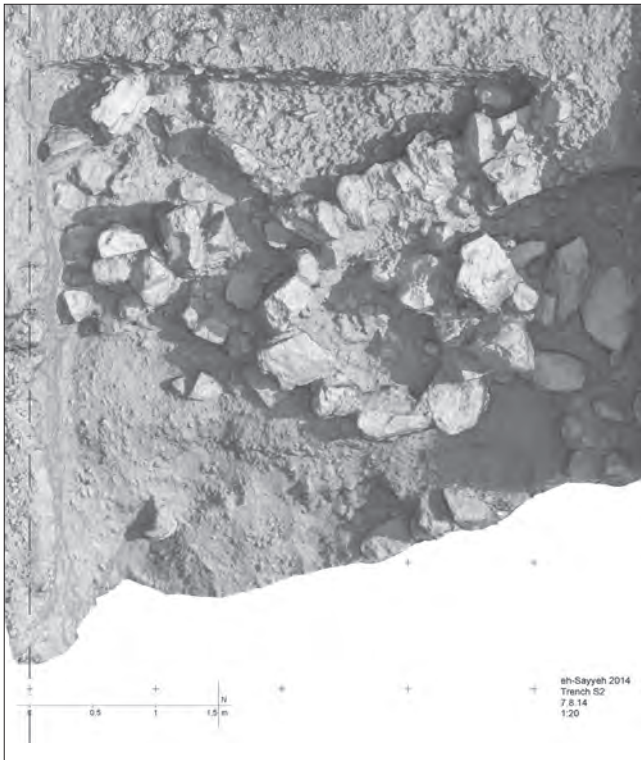


Fig. 7 Eh-Sayyeh, western area, Level II, Unit 43, vertical view (ortho-photo: DAI, Orient Department, Th. Urban).

Lower Level (III)

South of the excavation squares 1-2, 8-9 a small sounding (no. 10) was lowered into virgin soil. The depth of the archaeological deposits was quite shallow, and quickly a layer was reached that appeared to be the natural (Unit 6). The latter consisted of a reddish to yellow sandy soil containing densely packed medium-sized and large stones overlying a compact whitish lime deposit. No archaeological material was recovered from either deposit, and the excavation in S10 was concluded following the removal to a combined depth of up to c. 0.70 m of Unit 6.

A shallow oval pit (Unit 5) dug into the natural soil extended c. 0.70 m southwards into the sounding from below wall Unit 14 in S2. The pit was filled with lighter grey, ashy silt containing some lithics and bone fragments. In the southern part of the trench the lower part of at least one, possibly two, shallow pits (Unit 7) that had been dug into the lime deposit were excavated (Fig. 8).

At some point following the infilling of the pit containing ash (Unit 5), wall unit 14 in S2 had been built directly on top of it. The remains of a plaster surface (Unit 2) extended southwards from the wall for up to 1.20 m. A bone awl was found lying directly on the plaster surface; it is possible that it had been left there intentionally, considering that artefacts are usually found in fills and refuse contexts rather than on floor surfaces. The presence of the pits indicates a phase of human activity that predates the structures thus far uncovered in this area. On the other hand, it is also possible that they are associated with earlier buildings below those we have excavated to date (Fig. 9).

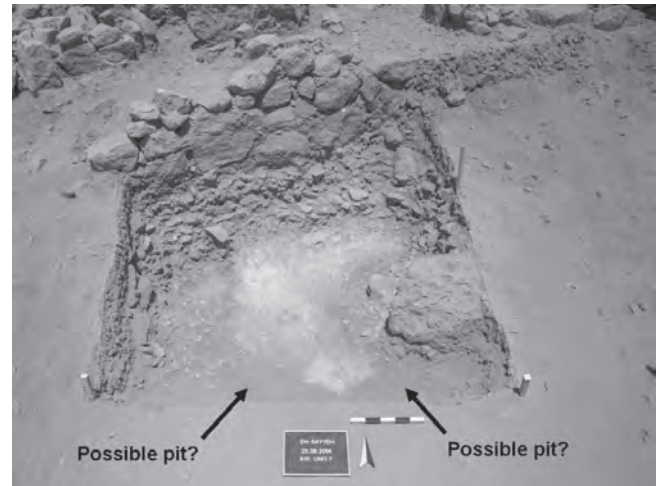


Fig. 8 Eh-Sayyeh, western area, Square 10, Level III, virgin soil (photo: DAI, Orient Department, C. Lelek Tvetmarken).

Comparisons

There are only few comparisons for the buildings structures exposed in the western area of eh-Sayyeh, in particular for the elliptical house. No parallels are known from the vicinity of the site. However, very similar structures have been discovered at various settlements in the Eastern Basalt Desert (badia), for example at Maitland's Mesa and Wisad Pools, about 200 km to the east of eh-Sayyeh. Here buildings that are accessible through "creeping holes" are designated either as residential buildings ("ghura huts") (Rollefson 2013: 215, fig. 7) or as graves ("nawamis") (Rollefson 2013: 217, fig. 10a). Corresponding uses are conceivable also in eh-Sayyeh. However, due to the lack of appropriate inventories or find material none of these functions can be verified to date.

At Wisad Pools the finds of two Yarmoukian shards led to the assumption of contacts with Neolithic settlements in the West, for example 'Ain Ghazal/Amman, since pottery of the 7th/6th millennium BCE is known mainly from this region (Rollefson *et al.* 2014: 291, 299). The new evidence from eh-Sayyeh might confirm this proposition. The results of ¹⁴C analyses which are still in progress will hopefully give further insight into the chronological relationship between similar architectural developments in two relatively distant areas.

Eastern Area Squares 12-13

The two squares 12 and 13 are adjacent to each other and located immediately east of Wadi B, which today is used as a track (Fig. 10). In this area numerous lithic finds were documented during the surface surveys that pointed to a settlement area.

The results of the excavations at square 12 indicate various domestic activities, but substantial building structures or installations were missing. In square 13



Fig. 9 Eh-Sayyeh, western area, Square 10, Level III, Unit 5-6 (photo: DAI, Orient Department, C. Lelek Tvetmarken).

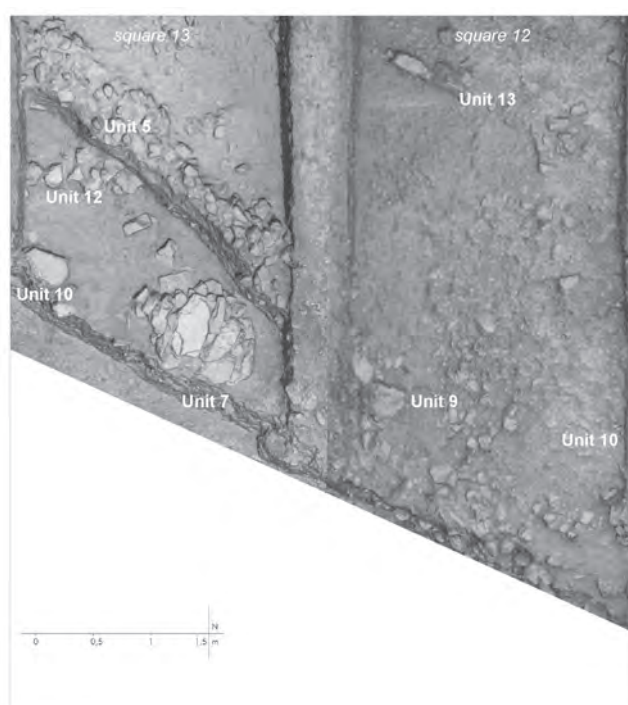


Fig. 11 Eh-Sayyeh, eastern area, excavation Squares 12-13, (ortho-photo: DAI, Orient Department, Th. Urban).

an undisturbed oval structure and a “terrace wall” were uncovered, though showing no connection to the structures discovered at square 12 (Fig. 11).

Square 12

Square 12 measures 10 m N-S x 5 m E-W. After removing the top soil, a half circle full of ash measuring 2.20 m E-W x 0.97 m N-S was recorded (Unit 2). With much probability it had functioned as a hearth. A line of three large stones (Unit 13) oriented NE-SW was documented in the western part of the square. This row was connected with a plaster floor (Unit 18) at its southern face. Below the remnants of the plaster floor (Unit 18), which measures *c.* 2.00 m E-W x 0.90-0.30



Fig. 10 Eh-Sayyeh, eastern area, excavation Squares 12-13, view from the south (photo: DAI, Orient Department, Th. Urban).

m N-S, a rubble layer was uncovered (Unit 5) covering most of the square. After removing the gravel layer at the eastern side of the square, two to three half circles of stones appeared. One of them (Unit 6) may have formed part of a circle still unexcavated at its eastern side.

At the southwest corner of the square three large stones were visible (Unit 9), which are thought to be an extension of a terracing wall uncovered in Square 13. Moreover, a scatter of medium-sized stones (Unit 8) was found in the area located to the east of the larger ones.

After removing the rubble layer and the stones forming half-circles, a very hard and compact plaster deposit mixed with small stones appeared (Unit 10) at the eastern part of the square. The type of construction of this layer did not indicate that it served as a floor, but most probably was a natural formation.

After removing the rubble layer, a part of a light brown compact plaster surface sloping to the south was found (Unit 11) at the middle of the western part of the square. This surface was not connected to any structure, but covered with the rubble layer. At the southern part of this surface a fireplace measuring 2.00 m E-W x 0.50 m N-S was uncovered (Unit 15). The large size of this fireplace indicates that it had been used for other purposes than cooking.

Square 13

The trench measures *c.* 8 x 5 x 5 m. The removal of the top soil (Units 1-4) extended at a depth of *c.* 0.40 -0.70 m across the trench. At least *c.* 0.70 m of cultural material in the southern part and *c.* 0.60 m in the northern part had to be excavated to reach structural remains. The material in both parts of the trench consisted of loose brown to greyish soil with countless small, fist-sized and large stones and numerous chipped lithic artefacts.

Whitish chalky erosion material was observed next to the surface all over the trench and was visible in the section as well. Chalky coatings even on large boulders were also observed. However, it could not be clarified whether these were residues from a lime plaster floor or

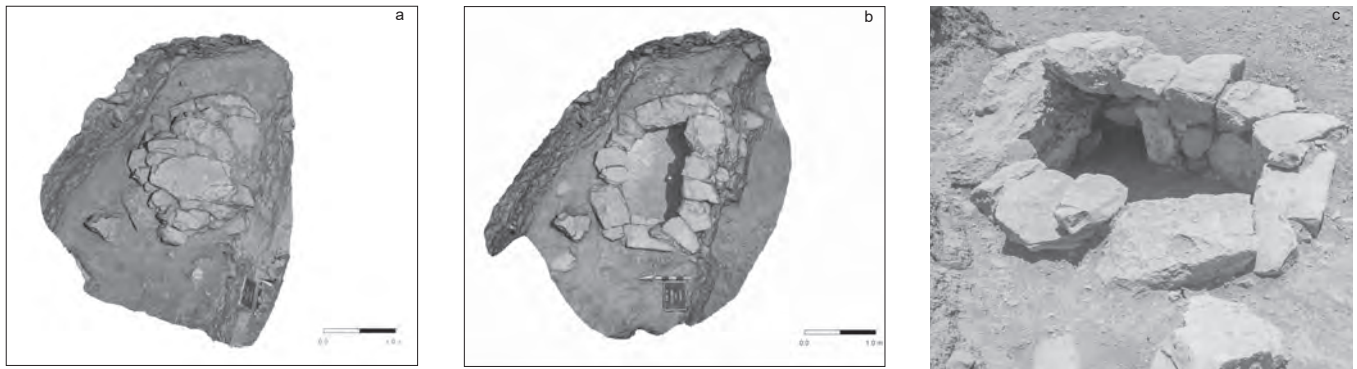


Fig. 12 Eh-Sayyeh, eastern area, Square 13, Unit 7, a) prior removing the stone cover, b) after removing the stone cover, c) view into the structure with the niche (ortho-photo: DAL, Orient Department, Th. Urban).

of natural origin. The sloping terrain may rather hint to erosion than to an *in situ* feature.

Following this “erosion”, a rubble layer with fist-sized stones and greyish-brown soil was excavated, but it revealed no further constructional information concerning a floor construction. Some chipped lithic items as well as some shards were found.

The first structural remain in the northern part was labelled as Unit 5 and describes a (“terrace”) wall in a NW-SE orientation. Only two stone rows were preserved, as most of the wall had collapsed. No floor or other hints to a wall enclosing a living area were found, which may point to a terrace wall rather than one of a house.

The southern part of the trench revealed some larger stones (Units 7, 10) which were covered with a loose brown-greyish fill layer (Unit 14) with numerous small stones and many chipped lithics (Units 8, 11). Unit 7 is of special interest, since the large stones mark the cover of a well-built structure. Four large stones had been used for covering an elliptical structure of 2.50 m length and 1.80 m width, its height being about 0.50 m. The structure was completely preserved and undisturbed (Fig. 12a-b). Two rows of stones had been carefully placed onto the ground, revealing a small niche at the south-eastern edge but no entrance (Fig. 12c). The interior of the structure had been executed in a very appropriate manner as compared to its roughness at the outer face. The cover-stones had been placed very close to each other, leaving no wide joints. The interior revealed neither internal layers nor depositions. Instead, the filling material may possibly be interpreted as intrusive since it was very loose with only some small stones and chipped lithics.

Comparisons

The oval structure in square 13 represents a previously unknown building type in Northern Jordan, and whose function is problematic. Size and shape could indicate either a storage installation or a grave. The former seems not very likely, since it is doubtful that this solid, isolated structure was constructed to contain grain or pulses. A simple pit with a cover of branches and soil

would have served the same purposes.

Its size, shape, and the apparent constructional effort would rather suggest a grave, which although prepared, had not been used. Similar types of graves are found in the Southern Levant from the Late Neolithic Period onwards, for example at Neve-Yam, near Haifa, which dates to the Wadi Rabah period of the 6th/5th millennium BCE (Galili *et al.* 2009: fig. 8).

Findings

In addition to the lithic industry, which forms the majority of the finds (see contribution of D. Rokitta-Krumnow, this volume), pottery was found in almost all areas, and covering the periods between the Neolithic and the Islamic periods. This points to the occasional use of the site even in post-Neolithic Periods, particularly the Chalcolithic and Early Bronze Age (Fig. 13).

Typical pottery of the Yarmoukian Period derived particularly from Area 4 and to a very small percentage also from the western excavation area (Squares 1-2, 8-9) (Figs. 14a-b). Characteristic decorations are red-slipped surfaces and incisions of herringbone patterns. The simple spectrum of shapes consists of pots, bowls and cups.

Further findings include various objects for everyday needs. These include numerous bone tools for processing leather or textiles such as awls, needles, and spatulas (Fig. 15a-b) and heavy duty tools such as grinding stones and pestles for processing plant foods (Figs. 16a-b). Some rare finds are a pierced ornament made of mother-of-pearl and a bead made of bone (Figs. 17a-b).

Summary

The data generated at eh-Sayyeh in 2013-2015 gave insight into the stratigraphy of various parts of this enormous site. The size of the settlement and the limited stratigraphic sequence with a maximum of two to three phases in different settlement areas seem to refer to the above-mentioned concept of shifting settlements, where alternating settlement cores were in use during different periods.



Fig. 13 Eh-Sayyeh, pottery of the Chalcolithic/Early Bronze Age I (photo: DAI, Orient Department, K. Bartl).



Fig. 14 Eh-Sayyeh, Yarmoukian pottery (photos: DAI, Orient Department, a: Z. Kafafi, b: K. Bartl).



Fig. 15 Eh-Sayyeh, bone tool, a, b) awl, c) spatula (photo: DAI, Orient Department, K. Bartl).



Fig. 16 Eh-Sayyeh, a) grinding stone made of basalt, b) pestle made of basalt (photo: DAI, Orient Department, K. Bartl).



Fig. 17 Eh-Sayyeh, a) ornament made of mother-of-pearl, b) bead made of bone (photo: DAI, Orient Department, K. Bartl).

With regard to lithic and pottery finds, the main settlement periods are probably the PPNC and the Yarmoukian. For the latter period, two ^{14}C samples from square 4 have already been analysed. The results obtained from grain seeds provided the dates 6396-6230 (62) and 6416-6241 calBCE (62) which point to the beginning of the pottery development in the southern Levant. Further ^{14}C analyses from other residential areas are currently in progress.

The architectural structures discovered during the new excavations, in particular the elliptical building and the “grave”, constitute important evidence for the local architectural development in the late Early Neolithic Period and its links to neighbouring areas.

Generally, the results confirm again the importance of the Wadi az-Zarqa region for the Neolithic development of the southern Levant.

Acknowledgements: We would like to express our thanks to Their Excellences Dr. Monther D. Jamhawi, General Director of Antiquities in Jordan, and Mr. Fares al-Hmoud, Acting Director General of the Department of Antiquities in 2013, for their generous support and interest in the project.

We are deeply grateful to the representatives of the Department of Antiquities, Mr. Ibrahim az-Zabbin (2013) and Mr. Mohammad Naser (2014-2015) for their help and assistance during the fieldwork.

Many thanks go to our excellent team of scholars and students: Dr. Laura Dietrich (DAI), Dr. Cecilie Lelek Tvetmarken (DAI), Dr. Kristina Pfeiffer (DAI), Dr. Dörte Rokitta-Krumnow (DAI), Dr. Thomas Urban, Zeinab Bishtawi, Amany al-Dabouki, Khairieh Hamad al-Kukhun, Rania Nazzal, Ala Shweiter, Heba Khair, Kariman Sub-Laban, Omar Shishani, Amal Masarweh, Qamar Shishani, and ‘Ali el-Haj.

Last but not least we would like to thank the Oleimat family for their continuous support. And of course, we owe many thanks to our workmen who contributed tremendously to the project’s success.

Endnote

¹ The entire site of eh-Sayyeh is located on private property. The owners kindly permitted archaeological investigations to be carried out from 2013 to 2015. However, interests of agriculture do not match with ones of archaeology. In order to facilitate agricultural work, the site has now been completely “remodelled” through large-scale terracing. Meanwhile, almost the entire Neolithic settlement has been destroyed or covered by soil, and archaeological investigations are no longer possible.

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Lithic Industries of eh-Sayyeh - Preliminary Observations

Dörte Rokita-Krumnow

Introduction

The site of eh-Sayyeh is situated at the confluence of Wadi adh-Dhulayl and Wadi Zarqa some 8 km NNW of the northern Jordan city of Zarqa. The site has been discovered in 1993 during the Wadi az-Zarqa/Wadi adh-Dhulayl survey and excavations have been conducted in 1997, 1999 and renewed in 2013-2015 (Palumbo *et al.* 1996; Kafafi *et al.* 1999; Caneva *et al.* 2001, but see the contribution of Bartl and Kafafi in this issue, and references therein).

State of Research

The lithic industry of eh-Sayyeh has not been systematically investigated, yet. But already in the preliminary report of 1999 (Kafafi *et al.* 1999) PPNB Jericho points from the lower levels as well as denticulated sickle blades of Yarmoukian origin were found in the uppermost levels of the Western Area. Medium sized Byblos and 'Amuq points as well as Haparsa points were found (Kafafi *et al.* 1999: 10) pointing to a settlement history ranging from the PPNB to the PN.

The material described here comprises the lithic findings from Squares 1, 2, 4 and 6 and was excavated in 2013 (see fig. 2 in Bartl and Kafafi, this volume).

