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NEO-LITHICS 22

The Newsletter of Southwest
Asian Neolithic Research

NEO-LITHICS

The Newsletter of Southwest Asian Neolithic Research

from 1994-2001: The Newsletter of Southwest Asian Lithics Research

founded in 1994 by Hans Georg Gebel and Gary O. Rollefson,
following the 1st Workshop on the PPN Chipped Lithic Industries (Berlin 1993)

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Typesetting: Stephanie Renger, Kiel and Heidelberg University
DOI-Coordination and ePublication: Martin Renger, Heidelberg University
Cover Layout: Hans Georg Gebel, Avi Gopher and the TAVO Cartography (from 1994),
revised by Martin Renger (2020)

Online Publication/ Download of Neo-Lithics

<https://www.exoriente.org/downloads/neolithics.php> (all issues since 1994)
<https://journals.ub.uni-heidelberg.de/index.php/nl/issue/archive> (from 2021)

Neo-Lithics Publishing House

ex oriente Publishers, c/o Hans Georg K. Gebel
Karl-Marx-Str. 14, 16356 Ahrensfelde-Lindenberg, Germany

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© ex oriente e.V., Berlin - ISSN 1434-6990, eISSN 2750-2910

DOI: 10.48632/nl.2022.1

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Neo-Lithics is published and distributed by ex oriente, Berlin.

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Editorial

This editorial was written in the 20th week of the Gaza conflict and comes two years after this issue of Neo-Lithics should have been published. We apologise for the delay to our authors, members and our Neolithic family. After almost 30 years, ex oriente publishing Neo-Lithics, experienced its first major crisis, which affected the publication of this newsletter. But this means nothing in the face of the horror we see every day in Gaza and Israel.

In these times, we have been and continue to be increasingly paralysed by the various and accelerating regional and global conflicts and crises that are shaking our sense of life and confidence. But how much more suffer those who are directly and existentially affected, and how unbearable is seeing the many dying and dead? And what do the images and hatred in people's minds to our future? And it doesn't stop. If only the perspectives of mothers would take control of conflicts! Wouldn't women join and make the care and foreseen grief for children and sons the guiding avoidance behaviour in conflicts? Isn't it male behaviour that chiefly perpetuates cycles of violence and war throughout human evolution?

How have we, cultural researchers, dealt with the topic of the emergence of violence up to now? What role conflict research plays in archaeology? How can

we, as prehistorians, finally contribute to such research that at least works out the historical dimensions of this devastating human disposition to invest empathy only for one's own group – and offer it to a better world to come? Is recurring confined empathy really the unchangeable destiny of humankind?

Regarding confined empathy. Our archaeological community is also practising it these days – creating polarisation by one-sidedness and simplification between us without need or care. Systemic constraints demand signatures under open letters where self-responsible conscience should act for empathy with all who suffer, and for peace. This is how violence begins.

We conclude this editorial with a quote from Musharraf ad-Din Abdullah (Sa`adi), Golestan 1, The Conduct of Kings (c. 1259), which hangs in Persian on a carpet on a meeting room's wall in the United Nations building in New York:

*All human beings are members of one frame.
Since all, at first, from the same essence came.
When time afflicts a limb with pain
The other limbs at rest cannot remain.
If thou feel not for other's misery
A human being is no name for thee.*

Hans Georg K. Gebel and Gary Rollefson

Kites in the Desert: Placing Ancient Animal Traps in Context

Austin Hill, Bilal Fawwaz Boreni, Quinn Comprosky, Jennifer Feng, Rosemary Hanson, Blair Heidkamp, Morag M. Kersel, Kathleen D. Morrison, Gary Rollefson and Yorke Rowan

Introduction

The Harrat al-Sham, or the Black Desert, extends from southern Syria across Jordan and into northern Saudi Arabia. Across this virtually impassable rocky terrain, a remarkable number of anthropogenic features are identifiable. Although initially spotted by early aviators over 100 years ago, it is only through the more recent increase in accessibility of aerial and satellite imagery that the sheer quantity and widespread distribution has been recognized. The most familiar of these features are the desert ‘kites,’ extensive networks of animal traps built by prehistoric hunters in the Neolithic. Extensively mapped across a broad region (Crassard *et al.* 2015), over 6000 individual kites are currently mapped, and that number will expand with additional research in nearby regions (*e.g.*, Fradley *et al.* 2022). To date, 1281 kites are noted in Jordan (Crassard *et al.* 2015). The growing recognition of the abundance and distribution of kites across the region has driven significant research focus on the subject (Helms and Betts 1987; van Berg *et al.* 2004; Bar-Oz *et al.* 2011; Kempe and Al-Malabeh 2013; Abu Azizeh and Tarawneh 2015; Chahoud *et al.* 2015; Crassard *et al.* 2015; Hammer and Lauricella 2017; Repper *et al.* 2022), with most researchers working from remotely sensed data, although very recent excavations of kites contributed tantalizing new insights to their dating and function (*e.g.*, Crassard *et al.* 2022).



Fig. 1 The Black Desert, or Harrat al-Sham. (Figure: A. Hill; Map data: Google Earth Dada Slo, NOAA, US. Nav, NGA, CEBCO, Image Landsat/ Copernicus)



Fig. 2 Phantom 4 RTK taking off (Emlid RTK base station not pictured). (Photo: M. Kersel, KiC Project)

In June 2022, we launched a new project, the Kites in Context Project (KiC), which focused on a multi-scalar investigation of “Desert Kites” in the eastern *badia* region of Jordan, one of the core regions of kite distribution (Fig. 1). This long-term project is designed to provide novel insights into the chronology and function of these animal traps through an intensive study incorporating remote sensing with boots-on-the-ground excavation. The project operates at several scales of investigation, using satellite and aerial imagery to investigate the distribution of kites and associated structures throughout the region, drone imagery to map and record the landscape in high resolution around a small subset of kites in the *harra*, and excavation and terrestrial survey to study individual kites and associated structures at an even smaller scale.

In the first season (Summer 2022) of the KiC Project we had two primary goals: drone-based mapping of the landscape, with a focus on recording as many kites in the survey area as possible, and initial excavations of one kite. We decided to focus on the area around a site located along a wadi known locally as Wadi el-Mahdath, located at 32°19′35.64″N, 37°59′52.41″E. Chosen because the site appears to be a concentration point for human and animal use of the landscape, it contains many apparent Neolithic structures, and sits right along one of the core “chains” of kites in the *harra*. We focused our excavation efforts for the season on the kite that sits immediately to the north of Wadi el-Mahdath,

which we labelled “KiC 1-4”, and the aerial survey on the kites to the immediate north and south.

Aerial Survey

Previous Work

This new project builds on the aerial survey work previously conducted (Hill *et al.* 2014; Hill and Rowan 2017, 2022) as part of the Eastern Badia Archaeological Project at the sites of Wisad Pools and Wadi al-Qattafi (Rowan *et al.* 2015, 2017; Rollefson *et al.* 2018; Hill *et al.* 2020). Earlier work demonstrated that high-resolution photogrammetry using drones can provide significantly more detailed recording of landscape data than satellite imagery alone, and at relatively low cost. By using drones to survey landscapes in the *badia*, we can record human-made features at a notably higher resolution than is possible with satellite imagery, allowing for the production of more detailed Digital Elevation Models/ DEMs. The increased resolution from drone mapping permits us to record smaller and more imperceptible prehistoric features than possible from the much coarser imagery of satellite data. We have greater information on the construction of anthropogenic structures and the utilization of landscape features like topography. The drone survey at Wadi al-Qattafi enabled us to produce a database of thousands of ancient and modern structures and to identify a previously unrecognized kite (Hill and Rowan 2022). With this proven methodology, we turn to mapping another area of the *badia* to understand better the complex association of different structures and the ancient use of this landscape.

2022 Aerial Survey Campaign

New aerial surveys are, in part, a continuation of aerial surveys we conducted between 2012 and 2016 as part of the Eastern Badia Archaeological Project (Hill *et al.* 2014; Hill and Rowan 2017). Between 2016-2019 it was impossible to get permission to operate drones for archaeological surveys, and then no fieldwork was conducted due to Covid in 2020-2021. In 2018, we experimented with using Kite Aerial Photography (KAP) for aerial surveys at the Eastern Badia Archaeological Project, but for large-scale surveys, this proved impractical. With the new project, we were delighted to receive permission to operate drones with the assistance of the Royal Film Commission and the Department of Antiquities, and through oversight by the military.

For this new project, we brought an advanced drone as our primary mapping equipment, a *DJI Phantom 4 RTK*, and a smaller, much less powerful drone, a *DJI Mini 2*, as a backup. The *Phantom 4 RTK* is based on an older drone model (the *Phantom 4*) but incorporates a Real Time Kinematic (RTK) GPS/GNSS receiver, making it an ideal archaeological mapping platform. RTK positioning onboard the drone collects centimeter-ac-

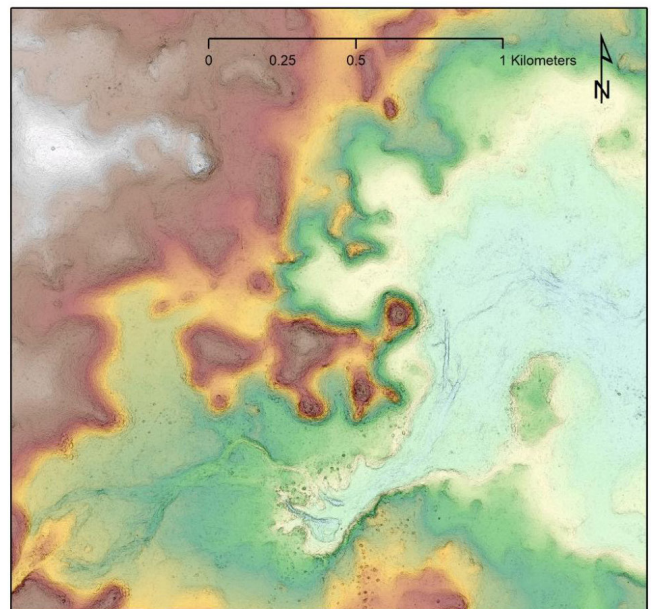
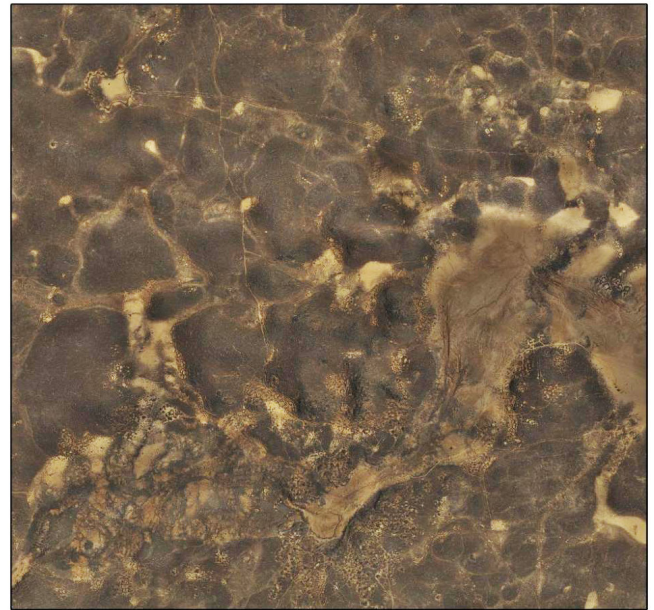


Fig. 3 An orthophoto (upper) and hillshaded DEM (lower) of a large area surrounding the site and excavation. (Figure and Imagery: A. Hill, KiC Project)

curate positioning data as precision “geo-tags” attached to every recorded image. These high-precision geotags can be utilized when post-processing sets of overlapping images with photogrammetry software to produce exceptionally accurate, high-resolution, undistorted composite orthoimages of the landscape (Hill *et al.* 2019).