Material from sounding 4 was chosen for statistical analysis. All items have been counted and weighed while tools or "specific" artefacts have been measured, weighed and described. All other soundings have been systematically searched for tools which were then measured and described.

The Contexts

The excavation Squares 1-2 (S1, S2) bear several architectural structures and are located immediately north of a bulldozer section (see the description in Bartl and Kafafi: fig. 2, this issue). Yarmoukian pottery sherds as well as ground stone tools have been found.

Excavation Square 4 (S4) in the "centre" of the settlement exhibited also architectural structures as well as Yarmoukian pottery sherds, a bone bead, bone and ground stone tools. Two ¹⁴C dates are available for this sounding (6396-6230 and 6416-6241 cal. BC).

Square 6 (S6) east of Square 4 exhibits architectural structures like parallel running walls and plaster floors. No pottery sherds have been found there.

Raw Material

Mainly flint has been used for chipped stone artefacts at eh-Sayyeh, only one piece of obsidian has been found so far (Square 10, 2014; not tested but probably of Cappadocian origin, *cf.* Chataigner 1998: 292). According to personal observations in May 2014, flint can be found easily in the site vicinity. Predominant raw

1. dark brown, fg	8. grey, mg
2. dark brown, mg	9. light brown, cg
3. light brown, fg	10. dark grey, fg
4. light brown, mg	11. dark grey, mg
5. brown, fg, translucent	12. whitish, cg
6. pink (Huweijir?)	13. whitish, fg
7. grey, fg	

Table 1 Raw material groups at eh-Sayyeh (fg=fine grained, mg=medium grained, cg= coarse grained).

Raw material	S 1	S1	S 2	S2	S 4	S4	S6	S6	Total	
	N	%	N	%	N	%	N	%	N	%
RM 1	171	36%	80	38%	121	19%	53	23%	425	27%
RM 2	55	12%	20	9%	140	22%	38	17%	253	16%
RM 3	84	18%	48	23%	123	19%	54	24%	309	20%
RM 4	42	9%	7	3%	86	13%	31	14%	166	11%
RM 5	3	1%	1	0%	16	3%	4	2%	24	2%
RM 6	34	7%	14	7%	61	10%	21	9%	130	8%
RM 7	26	5%	11	5%	27	4%	7	3%	71	5%
RM 8	12	3%	10	5%	30	5%	4	2%	56	4%
RM 9	6	1%	3	1%	16	3%	3	1%	28	2%
RM 12	22	5%	12	6%	19	3%	5	2%	58	4%
RM 13	18	4%	7	3%	0	0%	6	3%	31	2%
Total	473	100%	213	100%	639	100%	226	100%	1551	100%

Table 2 Raw material usage at all squares.

material shapes are small river pebbles of poor quality but also larger nodules of higher quality are attested.

The raw material used on site can be subdivided into 13 groups distinguished by optical observations like grain size and color.

The raw material use is very constant in all soundings and dark brown fine grained (RM1) as well as medium grained flint (RM2) are dominating in all collections (see Tab. 2), examinations according to raw material use at primary and secondary production are in progress. Purple/pink flints (RM 6) which had been frequently used at nearby 'Ain Ghazal comprise between 7 and 10%.

Primary Classification and Technology

The primary production of Sounding 4 is in evidence by all primary product classes (such as cores, CTE, flakes, blades and chips), which illustrates that blank and tool production was a common activity on site (Tab. 3).

Various types of blade/bladelet and flake cores are attested among which amorphous flake cores are the predominant type. Of particular interest are a bidirectional blade core and a unidirectional bladelet core since they prove the reductions of such core techniques on site.

According to knapping features hard hammer percussion was the most used knapping technique. However, soft hammer technique and pressure flaking is likewise in evidence, although less common.

Category	Sounding 4	
Flakes	1866	43,9%
Blades	276	6,5%
Bladelets	88	2,1%
Chips	776	18,3%
Burin spalls	6	0,1%
Core-trimming Elements	528	12,4%
Cores	34	0,8%
Tools	678	15,9%
Total	4252	100%

Table 3 Stages of reduction and tools in Sounding 4.

Due to the source material – small river pebbles – lots of the items still bear remnants of surfaces on their exterior faces.

Tools

The predominant tool class at eh-Sayyeh is the perforator/borer (Figs. 1.7-11). They are usually formed on flakes and their production is very simple: They are formed by retouching one side and by a burin-like blow on the other (Figs. 1.7-8). Additionally, there are items formed by notching from both sides. Noteworthy is the fact that most of the perforators are not alternating retouched but from only one side. Another phenomenon, even though with a high variety in form and drill-diameter, is the shortness of most of the drill bits. They extend not more than 1.5 mm and are very thin. This might hint at a usage at soft and thin materials, maybe bones or leather. Nevertheless, some long borers may hint at other activities.

Non-formal tools are the second most tool class at eh-Sayyeh and consist of retouched flakes and blades as well as few notched flakes and blades. The latter are sometimes hard to distinguish from perforators, which occasionally are made on opposed notches.

Burins, sickles and projectiles are a rare tool class at the site. Burins are mostly of simple type and some burin spalls well attest on-site production of this tool class. Sickle implements are rare and predominantly of Yar-

	S1		S2		S4		S6	
Retouched Flakes	72	17,8%	31	15,9%	72	12,8%	25	12,0%
Retouched Blades	73	18,1%	49	25,1%	80	14,2%	62	29,7%
Burins	6	1,5%	1	0,5%	14	2,5%	5	2,4%
Sickles	6	1,5%	2	1,0%	17	3,0%	6	2,9%
Arrowheads	0	0,0%	1	0,5%	32	5,7%	1	0,5%
Perforators	228	56,4%	98	50,3%	315	56,0%	102	48,8%
Scrapers	19	4,7%	13	6,7%	32	5,7%	8	3,8%
Total	404	100%	195	100%	562	100%	209	100%

Table 4 Main tool types according to Squares.

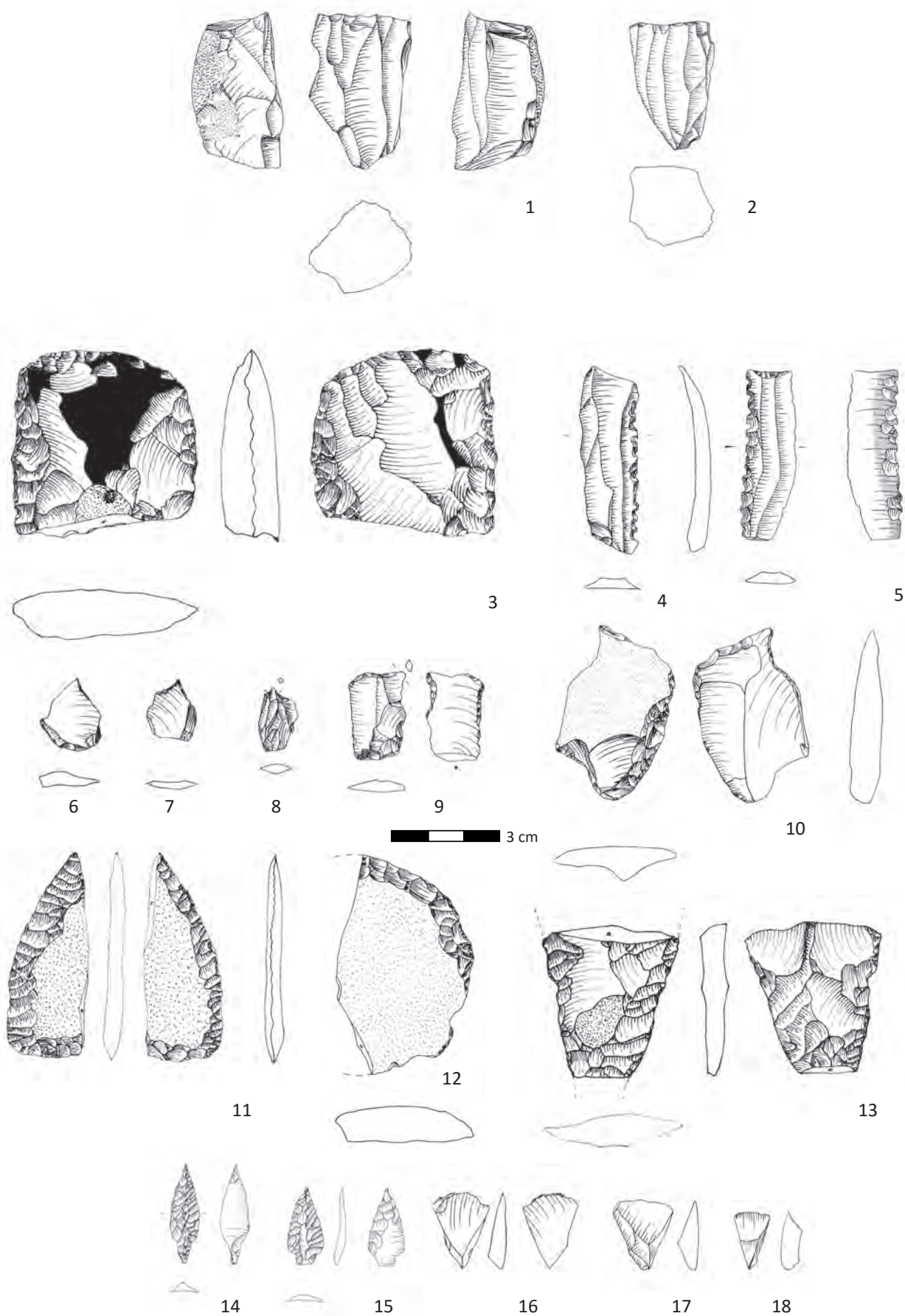


Fig. 1 Lithic finds from eh-Sayyeh: 1-2 cores, 3 polished celt, 4-5 sickles, 6-10 perforators, 11-12 cortical tool, 13 dagger, 14-15 Nizzanim points, 16-18 transverse arrowheads (drawings: D. Rokitta-Krumnow).

moukian type (Figs. 1.5-6), although not all denticulated sickle blades bear gloss. Projectiles are found almost exclusively in S4, while they appear absent in the other squares. However, S4 projectiles constitute of few Niz-zanim points and transverse arrowheads (Figs. 1.15-19).

Both are typical tool types of southern Levantine Late Neolithic sites (Bar-Yosef 1981: 561; Gopher 1994: 41).

There is one fragment of a pressure flaked dagger from Square 2, Unit 2 (Fig. 1.14). Daggers of this type first are reported from the late PPN B but become more common in PN-sites of the 7th millenium (see Goring-Morris *et al.* 1994; Rollefson *et al.* 1994). A typical tool class of the 7th millenium are cortex tools, which often are shaped by a very regular pressure retouch (Rollefson *et al.* 1994: 455) (Fig. 1.12). Celts are very rare at the site and only two items of flint have been found. One has remnants of a polished surface at the bit (Fig. 1.4; Square 4/Unit 31), the other is a fragment of a narrower piece (SAY13-972; from Square 1/Unit 3).

Scrapers are regularly found but were not very numerous (*e.g.* Fig. 1.13). Their steep retouch is most often formed on a large flake which bears lots of cortex on the surface. End scrapers are very rare while thumb-nail scrapers occur more frequent.

Summary

Overall, the results of these preliminary observations show a household based tool production with ad hoc character. Common tools are retouched flakes and blades as well as notched blades and flakes. The extraordinary high number of perforators at eh-Sayyeh may attest that the use of perforators (as part of bone or hide processing?) was a common daily practice. However, arrowheads as well as sickles, scrapers and burins complete the tool kit.

Similar tool kits and tool types can be found in the Central Negev (*e.g.* Kvish Harif, Rosen 1984), at the coastal plain (*e.g.* Nahal Betzet II in the Akko plain, Getzov *et al.* 2009) as well as in the Badia (Wisad pools, Rollefson *et al.* 2014) and fits well into the second part of the 7th millennium BC.

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Nahal Efe

A Middle Pre-Pottery Neolithic B Site in the North-eastern Negev

Preliminary Results of the 2015 Pilot Season

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Introduction

Epipalaeolithic industries (e.g. Kebaran, Mushabian, Harifian) recognized in the desertic and semi-desertic regions of the Negev and the Sinai point to favourable climatic conditions that permitted the exploitation of a range of desertic ecozones by groups of hunter-gatherers (Bar-Yosef 1985). This period was followed by an apparent local hiatus in occupation during the Pre-Pottery Neolithic A (ca. 11600-10500 cal. BP). During this lapse of time the Negev and Sinai were, with only a few exceptions such as the small “epi-Harifian” encampment at Abu Madi I in the high mountains of the southern Sinai (Bar-Yosef 1991), virtually devoid of occupants, indicating a very

limited use of arid areas by, hypothetically, highly mobile foragers (residual Harifian communities) (Goring-Morris and Belfer-Cohen 2013). A gradual re-colonization of the region or a local increase emanating from vestigial local populations is demonstrated during the course of the Pre-Pottery Neolithic B, especially during the Middle (ca. 10,100-9500 cal. BP) and Late PPNB (ca. 9500-8750 cal. BP). Small-scale mobile foraging groups exploited both the highlands and lowlands, probably on a seasonal basis (Noy 1976; Simmons 1981; Bar-Yosef 1984; Goring-Morris 1993). Hunting focused on gazelle, ibex, wild ass and hare, and occupations ranged from 25 to 250m² in size and usually comprise beehive-type clusters of round stone structures.

The ‘Nahal Efe project’ is a Spanish-Israeli joint action launched in 2015 aimed at fine-tuning our understanding of the settlement history of the Negev during the Neolithic, which has barely changed from the above-mentioned interpretations and hypotheses proposed after the pioneering work during the 1970s and 80s, subsequent research in the early 1990s and more recent field operations (e.g. Bar-Yosef 1984; Goring-Morris 1993; Barzilai and Goring-Morris 2011; Birkenfeld and Goring-Morris 2013). In this sense, the principal aim of the project is thus to elucidate the various aspects of the ways of life of the communities that settled in the Negev during the PPNB and PN period, through systematic extensive excavation of a major site. That implies refining our knowledge of specific desertic adaptations to local situations during the PPNB and thus characterize human-environment interaction in the arid regions of the southern Levant. In particular, the project aims to assess the potential interrelationship between early Holocene climate fluctuations and settlement history and subsistence economies observed during the Neo-



Fig. 1 Location of Nahal Efe and other PPNB sites in the southern Levant (map: F. Borrell, L. Teira and J. Vardi)

lithic period in the region. The site of Nahal Efe is the only large PPNB site in the eastern Negev highlands and in the nearby Judean desert. Very little is known on this specific area which is situated between the central and southern Negev highlands, the Arava valley, the Judean desert and the area of Edom. It is also not far from the southern Judea mountain areas, especially the south Hebron Hills. The project will clarify the nature of the PPNB settlement in the environment of the southern Judean desert and the north-eastern Negev. Finally, the results will also provide a basis for comparison with the later groups of hunter-herders, allowing a better understanding of the emergence of pastoral societies in the southern Levant.

This paper summarises preliminary investigations at the site during the 2015 pilot season under the direction of J. Vardi and F. Borrell and focuses in the Neolithic occupations documented in one of the sectors (Sector1).

Nahal Efe a Multi-period Prehistoric Site

Nahal Efe is located in the northern Negev ($31^{\circ} 04'' 43''$ N and $35^{\circ} 09'' 02''$ E), 11 km east of the modern city of Dimona (Fig. 1). This geographic context is in the transition between three different eco-zones but also cultural zones during the PPNB: the large permanent Neolithic villages of the Mediterranean wood-

land region to the North, the ephemeral occupations of mobile foragers in the arid regions to the South and, finally, the large “megacities” in the Transjordan plateau/rift to the East. The site is situated on a moderate hillslope on the left bank of the wadi Nahal Efe, a tributary to the wadi Nahal Hemar, at about 320m above sea level. The site was known but had never been excavated previously. It is often listed as a PPNB site (e.g. Asouti 2006; Goring-Morris and Belfer-Cohen 2013) and mentioned as a base camp (e.g. Gubenko *et al.* 2009).

The primary aim of the pilot exploratory season was to ascertain what periods were represented at the locality, their extent and to evaluate whether *in situ* deposits remained.

As the site is divided by two smaller gullies, we decided to differentiate three sectors (Sectors 1 to 3) which have no direct stratigraphic connection between one another (Fig. 2). Sector 1 constitutes the main area of the archaeological site and where evidence of Neolithic occupation is concentrated (Fig. 3). Archaeological material is relatively abundant on the surface (mostly flint artefacts but also fragments of grinding stones, stone bowls and, only occasionally, a few pottery sherds) extending over a total surface of ca. 2000m². The eastern part of the sector, downslope and closer to the riverbed, is dominated by a continuous large irregular enclosure or terracing wall/s constructed with 3 to 4 courses of medium to large-sized



Fig. 2 Picture showing the landscape surrounding the site (view from the West) and the three sectors (photo: F. Borrell, L. Teira and J. Vardi).

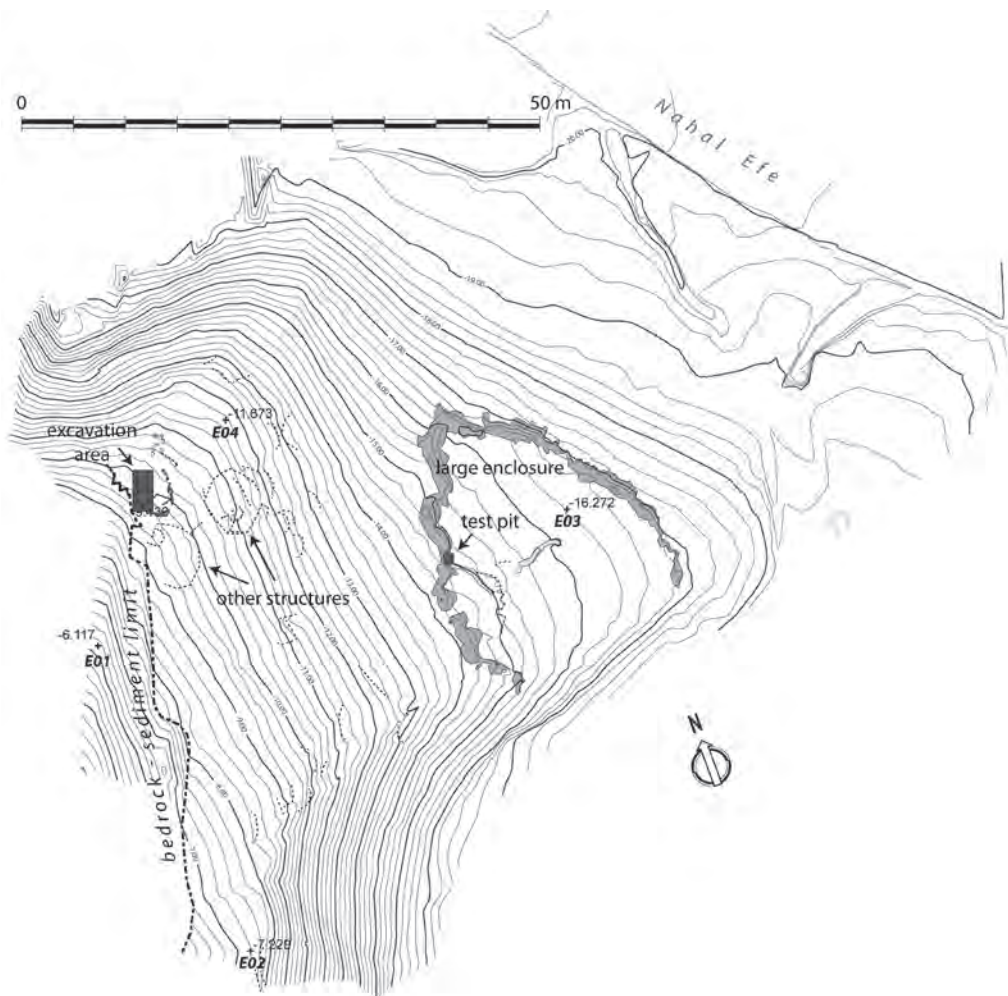


Fig. 3 Topography of Sector 1. Note the large enclosure or terracing wall/s on the lower part of the slope, closer to the riverbed, and the excavated circular structure (plan: F. Borrell, L. Teira and J. Vardi).