2022 Aerial Survey Results

The aerial survey was exceptionally successful. We visited 15 individual kites and flew approximately 24 different “missions” comprising between one and six batteries worth of flights per mission. We recorded approximately 14,000 drone images of the kites, other attached and nearby structures, and the surrounding



Fig. 4 A close-up ortho/ DEM composite showing the “Roman Pool” area. Note the kite on the southwest side of the pool and multiple structures around the pools. (Figure and Imagery: A. Hill, KiC Project)



Fig. 5 Oblique aerial view of two kites in the survey area. (Image: A. Hill, KiC Project)

landscape. The vast majority of these are sets of mapping images that will be post-processed to produce the primary output of the survey: Orthophotos and Digital

Elevation Models (Figs. 3-4). That processing is ongoing. We can only do rough processing in the field to ensure the data is acceptable.

A smaller fraction, approximately 3,000 of the 14,000 images, are oblique shots that are primarily meant as illustrations and basic records of the kites and landscape. Like the APAAME project, these oblique shots provide an important record of the structures in the region as they existed in 2022 (Fig. 5).

Excavations

For the initial season of the KiC Project, the primary goal of the excavation was to examine the construction and function of the kite cells. In Kite 1-4, Cells 1, 9, and 10 were selected due to their intact form and locations within the kite (Fig. 6). Each cell was sectioned, and half of the cell was excavated. Multiple samples for OSL dating were taken from each excavated cell and one below the sondage of the enclosure wall.

Kite KiC 1-4, Cell 9: Cell 9 (Fig. 7) was bisected along a north-south axis, cutting the cell in half from the apparent entrance to the cell from the kite interior to the exterior cell wall. The cell is circular in shape with walls that are 1.25-2m thick, though we suspect the thickness may have resulted from the tumble of the previously higher walls and superstructure. At present, the walls are 2-3 courses high and constructed by loose stacking of smaller cobbles with larger stones placed

on top. The interior of the cell measures 4m across. The eastern half of the cell was excavated. The top 70cm of fill was a homogeneous reddish beige loose sediment. At 70cm below the surface, the sediment became much more compact and a lighter beige color. This continued to the top of the bedrock, which was exposed at 80cm below the surface. Within the entire fill matrix, there were a number of small to medium-sized cobbles, which were located primarily around the exterior wall, indicating they likely were tumble. The bedrock at the bottom of Cell 9 covered over half of the base of the section. It was flat and could have been used as a surface or floor for the cell.

Kite KiC 1-4, Cell 10: Sectioned on the north-south axis, Cell 10 (Fig. 7) had a similar sediment sequence to that of Cell 9, with light loose sand sediment at the top, becoming slightly more compact. At least one small drill was found within this sediment and fragments of Dabba marble or turquoise. Cell 10 was distinguished by the collection of smaller cobbles near the bottom of the cell (cobbles, *c.* 130 x 83cm). Removing those cobbles exposed an interesting alignment of larger basalt cobbles that seemed to line one side of an additional pit feature. This was apparently the sterile sediment that was excavated to create greater depth at the bottom of the cell.

Kite KiC 1-4, Cell 1: Cell 1 was bisected across the southwest to northeast axis to accurately section the

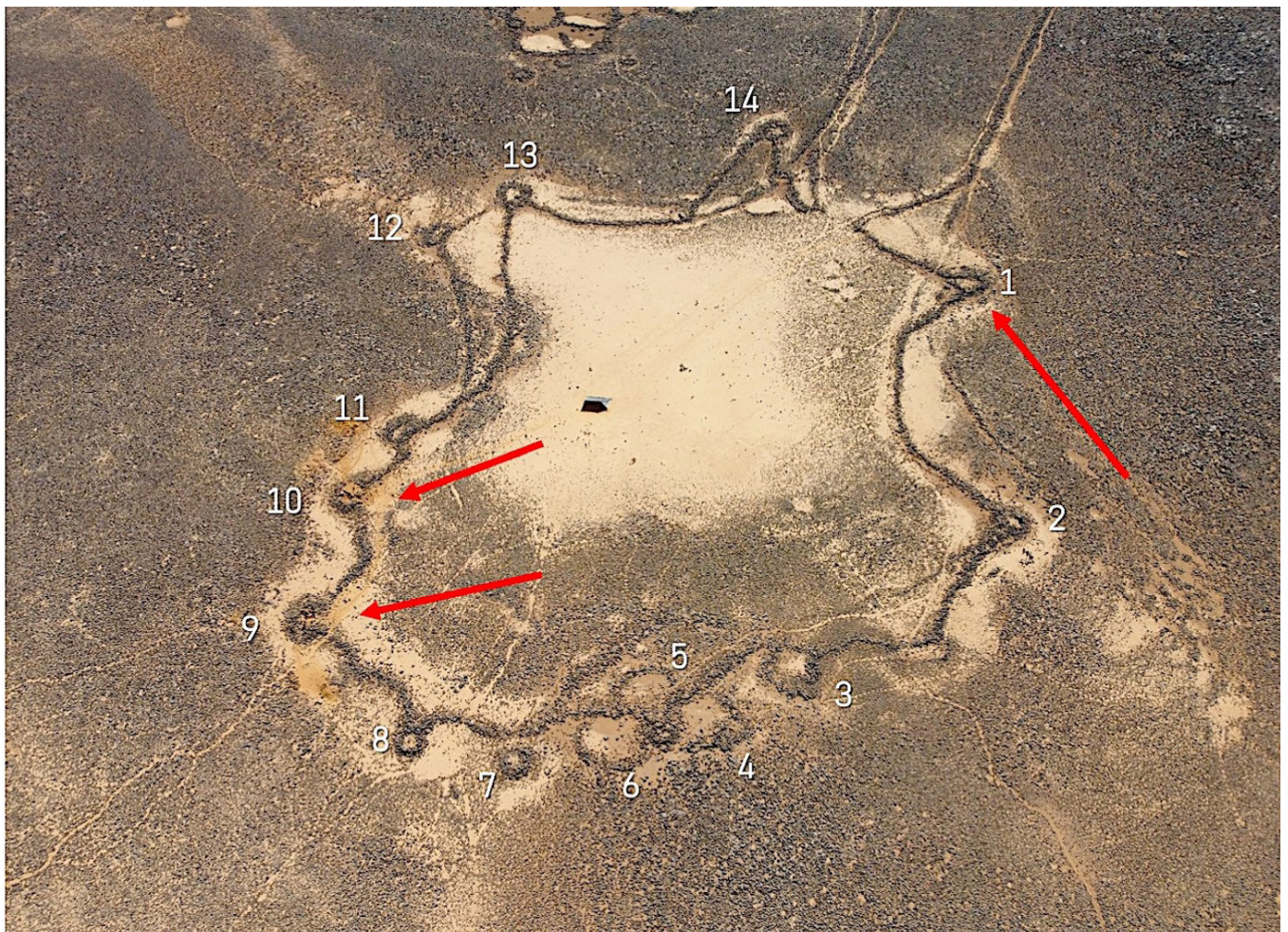


Fig. 6 Oblique view of a pair of kites (1-15 and 1-16) in the survey area, shot with the DJI Mini 2 drone. (Image: A. Hill, KiC Project)



Cell 9



Cell 10

Fig. 7 Views of excavated Cells 9 and 10. (Photo: Y. Rowan, KiC Project)

cell in half. The circular cell was larger than Cells 9 and 10. The interior fill was homogeneous reddish beige. In the upper 35cm, small to medium cobbles were found primarily around the edges of the exterior wall. At 35cm below the surface, we started to find larger slabs, particularly in the northern section towards the wall with the interior of the kite. These slabs were all slanted with the eastern edges pointed down. Some of these slabs looked as if they were stacked on another flat slab located on the center section line, cutting the cell in half. These slabs were not found in the southern section of the cell. At 40-50cm down, a series of large flat stones appeared in the bottom of the cell, apparently bedrock. The slanted slabs appear to have been stacked on this bedrock, possibly creating a short wall sectioning the cell into smaller compartments. Also of note is a large stone standing up, which appears to be wedged between bedrock slabs and secured with small and medium cobbles. This upright stone could be another edge of an interior section with the slabs in the center line. The fill continues down to a gritty pebble-filled layer, which appears to be sterile, eroded basalt bedrock. The northeast quadrant of Cell 1, between the slabs and upright, reaches 70-80cm of depth.

The excavation of these three structures demonstrates a diversity of construction styles for the kite cells. The shape of the cells, depth, and bases are all varied. All three cells have walls facing the interior of the kite. If the function of the kite cells was to capture gazelle where they would then be captured or killed (Crassard *et al.* 2022), it makes little sense for the cells to have walls facing the interior of the kite, closing off the cells. If the walls facing the interior of the kite are original, this would hinder the entrance of a gazelle, which could easily jump back out if it jumped into the cell. Given the presence of the wall facing the interior kite and the shallow depth of the cells, our current

hypothesis is that these cells served as “hunter’s blinds”, where the hunters would be hidden until the gazelle entered the large enclosure. This suggests that the cells at this kite are more likely to be hunting blinds than gazelle pit traps, unlike those discovered at other recently excavated kites in Jordan with much deeper cells (Crassard *et al.* 2022: Figs. 5-7). Additional cells must be excavated to understand if there are two different forms of cells with different functions.

Petroglyph Survey

At the main part of the site, around Wadi el-Mahdath, we noticed a high concentration of petroglyphs clustered around the potential water source of the area the local Bedouin refer to as the “Roman Pool”. Like the clustering of petroglyphs at Wisad Pools, the rock art depicts a range of animals (Hill *et al.* 2020). We undertook a small survey of the petroglyphs to see if we could see any patterning that might delineate any association with the many hundreds of anthropogenic structures in this area. Many of the structures appear to be later tower tombs, presumably dating between the Iron Age to Safaitic period, like those found at most higher elevation spots across the *badia*, but given the presence of the kite chain, water resources and flint scatters, we assume many must be earlier as well. We hoped that surveying the petroglyphs might give some glimpse into past distributions of human occupation on the landscape.

We surveyed a 100 x 200m area and recorded all observed petroglyphs (Fig. 8). In total, there were more than 400 individual petroglyphs. Somewhat surprisingly, there is distinct patterning to the distribution. Most petroglyphs occur at the highest elevations in the survey area. Density drops significantly, almost to zero,

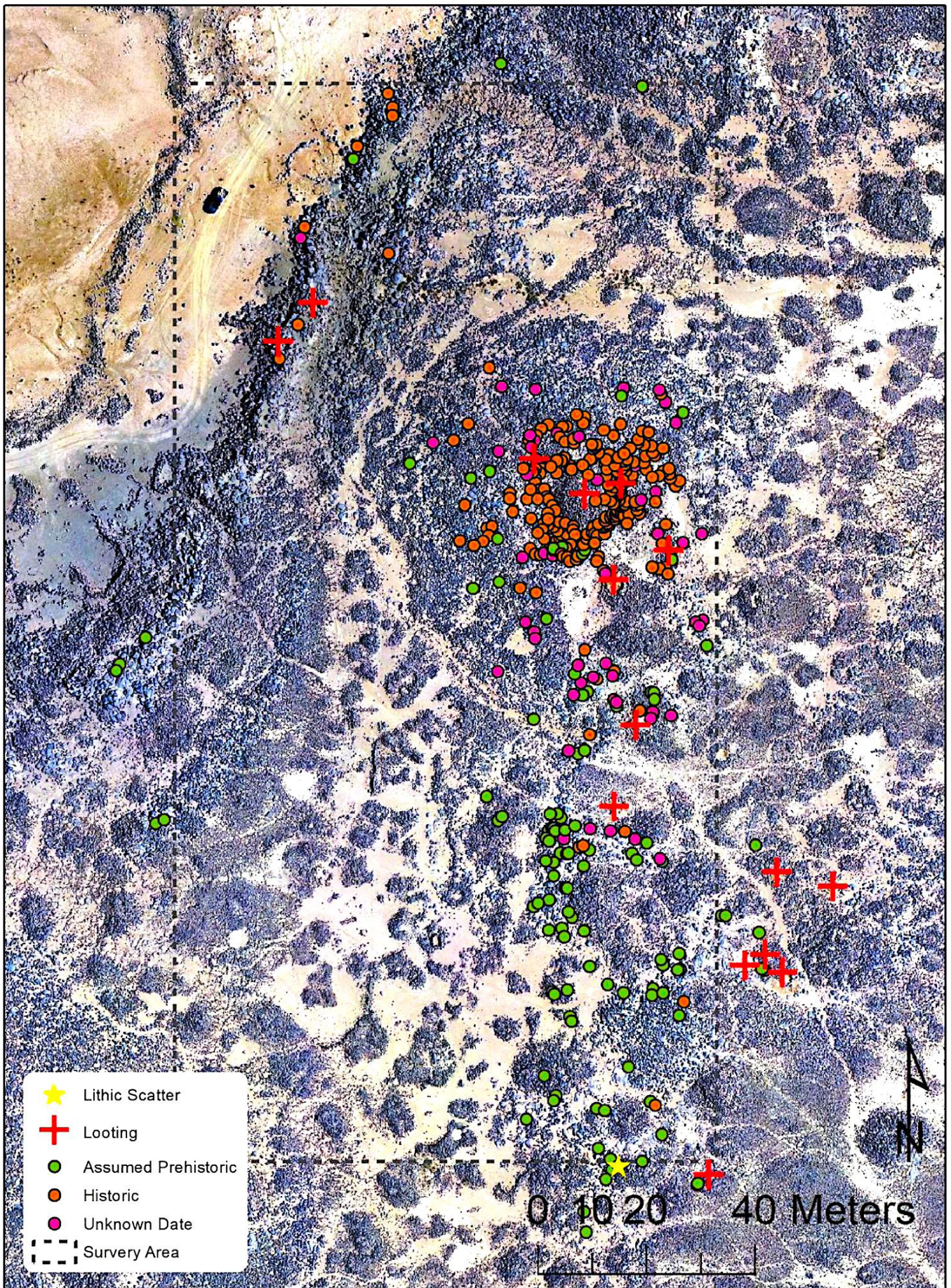


Fig. 8 The distribution of petroglyphs, looting, and lithic scatters near the "Roman Pool." (Fig. and imagery: A. Hill, KiC Project)

everywhere else, except where vertical stones with faces pointing toward the “pool” area. Around the largest and highest tomb, which we assume to be a later-period burial, there are dense clusters of camel depictions and Safaitic inscriptions. But only a few dozen meters to the south of this cluster, the camels and Safaitic inscriptions disappear and are replaced by petroglyphs that we associate with earlier periods and depictions of wild animals like ibex, like the pattern documented at Wisad Pools (Hill *et al.* 2020).

As part of this survey, we collected surface samples of lithics from a few areas that had been disturbed by looting (Fig. 9). This small sample was analyzed to give some context for the area around the peak petroglyph density and close to the pool. Lithics collected include PPNB naviform blades and cores, a mix of Late Neolithic blades, some of which have likely been reworked in the Chalcolithic/Early Bronze age into denticulates, and a Late Acheulian/Early Middle Paleolithic Levallois point.

Looting

In the past, we have identified evidence of looting at our previous sites in the *badia*, at Wisad Pools and Wadi al-Qattafi. Those sites are significantly more difficult to get to than the current survey area. Unsurprisingly, we noticed significant evidence for looting at and around the main site of Wadi el-Mahdath (see Fig. 6) and at many of the kites and structures we visited. Recording looting and more recent disturbances to the area is an ongoing and elemental part of understanding the use of this landscape in the past and in the present, and a core part of our work documenting the current context of the desert kites.

Conclusion

From the drone mapping to the excavations of kite cells and recording the rock art and looting, this was a successful archaeological season for the new KiC Project. Processing the 14,000 images into orthophoto maps and Digital Elevation Models will take many more months of work, but initial testing demonstrates that this data will produce maps with superb accuracy and excellent coverage. Our excavations of the kite cells leave unanswered questions – how did they function? Did hunters use them to lie in wait for gazelle, or were they pits for the gazelle to fall into during their panic, as seemed likely elsewhere? We expected to find deep pits like those recently published by Crassard and colleagues (Crassard *et al.* 2022), indicative of the latter. Still, our results suggest there may be more variability, with at least some possibly functioning as blinds. Further testing will be necessary to determine whether this is correct or not. Crucially, we hope that OSL and ^{14}C dating, from this season and future seasons, will also help answer some of the ongoing questions about the timing of the construction and abandonment of these structures. There remain very few good, published dates for the kites and we hope that our work will help build a comprehensive picture of kite development and operation. Future seasons of research will focus on additional mapping of kites and the associated features as well as expanded excavation of kites and associated structures that have been surveyed and mapped via drone.

Acknowledgements: We thank the Department of Antiquities of Jordan for their support and permission to conduct research in the region. This material is based upon work supported by the National Science Foundation under Grant #2122443.

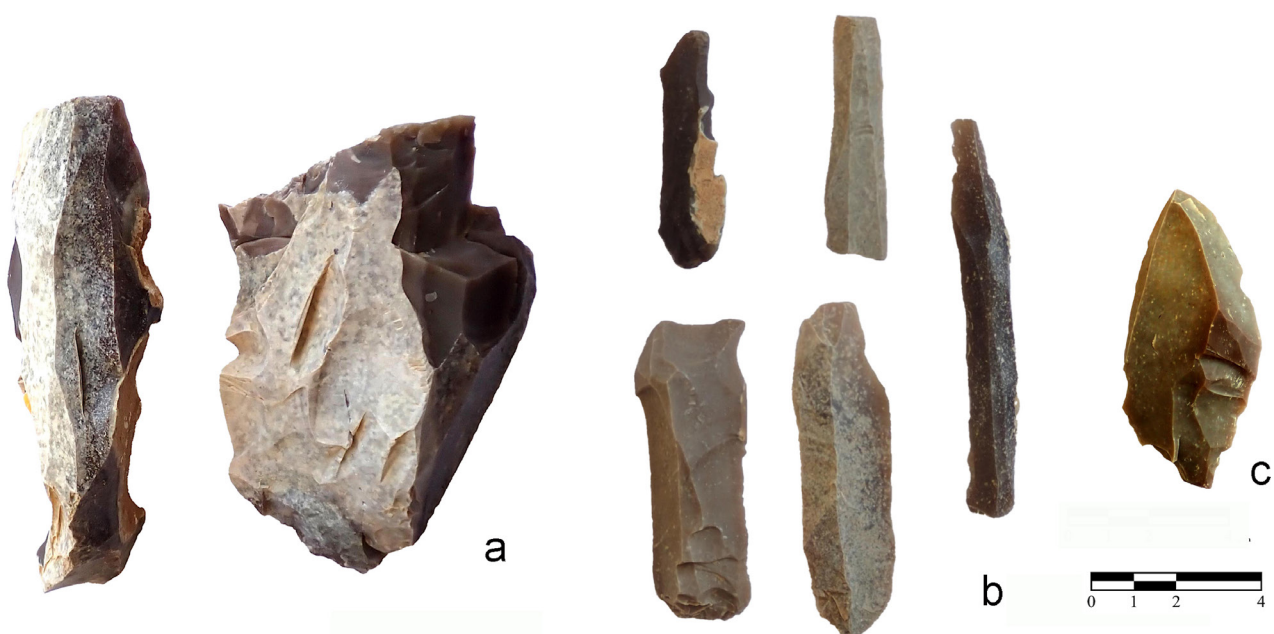


Fig. 9 Lithics collected from the surface near a looter's pit, close to the concentration of petroglyphs. (Photos: G. Rollefson, KiC Project)