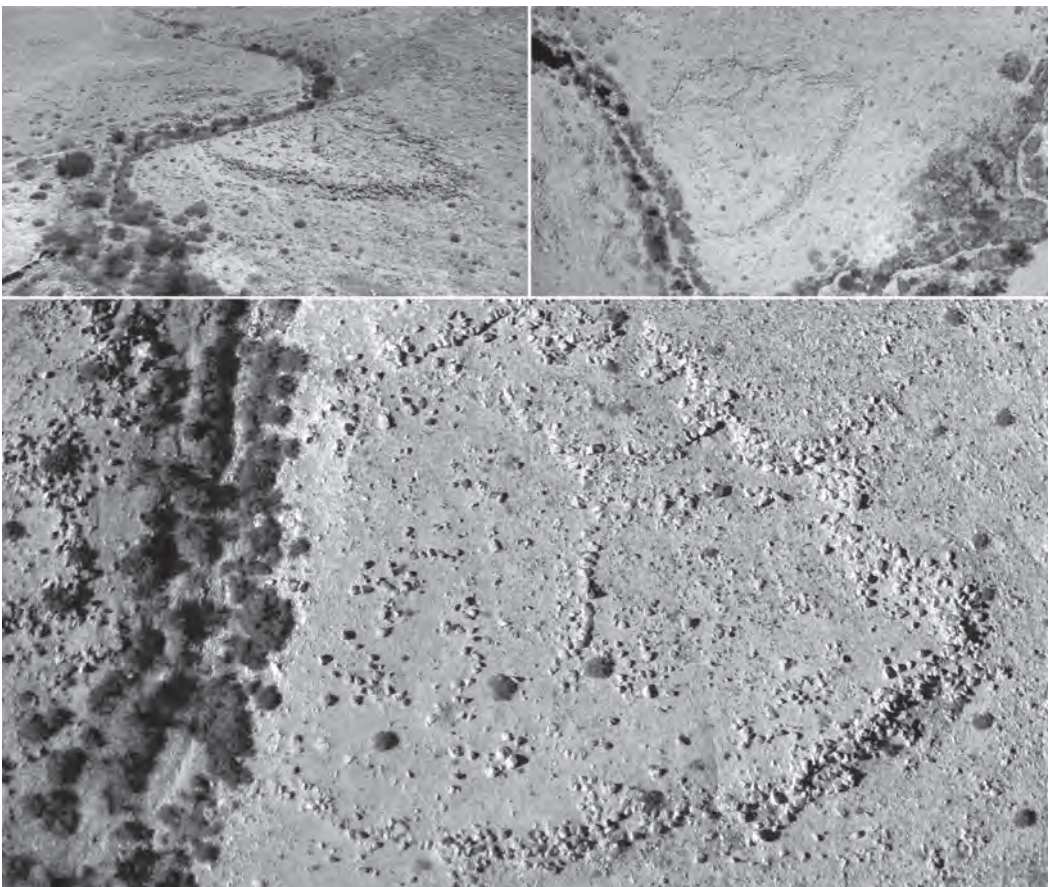


Fig. 4 Aerial view of the large enclosure or terracing wall/s from the northeast (top left) and from above (top right and below) (photos: F. Borrell, L. Teira and J. Vardi).

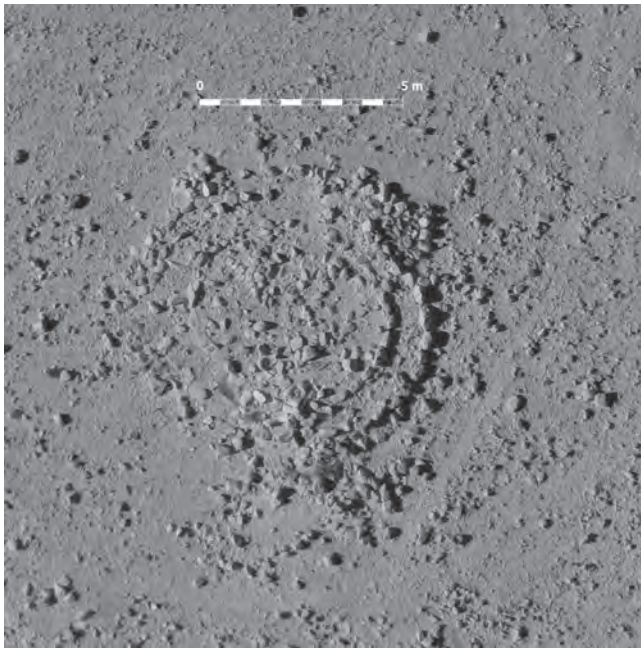


Fig. 5 Aerial view of one of two tumulus-like structures documented in Sector 2 (photo: F. Borrell, L. Teira and J. Vardi).

limestone blocks (Fig. 4). A 1m² test pit adjacent to the inner part of the western wall of the enclosure yielded a few flint artefacts and a pottery sherd, suggesting a Chalcolithic or Early Bronze Age date/attribution for this structure. The central and western parts (uphill)

display a series of circular and semi-circular stone structures visible on the surface (in some cases superposing and/or overlapping one another), extending from North to South with almost no interruption over at least half of the extension of Sector 1. No pottery has been found on the surface in this part of the sector, whereas Neolithic Byblos/Jericho type points are relatively abundant. In Sector 2, surface material is very scarce (a few flint flakes) but architectural remains are noticeable, in the form of two tumulus-like, perfectly circular structures that could tentatively be attributed to the Bronze Age (Fig. 5). A rapid inspection of Sector 3 revealed the remains of a collapsed wall associated with a very limited number of undiagnostic flint artefacts.

The PPNB Site

Our investigations focused on the cluster of round structures that extend from north to south on the central and upper parts of the slope, resembling the characteristic beehive architecture documented at a series of PPNB sites located in the Negev and northern Sinai, such as Nahal Hava I (Birkenfeld and Goring-Morris 2013), Nahal Issaron (Carmi *et al.* 1994) and Nahal Reuel (Ronen *et al.* 2001), and in the southern Sinai at Wadi Tbeik and Wadi Jibba I (Bar-Yosef 1985).

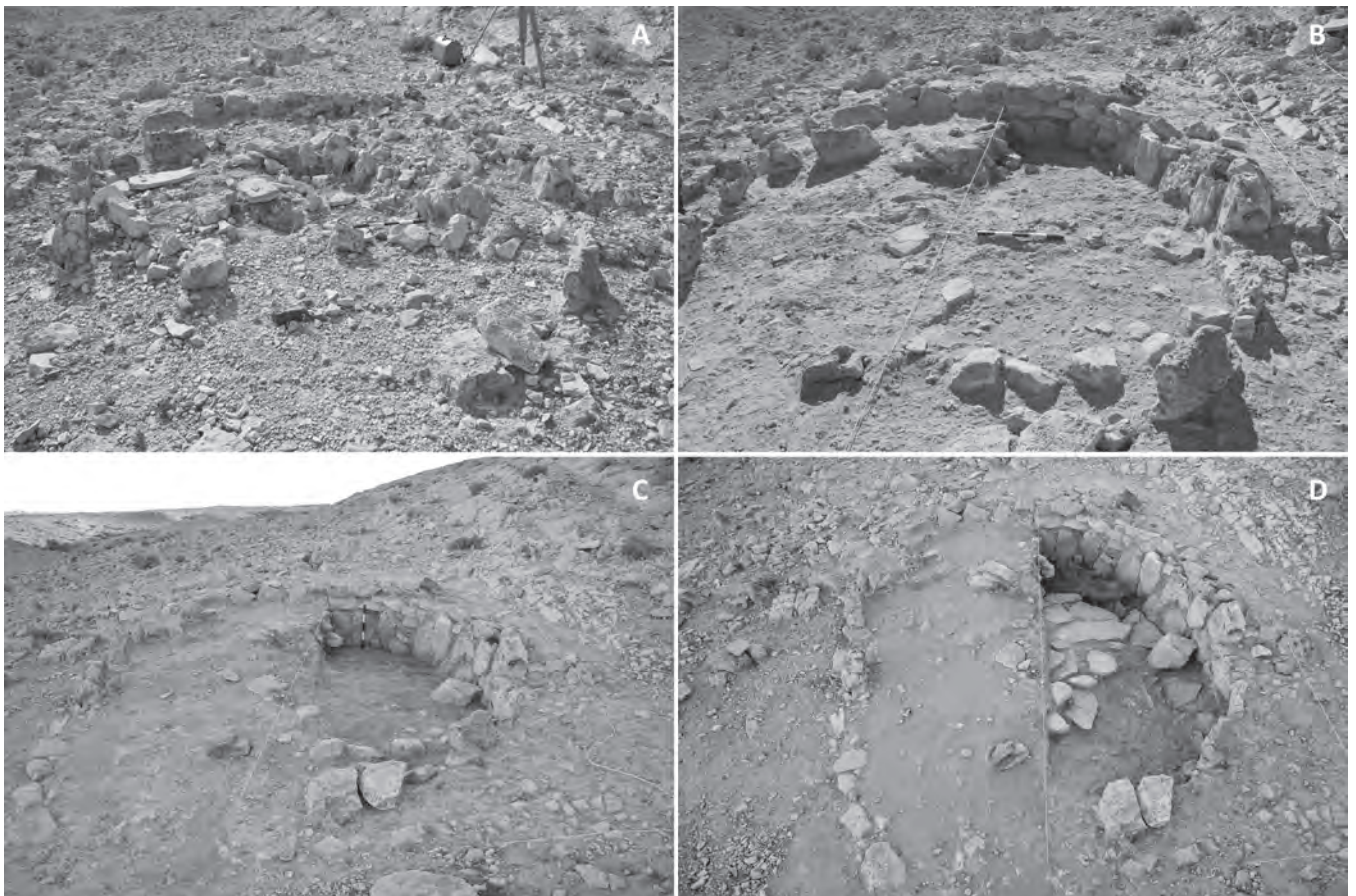


Fig. 6 Excavation of the building: before starting the excavation (A), after removing Locus 5 (B), exposing Loci 8, 9 and 12 (C) and at the end of the season, exposing the partially paved floor (D) (photos: F. Borrell, L. Teira and J. Vardi).

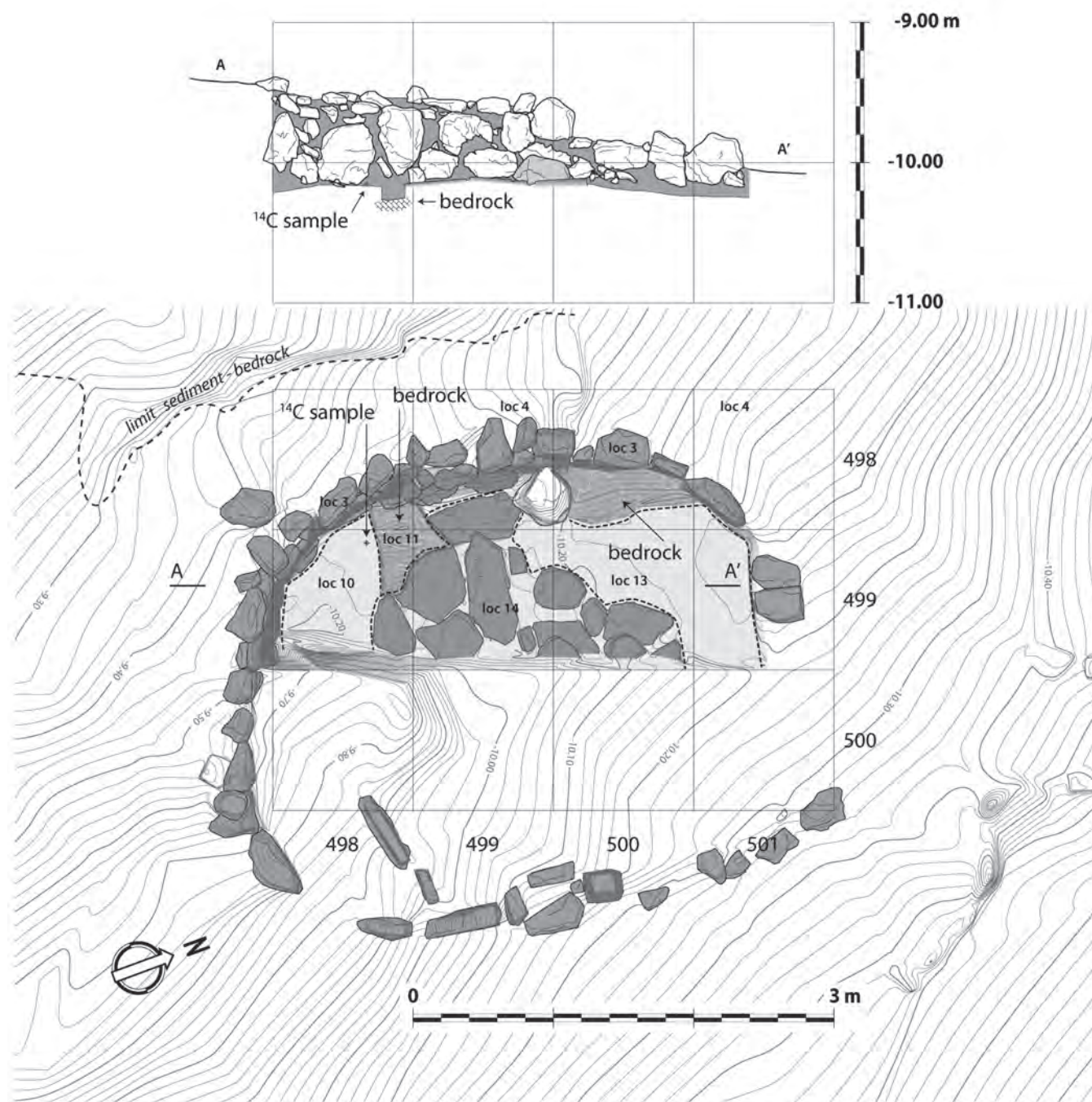


Fig. 7 Plan of the excavated building (below) and side view of the wall (above) with the location of the sample of charcoal used for dating the structure. Note the test pit in Locus 11 exposing the bedrock in this section of the building after 10-20 cm (plan: F. Borrell, L. Teira and J. Vardi).

The structures vary in size from one to four or five metres in diameter and are constructed with local limestones. Fieldwork concentrated on one of the circular structures, located on the top north-western limit of the sector (Figs. 6 and 7). Excavations were conducted using a 1 x 1 m grid, and the western half of the structure was excavated. Surface and undiagnostic material found during the excavation was recorded according to the grid, while the position of exceptional material and samples for ^{14}C dating were recorded with the total station. All material was dry-sieved using a 3-4 mm mesh. The structure was mainly filled by the partial collapse of the stone wall (stones between 20 to 40 cm in size) mixed with light tan-coloured loess

sediment (Locus 5). Snail shell fragments were numerous with relatively low densities of artefacts. The collapsed wall overlay a relatively flat matrix of light brown loess sediment with a few small-sized stones, some snail shell fragments and isolated charcoal remains (Locus 6). These two layers had been partially eroded downslope on the northern edge of the structure (Locus 7) and yielded a limited number of flint artefacts (flakes and blades). These loci (5 to 7) correspond to the abandonment and destruction phases of the building respectively. Below them, and in clear contrast, the sediments were more ashy and organic in nature. A 10 cm thick layer (Locus 8) with abundant macrobotanical material was found over the floor of



Fig. 8 Detail of the wall, the partially paved floor, and the test pit exposing the bedrock (A) and final recording at the end of the season (B) (photos: F. Borrell, L. Teira and J. Vardi).

the building. This sediment/matrix with abundant charcoal remains is to be interpreted as the accumulation of repeated activities performed during the occupation of the building. Beside the rich charcoal record and some undiagnostic flint artefacts, four hammerstones (grouped on the northern edge of the structure) and a Jericho point made of pink/purple fine-grained flint were found almost at the same height lying on the floor of the structure. The floor (Loci 10, 11 and 13) of the building was partially paved with flat limestone slabs (Locus 14). Bedrock also constituted part of the floor of the structure (Square 500/498). A small test pit in the non-paved part of the floor (Locus 11) exposed the bedrock after 10 to 20 cm (Fig. 8). The stone wall is in a very good state of preservation, to a height of about 0.80 m on the western, less eroded, side. It was built with upright flat limestone slabs, with a series of smaller pieces of limestone on top. All the above-mentioned data lead to a preliminary interpretation of the structure as a single-phase habitation building half dug into the hillside. This latter aspect needs confirmation by further excavation outside the building, where only surface material was collected (Locus 4).

The study of the flint assemblage recovered from both the excavated building and the artefacts found

on the surface in Sector 1 is ongoing. However, some preliminary interpretations can be proposed. The raw materials are varied, including brown, tan and light grey coloured banded flint of the Hazeva formation. Some artefacts bear patination and most of the flint is relatively fresh. The assemblage includes flakes, cores, blades and retouched tools, indicating that knapping activities were performed, at least partially, on-site. Bidirectional blade technology, which is considered one of the hallmarks of the PPNB period, is attested by the presence of opposed-platform cores (Fig. 9). Determining which variant (single-dominant platform, typical of the Negev, or upsilon-predetermined, associated with the Mediterranean-zone large villages), as defined by Barzilai (2010), deserves a more detailed approach. The tool assemblage includes a series of tanged points (Jericho in most cases), showing certain variability in their shape and length (Fig. 10).

One of the charcoal fragments (identified as *Retama raetam*) from the non-paved floor of the building was sampled for ^{14}C dating at the Weizmann Institute of Science. It dates the building in the first half of the 10th millennium cal. BP (Fig. 11), thus corresponding to the Middle PPNB.

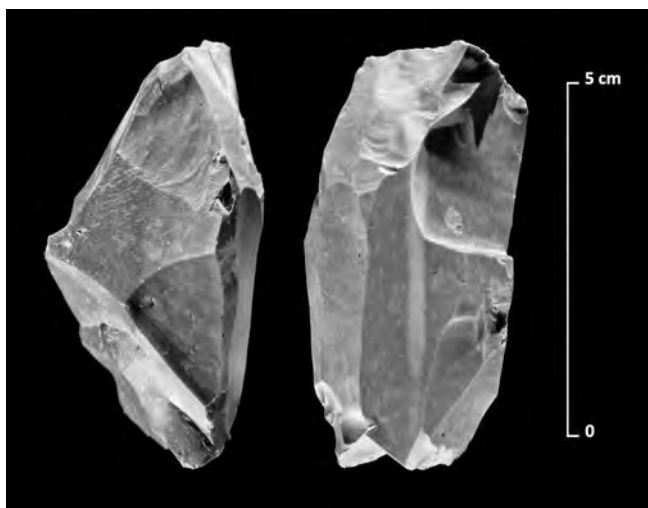


Fig. 9 Bidirectional core found on surface in Sector 1 (F. Borrell, L. Teira and J. Vardi).