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References

- Abu Azizeh W. and Tarawneh M.B.
 2015 Out of the *harrat*: desert kites in south-eastern Jordan. New results from the South Eastern Badia Archaeological Project. *Arabian Archaeology and Epigraphy* 26: 95-119.
- Bar-Oz G., Nadel D., Avner U. and Malkinson D.
 2011 Mass hunting game traps in the southern Levant: the Negev and Arabah "Desert Kites". *Near Eastern Archaeology* 74: 208-215.
- Chahoud J., Vila E. and Crassard R.
 2015 A zooarchaeological approach to understanding desert kites. *Arabian Archaeology and Epigraphy* 26: 235-244. <https://doi.org/10.1111/aae.12054>
- Crassard R., Abu Azizeh W., Barge O., Brochier J.É., Chahoud J. and Régagnon E.
 2022 The use of desert kites as hunting mega-traps: functional evidence and potential impacts on socioeconomic and ecological spheres. *Journal of World Prehistory* 35: 1-44. <https://doi.org/10.1007/s10963-022-09165-z>
- Crassard R., Barge O., Bichot C.E., Brochier J.É., Chahoud J., Chambrade M.L., Chataigner C., Madi K., Régagnon E. and Seba H.
 2015 Addressing the desert kites phenomenon and its global range through a multi-proxy approach. *Journal of Archaeological Method and Theory* 22: 1093-1121.
- Fradley M., Simi F. and Guagnin M.
 2022 Following the herds? A new distribution of hunting kites in Southwest Asia. *The Holocene* 32: 1160-1172. <https://doi.org/10.1177/09596836221114290>
- Hammer E. and Lauricella A.
 2017 Historical imagery of desert kites in Eastern Jordan. *Near Eastern Archaeology* 80: 74-83.
- Helms S. and Betts A.
 1987 The desert kites of the Badiyah esh-Sham and North Arabia. *Paléorient* 13(1): 41-67.
- Hill A.C. and Rowan Y.
 2017 Droning on in the Badia: UAVs and site documentation at Wadi al-Qattafi. *Near Eastern Archaeology* 80: 114-123.
 2022 The Black Desert Drone Survey: new perspectives on an ancient landscape. *Remote Sensing* 14: 702. <https://doi.org/10.3390/rs14030702>
- Hill A.C., Limp F., Casana J., Laugier E.J. and Williamson M.
 2019 A new era in spatial data recording: low-cost GNSS. *Advances in Archaeological Practice* 7: 169-177. <https://doi.org/10.1017/aap.2018.50>
- Hill A., Rowan Y. and Kersel M.M.
 2014 Mapping with aerial photographs: recording the past, the present, and the invisible at Marj Rabba, Israel. *Near Eastern Archaeology* 77: 182-186. <https://doi.org/10.5615/neareastarch.77.3.0182>
- Hill A.C., Rowan Y.M., Wasse A. and Rollefson G.O.
 2020 Inscribed landscapes in the Black Desert: petroglyphs and kites at Wisad Pools, Jordan. *Arabian Archaeology and Epigraphy* aae.12158. <https://doi.org/10.1111/aae.12158>
- Kempe S. and Al-Malabeh A.
 2013 Desert kites in Jordan and Saudi Arabia: structure, statistics and function, a Google Earth study. *Quaternary International. World-wide Large-Scale Trapping and Hunting of Ungulates in Past Societies* 297: 126-146. <https://doi.org/10.1016/j.quaint.2013.02.013>
- Repper R., Kennedy M., McMahon J., Boyer D., Dalton M., Thomas H. and Kennedy D.
 2022 Kites of Al-Ula County and the Harrat 'Uwayrid, Saudi Arabia. *Arabian Archaeology and Epigraphy* 33: 3-22. <https://doi.org/10.1111/aae.12214>
- Rollefson G., Rowan Y., Wasse A., Kersel M., Hill A., Lorentzen B., Ramsay J. and Jones M.
 2018 Excavations of structure W-80, a complex Late Neolithic building at Wisad Pools, Black Desert. *Annual of the Department of Antiquities of Jordan* 59: 531-544.
- Rowan Y.M., Rollefson G.O., Wasse A., Abu Azizeh W., Hill A.C. and Kersel M.M.
 2015 The "land of conjecture": new late prehistoric discoveries at Maitland's Mesa and Wisad Pools, Jordan. *Journal of Field Archaeology* 40: 176-189.
- Rowan Y.M., Rollefson G., Wasse A., Hill A.C. and Kersel M.M.
 2017 The Late Neolithic presence in the Black Desert. *Near Eastern Archaeology* 80: 102-113. <https://doi.org/10.5615/neareas-tarch.80.2.0102>
- van Berg P.L., Vander Linden M., Picalause V., Lemaitre S. and Cauwe N.
 2004 Desert-kites of the Hemma Plateau (Hassake, Syria). *Paléorient* 30: 89-99.

The Neolithic Periods' Finds from the Karstic Cave of Nahal Rephaim, Southwest Jerusalem

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An intact karstic cave with active speleothems was found during drainage works at Nahal Rephaim (Arabic: *Wadi el-Ward*) in Jerusalem (Fig. 1). The cave's ground is oval in outline, c. 40 x 25m and has a talus caused by a large stone in the centre (c. 5m in height). The entrance to the cave was probably possible through a shaft c. 6m above the top of the cave's talus. Three excavation areas were opened in the east, the southeast and the southwest (Figs. 2-3). Trial excavations revealed circular and rectilinear structures with few fireplaces, pits, and a primary burial with poorly preserved skeletal remains. Other human remains and animal bones were found in the cave's sediments. The finds comprise pottery sherds, flint and other stone artefacts dated mainly to the Early Pottery Neolithic (EPN; 6,500-5,800 BCE) and the Late Pottery Neolithic/ Early Chalcolithic (LPN/ECh; c. 5,800-4,500 BCE) periods; few may hint to Late Chalcolithic (4,500-3,700 BCE) occupations. A fascinating female figurine made of a stalagmite flow fragment was found near the burial. While the study of the cave's stratigraphy is still in progress, this report aims to preliminarily present the findings, with a detailed description of the chipped stone material retrieved during the salvage excavation conducted in December 2020 on behalf of the Israel Antiquities Authority (IAA).

The Cave

The Nahal Rephaim Cave is an active karstic cave situated along of Nahal Rephaim seasonal stream in the southern part of Jerusalem (Fig. 1). The cave's main hall is about 700m² (Figs. 2-3). About half of its interior is covered by a large stone talus. The talus rises to a height of 5m relative to the elevations along the cave's walls, and above it, a natural shaft vertically extended to a height of 6m more.

This shaft, which is the current entrance to the cave, was probably used as the original access too. The cave is rich with stalagmites formed over tens of thousands of years. Some of them are 1m in diameter and 2.5m high (Fig. 2.2). Formation of stalactites on the walls of the cave suggests that in the distant past, the interior surface reached a considerably higher elevation and that the sediment was probably washed down to additional spaces not yet discovered. In a preliminary survey, architectural remains, pottery concentrations, ground stone tools and human skeletal remains (including a skull fragment of a child) were noted on the surface along the cave's walls.

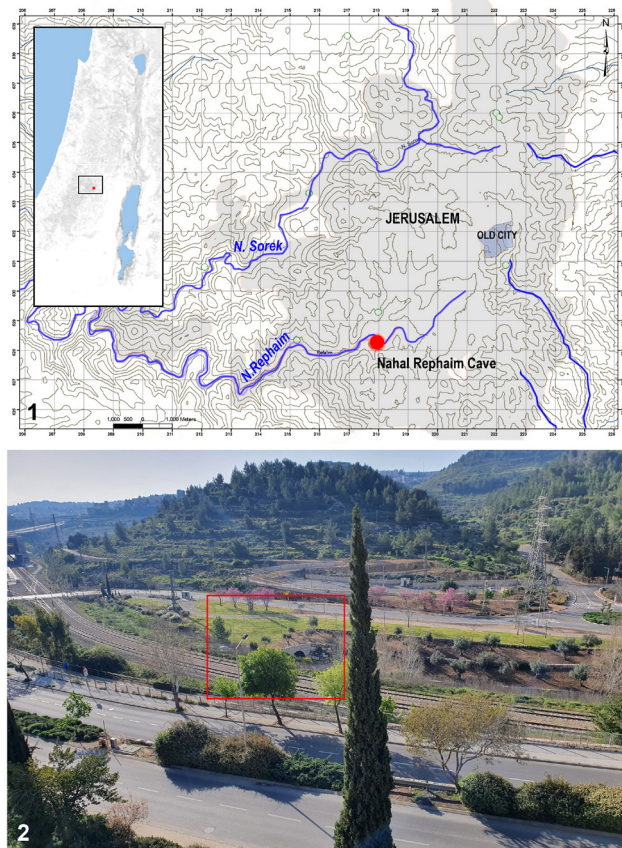


Fig. 1 1 Location of Nahal Rephaim Cave near Jerusalem;
2 General view of the cave's location within the Rephaim Valley, looking southeast. (Map: A. Fadida based on ArcGIS, Esri; Photo: I. Milevski)

The Excavation

The trial excavation was carried out in 2 x 2m squares in three areas: eastern, southeastern and southwestern, exposing a total surface of 48m² (Fig. 3). In the southwestern area, a single square was opened, revealing the remains of a wall and two pits that contained stones and pottery sherds, including a single sherd with decoration typical to the Wadi Rabah Culture. The eastern area comprised two squares that yielded pottery dating to both EPN and LPN/ECh periods (Fig. 4).

The excavation focused on the southeastern area in which ten squares were opened in the space between the edge of the talus and the eastern cave wall. In this area, the remains of walls and installations were partially visible on the surface. Along the cave wall, the stone features were associated with a living floor that comprised hearths and a pottery concentration (dated to



Fig. 2 1 General view of the Nahal Rephaim Cave, looking south; 2 hall of the stalagmites, looking north; 3 southeastern area of excavations, Square F13, looking west. (Photos: G. Haklay, S. Halevi, A. Peretz)

the LPN/ECh).¹ The living floor was levelled above a 10cm thick sediment layer resting on top of flowstone layers. This layer contained only a few finds; among them were two exceptional flint tools that were carefully shaped by flat-pressure retouch (*cf.* Fig. 5). At the westernmost square of this area, an accumulation of small stones was covering the living floor. This accumulation yielded many pottery sherds dated to both phases of the Pottery Neolithic period and a retouched obsidian blade.

At the foot of the talus, about 3m away from the cave wall, the flowstone layers were cut by human activities, including digging pits and possibly a burial. In a partial and crumbling condition, human bones were discovered at a depth of about 0.5m below the surface in Square F13 of the southeastern area. Despite the poor state of preservation in this case, it was possible to determine that the bones were in articulation. Therefore, it is possible that these were the remains of a primary burial of an adult in a flexed position. The bones were associated with a concentration of stones and finds, including a flint sickle blade and pottery dated to the EPN period. Just north of where the flowstone layers ripple and form a hill, the top flowstone layers appear to have been cut around the remains of a destroyed stalagmite. A figurine was found on top of the rubbles in Square F13 (*cf.* Fig. 6.2).

The Pottery Assemblages

The pottery assemblages (Fig. 4) consist of 237 diagnostic pottery sherds; no complete or restorable vessels were found. The most prominent types of the EPN assemblage are bowls. The bowls are of two types: deep or hemispherical. Deep bowls have flared, straight, or curved walls and a small, flat, or rounded base. The bowls are coarsely constructed with a rough surface, sometimes smoothed with grass. Some bowls have horizontal small lug handles, in a few cases pierced. Hemispherical or globular bowls resemble a small open hole-mouth. Additional vessel types in the Nahal Rephaim assemblage were open hole-mouth jars and large necked jars with sloping shoulders.

The EPN pottery of Nahal Rephaim doesn't bear any decoration. Since the differences in pottery between the main EPN entities, the Yarmukian and Jericho IX (Lodian), are mainly based on the decorative style, it is therefore hard to establish the cultural affiliation (*cf. e.g.*, Garfinkel 1992, 1999: 16-103); but few features found at Nahal Rephaim pottery seemingly exist only in the Jericho IX repertoire: jars with relatively closer neck and relatively sloping shoulder, flat lug handles, and large lug handles rising above the rim (*e.g.*, Garfinkel 1999: Figs. 50, 58, 60).

The LPN/ECh pottery assemblage from the Nahal Rephaim Cave included jars, bowls, hole-mouth jars,

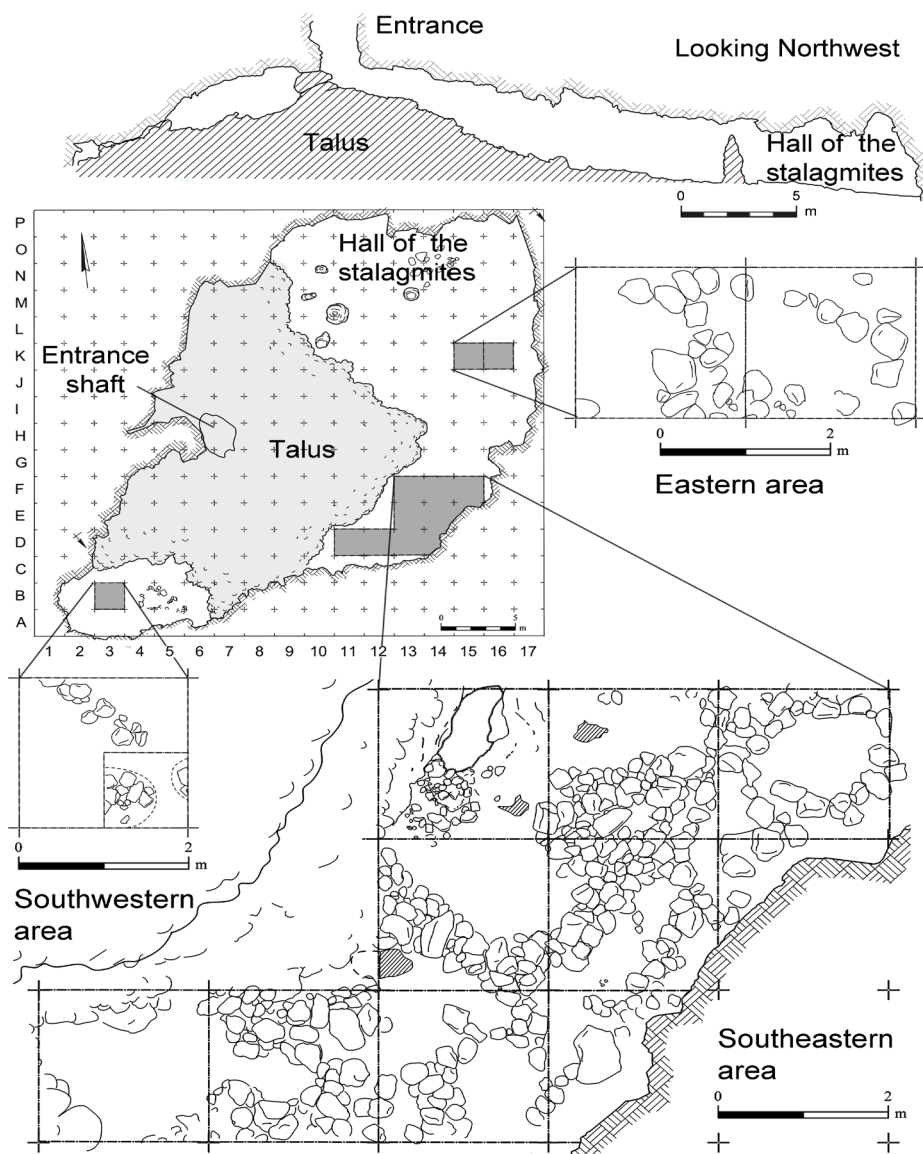


Fig. 3 Plan and section of Nahal Rephaim Cave with the excavated areas. (Drawing: O. Rose and G. Haklay)

handles and bases. Some of the main ceramic indicators of this time span are represented in this assemblage: the bow-rim jar is the main marker. This type of vessels begins already with the Wadi Rabbah Culture, nevertheless, in this period the angle between the neck and the body is more moderate (Milevski *et al.* 2020: 252). Only one sherd (Fig. 4.20) exhibits the classic decoration of the Wadi Rabah Culture, of the early phase of the LPN/ECh.

Another *fossile directeur* is the strap handles broadening at the point of joining the vessel. This type of handle was defined at Tell Tzaf as the marker of Beth Shean XVIII culture (termed Middle Chalcolithic by Garfinkel 1999: 181). Bowls with straight walls, usually of small size, are a known marker of the Late Chalcolithic period, but their roots can be seen in this period. Other bowls, medium-sized, sometimes have fairly flaring walls. A spouted vessel with an applied rope decoration (Fig. 4.21) is a prevalent vessel in the Late Chalcolithic period (*e.g.*, Commenge-Pellerin 1987: Fig. 26.1-6; Garfinkel 1999: Figs. 137, 145). Spouted vessels also appear infrequently in the earlier LPN/ECh (*e.g.*, Garfinkel 1999: Fig. 100.1).

The Lithic Assemblages

The chipped stone assemblage retrieved during the excavation at Nahal Rephaim Cave is small; it includes 33 chipped flint items, two chipped obsidian bladelets and one chipped stone tool.

The flint assemblage includes nine primary elements, eight flakes and four core trimming elements, ten tools and two cores. The debitage items originate from a non-diagnostic *ad hoc* knapping reduction sequence for flake production. They were knapped of non-homogenous brecciated Meshash Flint, of beige color with brown or grey stripes and limestone inclusions, typical to the region (Barzilai *et al.* 2020).

The two cores were also knapped from local Meshash Flint nodules of beige color with coarse-grained brown inclusions. Both cores were knapped for flake production; one is a large single platform core, and the other is a large single central surface core. Both cores were abandoned probably due to the poor quality of the raw material with imperfections such as limestone inclusions and cracks, and do not exhibit exhaustion of the entire volume potential.

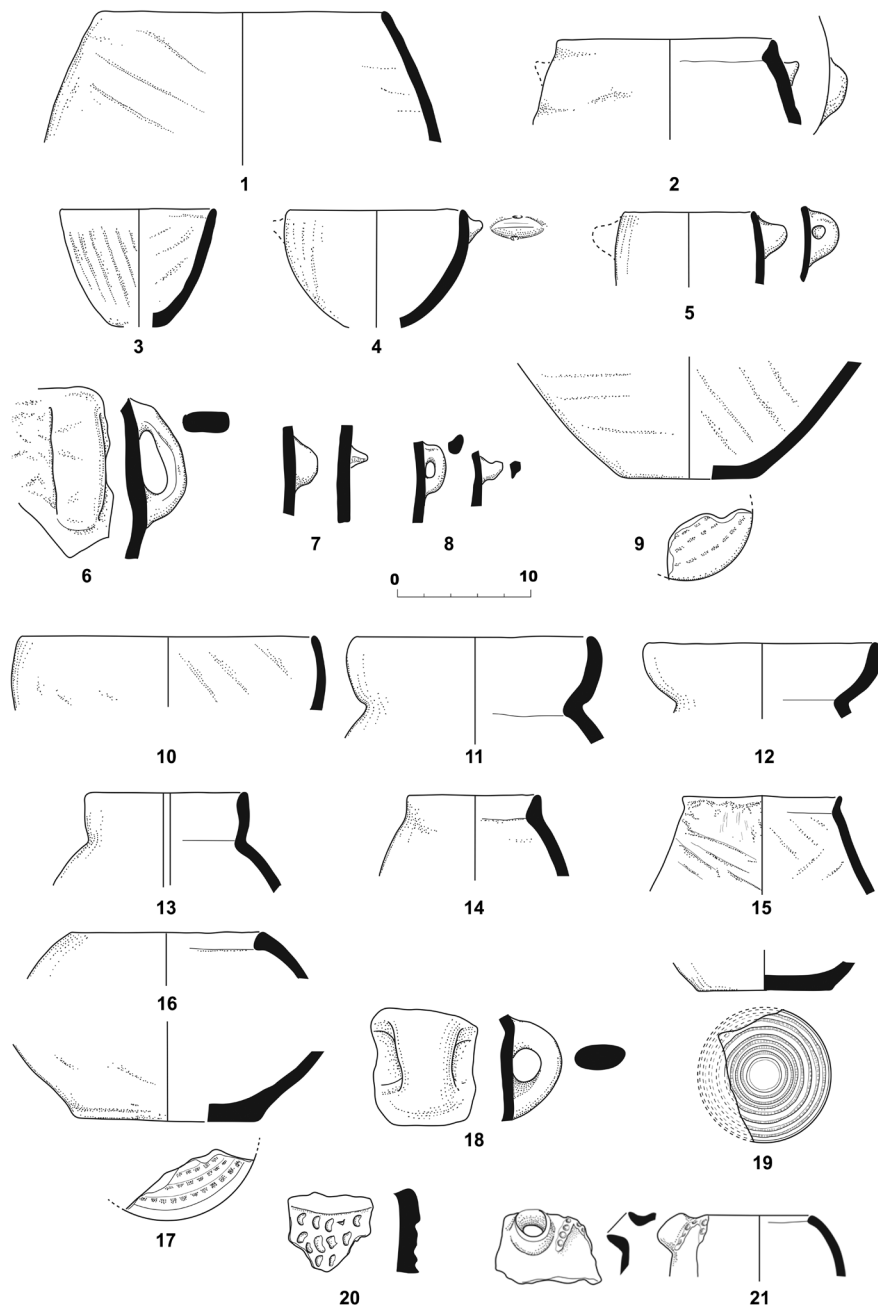


Fig. 4 Pottery from Nahal Rephaim Cave: 1-9 Early Pottery Neolithic: 1-2 holemouth jars, 3-5 bowls, 6 loop handle, 7 lug handle, 8 horizontal loop handle, 9 jar base; 10-20 Late Pottery Neolithic (Early Chalcolithic): 10-13 bow rim jars, 14-15 storage jars, 16 holemouth jar, 17, 19 jar bases (mat impressed), 18 loop handle, 20 Wadi Rabah decorated sherd; 21 Late Chalcolithic vessel with plastic decoration. (Drawings: C. Hersch)

Tools

The tool assemblage includes ten items. Contrasting the unremarkable nature of the debitage components, some of the tools are of great interest being extraordinary in the Southern Levantine record. Others are chronologically sensitive tools while the rest are non-diagnostic *ad hoc* tools.

The first among the exceptional items was classified as a 'fan-shaped' (Fig. 5.1). It was shaped on a large transversal and flat flake with little cortex remaining on the left edge of the dorsal face. It was fashioned of beige flint with slightly darker centripetal stripes; the item's silhouette almost echoes the flint's natural wavelet pattern. The tool was shaped all around: intensive flat-pressure retouch was applied all along the distal-dorsal end; abrupt to semi-abrupt pressure retouch is present along the ventral-proximal end,

removing along the way any evidence of the bulb of percussion and continuing to the right-ventral edge; fine retouch was observed on the left-dorsal side next to cortex remains, blunting the edge slightly. Also, a blackish smear of stripe configuration was observed on the right lateral-dorsal edge.