Conclusions

The fieldwork carried out during this first season has confirmed that Nahal Efe is a multi-period prehistoric site which offers the opportunity to characterize the evolution of prehistoric settlement in the region over a wide chronological span of several millennia (Borrell *et al.* in press).

The main occupation of the site can be dated in the Middle PPNB, around the first half of the 10th millennium cal BP. This occupation corresponds to a series of beehive-type clusters of round stone structures located on different levels of the slope. They are very similar to the architecture documented at other sites dated or attributed to the PPNB period in the central Negev,

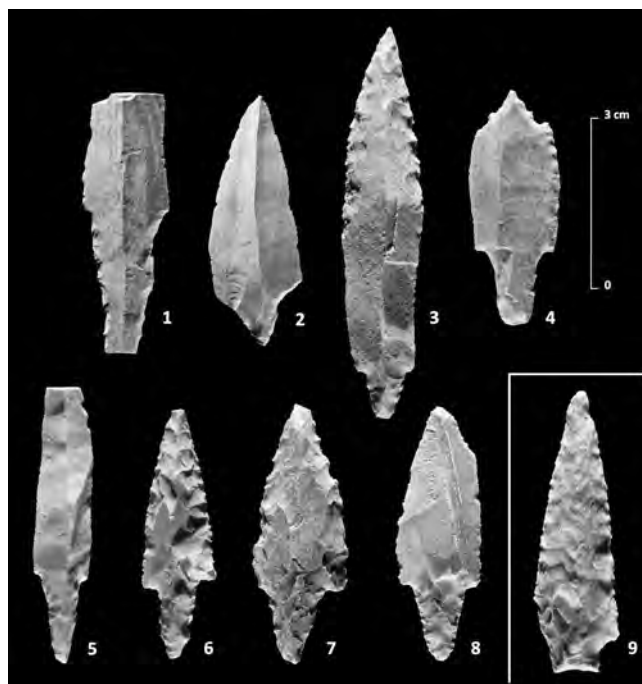


Fig. 10 Complete and broken points found on surface in Sector 1 (1-8) and the Jericho point found lying directly on the flat limestone slabs paving the floor of the building (9) (photo: F. Borrell, L. Teira and J. Vardi).

such as Nahal Hava I (Birkenfeld and Goring-Morris 2013), southern Negev, such as Nahal Reuel (Ronen *et al.* 2001), northern Sinai, such as Nahal Issaron (Carmi *et al.* 1994) and southern Sinai at Wadi Tbeik and Wadi Jibba I (Bar-Yosef 1985). Similarities in the architectural features also include the use of flat slabs for paving the activity floors, as documented at Nahal Reuel (*e.g.* Room 1) (Ronen *et al.* 2001). In this sense, Nahal Efe

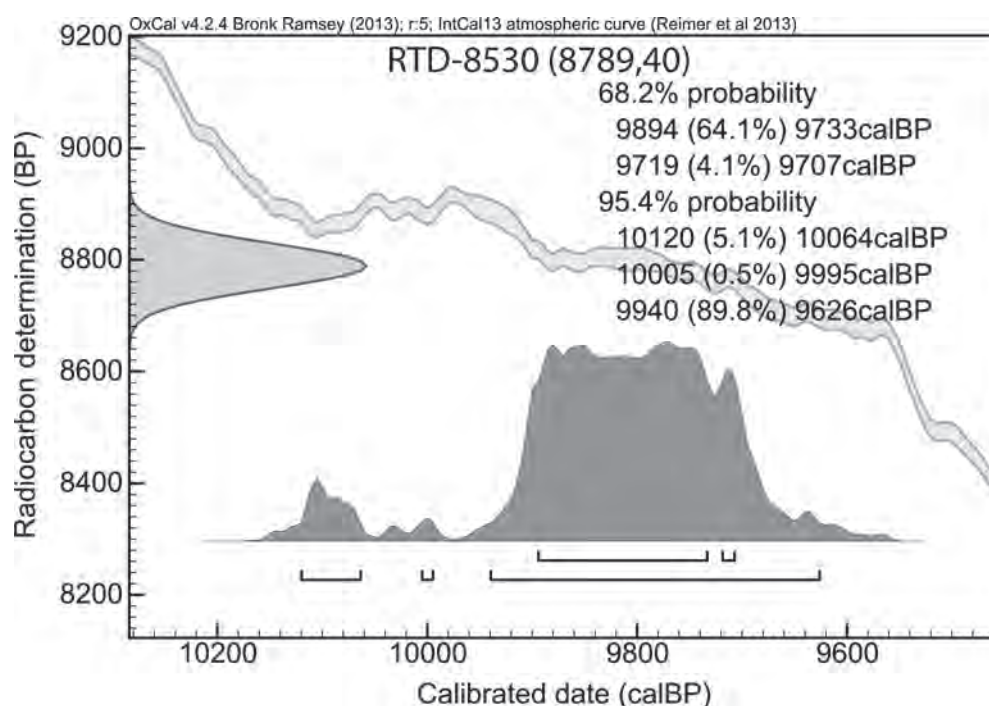


Fig. 11 Calibration of the radiocarbon date using OxCal 4.2 (Bronk Ramsey 2009) using IntCal13 atmospheric curve (Reimer *et al.* 2013).

seems to be the northernmost expression of a distinctive architectural tradition associated with the PPNB settlement of the arid regions of the Negev and Sinai.

The estimated size of the PPNB site (ca. 1000 m² in Sector 1) also deserves special attention. In the Negev, beehive-type architecture is generally associated with small seasonal base camps located mainly in and adjacent to the highland areas (e.g. Abu Salem, Ein Qadis I, Nahal Divshon, Lavan Elyon I and HK/361). These sites are considered to be complementary to more ephemeral open-air camps/sites lacking durable architectural features, documented in the highlands (e.g. Ramat Matred V, VI and VIII) as well as in the lowland dune fields of the western Negev and northern Sinai (e.g. Nahal Lavan 1006 and 1021, Halutza Dunes, Nahal Sekher and Mushabi VI) (Goring-Morris 1993, Birkenfeld and Goring-Morris 2013). The size of these base camps, which commonly include small numbers of round structures of various sizes, ranges between 25 and 250 m². Nahal Efe clearly exceeds the maximum extension proposed for PPNB occupations in the region. Therefore, the forthcoming extensive excavation of the site is to be aimed at determining whether or not all the circular structures belong to the same occupation phase (Middle PPNB), thus confirming or refuting Nahal Efe as the largest PPNB settlement known in the Negev.

One of the most extraordinary features of the site is the preservation of organic material within the excavated building (Middle PPNB). The Negev sites usually lack any preservation of organic material, either macro-botanic or faunal. Finds are thus generally limited to chipped stone artefacts, in many cases deriving from eroded sediments or/and extensively or totally deflated architectural features, as noted at Nahal Hava I (Birkenfeld and Goring-Morris 2013), Nahal Nizzana IX (Noy 1976), Divshon and Ramat Matred (Servello 1976). In clear contrast, the round structure excavated at Nahal Efe has yielded abundant macro-botanical material that will allow a wide range of analyses (e.g. pollen, charcoal, phytoliths and spherulites analyses). These analyses will 1) provide key data concerning the different activities carried out at Nahal Efe (agricultural and/or herding), as proved successful at similar contexts in Jordan (Albert and Henry 2004), 2) help to determine/test the seasonal occupation of the settlement, 3) contribute to reconstructing past climate conditions in the region during the Neolithic period and 4) develop a fine-tuned chronology of the Neolithic occupation of the site.

In conclusion, the short exploratory season at Nahal Efe has confirmed the great potential of the site for reconstructing the settlement history of the Negev during the Neolithic period and, by extension, of the southern margins of the Levant. It also offers great potential for characterizing human-environment interaction in arid/semi-arid environments and assessing socio-ecological responses to early Holocene climate instability. Last but not least, it has to be noted that Nahal Efe is located no more than 10 km south of one of the most enigmatic and fascinating Neolithic sites in the southern Levant:

Nahal Hemar (Bar-Yosef and Alon 1988). Nahal Efe corresponds to the closest contemporary site to the cult-cave of Hemar, thus providing a connection between the two sites. The excavation at Nahal Efe will provide a socio-economic context to which the varied and impressive symbolic paraphernalia found in the cave (e.g. the enigmatic stone mask) can be related, while Hemar can shed light on the spiritual world of the Neolithic community at Nahal Efe.

Acknowledgements: Fieldwork at Nahal Efe was conducted under the licence of the Israel Antiquities Authority G-85/2015. The project has received financial and logistical support from the Generalitat de Catalunya (Research Group SAPPO/GRAMPO-2014-SGR-1248), Centre de Recherche Français à Jérusalem, Universidad de Cantabria, and the Israel Antiquities Authority. We are also grateful to Emil Aladjem, Kyle Mknabb and Gregory Seri for their assistance during the fieldwork.

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Le Bâtiment DE de Çayönü: un bâtiment au coffrage?

Ergul Kudas

Résumé : Le Bâtiment DE de Çayönü a livré un individu inhumé seul dans un coffrage qui est pour l'instant inattendu au Néolithique proche-oriental. Cette sépulture à coffrage reflète une innovation majeure ainsi qu'une étape remarquable dans l'évolution de l'organisation sociale des sociétés du Néolithique proche-oriental. La présence de restes humains dans les bâtiments communautaires est par ailleurs attestée, mais rare, elle ne semble être d'avantage que le simple reflet d'un rite funéraire, mais relève une insigne caractéristique de l'organisation sociale de la communauté déployée dans un espace collectif. Le Bâtiment DE de Çayönü offre une nouvelle opportunité afin d'avancer nos connaissances sur les institutions sociales des sociétés du Néolithique proche-oriental.

Mots clef : Archéologie, Anthropologie, Bâtiment Collectif, Çayönü, Culte du Crâne, Anatolie orientale, Néolithique, Néolithisation

Abstract: Unexpectedly and so far unique for the Near Eastern Neolithic, in Building DE of Çayönü the remains of an individual were discovered in a clay cist. This burial within some kind of clay coffin represents a major innovation as well as a remarkable step in the evolution of the social organization of this period. In general, human remains were encountered in communal buildings only rarely. However these burials are not only an illustration of a funerary ritual but reveal characteristic features of the social organization displayed in collective space. Building DE of Çayönü gives the opportunity to improve our knowledge on the social institutions of the Near Eastern Neolithic.

Keywords: Archaeology, Anthropology, Collective Building, Çayönü, Skull Cult Eastern Anatolia, Neolithic, Neolithisation

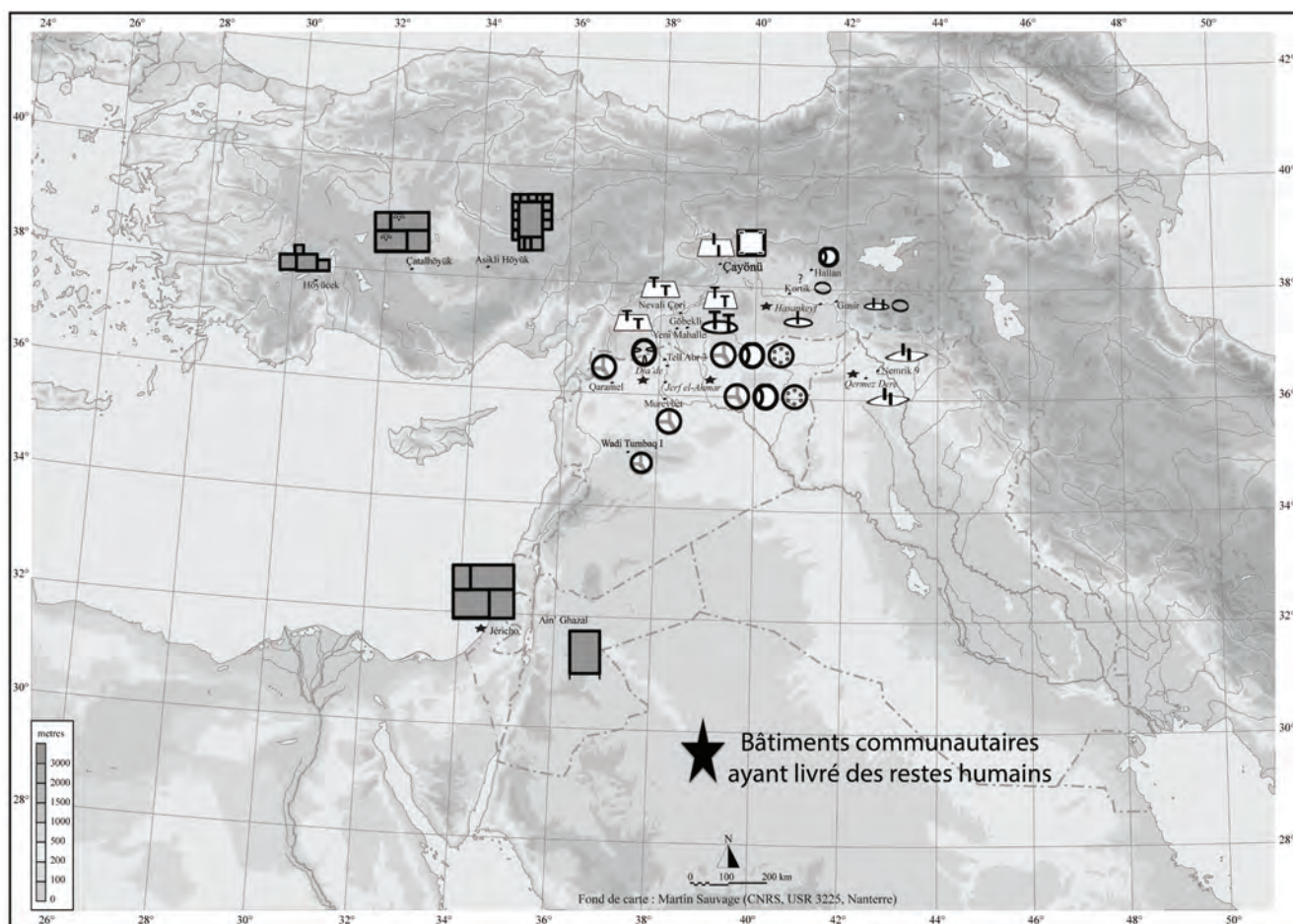


Fig. 1 Localisation du site de Çayönü et sites mentionnés dans cet article (E. Kudas).

Introduction

La construction des bâtiments communautaires, érigés par tous ou par une partie de la communauté villageoise, se manifeste dans son architecture. La disposition spatiale centrale de ces bâtiments, liés aux activités économiques, sociales, culturelles, etc. renvoie de toute évidence à leur importance dans la société villageoise. Au-delà d'une apparente homogénéité, nous notons toutefois que des fonctions parfois distinctes leur sont assignées. Des traces de pratiques d'inhumation primaire et secondaire ont par ailleurs été révélées dans ce genre de bâtiment, évoquant l'existence d'une pratique funéraire se référant à l'élaboration d'une structure identitaire à l'échelle collective. Le Bâtiment DE du PPNB récent à Çayönü semble avoir été aménagé spécifiquement pour l'inhumation d'un individu dans un coffrage. Ce bâtiment a été défini comme un bâtiment domestique par Çambel et Erim-Özdoğan, en raison de la présence de matériaux à l'usage domestique comme des outils en silex et en obsidienne, des pilons et des meules, mais cette interprétation peut être remise en question (Çambel *et al.* 1989:70-71; Erim-Özdoğan 2011: 204). Sa découverte a fourni un indice pour soutenir notre hypothèse concernant la création de statuts entre les individus d'une même communauté, à savoir l'apparition des marqueurs d'une différenciation sociale à cette époque. Cette hypothèse nous conduit donc à tenter de l'étudier d'une nouvelle perspective afin de mieux comprendre sa fonction et son rôle dans l'organisation sociale au PPNB récent.

Çayönü : un des sites référentiels du Néolithique proche-oriental

Le site de Çayönü (38°13'09"N, 39°43'45"E) se trouve à proximité du village de Sesverenpinar (Hilar), au nord de Diyarbakır, à 7 km au sud-est de la ville d'Ergani. Il est situé à côté d'un affluent du Tigre (Boğazçay) à 800 m d'altitude (Fig. 1, TAY). Le site a été occupé sur une superficie de 160 x 350 m et sur 4,5 m de hauteur (Erim-Özdoğan 2011: 186). Il fut découvert par une équipe de l'Université d'Istanbul et de l'Université de Chicago lors d'une prospection en 1963. En 1964, les premières fouilles ont été effectuées par Halet Çambel, de l'Université d'Istanbul et John Robert Braidwood, de l'Université de Chicago, de l'Institut d'Oriental jusqu'en 1986, puis M. Özdoğan, de l'Université d'Istanbul, a repris les fouilles jusqu'en 1992. Le site semble occupé à partir du PPNA jusqu'au PN ancien (Erim-Özdoğan 2011: 186, 270).

Plusieurs bâtiments «communautaires» ont été retrouvés à Çayönü (Tab. 1, Erim-Özdoğan 2011; Özdoğan 1995; Özdoğan and Özdoğan 1990, 1993; 1998; Schirmer 1988, 1990), étudiés en détails par les fouilleurs : le *Flagstone Building* (Bâtiment aux sols pavés de galets, datant du PPNA¹ final et du PPNB ancien), le *Skull Building* (Bâtiment aux crânes, datant du PPNA final (?), du PPNB ancien et du PPNB moyen), *Bench Building* (BK Building, Bâtiment en argile, datant du PPNB moyen), *Building BL* (Bâtiment BL, datant du PPNB moyen), et *Terrazzo Building* (Bâtiment au sol en *terrazzo* datant du PPNB récent).

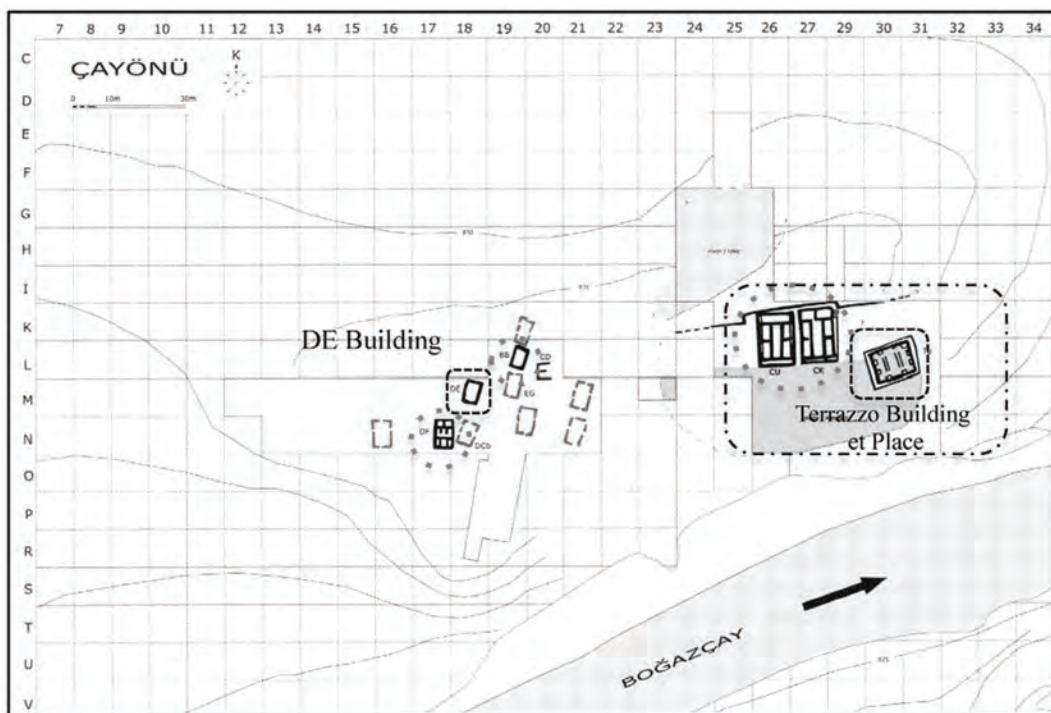


Fig. 2 Niveau c2 du site de Çayönü et la localisation du Terrazzo Building et du DE Building (Özdoğan [A.E.] 2011, fig. 35).