This item is morphologically resembling the fanscrapers typical of the Late Chalcolithic period (Manclossi and Rosen 2022, and references therein), yet the incorporation of 'flat-pressure' retouch is extremely uncommon in southern Levantine Chalcolithic and more typical of the late phases of the Pre-Pottery Neolithic (PPN hereafter) B and PN (Abu-Gosh retouch). It is also atypical as a technique incorporated in fan-scraper fashioning and more commonly applied while shaping projectile points and knives. Perhaps this item can be considered as a knife, very similar to the item retrieved from the PN stratum V at Hagoshrim and published as a 'leaf-shaped

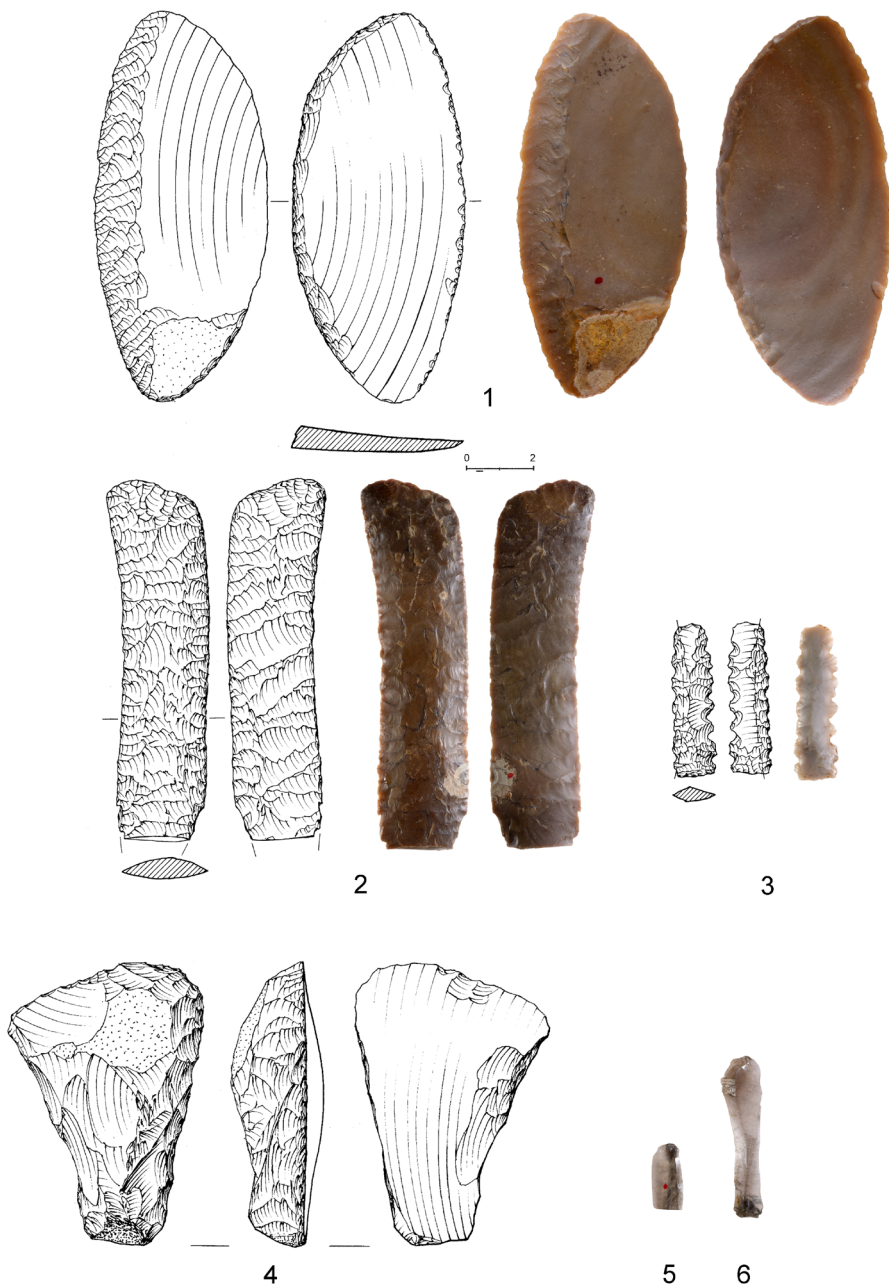


Fig. 5 Chipped stones from Nahal Rephaim Cave: 1 scraper, 2 bifacial knife, 3 sickle blade, 4 side scraper, 5-6 obsidian bladelets. (Drawings: M. Smeliansky; photos: D. Gazit)

knife' (Khalaily 1999: 42, Fig. 28.1). Crowfoot-Payne in her publication of the flint assemblage of Jericho, defines similarly fashioned items as 'flake-scrapers', being characteristic of the PN layers at the site (1983: 710-711, Fig. 339.5-6). Following this definition, Matskevich recognised similar items at Sha'ar Hagolan (Matskevich 2005: 56, Plate 25). Although the items from Jericho and Sha'ar Hagolan are fashioned on simple flakes or blades, the fashioning manner resembles that of the item from Nahal Rephaim Cave.

The second extraordinary item is a bifacially shaped knife (Fig. 5.2). It was knapped of fine-grained light brown flint with darker brown 'stains' at the extremities and a limestone inclusion on one of the edges. The blank is undetermined due to the extensive retouch coverage, shaping both faces and edges (including the distal part) by extremely extensive flat-pressure retouch. The item is missing its proximal part, yet it is clearly of an elongated proportion, with straight lateral edges, lens section, and slight distal inclination to one side.

Another bifacially shaped knife fragment is present in the assemblage. It was shaped on a large flake or blade (with maximal width of 30mm and thickness 9mm) with little cortex left on the dorsal-central part. It was heavily burnt and fragmented from both ends. Unlike the first knife, less effort was invested in manufacturing the second item: its left edge was shaped by coarse scaly bifacial retouch, and its right edge was formed by dorsally applied scaly semi-abrupt retouch; the cortical part in the centre was slightly polished.

Bifacial knives are present in the southern Levant assemblages from the very end of the PPNB, and along the Pottery Neolithic period (Olami *et al.* 1977; Crowfoot-Payne 1978, 1983; Yeivin and Olami 1979; Galili *et al.* 1993; Goring-Morris *et al.* 1994; Garfinkel 1994; Rollefson *et al.* 1994; Khalaily 1999; Garfinkel and Dag 2001; Garfinkel *et al.* 2002; Dag 2008a, 2008b). The Neolithic bifacial knives are usually symmetrical and leaf-shaped with ogival or rounded tips, unlike the Nahal Rephaim knife, which has a straight,

narrow silhouette and slightly curved rounded end. Its fashioning by extreme flat-pressure retouch echoes the Abu Gosh pressure retouch of the Late-Final PPNB and the PN, yet it is also resembling the “ripple” pressure retouch typical of the somewhat later – Bronze Age – Pre-Dynastic Egyptian trademark (Chlodnicki and Ciałowicz 2004; Kabaciński 2012; Kobusiewicz 2015; Skłucki 2018; Lajs 2019). Few examples of such knives were found in southern Levantine EB contexts (Rosen 1988; Kempinski and Gilead 1991; Gophna and Friedmann 1995; Marder *et al.* 1995), yet none of them exhibits such an investment in their shaping as the knife from Nahal Rephaim Cave. The Egyptian predynastic bifacial knives seem to have evolved from their local Pottery Neolithic predecessors. Elegant, almost entirely covered by invasive and flat pressure retouch, knives were found all over the Egyptian deserts (Kindermann 2010: 108; Lucarini 2014: 268-272; Shirai 2022). Some display inclination of the distal part similar to that of Nahal Rephaim (Lucarini 2014: Ch. 11/4, Figs. 3.3-4,6; Kindermann 2010: 108, Fig 49.5).

Stylistically, the Nahal Rephaim Cave knife resembles the Pottery Neolithic Egyptian knives. There is no evidence of Egyptian presence or any evidence of Early Bronze Age occupation in the cave or nearby. Therefore, this knife and the other bifacially shaped knife found at Nahal Rephaim Cave should be attributed to the local southern Levantine Pottery Neolithic traditions present at the site. Until more information regarding the Egyptian Pottery Neolithic come to light, the relations and the influences between the southern Levant and Egypt will remain unclear.

Another chronologically sensitive tool is a double-edged, wide denticulate, bifacially shaped sickle blade segment (Fig. 5.3). The segment is rectangular and truncated bifacially from both ends. It was fashioned of an undefined blank of fine-grained pale grey flint. The denticulation was achieved by bifacial pressure retouch, creating crenellated working edges with rounded teeth. The left working edge displays greater wear and blunting than the right. Both edges display traces of visible lustre; the right edge lustre covers only the teeth area on both faces. This sickle type is typical of the Pottery Neolithic, Yarmukian Culture (Stekelis 1951, 1972; Crowfoot-Payne 1983).

A single microlith was also found during the excavation; this is a small (30 x 9 x 3mm), slightly twisted, pointed bladelet, knapped of fine-grained beige flint, with semi-abrupt inverse retouch along the right edge. Such tools are typical of the Chalcolithic microlithic industry and present both in Early and Late Chalcolithic assemblages (Gilead *et al.* 1995; Rosen 1997: 65-67; Barkai and Gopher 2012).

A convergent borer was also retrieved during the excavation. It was fashioned of a thick blade or flake, made of coarse-grained yet homogeneous flint of beige colour with reddish ‘veins’. It was fashioned by coarse abrupt retouch applied mostly dorsally, with a small portion on the right edge applied ventrally. Such tools are present in assemblages from varied periods.

Further non-diagnostic tools within the assemblage are a massive scraper (Fig. 5.4) and three *ad hoc* tools. The scraper was fashioned on a large and thick cortical CTE of flake proportions of coarse-grained non-homogeneous Meshash Flint of grey-beige colour. Several blows proximally truncated it. The distal part was retouched by coarse scaly scraper retouch, creating a straight working edge and a rounded left side.

Two obsidian bladelets were also found. One is distally truncated (Fig. 5.5) by abrupt retouching, and the other (Fig. 5.6) is distally broken. Both bladelets are of grey transparent colour with a smoky translucency.

The diagnostic tools described above, unlike the flake items and the *ad-hoc* tools, were fashioned of non-local raw materials of good quality. All of these seem to have been brought to the cave from elsewhere as finished items, some probably from a great distance (like in the case of the obsidian objects). Much energy was involved in fashioning the almost complete bifacial knife, the fanscraper, and the sickle segment – indicating their importance.

These diagnostic items can be dated to the Pottery Neolithic and the Chalcolithic periods. A somewhat similar yet larger flint assemblage was retrieved from Nahal Qanah Cave, exhibiting parallels in composition and chronology (Gopher and Tsuk 1996) and being interpreted as a special activity site.

Other Finds

Last but not least, two finds are worth noting. One is a shaft-hole axe, or “sledgehammer”, found on the topsoil of the cave (Fig. 6.1). It is made of hard limestone; it was found broken, but the sharp working edge and the hafting shaft were preserved. The second is a figurine made from a flowstone slab bearing two small stalagmites resembling female breasts (Fig. 6.2); it was found near the burial in the southeastern area. The stone was cut and worked along the perimeter. Flowstone layers were peeled from the pair of stalagmites, which are usually less pointed, and have a depression at the drip point, thus creating the breast shape. The overall form recalls the iconography of the well-known flat violin-shaped figurines, which are not only a hallmark of the Late Chalcolithic but also known from the last phases of the LPN/ECh ((Milevski 1998: Fig. 5.15:1; Milevski *et al.* 2018; Freikman *et al.* 2021). These figurines were associated with fertility cults in the southern Levant (*e.g.*, Commenge *et al.* 2006; Milevski *et al.* 2018, 2023).