Phase (Plan des bâtiments)	Niveau	Date (app. BP)	Période	Bâtiment communautaire
Bâtiment circulaire	r 1G-4	10 200-9 400	PPNA	Skull Building (BM 1c) Flagstone Building (BN round structure)
Bâtiment de plan en grille ancien	g (1-4)	9 400-9 200	PPNA	Skull Building (BM 1a et 1b) Flagstone Building (Building FA)
Bâtiment de plan en grille récent	g (5-6)	9 200-9 100	PPNB ancien	Skull Building (BM 1b) Flagstone Building (?)
Bâtiment de plan à canal	ch 1-4	9 100-9 000	PPNB ancien	Skull Building (BM 2c)
Bâtiment de pavé en galet	cp 1-3	9 000-8 600	PPNB moyen	Skull Building (BM 2a-b) Bench Building (BK Building) Building BL First pebble plaza
Bâtiment de plan en cellule	c 1-3a/b	8 600-8 300	PPNB récent	Terrazzo Building (T) et clayey plaza with standing stone
Bâtiment à une seule pièce	lr 1-6	8 200-8 000	PPNC/PT	Aucun

Table 1 Évolution chronologique des bâtiments communautaires mis au jour à Çayönü (Özdoğan [A.E.] 2011 et [http://www.tayproject.org/C14.fm\\$Retrieve?YerlesmeNo=591&html=C14DetailEng.html&layout=web](http://www.tayproject.org/C14.fm$Retrieve?YerlesmeNo=591&html=C14DetailEng.html&layout=web)).

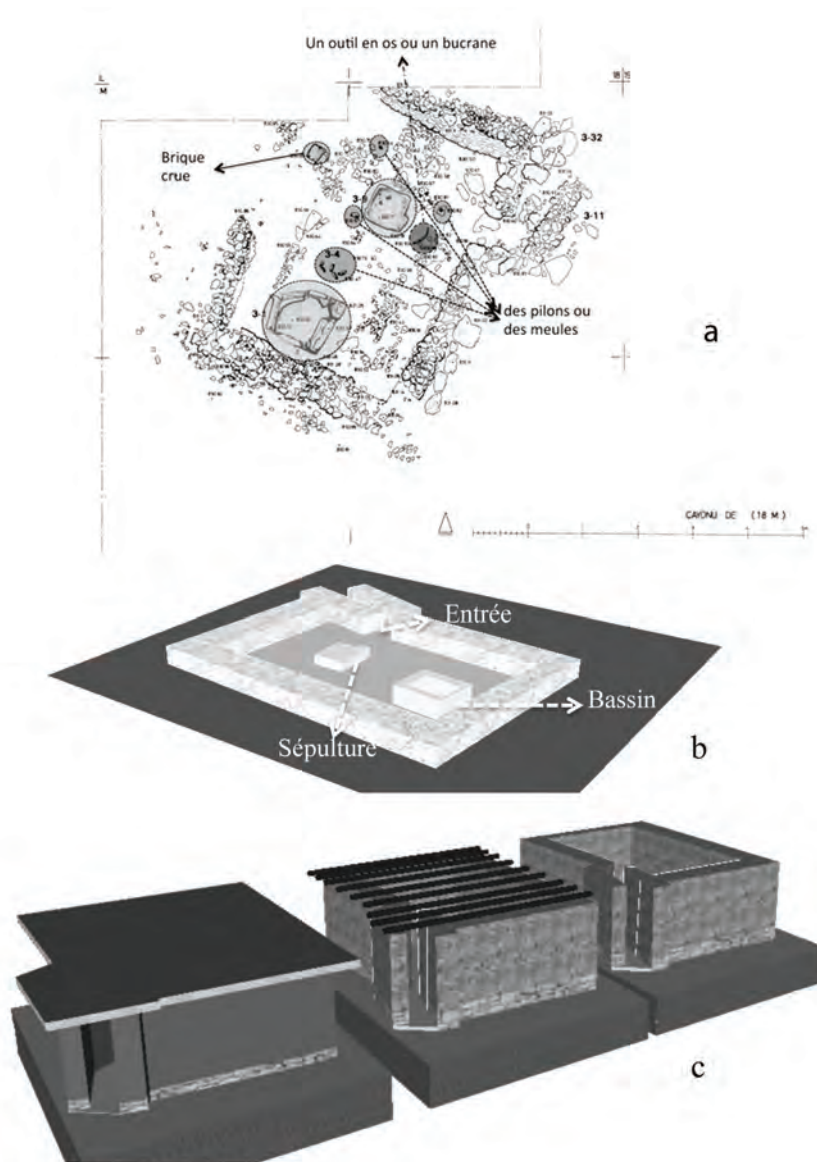


Fig. 3 Plan du DE Building et la localisation des outils en os, en silex et en obsidienne, de pions et de meules ainsi que des briques crues (a, modifié d'après Bıçakçı 2001, fig. 22, et Planche 4/f), et plan en 3D (b-c, E. Kodas).

Bâtiment DE de Çayönü

Le Bâtiment DE est construit dans le niveau c2 qui correspond au PPNB récent (Çambel *et al.* 1989: 70-71; Erim-Özdoğan 2011: 204). Il se trouve dans le secteur 18 M 3-10/a-g dans la partie ouest du site (Fig. 2). Il comporte une seule pièce orienté nord-est,

sud-ouest mesurant 6,20 m de long du nord-est au sud-ouest, 5 m de large au nord-est et 4,30 m de large au sud-ouest, ce qui correspond environ à 28 m² de superficie à l'extérieur. L'intérieur du bâtiment mesure environ 5 m de long sur 3,30 m de large ce qui correspond à 16,50 m² de superficie (Figs. 3/a-b). La pièce contient un bassin ainsi qu'une sépulture que

nous décrivions en détail par la suite. Le bâtiment était légèrement semi-enterré et fut détruit par un incendie. Des traces de brique crue identifiées dans le comblement ont permis de déduire que les murs étaient vraisemblablement montés avec cette technique sur un soubassement de pierres. Le sol du bâtiment partiellement conservé est pavé de galets et il semble qu'il a été également enduit de terre argileuse. Un bâtiment avec cellule (Bâtiment DF, environ 7,40 m de long et 4,70 m de large) se trouve au sud-ouest et un autre bâtiment à une seule pièce (Bâtiment BB, environ 5,50 m de long et 4,50 m de large) se trouve au nord-est du Bâtiment DE. Bıçakçı mentionne une entrée, située dans l'angle nord-est, construite entre les deux murs à l'est du bâtiment sur l'axe nord-sud (Bıçakçı 2001: 47-48, Fig. 3c). Le muret construit à l'extérieur de l'entrée mesure 2 m de long sur l'axe sud-ouest/nord-est et 0,60 m de large.

Bassin

Le bassin en argile se trouve dans la partie sud de la pièce, à 10 cm du mur sud (Fig. 4). Il est de forme sub-rectangulaire. Il mesure 125 cm de long et 100 cm de large à l'extérieur, 0,80 m à l'intérieur et environ 100 cm de long. Il est conservé sur une hauteur de 0,45 m. Les parois mesurent 0,10 m d'épaisseur et ils sont supportés par des roseaux et des cannes, ce qui a certainement permis de solidifier la structure. De plus, les morceaux de briques utilisés ont des largeurs très réduites et les végétaux servaient également d'assises inférieures aux briques. Çambel a proposé l'hypothèse d'un « silo » construit pour un usage de stockage car des restes de céréales ont été identifiés à l'extérieur, à l'ouest et au nord de cette structure (Bıçakçı 2001: 47-48; Çambel *et al.* 1989: 71). Çambel et Bıçakçı mentionnent également la présence d'outils en os, en silex et en obsidienne, de pilons et de meules ainsi que des traces de tissus sur les briques crues retrouvées dans le comblement du bâtiment.

Sépulture au coffrage

Un individu a été inhumé dans un coffrage posé en élévation au-dessus du sol du bâtiment, et il n'est pas enterré. Le coffrage est situé juste en face du bassin à environ 1,30 m au sud du mur nord. Bıçakçı mentionne que l'installation mesure 0,66 m de long sur 0,58 m de large pour 0,40 m de haut (Fig. 5a,

Erim-Özdoğan 2011: 186). Il est presque carré, mais les angles ont été arrondis. L'angle sud-est de cette structure a été agrandi de 0,15 m vers l'extérieur. Sa surface supérieure est plate, raison pour laquelle Çambel l'a définie comme une « plateforme en forme de table » (Çambel *et al.* 1989: 71). Çambel indique également que cette structure comporte trois parties: premièrement un soubassement en pierre; deuxièmement une boîte inférieure en argile, construite sur cette base et un couvercle amovible en argile déposé après l'inhumation de l'individu (Fig. 5b, Çambel *et al.* 1989: 71). La structure a livré un squelette complet appartenant à une femme adulte inhumée en position fléchie sur le côté gauche (Çambel *et al.* 1989: 71). Comme les fouilleurs l'ont suggéré, il est très probable que cette installation a été construite de manière intentionnelle dans le but d'accueillir le squelette (Bıçakçı 2001: 47-48; Çambel *et al.* 1989: 71; Erim-Özdoğan 2011: 186). Sa constitution comprenant une base, une partie inférieure et un boîtier supérieur, nous amène à penser qu'il s'agit d'un cercueil bâti en terre construit au milieu. Si cela semble probable, la construction a été le réceptacle d'un corps. L'histoire

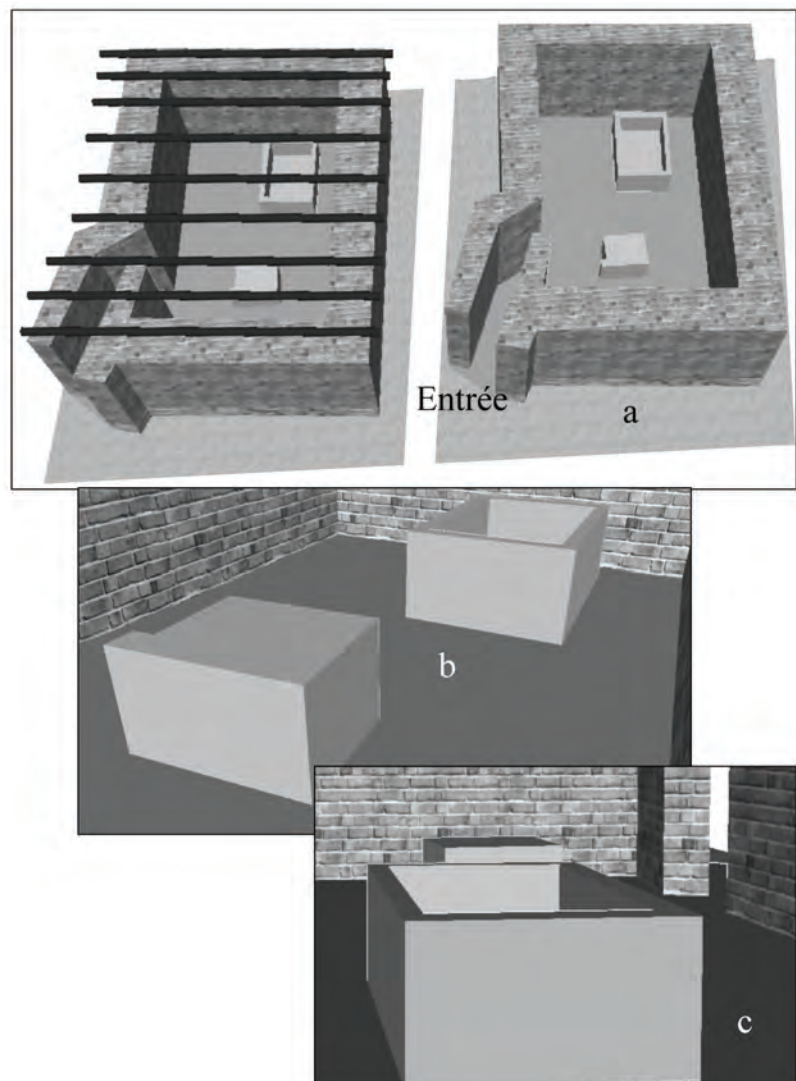


Fig. 4 3-D reconstruction du DE Building (a), du bassin (b) et du coffrage (c) en 3D (E. Kodas).

nous montre que des lieux peuvent être à la fois domestique, sociale et rituelle (Heinz 2013), d'autant qu'on ne connaît pas leur société. Il est possible que cette sépulture ait été réemployée dans une ancienne structure domestique; selon Bıçakçı (2001: 47-48), la structure n'a pas été construite en même temps que la sépulture et le bassin, mais elle a été rénovée au moment de la construction de ces éléments. Çambel *et al.* mentionnent (1989: 71) par ailleurs qu'un certain nombre d'outils (lames longues et autres objets) en silex et en obsidienne ont été déposés à proximité des pieds de l'individu. Une empreinte de tissu identifiée sur ceux-ci montre qu'ils ont probablement été attachés ou roulés dans une étoffe.

Nouvelle interprétation: un bâtiment domestique ou un sanctuaire

Il s'avère que le Bâtiment DE suivait un plan distinct de l'architecture domestique que nous trouvons dans la partie est et ouest du site, à quoi s'ajoutent les différences d'aménagement intérieur. En outre, il possède un accès dans la partie nord-est, qui était limité par un muret dans l'angle nord-est, puisqu'il a été borné par un muret à l'extérieur du bâtiment sur l'axe nord-sud. Serait-ce pour limiter son accessibilité ou contre les inondations comme Erim-Özdoğan pense (*comm. perso.*)? Il est probable que l'accès au bâtiment a été borné pour ne pas accueillir le public, peut-être réservé à des individus spécifiques? Il est à signaler que les soubassements des bâtiments domestique du PPNB sont tous élevés à Çayönü contre les inondations, sauf l'entré du Bâtiment DE est borné. Dans ses publications, Erim-Özdoğan (2011: 186 et *comm. personnelle*) a également caractérisé ce bâtiment comme un bâtiment domestique. Selon elle, l'accès du bâtiment aurait été borné pour se protéger des inondations et la sépulture ainsi que le bassin auraient été construits lors d'une rénovation du bâtiment. Cette interprétation est pertinente mais ne démontre pas que le bâtiment a été construit ou rénové pour un usage domestique ou collectif. Nous ne savons pas si le bassin installé face au cercueil (coffrage) avait un lien avec ce dernier, ni s'il faisait partie d'un rite, ayant ainsi pu servir d'autel ou d'une table d'offrande. L'interprétation proposée par Çambel, selon laquelle ce bassin serait une structure de stockage, se heurte d'une part aux dimensions modestes de l'installation (1,00 m de long et 80 cm de large pour 0,45 m de haut à l'intérieur, ce qui correspond environ à 360 cm³), bien que l'on puisse y voir un récipient à l'usage de stockage de petite échelle, probablement privé. En effet, l'installation du coffrage et du bassin n'a pas un lien direct avec l'origine de la construction du bâtiment. Ils ont été façonnés lors de la rénovation du bâtiment (Bıçakçı 2001), pendant laquelle le bâtiment a perdu probablement sa simple fonction domestique.

Les bâtiments communautaires au Néolithique proche-oriental : restes humains et leur interprétation

Les villages du PPN au Proche-Orient ancien sont marqués par un nouveau type de construction jouant un rôle essentiel: à cette époque qu'outre les maisons d'habitation, les bâtiments « communautaires » font leur apparition au sein de l'espace villageois (Aurenche et Kozłowski 2000; Benz et Bauer 2013; Coqueugniot 2009; Forest 1999; Hauptmann 2009; Hauptmann et Schmidt 2000; Karul 2011; Miyake *et al.* 2012; Özdoğan et Özdoğan 1998; Schmidt 1998, 2009; Stordeur 2012, 2015; Stordeur et Abbès 2002; Watkins 2006; Yartah 2004). C'est sans doute la première attestation historique clairement visible d'une différenciation sociale par l'architecture. Ce type de bâtiment a été signalé pour la première fois dans les années 1950 par Kenyon, après une série de campagnes de fouilles effectuées à Jéricho. Elle a identifié des types d'édifices, selon elle, non domestiques et remarquables, qu'elle définit alors comme des « sanctuaires ». Dans les années 1960, Mellaart mentionna l'existence de nombreux sanctuaires (*Shrines*) en lien avec le culte d'une « déesse de la fertilité » dans les niveaux du Néolithique céramique à Çatalhöyük. Dans les années 1970, Cauvin découvrit des bâtiments interprétés plus tard comme communautaires de type

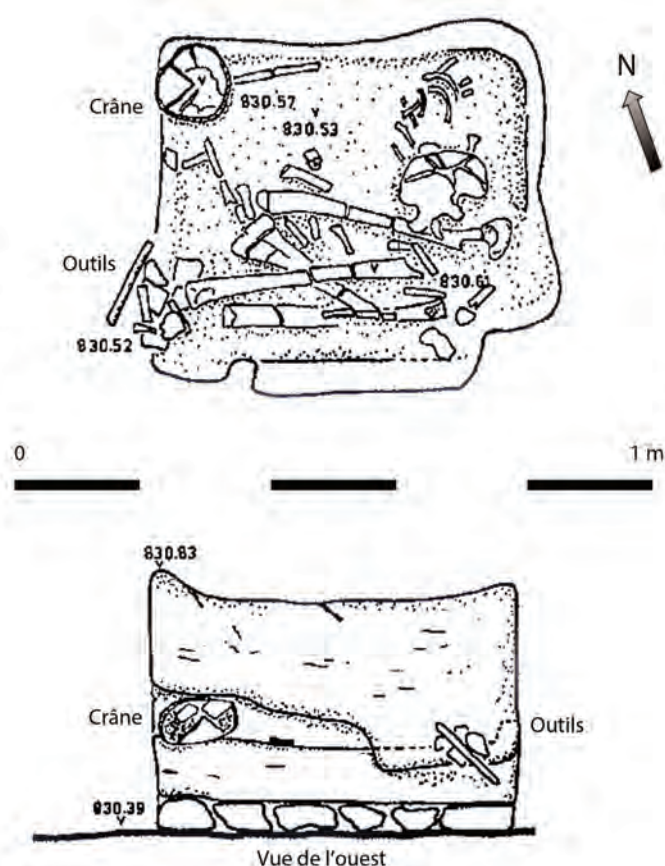


Fig. 5 Les trois parties du coffrage et le squelette et sa position dans le coffrage (Çambel *et al.*, 1989, fig. 13).

polyvalent sur le site de Mureybet, dans la vallée du Moyen Euphrate. A Çayönü, les bâtiments communautaires ont été mis au jour dans les années 1970 et 1980. Dans les années 1980, un certain nombre de sites de Haute-Mésopotamie, notamment à Qermez Dere, Nemrik 9 et dans les années 1990 à Hallan Çemi, ont livré des découvertes similaires enrichissant la documentation sur les « bâtiments communautaires ». Deux sites très importants installés dans la vallée du Moyen Euphrate anatolien, le site de Nevalı Çori, fouillé dans les années 1980 et 1990, le site de Göbekli Tepe, fouillé depuis 1995, ont livré des piliers de pierre « mégalithiques » dans les bâtiments communautaires. Pendant la même période, dans la vallée du Moyen Euphrate syrien, à Jerf el-Ahmar (Stordeur 2012, 2015; Stordeur et Abbès 2002), à Dja'de (Coqueugniot 2009, 2014), et plus récemment à Tell 'Abr 3 (Yartah 2004), plusieurs bâtiments communautaires monocellulaires et de type polyvalent ont été révélés. Nous pouvons mentionner également d'autres sites comme Wadi Tumba 3 (Abbès 2011, 2014), Aşıklı Höyük, 'Ain Ghazal, Beidha, Höyücek ou d'autres (Aurenche et Kozłowski 2000; Benz et Bauer 2013).

Quelle était alors la place de ces bâtiments communautaires dans l'organisation sociale et économique des villages? Tout d'abord, la construction d'un bâtiment communautaire est un projet de grande échelle, ce qui a bien été expliqué par Stordeur après les fouilles effectuées à Jerf el-Ahmar (Stordeur 2012; Stordeur *et al.* 2000). Elle indique que la mise en œuvre des bâtiments communautaires est très dissemblable des bâtiments domestiques à Jerf el-Ahmar et qu'ils sont tous enterrés, aspect qui les distingue facilement des maisons individuelles, de même que leur localisation, leur implantation, leurs dimensions mais également leur aménagement intérieur et leurs fonctions à Jerf el-Ahmar (Stordeur 2015). Elle ajoute que la circulation, à partir de la phase moyenne du site (Stordeur 2015; Stordeur et Abbès 2002; Stordeur *et al.* 2000), a été matérialisée par des passages, des groupes de maisons qui entourent de petites places, et conclut que la construction de ces bâtiments nécessiteraient une organisation à l'échelle collective. Schmidt propose une approche similaire pour Göbekli Tepe (Schmidt 2009, 2011). Il avance que la construction des bâtiments « communautaires » à piliers de grande taille, en chapiteaux en 'T', nécessiterait une mise en œuvre à l'échelle collective. À Çayönü, les bâtiments communautaires sont accumulés dans la partie est du site, sauf dans le cas du Bâtiment DE, dès le PPNA jusqu'à la fin du PPNB récent (Erim-Özdoğan 2011; Özdoğan et Özdoğan 1990). La place collective est en usage, au PPNB moyen, avec le *Skull Building* et, au PPNB récent, avec le Bâtiment au sol en *terrazzo*. À Nevalı Çori, les bâtiments de culte I, II, III ont été construits au même endroit, à proximité des maisons domestiques, mais bien séparés (Hauptmann 2009). Récemment, des bâtiments communautaires installés au bord et/ou au milieu des bâtiments domestiques ont été révélés dans le niveau du PPNA

ancien à Gusir Höyük (Karul 2011) et à Hasankeyf Höyük (Miyake *et al.* 2012) dans la haute vallée du Tigre. On trouve également les bâtiments communautaires isolés à Wadi Tumba 3. Il y a 5 constructions dont 3 évoquent très fortement des bâtiments communautaires (Abbès 2011, 2014). La fouille autour n'a donné aucune construction domestique, ce qui pose un problème majeur et permet une nouvelle vision pour l'interprétation des bâtiments communautaires au Néolithique proche-oriental.

Interprétations traditionnelles

Les réflexions menées autour de ces bâtiments ont conduit à leur attribuer divers adjectifs censés représenter leurs fonctions supposées, tels que « bâtiments collectifs », « communautaires », « monumentaux », « publics », « culturels », « de stockage », « exceptionnels » ou encore « mégalithiques » (Aurenche et Kozłowski 2000; Benz et Bauer 2013; Hauptmann et Schmidt 2000; Özdoğan et Özdoğan 1998; Stordeur 2012, 2015; Stordeur et Abbès 2002; Watkins 2006; Schmidt 1998; Yartah 2004). La terminologie reflète, ici, des interprétations très variées, souvent complémentaires et formulées essentiellement à partir des données architecturales puisque ces bâtiments ont des plans et des aménagements très distincts, vraisemblablement pour des fonctions variées, ce que montre bien la diversité de leurs plans et de leurs aménagements intérieurs: stockage, lieu de réunion, lieu de rite, *etc.* Dans cette optique la définition de « bâtiment communautaire », proposée par Stordeur, est un terme neutre comprenant la totalité des bâtiments de type non domestique multifonctionnel à usage collectif (Stordeur 2012, 2014, 2015; Stordeur et Abbès 2002; Stordeur *et al.* 2000). D'autre part, la construction des bâtiments communautaires sollicite une organisation collective qui est nettement caractérisée par leur architecture. L'organisation spatiale est directement hiérarchisée autour ou à proximité de ces bâtiments : la présence des bâtiments communautaires joue donc sans doute un rôle spatial (Aurenche et Kozłowski 2000 ; Benz et Bauer 2013 ; Hauptmann 2009; Özdoğan et Erim-Özdoğan 1998 ; Schmidt 2009, 2011; Stordeur 2015; Watkins 2006). Le village s'installe autour ou à proximité des bâtiments « communautaires ». Par conséquent, plusieurs questions se posent : l'organisation spatiale peut-elle être collective, et comment les villages s'organisent-ils par rapport aux bâtiments « communautaires » ? La présence des bâtiments « communautaires » de type culturel peut-elle être considérée comme un indice pour identifier le développement d'une différenciation sociale au sein des sociétés villageoises au Néolithique proche-oriental ? Nous suggérons que le statut social de l'individu et la différenciation individuelle au sein de la société s'augmentent.

L'apparition des bâtiments communautaires est un phénomène déjà bien déterminé à partir du Khiamien;

ils deviennent plus fréquents au PPNA, au PPNA-PPNB ancien et au PPNB ancien. Les bâtiments communautaires présentent une organisation très variée dans le temps et dans l'espace. À Bal'as, un bâtiment a été construit sur cinq phases successives au niveau Khiamien (Abbès 2011, 2014), et à chaque phase, le plan intérieur est radicalement différent, même chose à Tell Abr 3 au PPNA (Yartah 2004). Les mêmes bâtiments changent leur organisation interne radicalement. Cette caractéristique se retrouve de façon similaire dans les bâtiments communautaires de type polyvalent et monocellulaire identifiés dans la région du Moyen Euphrate syrien. Ils ont dû probablement posséder des fonctions très distinctes comme celles d'un lieu de réunion, lieu saint, lieu de stockage et/ou être multifonctionnels. Ils sont parfois au centre de l'organisation spatiale du village comme à Jerf el-Ahmar (très nettement dans le cas du Bâtiment EA 30 et EA 57; Stordeur 2000, 2015 ; Stordeur, et Abbès 2002) ou à proximité comme le bâtiment au culte de Nevalı Çori ou ils ont été installés sur une partie du site à Çayönü (dans la partie est du site se trouvent *Skull Building*, *Flagstone Building*, *Bench Building*, et *Terrazzo Building*). Parfois il est très difficile de préciser leurs emplacements spatiaux.

Leur plan, leur organisation interne et leur position dans l'espace sont très hétérogènes, mais ils sont tous singularisés par rapport au « simple » habitat. Ils possèdent une importance économique, matérialisée par des structures de stockage et une importance sociale, concrétisée par des bâtiments publics en tant que lieu de réunion, sans fonction économique directe ou au moins « archéologiquement » perceptible. Il faut signaler que la fonction « religieuse » n'exclut pas les autres fonctions et que le fait religieux est aussi un fait économique et social en sens global. Les temples plus récents, par exemple certains monastères, sont des modèles de structures religieuses comportant une fonction de stockage : les temples sont souvent aussi des greniers.

Restes humains dans les bâtiments communautaires et la sépulture au coffrage du Bâtiment DE

Nous suggérons qu'une des questions essentielles est la présence de restes humains dans des bâtiments « communautaires » comme celui de la Maison aux peintures à Dja'de (Coqueugniot 2009), le Bâtiment EA 7 et EA 30 à Jerf el-Ahmar (Stordeur 2015; Stordeur et Abbès 2002, Fig. 6/a), du Bâtiment RAA à Qermez Dere (Watkins 1991, 1995, Fig. 6/b), du Sanctuaire avec niche ou encore du Bâtiment à abside à Jéricho (Kenyon 1981). Cette présence funéraire dans les bâtiments communautaires est très importante, mais ce sont des ajustements postérieurs, qui n'ont aucun lien avec l'origine de la construction du bâtiment. Quelque soit le sens à donner à ce mode funéraire, après leur mort, certains individus « in-

tègrent » l'espace collectif, vraisemblablement au centre de la vie sociale et économique du village. Ce genre d'inhumation doit jouer un rôle médiateur entre les générations (Kuijt 2008)² et être le « garant » de la protection du système socioéconomique au fil des générations, entre passé, présence et futur (Kodas 2015). Dans cette interprétation (Benz 2010, 2012; Erdal *sous presse*; Kuijt 2008), le prélèvement du crâne est un marqueur de la construction de l'identité et de la mémoire collective des villageois à partir de la sédentarisation au Proche-Orient. Nous sommes convaincus par l'interprétation d'I. Kuijt que la mémoire collective est en connexion permanente avec l'imagerie, avec le lieu et avec les pratiques funéraires accomplies sur les crânes qui sont intelligibles à partir du moment où le temps, l'espace et l'iconographie sont pris en compte comme un ensemble (Kodas 2014). Les retouches apportées à un crâne comme la place qui lui est accordée dans un ensemble architectural représentent un élément primordial dans la mémoire collective intergénérationnelle. Cette interprétation est liée aux regroupements des crânes prélevés dans les dépôts, au fil du temps. Dans cette optique, nous suggérons que les crânes prélevés, un squelette sans crâne à Jerf el-Ahmar (Bâtiment EA 30 et EA 7, Stordeur 2015; Stordeur et Abbès 2002), un squelette complet à Dja'de (Maison aux peintures, Coqueugniot 2009) et les crânes isolés à Qermez Dere RAA (Watkins 1991), sont des exemples de référence

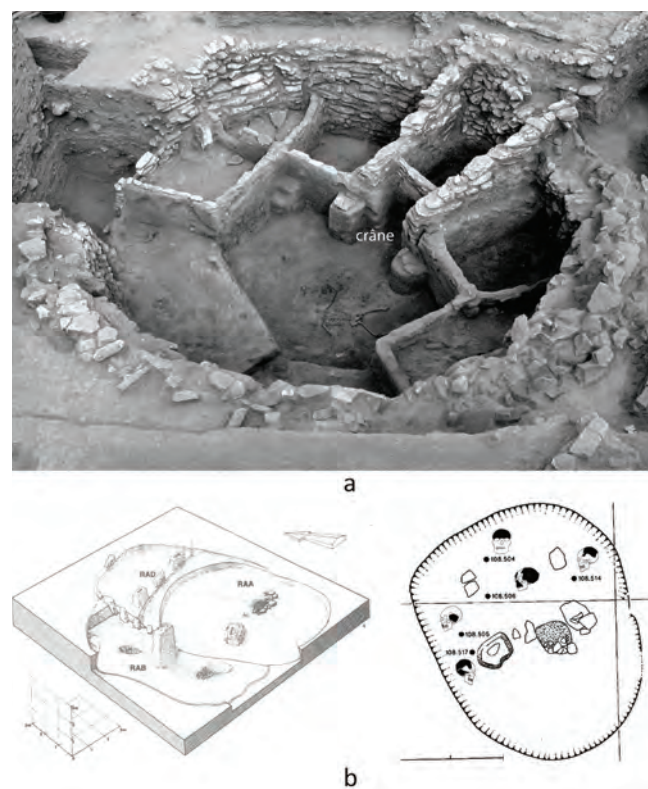


Fig. 6 Un squelette sans crâne a été mis au jour dans la pièce centrale du bâtiment collectif EA-30 du niveau II/Ouest alors qu'un crâne a été déposé à proximité à Jerf el-Ahmar (a, Stordeur 2015, fig. 106/1) et les crânes isolés mis au jour dans le bâtiment RAA de Qermez Dere (b, Watkins 1991, fig. 10, Watkins 1995, fig. 2/15).

sociale au sein des sociétés qui créent un lien intergénérationnel, protégeant ainsi le système (Benz 2012; Kodas 2015; Kuijt 2008; Stordeur et Abbes 2002). En revanche, ces sujets sont inhumés dans des espaces collectives au moment différents; pendant la phase de construction du bâtiment (EA 7 de Jerf el-Ahmar, trois crâne isolés), pendant le fonctionnement du bâtiment (Jerf el-Ahmar EA 30, crâne isolé ou pendant l'abandonnement (Jerf el-Ahmar EA 30, un squelette sans crâne; Dja'de, bâtiment aux peintures, un sujet complet et un crâne isolé; Qermez Dere RAA, cinq crâne isolés).

Contrairement, le Bâtiment DE semble être construit ou réaménagé spécifiquement pour l'inhumation d'un individu, de manière très inattendue, au Néolithique proche-oriental. Cette inhumation est très différente par rapports aux restes humains retrouvés dans les « bâtiments communautaires ». Lors des débuts de cette pratique, l'individu ne s'intègre au système qu'après sa mort, à travers laquelle il joue un rôle de protection du système dans un espace collectif. Il est possible qu'il ne soit qu'un simple individu qui devient une référence symbolique après sa mort, dans l'anonymat que le temps lui procure. La présence de femmes, d'hommes et d'enfants parmi les restes fouillés nous indique que le choix du crâne répond à d'autres critères que ceux du sexe et de l'âge. Ces inhumations n'ont vraisemblablement aucun lien avec une différenciation sociale puisque la différenciation sociale est un processus qui établit, pour une personne ou un groupe, sa place dans la société, selon une hiérarchie de valeurs propre à cette société, qui lui permet d'avoir une situation fondamentale et particularisé au sein de la société. Il s'agit d'un statut « distingué » par rapport aux autres individus qui vivent dans la même société. Par contre, nous avons considéré que la présence des bâtiments communautaires est un indice fondamental pour une collectivité sociale et, également, pour une organisation collective au moins dans le cadre de leurs concepts architecturaux (Hauptmann 2009; Stordeur 2015). L'inhumation des crânes ou des sujets complets dans les bâtiments communautaires démontre que ces inhumations soient effectuées à l'échelle collective.

Discussion : un changement primordial de l'individu référentiel vers l'individu différencié

Le Bâtiment DE était construit selon un plan différent que celui des bâtiments domestiques que nous trouvons sur le site, aménagement intérieur inclus. Son accès, situé dans la partie nord-est, a été érigé sur un axe caudé, il est limité par un muret et, selon toute probabilité, il est unique. Ces faits seraient

surprenants dans le cas d'un bâtiment à l'usage d'une famille ou d'un group restreint, l'entrée se faisant normalement directement. Pourquoi restreindre l'accès? Autant que nous puissions en juger, pour couper la visibilité de l'extérieur de l'endroit où l'individu inhumé se trouve (Fig. 7)? C'est aussi, il faut le souligner, le premier cas connu de bâtiment funéraire ne recevant qu'un seul défunt. Nous estimons que cet édifice fut vraisemblablement conçu dans le but d'effectuer cette inhumation, hors norme par rapport à celles que nous avons identifiées au PPNB récent à Çayönü ou ailleurs (Özbek 2004).

Sans se limiter pourtant à noter la fonction de ce bâtiment, il est important de comprendre la portée d'une telle pratique. Selon nous, ces aménagements montrent la possibilité d'un changement social, à savoir les prémisses d'une différenciation entre individus qui se révèle fondamentale pour penser ce qui est une société. L'usage funéraire de ce bâtiment est tout à fait singulier vis-à-vis de l'ensemble des traces d'inhumations relevées de Çayönü, et même de l'ensemble des inhumations notées au Néolithique proche-oriental. A l'instar de ce que Kuijt observe à propos des crânes prélevés (isolés et/ou surmodelés), nous assistons, ici, à une réévaluation de la signification attribuée à l'inhumation

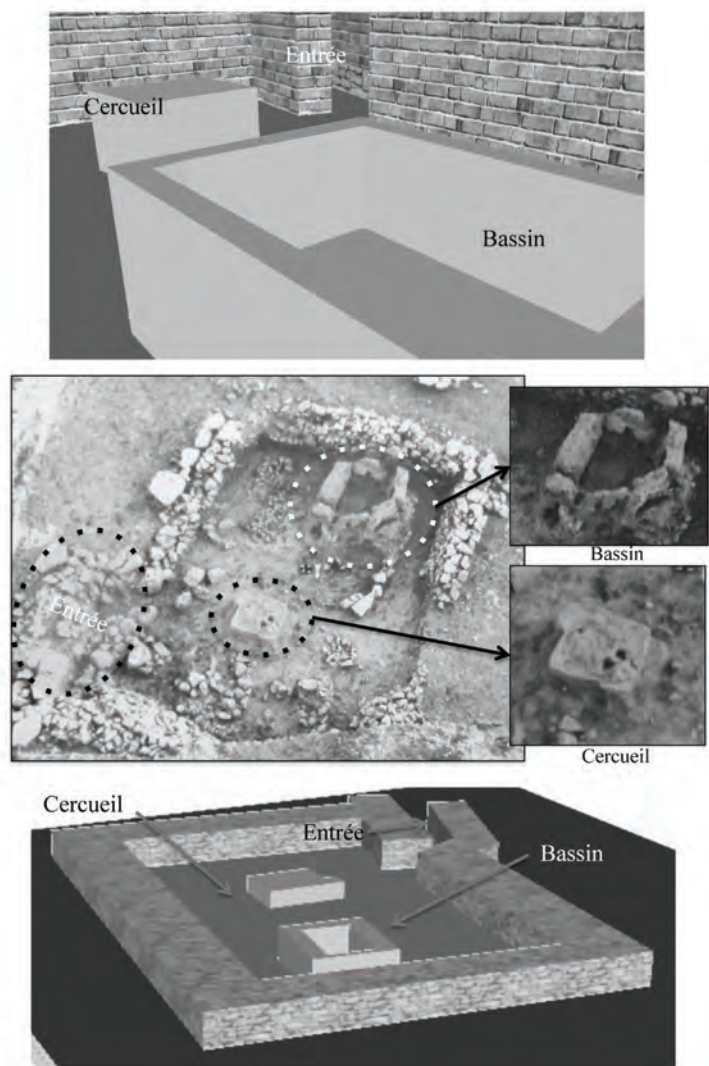


Fig. 7 Reconstruction en 3D du bassin et du coffrage mis au jour dans le DE Building (E. Kodas), la photo du bâtiment (Çambel et al. 1989: fig. 13).