Discussion

The excavations in the Nahal Rephaim Cave have revealed an early phase of occupation in the southwestern part of Jerusalem, around 6,500-4,500 BCE, and perhaps a little bit after – a period until recently unknown in this area. The results of the excavations of the Nahal Rephaim Cave and other sites in the Judean Hills

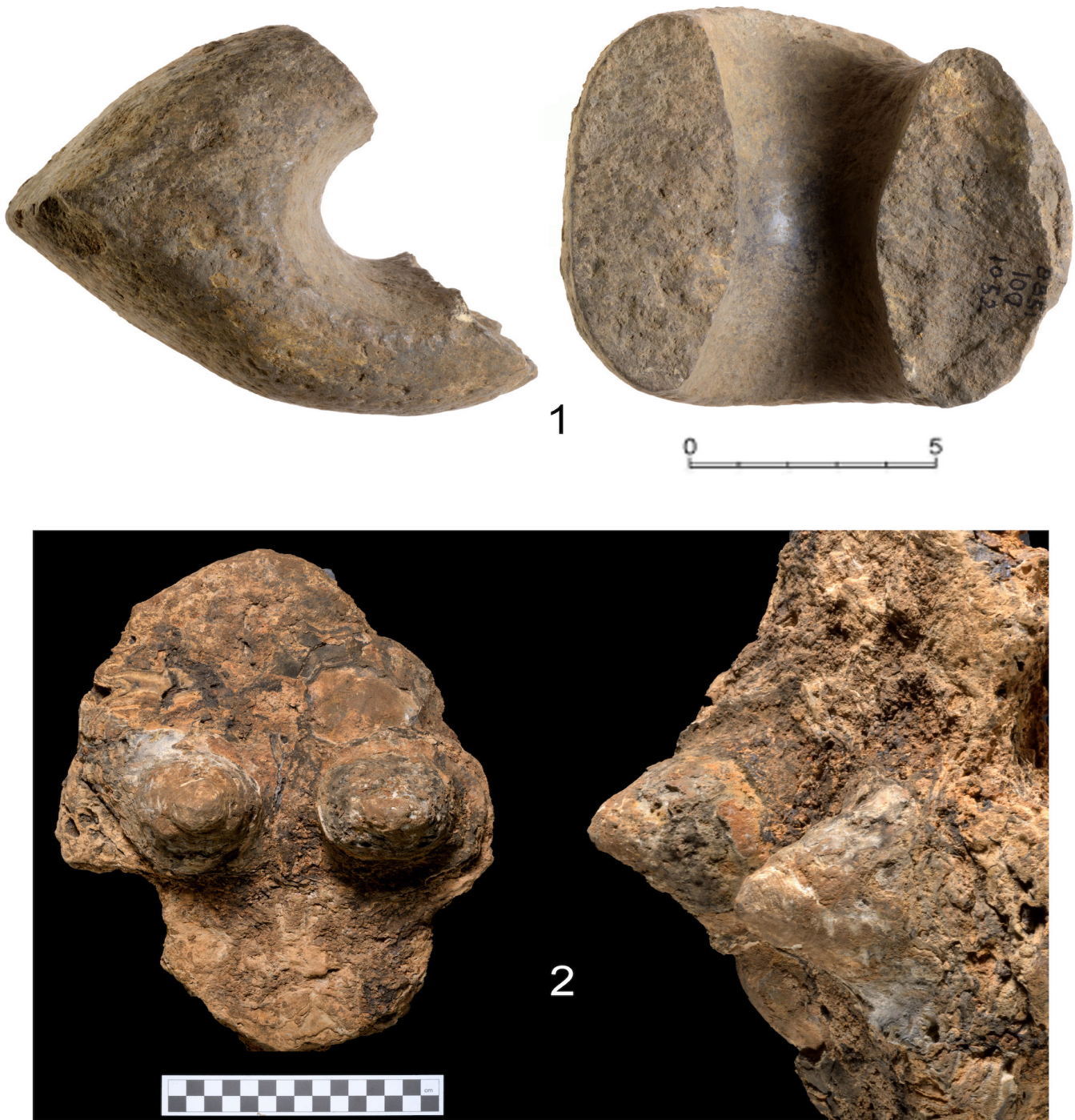


Fig. 6 Stone items from Nahal Rephaim Cave: 1 sledgehammer, 2 figurine made of stalagmite. (Photos: D. Gazit).

(Khalaily and Vardi 2020: 7-9; Milevski *et al.* 2020) have shown that the EPN and LPN/ECh entities are significant facies of the late prehistory in this region.

The function of the cave can only be suggested, but the ritual component of it, including the human remains, the unique collection of flint artefacts, the female figurine and the 'dramatic scenography' of stalagmites cannot be denied. No human occupations within active karstic caves were reported from the preceding Pre-Pottery Neolithic period in the southern Levant, but it seems that the use of such caves, probably for cultic and burial purposes, was practised throughout the PN period (e.g., Gopher and Tsuk 1996). Caves

with stalactites and stalagmites are known to attract people in all areas of the world, and several of them were conceived as cultic localities (e.g., Moyes *et al.* 2009; Whitehouse 2014-15).

Once available, the radiocarbon dates and a comparative analysis of pottery and lithics will enable us to equate the cultural material of the Judean Hills with that of the EPN and LPN/ECh in the southern areas of the coastal plain, entities defined by Gilead (1990, 2009) in the transition from the Late Pottery Neolithic to the Ghassulian Chalcolithic. During the LPN/ECh period in the southern Levant (c. 5,800-4,500 cal BCE), ceramic regionalism was clearly

evident, as stressed some time ago (Sadeh 1994), but all these various ceramic repertoires seem to culminate in the Ghassulian Culture in uneven and combined ways.

Based on the results of the recent excavations in the Jerusalem area (Milevski *et al.* 2010, 2020; Milevski and Lupu 2022) and the recently excavated northern sites (*e.g.*, Milevski and Getzov 2014; Elad *et al.* 2018, 2019, 2020), it seems that the LPN/ECh was not a dark age in which small sites characterised the southern Levant, but an era of large settlements, with extensive construction, agriculture, craftsmanship exemplified by fine lithic production, and wide-scale trade (*cf.* Gibbs and Banning 2013).

In the past, it was suggested that the exchange networks were interestingly more ‘international’ in the LPN/ECh than in the preceding prehistoric periods (Milevski and Barzilai 2017). Among the items indicative of exchange networks with Anatolia and the north Levant are the obsidian pieces found in the southern Levant, and in this respect, Nahal Rephaim, Motza and Abu Ghosh were evidently part of these networks. Such a phenomenon could not have been possible if only “weak” settlements existed at that time in the southern Levant.²

The iconography of these the 6th-5th millennia BCE has already been discussed in the framework of the entire Near East, and hints at a large interaction sphere connecting the Judean Hills with regions extending from the Caucasus to the Balkans and from Anatolia to Mesopotamia (*e.g.*, Milevski *et al.* 2016a, 2016b).

The almost-continuous occupation of the Judean Hills, from the Epipalaeolithic (Eisenberg and Sklar-Parnes 2005) to the Ghassulian Chalcolithic with possible gaps during some prehistoric phases such as the Pre-Pottery Neolithic A and the “classic” Wadi Rabah Culture (the first phase of the LPN/ECh sequence), demonstrates that the inhabitants of the area extending from Abu Ghosh to Jerusalem exploited the nearby springs and soils relatively continuously for several millennia during the late prehistoric periods.

Although most excavations in the Jerusalem Hills are small exposures, they illustrate the importance of small assemblages in defining specific cultural horizons or archaeological facies. Ten years ago, it was suggested (Milevski *et al.* 2010) that the number of Ghassulian sites apparently outnumber the LPN/ECh sites, suggesting an increase in the population of Jerusalem and its surroundings. Today this assumption is under review (*cf.* Milevski *et al.* 2020). This, of course, includes the results of the excavations at the Nahal Rephaim Cave.

The exposure of the 7th-5th millennia BCE horizons in the Jerusalem Hills is one of the most outstanding contributions of several excavations, including the Nahal Rephaim Cave, for the knowledge of prehistoric pottery-bearing cultures in this region.

Acknowledgements: The authors wish to thank Y. Zissu, who discovered the cave and reported it to the Israel Antiquities Authority and the Robbery Prevention Unit of the IAA. Furthermore, we are indebted to S. Halevi for the work of photogrammetry at the cave and to A. Fadida for the map, plans and sections. Other pictures were taken by the authors and by A. Peretz (all of the IAA). Thanks are also due to workers of the Jenin Region. Photos and illustrations are courtesy of the IAA. Furthermore, we are indebted to the Archaeological Research Department, the Artifacts Treatment and Laboratories Department, and the Jerusalem District of the IAA for their help during all work steps. Finally, we want to thank Amos Frumkin (The Hebrew University of Jerusalem) for his general advice and input on the cave’s nature and morphology.

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Endnotes

¹ Organic material from these layers were taken for ¹⁴C and archaeobotanical analysis.

² The presence of obsidian in the region of Jerusalem (which probably originated in central or eastern Anatolia) has been analysed for other regions of the southern Levant (*e.g.*, Schechter *et al.* 2013, 2016) during the Pottery Neolithic period.