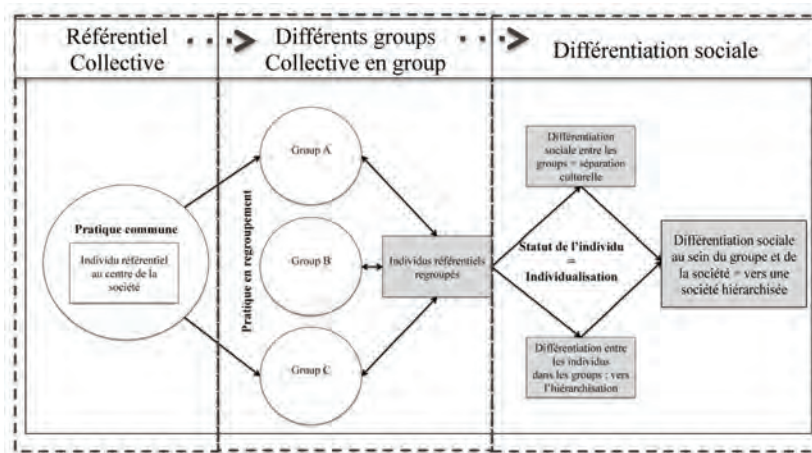


Table 2 Développement de l'individu référentiel vers le regroupement différencié dans les sociétés néolithiques au Proche-Orient.

Conclusion

Nous nous sommes efforcés, au cours de cette étude, de défendre l'hypothèse du caractère funéraire du Bâtiment DE, le redéfinissant de la sorte à l'encontre des suggestions proposées par les auteurs qui s'y étaient intéressés. Plusieurs éléments contribuent à soutenir cette idée: l'édifice est destiné à n'accueillir qu'un seul indi-

vidu dans un coffrage, son accessibilité est restreinte. La chose la plus importante est le coffrage ayant été posé en élévation dans le bâtiment. Ce n'est plus une simple sépulture où le corps est enterré dans une fosse, ici le coffrage est à la vue de tous, le corps est symboliquement présent et même omniprésent. Mais l'entrée du bâtiment est bornée et le coffrage n'est pas visible de l'extérieur. Il apparaît que l'inhumation dans un coffrage posée en élévation est une nouvelle pratique. Il semble que la mise en scène d'une concentration opposante entre le coffrage et le bassin, et la limitation de l'accès du bâtiment font partie d'une organisation non domestique. Il semble s'agir apparemment d'un bâtiment au caractère d'un sanctuaire au coffrage, qui est d'ailleurs unique au Néolithique proche-oriental.

Au sens sociologique, le cas du Bâtiment DE est un des marqueurs le plus remarquable des transformations sociales du Néolithique proche-oriental. Il suggère que l'individu devient l'ancêtre propre à un groupe par rapport à l'autre (plusieurs groupes, Tab. 2, section 2), lequel engendre la mise en place de marqueurs différenciateurs dans le cadre d'une société (différentiation sociale dans le groupe même) et séparation de la société en groupes différents, Tab. 2, section 3). L'inhumation des restes humains dans les bâtiments communautaires au PPNA-PPNB et au PPNB ancien (Jerf el-Ahmar, Dja'de, Qermez Dere, et Hasankeyf Höyük) commence à avoir une nouvelle forme, visible dans le cas du Bâtiment DE, celle de la différenciation sociale et de l'individualisation. Les groupes sont ainsi amenés à construire des séparations culturelles par l'élaboration d'un lien spécifique avec un ancêtre, lien contribuera en retour à caractériser leur identité propre (Tab. 3). C'est là le signe d'un changement de statut pour l'individu: quelques-uns sont distingués par rapport aux autres au sein de certaines populations et/ou quelques-uns tout en appartenant au groupe forment un monde à part au sein d'une communauté du même village.

d'un individu qui, avec le changement de génération, devient référentiel (Kodas 2014; Kuijt 2008). Nous pensons que la présence de restes humains, crânes prélevés, squelettes sans crâne et sujets complets dans les bâtiments communautaires au PPNA-PPNB et au PPNB ancien à Jerf el-Ahmar (EA 7 et EA 30), Qermez Dere (RAA), et Dja'de (Maison aux peintures) serait l'indice de la formation de figures référentielles situées dans l'espace collectif.³ Le sens qui leur est primitivement attribué évolue avec le statut qu'ils atteignent au cours du temps, dans l'espace occupé par un groupe dans le cas du Bâtiment DE, qui a été occupé sur deux niveaux successifs. Probablement un acte particulier, voué à honorer l'ancêtre d'une famille, l'inhumation de l'individu a contribué, avec le passage des générations, à en faire une figure symbolique et référentielle, et, peut-être, finalement provoque à différencier culturellement le groupe. Il ne s'agit donc plus seulement d'un rassemblement collectif autour d'un individu référentiel, tel que nous pensons le trouver dans les bâtiments communautaires au PPNA-PPNB, notamment à Jerf el-Ahmar (EA 7 et EA 30), Qermez Dere (RAA), et Dja'de (Maison aux peintures) et attesté récemment à Hasankeyf Höyük (référentiel et collective, Tab. 2, section 1, Miyake *et al.*, 2012) mais d'un processus de différenciation sociale.

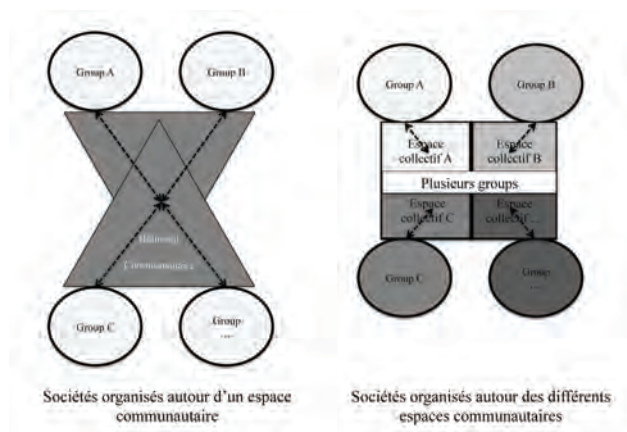


Table 3 Schématisation du regroupement différencié dans les sociétés néolithiques au Proche-Orient.

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Endnotes

¹ Pour la datation du PPNA et du PPNB, voire Erim-Özdoğan 2011: 192, et Neolithic in Turkey The Tigris Basin, p: 270, tableau chronologique de la région. La datation de la phase « grill plan » de Çayönü fut suggérer lors de la stratigraphie par Erim-Özdoğan. Pour l'instant, il faut s'attendre à une vérification de cette attribution par une datation radiocarbone.

² Kuijt (2008) a proposé la théorie d'individu référentiel pour les crânes prélevés.

³ Il s'agit des transformations dans le temps, les individus sont référentiels, aucun statu social n'est présent, comme Kuijt (Kuijt 2008) et nous-mêmes (Kodas 2014) ont proposé pour les crânes prélevés.

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Conference Report

Prehistoric Networks in the *Longue Durée*: Palaeolithic Innovations Enabling the Neolithic Revolution

Florian Klimscha

Even though prehistorians have been fighting against modern prejudices concerning the Stone Ages nearly since their discovery, this struggle seems futile in many regards. Just recently the French president Francois Hollande stated, that he did not live in the Stone Age, when he was asked about the security of the French communication systems against espionage (www.Spiegel.de, 24.06.2015). The Stone Age is too often still synonymous for technical simplicity or even the non-existence of culture and technique.

Also many archaeological treatises still take on such a point of view and still uphold evolutionistic perspectives, in which societies have to fight themselves through the perils of hunter/gatherer-life until they are “rewarded” with first Neolithic and then the Urban life. Strangely enough such narratives are still very fashionable even when recent discoveries like Göbekli Tepe demonstrate that evolutionist metaphors are not only simplistic but also misleading.

Within the Excellence-Cluster TOPOI the research group Digital Atlas of Innovations (Svend Hansen, Florian Klimscha and Jürgen Renn) organised an international conference shifting the focus on the Neolithization debate into the Palaeolithic.

The conference brought together archaeologists researching the Late Palaeolithic, Epipalaeolithic, Mesolithic and Early Neolithic periods to discuss the role of networks for the transfer of prehistoric techniques. It aimed to focus on the long-term development and diffusion of technologies in the late Pleistocene and early Holocene thereby focussing on the relevance of Hunter/Gatherer-networks in the Palaeolithic and Mesolithic for the adaption and diffusion of key technologies enabling the Neolithic way of life.

While the Neolithic Revolution has been identified as one of the key-shifts in the development of human technical systems for a long time, our understanding of it is blurred by a lack of data concerning the extent and persistence of communication networks and techniques from previous periods. Or to formulate it as a question: How did the long-term development and functioning of communication networks (gift-giving, raw-material procurement, marriage alliances *etc.*) affect the diffusion of technical *know how* as a precondition for the Neolithic Revolution?

The participants were proposed a specific topic and asked to discuss it concerning the relevance of networks for the diffusion of technical innovations. The Program included the following lectures dealing with Palaeolithic technologies and their diffusion:

Henny Piezonka (Berlin) and Shinya Shoda (Nara/York) spoke about hunter/gatherer-ceramics. While Pi-

ezonka discussed the “big picture” and the arguments for the large scale diffusion of early pottery between Japan and the Eastern Baltic – even its diffusion into the Fertile Crescent –, Shoda presented differences and similarities between early pottery in Eastern Asia and stressed that hunter/gatherer-pots may look similar, but served different functions.

An overview of Palaeolithic technical innovations, with a special focus on hunting technology, was given by Thomas Terberger (Hannover), while several other specialists presented detailed studies of a single aspect: Miriam Haidle (Tübingen/Frankfurt) stressed the cognitive developments during the Upper Palaeolithic, while Olaf Jöris (Neuwied) argued, that nevertheless, already in the Middle Palaeolithic spatial organisation and long-distance contacts can be seen. Michael Baales (Olpe/Bochum) gave an overview of long-distance communication in the Magdalénien and Birgit Gehlen (Cologne) presented evidence for Late Palaeolithic/Early Mesolithic large-scale networks. Sophie de Beaune (Lyon) demonstrated that the highly appreciated peaks of Palaeolithic art, were, in fact, rather easy to create, and Danny Rosenberg (Haifa) and Daniel Schyle (Cologne) examined the changes within stone tool production during the Neolithization, Rosenberg dealt with the long traditions within the groundstone tool production, while Schyle summed up the evolution and changes within the chipped lithic tools. Eleni Asouti (Liverpool) presented archaeobotanical data and argued that woodland management began long before the Neolithic Revolution and might have been one element determining its beginning. Her paper was theoretically complemented by Jürgen Renn (Berlin), who presented a path dependency-model for the Neolithic. Trevor Watkins (Edinburgh) argued in a similar way by asking analysing the deeper roots of the Neolithic in Western Asia, while Florian Klimscha (TOPOI/Berlin) explored the reasons for becoming Neolithic from a hunter/gatherer-perspective.

The Neolithic was then presented in larger overviews over key regions, like the southern Levant, which was discussed by Anna Belfer-Cohen and Nigel Goring-Morris (both Jerusalem), or Transjordan presented by Bill Finlayson (London/Amman) and Cheryl Makarewicz (Kiel). New discoveries from often overlooked key region of the Early Neolithic, the Tigris region, were presented by Yutaka Miyake (Tsukuba) and Necmi Karul (Istanbul), while Mihriban Özbaşaran (Istanbul) spoke about the Neolithic in Central Anatolia, and Fokke A. Gerritsen and Rana Özbal (both Istanbul) finished the journey of the Neolithization in Northwest Anatolia.

A number of special studies dealt with Göbekli Tepe and similar monuments, where Dietmar Kurapkat (Regensburg) presented a detailed analysis of the architecture while Mehmet Özdoğan (Istanbul) discussed the wider archaeological context. The phenomenon of plastered skulls was brought forward by Ianir Milevski and Hamudi Khalaily (both Jerusalem), whereas Harald Hauptmann (Heidelberg) and Svend Hansen (Berlin) gave overviews over the changes within the production and style of figurines from the Upper Palaeolithic to the Neolithic. Hala Alarashi (Lyon) presented her new research on the PPN bead production in the Northern Levant, and Barbara Helwing (Sydney) spoke about the technology and application of Early Neolithic copper objects. Güneş Duru (Istanbul) spoke about private and public spaces in the Neolithic while new data on cloth production was presented by Marion Benz (Freiburg), Nicole Reifarth (Tübingen) and Lisa Völling (Würzburg). Larger topics were also discussed within the papers of Çiler Çilingiroglu (Izmir), who demonstrated that the Neolithic package still is a useful concept for understanding the westward expansion of the Neolithic, Bernd Müller-Neuhof (Berlin), who discussed the impact of conflicts for the Neolithic, Joris Peters (Munich), who dealt with the domestication of animals and Johannes Krause (Jena), who gave a recent overview of the archaeogenetic data.

Discussions were moderated by a board consisting of Hans-Georg Gebel (Berlin), Lee Clare (Berlin) and Jörg Adam Becker (Halle-Wittenberg), and were joined by a very active auditorium consisting of students, colleagues and interested non-archaeologists. Apart from questions directly after the lectures, several slots for longer discussions were available and often continued well into the coffee and lunch-breaks. The discussions touched many different aspects of the Neolithization, but several points were repeatedly re-evaluated after papers brought forward new evidence or positions. A major focus lay around the extremely long traditions (and sometimes repartitions) of the many of the Neolithic techniques,

and how this knowledge was preserved, transported and reproduced by hunter/gatherer-societies. Another discussion arose around the possible impulse that caused societies to grasp the potential within those techniques and therefore the reasons for the beginning of the Neolithization. Most colleagues agreed that human agents had a significantly greater impact on this than thought before the discovery of Göbekli Tepe, but another line of thought also stressed path dependence effects which could have been caused by the use of plant resources or the domestication of animals. It is impossible to sum up the various positions, that were stated, here satisfactorily. Apart from the idea, that the Neolithic was the result of people trying to enhance their control on human groups, the idea that it was the by-product of a number of outsiders, unable to adopt to environmental changes and unwilling (or unwanted) to participate in larger communication networks was also considered. It was generally agreed though, that the Neolithization was by far a by-product of a specific socio-technical or environmental evolution, but that human societies created the necessities to develop very easy techniques (like axes) into innovations with a serious impact.

This was also the start of a verbal exchange discussing whether the term “Revolution” still fits the archaeological record. While for the Fertile Crescent we can now see very clearly the successive steps which were essential for becoming Neolithic, several colleagues stressed the “revolutionary” impact, once the technical system had gained enough momentum to move towards Northwestern Anatolia and Europe. According to the new analyses of the genetic signatures of Mesolithic and Neolithic skeletons, it seems valid to discuss greater migrations again. All participants agreed that the results should be published, and we will be able to produce a volume within the Excellence Cluster TOPOI.

Finally, we want to send our best regards and wishes to our colleague and friend Prof. Dr. Ryszard F. Mazurowski, who sadly had to cancel his participation of the conference.



Fig. 1 Participants of the conference (© DAI, Eurasia Department).

Review of Danielle Stordeur, 2015. *Le village de Jerf el Ahmar (Syrie, 9500-8700 av. J.-C.). L'architecture, miroir d'une société néolithique complexe*. Paris: CNRS Editions ISBN : 978-2-271-08740-9.

The very first publications on the early Pre-Pottery Neolithic site of Jerf el-Ahmar in northern Syria were short, merely two pages (e.g. Stordeur and Jammous 1995:129-130, Stordeur *et al.* 1996:1-2), but the exciting findings immediately made clear that this would be one of the key-sites for the early Neolithic period. Discovered during a survey by Marie-Claire Cauvin, Miguel Molist and the Syrian archaeologist Ahmed Taha, and after some unpublished fieldwork by T. Mc Clellan, Danielle Stordeur started the rescue excavations in 1995, co-directed by her Syrian colleague Bassam Jamous. Only four years later, in 1999, flooding of the Tishrin Dam put an ultimate end to the archaeological fieldwork. Publications of the impressive subterranean communal buildings as well as of archaeobotanical remains forced the reconsideration of former interpretations of Neolithic architecture and proved the importance of the site for the transition to sedentary farming communities. They foreshadowed the site's high relevance adding to the expectations for a final publication of the settlement.

Danielle Stordeur exceeds these expectations. With her new publication *Le village de Jerf el Ahmar – L'architecture, miroir d'une société néolithique complexe*, she sets the standard for archaeological publications on architectural development very high. She has chosen a publication format attractive for archaeologists as well as for an interested public, forcing herself not to stop at a detailed description of stone-by-stone documentation but unfolding the development of the whole settlement. On 360 pages, she draws pictures “as animated as possible” (p. 261) of village life over 800 years, comprising 11 archaeological levels and the remains of 88 houses, including at least 6, probably more, communal buildings. It should be emphasized that such an incredible synthesis would not have been possible without years of work of an excellent team of specialists, resulting in telling photos, drawings and above all the illuminating 3-D reconstructions of the architect Yves Ubelmann. Despite considerable time constraints under which the rescue excavations had suffered, the documentation is detailed enough to allow for a convincing reconstruction of the settlement's development. The attractiveness of the book is due to the excellent work of the team, but without a coordinating synthesizing effort by the author these results would have been spread in isolated publications.

The huge amount of data could have filled volumes, but Stordeur's aims are different. The changing architecture and village layout give sufficient evidence to reconstruct the social structure and changes of early Holocene communities who started settling down on the fertile terrace of the middle Euphrates around 9500 cal BCE. Her aims seem even more ambitious, considering that no human remains have been discovered at

the site, except for some special depositions, a possible ritual sacrifice, and dispersed isolated bones from the backfill. Important aspects of direct evidence are thus lacking. Nevertheless, Stordeur fascinates the reader by turning him into a detective, recording thousands of tiny indications, sticking them together until village life of 11.000 years ago emerges. The reader becomes a spectator, observing the growing and diversification of the village until it is abandoned around 8700 cal BCE.

Despite this sociological perspective, Stordeur does not start with a grand narrative or theory. Her book is a masterpiece of French Archaeology, which last but not least is reflected in the bibliography. Several approaches of French scientific research merge in her publication. Her book lines up in a chain of meticulous studies of early Near Eastern architecture, starting in the early 1960ies with the French excavations at Mallaha and then at Mureybet. Both of them became key-sites of Near Eastern Prehistory. In the tradition of the Annales School, she develops the big picture starting from details, from the construction of the individual house to its context within the village and finally uncovering cultural traditions of the *longue durée*. The concept of the *chaîne opératoire* developed by André Leroi-Gourhan, one of the founding fathers of French Prehistory, characterises the structure of her work.

Moreover, the interdisciplinary and scientific approaches practised and promoted for many years at the *Laboratoire Archéorient* for Near Eastern Prehistoric Archaeology at Jalès, in Ardèche, culminate in this publication. From experimental archaeology to micro-ware analysis, from geomorphology to archaeobotany, every aspect is considered by the author to gain evidence for her dense description.

After a short overview to locate the site in its chronological and geographical context, she describes the construction technology, building plans and finally use for many house types whenever the preservation allows it. Since some of the houses burnt with their whole inventory, their function is quite evident. Grinding stones, mortars, basins for storage, and even the remains of the last meal were left *in situ*. In the case of a round building lavishly decorated with bucrania and goat skulls, Stordeur even makes some suggestions about who may have been the inhabitants. However, in none of such speculative questions does she decide on a definitive answer but rather elaborates different possibilities. It is one of the great achievements of the book that archaeological data are not squeezed into preconceived concepts, but conclusions are based on synthesizing observations from many different perspectives. Her approach is courageous, admitting gaps of knowledge and documenting contradictory data. Rather than seducing the reader with splendid *en vogue* terms and catchy conclusions, her arguments convince with clear discussions of different possible interpretations and by the grand overview she holds on all the data.

From the second part of the book onwards, Stordeur takes the reader on a time journey tracing the development of the village. Phase by phase, she explores the

layout of the village, the orientation of the houses, the development of communal space and work and of way systems. For those who are not so familiar with the French language, we dare to summarize the results bearing in mind that such a reduction will be fragmentary and imperfect.

At the end of the oldest phases an intense fire put an end to the rather homogeneous layout of the village, dominated by circular dwellings. Mehmet Özdoğan and Aşlı Erim-Özdoğan have already argued in 1998 for deliberate burning of buildings during the early Neolithic. Jerf el Ahmar seems to be one of the most striking examples of that practise. All buildings of Level III/E were burnt down. Was it enemies or the own people who set fire to the village? Once more Stordeur leaves the question open. She neither argues in favour of Neolithic communities imbued with violent conflicts, nor does she overarch the romantic image of a harmonious and peaceful Neolithic, but concludes: “it must have been done deliberately” (p. 325, translation MB). Evidence from the later phases supports her suggestion of deliberate ritual burning. All of the communal buildings were burnt down and backfilled although the place they occupied was visible and probably remembered for generations.

During the middle phase (about 9500-9200 cal BCE) the architectural spectrum became more diversified. Terracing of the burnt debris demonstrates increased communal work. On the southwestern border, at the deepest point of the slope, a sequence of two large rather identical communal buildings was constructed on top of each other, with domestic houses on the upper terraces looking down at them. Their symmetrical round layout with several compartments, replicates older examples from Mureybet and Wadi Tumbaq, thus integrating Jerf el Ahmar into a building tradition of the early 10th Millennium BCE. Communal activities inside these buildings took place invisible to the outsider. Interestingly, like in other early Holocene sites, in none of the compartments said to be for storage use was a significant amount of stock remains found.

Next to this building existed a huge hearth, probably of communal use, and a tripartite house reconstructed on top of the ruins of an older house of the same style. It is the only one during that phase which was oriented to the communal building. Stordeur suggests that its inhabitants might have abided strongly by traditions and possibly had a special role. But what if this building was for communal use, too? The preparation of food on a large scale is proven by the huge hearth in front of it, and it is the only house which was also affected by fire when the communal building was burnt. At the southern end of this group of buildings, the first rectangular house was erected. However, Stordeur does not overemphasise its new outward appearance. Considering aspects of technology and former developments she reveals gradual changes and traditions through all phases.

In the northeastern area, a second cluster of houses was clearly separated from the group next to the com-

munal building. This differentiation of two groups remained until the transition to the “Phase récente”.

Major transformations characterise the last phase (Phase de transition) around 8800-8700 cal BC: in the eastern part of the *tell*, the occupied space was shifted to the south, houses were now oriented to the *wadi* and a new type of circular communal building was erected. In contrast to the ancient communal buildings with compartments, in this new building an open hexagonal space was surrounded by six huge posts embedded in front of an encircling bench. It is this building which is most akin to the monumental T-pillar enclosures from Göbekli Tepe north of the Harran Plain, even though the two huge central pillars of the latter site are missing at Jerf el Ahmar. The similarity is even more striking, considering that the wooden posts at Jerf were covered by plaster giving them a stony appearance. Radiocarbon dating of this building (p. 18) seems to be later than the earliest enclosures at Göbekli Tepe. It thus seems premature to reconstruct diffusion from one site to the other, but to await the final publication of new radiocarbon data from Göbekli Tepe in order to evaluate the reciprocal relationship of both sites (*cf.* p. 344).

Despite these changes in architectural layout, fundamental similarities in technology and ritual activities relate the different phases over the long run: the deliberate burning of buildings and their backfilling as well as a skull cult attested at Jerf el Ahmar by skull deposits in communal buildings and by depictions of headless individuals on the bench of the most recent communal building (EA 100). Moreover, the standardised shape of the communal buildings points to strong traditions. When houses had changed their layout from round to rectangular since a long time, the *bâtiments communaux* were still semi-subterranean and circular.

The sequence of schematic village plans of each phase from the eastern part of the *tell* (Fig. 98a, b) is of great help for the reader to follow this development. Regrettably, the changing layout of the western part remains rather diffuse. One wishes having the same plans for that area too. Judging from the example of Houses EA 54 and EA 51, it seems that in this part, building traditions might have been rather strong too (Fig. 101). The reconstruction of the houses' orientations in that area remains rather questionable in light of the orientation of their entrances (Fig. 85). Comparing the parallel developments on both parts of the *tell*, would be a rather challenging task. This would be all the more interesting, because a new communal building was constructed in the western part during the “Phase récente”, which was nearly identical to the segmented communal buildings in the eastern part. What does this imply? Why was it shifted to that area and why was it burnt down in such a dramatic way, possibly including the sacrifice of a young woman? Searching for answers to these questions becomes even more delicate, if the segment of a bent wall discovered in the eastern part, indeed represents another communal building. Were these two communal buildings contemporaneous? This seems to be the case at

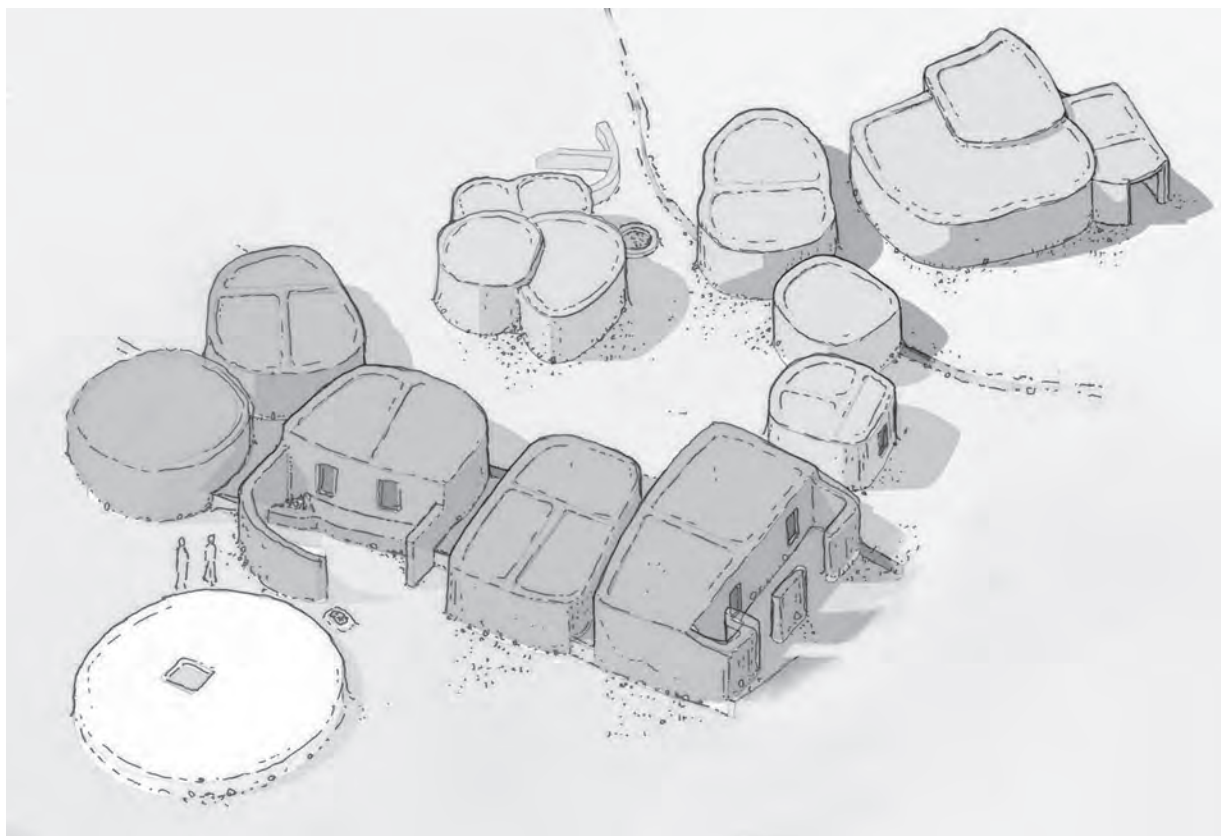


Fig. 1 Excellent photos, drawings and reconstructions (here: one of the more recent phases of the eastern part I/E) contribute to the attractiveness of Danielle Stordeur's publication on the early Holocene site of Jerf el Ahmar in Northern Syria. Reconstruction: Yves Ubelmann; by courtesy Danielle Stordeur.

least for the two latest communal buildings EA 53 in the east and EA 100 in the west.

In order to facilitate comprehensiveness and comparisons, a catalogue of houses for each phase, with measurements and complete architectural plans, and village plans for all phases might have allowed an easier understanding right from the beginning. Combining the information of Figures 38-46, 85 and 98 with Tables 3 and 4 are not a replacement. The illuminating descriptions of ritual behaviour, cultural traditions and collective memories in the third part make one curious to know more about the objects in one of the first villages of the Near East. Stordeur reports on 27 stone vessels, but how did they look like? How were the inhabitants related to other contemporary sites to the north and northeast, which were mentioned at the beginning of the book? In the end, it is the great story of the rise of communal life which leaves a lasting impression. Increasing communal and ritual activities were a means to strengthen and to keep the community together, guided by a powerful organizing authority, whether it was "a person, a group of persons, a sodality of age classes" (p. 359; translation MB) remains open to discussion. Stordeur emphasizes that the architectural developments at Jerf el Ahmar were not substitutive but additive, mirroring increasing tendencies of social differentiation and segregation of groups within the small hamlet. Whereas there seems to be a loosening of building convention for houses in the last phase, the communal buildings became more and more elaborate

with expressive figurative decorations. Does this reflect an "increased pressure on the individual by the group"? Is it indeed "a reflection of increased centralization of the authority" (p. 342)? Stordeur closes her book with such inspiring conclusions, at the same time she opens a wide window into the past for a fresh new discussion on early Neolithic village life in the Near East. Her impressive synthesis definitely deserves an English translation in order to gain a worldwide audience.

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David Eitam

2013 *Archaeo-industry of the Natufian culture: Late Epipalaeolithic rock-cut installations and groundstone tools in the Southern Levant*. (Hebrew with English Summary), PhD Thesis, Department of Archaeology, Hebrew University in Jerusalem, Supervisors: Prof. Anna Belfer-Cohen and Prof. Nigel Goring-Morris

Abstract

The main research question of the study was: What can the study of rock-cut utensils (henceforth=RCUs) and ground stones (henceforth=GSs) teach us about the Natufian culture? The geographical boundaries of the study include the 'core' area and part of the periphery of the Natufian hinterland (the Negev region), while its chronological framework extends to some pre-Natufian cultures, examining their similarities to and differences from the Natufian culture in order to highlight the latter's unique features. To answer the research question, hundreds of RCUs were documented (App. C) at thirty sites (out of 42 sites presented in App. B); methodology and a classification system were established (Chapter 1), including a primary typological list (App. A); and the resulting material were analyzed. The introduction presents the theme of the study, and the geographical and chronological outline; Chapter 2 presents the study's hypothesis, which is based on morphological and technological analyses as well as historical records and ethnographical parallels. Chapter 3 exhibits the experimental operations carried out to evaluate the hypothesis. The discussion is represented in two parts: the first (Chapter 4) presents the stone tools (see also App. A) and examines various interpretations of the use of rock-cut installations (the suggested functions are listed in App. D), while the second part of the discussion (Chapter 5) analyzes the geographical and chronological distributions of rock-cut installations at the Natufian sites and habitat. Chapter 6 is the summary of the study, answering the research question, displaying the contribution of the current study to a better understanding of the Natufians' food processing, settlement patterns, social practices and some spiritual aspects of the culture.

Food Processing: the functional study of Natufian stone tools has farther importance due to the extremely meager amount of archaeobotanical remains from the Late Epipaleolithic. The dozens of wild barley dehusking utensils – wide conical mortar (henceforth=WCM) and hundreds of narrow conical mortar (henceforth=NCM) provide a portion of the botanical missing link, indicating that barley was a staple plant food from the Late Epipaleolithic. The advantage of stone tool evidence on the archaeobotanical data is the ability to reconstruct, as in the case of NCM, the kind of food that was prepared and eventually consumed. Thus, primary dishes of the EN (and PPNA) were of two kinds: a variety of barley porridge and varieties of barley groats. Porridge seems to be a common Natufian

dish, as implied by the many concave deep rock-cut craters which served as cooking utensils. The soft and hot stew, which may have been warmed with heated pebbles, improved the quality of nutrition, and aided in digestion and satisfying hunger. The second reconstructed kind of nourishment obtained from barley was roasted groats in different stages of ripeness. The drastic shift from porridge to wild barley proto-bread in Late Natufian (LN) was enabled by the invention of the dehusking device – NCM – exclusive to the LN, as only peeled grains could produce flour for dough and bread making. The invention of bread enabled for the first time the production of food rich in energy; dry and dense pita bread (*lifa*, Arabic). Groating and probably coarse milling were also accomplished using the NCM, by rotary motion of the wooden pestle (as compared to the vertical motions during the peeling process), while additional fine milling, was carried out, if necessary, using the grinding utensils. In contrast, southern Levant oak acorns were and still are woody and insignificantly nourishing, and probably were only marginally used for food, unlike in other regions. The technological inventions and the development of threshing floors, hummeling, dehusking utensils and grinding devices, created an efficient agro-technological system, enabling the production of a large amount of barley proto-bread in LN. Consequently the staple food of the Early Neolithic period was porridge made of wild barley and oat and a variation of barley groats, similar to that of the EN.

Pattern of Settlement: Late Natufian sites contained numerous dehusking utensils, grinding and crushing installations, cooking and serving utensils as well as small silos and possibly small water cisterns; all indicate sedentary life style. The geographical distribution of LN sites, in the Mediterranean region and the Jordan valley, exhibit a pattern of smaller territories (of which included proto-bread production – NCMs) – ephemeral sites nearby the dwelling settlements. While the Negev region was settled in EN mainly in campsites (excluding Upper Besor VI), small dwelling sites and large congregation sites with hundreds of food production RCUs were established in the LN. This tips the scales toward LN sedentary settlements as opposed to temporary campsites of foragers. It seems that the term 'core' area, the Mediterranean Natufian 'homeland', becomes appropriate in the late part of the Natufian culture. The number of sites in the 'core' area in LN, in which stone tools were found, indicating the processing of plant food and sedentary life style, was doubled; eight dwelling sites, four burial sites and seven campsites with 'proto-bread devices', as compared to three sites and one burial site in the EN. The typological and functional analysis of the distribution of the Natufian stone tools revealed several distinctive sub-types, typical to some geo-cultural regions; typical to the 'North', the Negev and the central region. The Carmel region, a small and well-defined area, was settled during LN with various types of sites: one or possibly two dwelling sites, two burial sites and six

“satellite” sites, all with ‘proto-bread devices. The fact that most of the Natufian stone tool types were found in the Carmel region implies to the significance of the Carmel, possibly as a central region. At the end of the Natufian culture (Final Natufian) the ‘core’ area still contained three sites (Eynan, el-Wad and Nahal Oren), but it seems that the center of the Natufian population shifted to the Jordan valley, gathered in large sites – of which two have been discovered so far – Hruk Musa and Nahal Ein Gev II (around 100 people each).

Social Practices: the probably communal, egalitarian nature of Natufian society also indicated by the spatial and typological distribution of stone tools within sites and prominent architectural elements, is demonstrated in collective preparation of food and dining in a group or feasting, and the undertaking of communal social events by the site’s inhabitants. Furthermore, some processes of social change could be reconstructed according to our analysis. In EN, communal preparation of food and dining (which possibly bears symbolic or ritual characteristics) was undertaken by a large group gathered in a ‘public’ area at the center of the site (el-Wad) or in a large, open-sided structure (Eynan and Wadi Hammeh 27). Some cracks start appearing in the collective society during LN. The preparation of food, and eating, were carried out mainly in small dwelling structures (as in Eynan) by two or three people without ritual or symbolic features. Occasionally, dining in large groups continued. In the Negev region, according to the distribution of LN RCUs in dwelling sites (e.g. Rosh Zin), communal eating by the inhabitants was taking place, while feasts were attended by several groups taking place at the congregation site of Rosh Horsha-Saflulim. At Hruk Musa, a site from the end of the Natufian culture, a tendency toward reduced collectivity may be seen. While the preliminary processing (threshing of the barley ears) was done communally, the secondary processing (de-husking and milling) and preparing the proto-bread, and possibly dining were done in the vicinity of the dwellings or indoors. The spatial distribution of RCUs and the difference of stone tool types clarify once more the similar cultural character of the populations in the Natufian habitat and the mutual relationships between the different groups. This similarity existed side by side with exclusive regional-cultural differences revealing the typical sub-types of NCM.

The Spiritual World: the question we are concerned with is: Can stone tools, mainly used in connection to material needs (food, tools and artifacts production), teach us about the spiritual world of the Natufian beings? Two RCU sub-types have been classified as such according to morphological and technological features and in accordance with their location and context. The custom of placing an NCM dehusking device, cut into a boulder and pierced through the bottom, to serve as a monolithic stone in the grave representing afterlife Natufian belief, and as a source of nourishment, became common in LN. Twelve pierced NCMs have been found in five, possibly six burial complexes. Stekelis has suggested that the pierced boulder mortars

(“stone pipe mortars”) served as tombstones which connected the dead and the living through the hole in the bottom. There is a significant difference between the dozen pierced boulder NCMs found in graveyards, and the hundreds of NCMs found in domestic complexes which produced proto-bread for the living. The first have been left intentionally perforated, after being worn-out and pierced by intensive work possibly in the cemetery, while the latter were frequently repaired by sticking a pebble in the hole at the bottom.

The second possibly ritual RCU is a small, round box-like basin. The small basin was not used for production (as no usewear was observed on its straight side and bottom), nor was it a storage vat. The short sided box-like basin, identical in size and form, appeared in EN el-Wad and continued during LN at Nahal Oren Cave and in Raqefet Cave. It seems that the basin served as a mold for a disposable dish made of leaves or woven green barley stalks and could have been the Natufian eating bowl. In EN the box-like basins were cut into bedrock near burials and presumably were used for possibly placing plant food for the dead. In LN three box-like basins were found in isolated composite complexes with accompanying small installations. At Nahal Oren cave the small basin was carved on top of a rock-protrusion in the western cave wall, approximately 2.5m above the rock surface with five accompanying small NCMs cut in the cave bedrock. At Raqefet Cave the box-like basin was cut into the floor of a high alcove accompanying five cupmarks, and also cut on top of a huge boulder at the back of the first chamber accompanying some shallow cupmarks. All three presumably composite ritual complexes were situated above human burials. The location of the high rock-protrusion and the ‘bread devices’ beneath it, in a small chamber at Nahal Oren cave, overlooking the large graveyard below, and the two complexes of Raqefet overlooking the graves beneath them, may suggest a shift in the spiritual beliefs; the barley proto-bread was proposed metaphorically to the entire dead community. The box-like basin and the boulder pierced NCM are important additions to our knowledge of the Natufian treatment of the dead, as well as a most ancient evidence of the custom of supplying the dead with food in their graves.

The current study of stone tools in the southern Levant during the Late Epipalaeolithic clarifies significant issues concerning the Natufian culture, especially the first production of bread. Natufian culture bequeathed to its Neolithic successors an advanced material and rich spiritual culture which contributed to the establishment of agricultural societies in later periods. The resilience of the Natufian culture – its social coherence and its ability to adapt to changing subsistence systems – helped the Natufians produce the world’s most wide spread type of food.

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