References

- Barkai R. and Gopher A.
2012 Flint assemblage from Nahal Zehora II: techno-typological changes during the PN. In: A. Gopher (ed.), *Village communities of the Pottery Neolithic period in the Menashe Hills, Israel*: 757-869. Tel Aviv: Tel Aviv University.
- Barzilai O., Goldsmith Y., Shemer M., Porat N. and Crouvi O.
2020 Evidence for a Middle Paleolithic flint workshop in Arnona, South Jerusalem. *Mitekufat Haeven. Journal of the Israel Prehistoric Society* 50: 15-43.
- Commége C., Levy T.E., Alon D. and Kansa E.
2006 Gilat's figurines: exploring the social and symbolic dimensions of representation. In: T.E. Levy (ed.), *Archaeology, anthropology and cult. The sanctuary at Gilat, Israel*: 739-830. London: Equinox.
- Commége-Pellerin C.
1987 *La poterie d'Abou Matar et de l'Ouadi Zoumeili (Beersheva) au IV^e millénaire avant l'ère chrétienne*. Les Cahiers du Centre de Recherche Français de Jerusalem 3. Paris: Association Paléorient.
- Crowfoot-Payne J.
1978 A hoard of flint knives from the Negev. In: P. Parr (ed.), *Archaeology in the Levant: Essays for Kathleen Kenyon*: 19-21. London: Aris and Phillips.
1983 The flint industries of Jericho. In: K.M. Kenyon and T.A. Holland (eds.), *Excavations at Jericho* 5: 622-759. London: British School of Archaeology in Jerusalem.
- Chłodnicki M. and Ciałowicz M.
2004 Polish excavations at Tell el-Farkha (ghazala) in the Nile Delta. Preliminary report 2002-2003. *Archeologia* 55: 47-74]
- Dag D.
2008a The flint tools. In: Y. Garfinkel and D. Dag (eds.), *Neolithic Ashkelon*. Qedem 47: 117-171. Jerusalem: The Hebrew University of Jerusalem.
2008b Comparative analysis of the flint industry. In: Y. Garfinkel and D. Dag (eds.), *Neolithic Ashkelon*. Qedem 47: 173-179. Jerusalem: The Hebrew University of Jerusalem.
- Eisenberg E. and Sklar-Parnes D.A.
2005 Moza. *Hadashot Arkheologiyot. Excavations and Surveys in Israel* 117. http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=155&mag_id=110
- Elad I., Paz Y. and Shalem D.
2018 'En Esur (Asawir), Area M. Preliminary report. *Hadashot Arkheologiyot. Excavations and Surveys in Israel* 130. http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=25495
2019 'En Esur (Asawir), Area O. Preliminary Report. *Hadashot Arkheologiyot. Excavations and Surveys in Israel* 131. http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=25576&mag_id=127
2020 'En Esur (Asawir), Area N. Preliminary Report. *Hadashot Arkheologiyot. Excavations and Surveys in Israel* 132. http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=25833
- Freikman M., Ben-Shlomo D. and Garfinkel Y.
2021 The "violin-shaped" figurines of Tel Tsaf. New light on anthropomorphic imagery in the late prehistoric southern Levant. *Paléorient* 47(2): 43-59.
- Galili E., Hershkovitz I., Gopher A., Weinstein-Evron M., Lernau O., Kislev M. and Horwitz L.
1993 Atlit-Yam: A prehistoric site on the sea floor of the Israeli coast. *Journal of Field Archaeology* 20: 133-157.
- Garfinkel Y.
1992 *The pottery assemblages of the Shaar Hagolan and Rabah stages of Munhata (Israel)*. Les Cahiers du Centre de Recherche Français de Jerusalem 6. Paris: Association Paléorient.
- 1994 The "PPNC" flint assemblage from Tel 'Ali. In: H.G. Gebel and S.K. Kozłowski, *Neolithic chipped stone industries of the Fertile Crescent*. Studies in Early Near Eastern Production, Subsistence, and Environment 1: 543-562. Berlin: ex oriente.
1999 *Neolithic and Chalcolithic Pottery of the Southern Levant*. Qedem 39. Jerusalem: The Hebrew University of Jerusalem.
- Garfinkel Y. and Dag D.
2001 The Pre-Pottery Neolithic C flint assemblage of Ashkelon. In: I. Caneva, C. Lemorini, D. Zampetti and P. Biagi (eds.), *Beyond tools: redefining the PPN lithic assemblages of the Levant*. Studies in Early Near Eastern Production, Subsistence, and Environment 9: 333-352. Berlin: ex oriente.
- Garfinkel Y., Dag D., Horwitz L.K., Lernau O. and Mienis H.K.
2002 Ziqim, a Pottery Neolithic site in the southern Coastal Plain of Israel. A final report. *Mitekufat Haeven – Journal of the Israel Prehistoric Society* 32: 73-145.
- Gibbs K. and Banning E.W.
2013 Late Neolithic and village life: the view from the Southern Levant. In: O. Nieuwenhuys, P. Akkermans, R. Bernbeck and J. Rogasch (eds.), *Interpreting the Late Neolithic of Upper Mesopotamia*. Papers on Archaeology of the Leiden Museum of Antiquities Egyptology 9: 355-366 Turnhout: Brepols.
- Gilead I.
1990 The Neolithic-Chalcolithic transition and the Qatifian Culture of the northern Negev and Sinai. *Levant* 22: 47-63.
2009 The Neolithic-Chalcolithic transition in the Southern Levant. Late sixth-fifth millennium culture history. In: J.J. Shea and D. Lieberman (eds.), *Transitions in Prehistory. Essays in honor of Ofer Bar-Yosef*: 335-355. Oxford: Oxbow.
- Gilead I., Hershman D. and Marder O.
1995 The flint assemblage from Grar. In: I. Gilead (ed.), *Grar – a Chalcolithic site in the northern Negev*. Beer-Sheva 7: 223-280. Beersheva: Ben-Gurion University of the Negev.
- Gopher A. and Tsuk T.
1996 *The Nahal Qanah cave. Earliest gold in the southern Levant*. Tel Aviv: Tel Aviv University.
- Gophna R. and Friedmann E.
1995 The flint implements from 'En Besor. In: R. Gophna (ed.) *Excavations at 'En Besor*: 105-122. Tel Aviv: Ramot.
- Goring-Morris A.N., Gopher A. and Rosen S.A.
1994 The Neolithic Tuwailian cortical knife industry of the Negev. In: H.G. Gebel, and S. K. Kozłowski (eds.), *Neolithic chipped stone industries of the Fertile Crescent*. Studies in Early Near Eastern Production, Subsistence, and Environment 1: 511-524. Berlin: ex oriente.
- Kabaciński J.
2012 Some aspects of the lithic production. In: M. Chłodnicki, K.M. Ciałowicz and A. Mączyńska (eds.), *Tell El-Farkha I. Excavations 1998-2011*: 323-344. Poznań, Krakow: Jagiellonian University.
- Kempinski A. and Gilead I.
1991 New excavations at Tel Erani: a preliminary report of the 1985-1988 seasons. *Tel Aviv* 18: 164-191.
- Khalailiy M.
1999 *The flint assemblage of Layer V at Hagoshrim: a Neolithic assemblage of the sixth millennium B.C. in the Hula Basin*. Jerusalem: Hebrew University of Jerusalem. Unpublished MA Thesis. (in Hebrew).
- Khalailiy H. and Vardi J.
2020 The new excavations at Motza: An architectural perspective on a Neolithic 'Megasite' in the Judean Hills. In: H. Khalailiy, A. Reem, J. Vardi and I. Milevski (eds.), *The mega project at Motza (Moza): The Neolithic and later occupations up to the 20th Century*: 69-100. Jerusalem: Israel Antiquities Authority.

- Kindermann K.
2010 *Djara: Zur mittelholozänen Besiedlungsgeschichte zwischen Niltal und Oasen (Abu Muharik-Plateau, Ägypten) Teil I*. Köln: Heinrich Barth Institut.
- Kobusiewicz M.
2015 *The production, use and importance of flint tools in the Archaic Period and the Old Kingdom of Egypt*. Archaeopress Egyptology 12. Oxford: Archaeopress.
- Lajs K.
2019 Evolution of ancient Egyptian bifacial flint knives. *Studies in Ancient Art and Civilization* 23: 7-27]
- Lucarini G.
2014 The bifacial products from Hidden Valley and neighbouring areas in Wadi el-Obeiyid. In: B.E. Barich, G. Lucarini, M.A. Handan and F.A. Hassan (eds.), *From lake to sand: the archaeology of Farafra Oasis, Western Desert, Egypt*: 265-283. Firenze: All'Insegna del Giglio.
- Manicassi F. and Rosen S.A.
2022 *Flint trade in the Protohistoric Levant: the complexities and implications of tabular scraper exchange in the Levantine Protohistoric periods*. New York: Routledge.
- Marder O., Braun E. and Milevski I.
1995 The flint assemblage of Lower Horvat 'Illin: some technical and Economic considerations. *'Atiqot* 27: 63-93.
- Matskevich Z.
2005 *The lithic assemblage of Sha'ar Hagolan. The typo-technological and the chrono-cultural aspects*. Jerusalem: Hebrew University Jerusalem. Unpublished M.A. Thesis.
- Milevski I.
1998 The groundstone tools. In: G. Edelstein, I. Milevski and S. Aurant (eds.), *Villages, terraces and stone mounds. Manahat excavations, Jerusalem, 1987-1989*. IAA Reports 3: 61-77. Jerusalem: Israel Antiquities Authority.
2023 The iconography of Quleh and the religious beliefs of the Chalcolithic period: A socio-anthropological viewpoint. In: I. Milevski, R. Lupu and A. Cohen-Weinberger (eds.), *Excavations at Quleh and Mazor (West). Burial practices and iconography in southern Levantine Chalcolithic cemeteries*. Archaeology of Egypt, Sudan and the Levant 4. Vienna: Austrian Academy of Sciences.
- Milevski I. and Barzilai O.
2017 Redes de intercambio en los finales de la prehistoria del Levante meridional. In: I. Milevski, L. Monti and P. Jaruf (eds.), *Si un hombre desde el sur...Šumma Avilum ina šütim...Homenaje a Bernardo Gandulla. Escritos sobre historia y arqueología de alumnos, colegas y amigos* I: 23-56. Buenos Aires: Universidad de Buenos Aires.
- Milevski I. and Getzov N.
2014 'En Zippori. Preliminary report. *Hadashot Arkheologiyot. Excavations and Surveys in Israel* 126. http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=13675
- Milevski I. and Lupu R.
2022 Jerusalem and its vicinity in the Late Pottery Neolithic and Chalcolithic periods. *Cornerstone. Journal of Archaeological Sites* 10: 15-42. (in Arabic).
- Milevski I., Getzov N. and Ganor A.
2018 Human figurines from the region of Tel Halif in light of schematic representations in the Chalcolithic cultures of the Southern Levant. *Bulletin of the American Schools of Oriental Research* 379: 87-102.
- Milevski I., Lupu R. and Bischoff E.
2020 The Late Pottery Neolithic/Early Chalcolithic period at Motza and its surroundings: A new horizon emerging in the Judean Hills. In: H. Khalaily, A. Reem, J. Vardi, I. and Milevski (eds.), *The mega project at Motza (Moza): The Neolithic and later occupations up to the 20th century*: 241-264. Jerusalem: Israel Antiquities Authority.
- Milevski I., Matskevich I., Cohen-Weinberger A. and Getzov N.
2016a The 'Ein el-Jarba holmouth jar: a local vessel with parallels in the Near East and Southeast Europe. In: S. Ganor, I. Kreimerman, K. Streit and M. Mumcuoglu (eds.), *From Sha'ar Hagolan to Shaa-raim. Essays in Honor of Prof. Yosef Garfinkel*: 155-170. Jerusalem: Israel Exploration Society and The Hebrew University of Jerusalem.
- Moyes H., Awe J.J., Brook G.A and Webster J.W
2009 The ancient Maya drought cult: late classic cave use in Belize. *Latin American Antiquity* 20(1): 175-206.
- Olami Y., Burian F. and Friedman E.
1977 Giv'at Haparsa: a Neolithic site in the Coastal Region. *Eretz-Israel* 13: 34-47 (in Hebrew).
- Rollefson G.O., Forstadt M. and Beck R.
1994 A preliminary typological analysis of scrapers, knives, and borers from 'Ain Ghazal. In: H.G. Gebel and S.K. Kozłowski (eds.), *Neolithic chipped stone industries of the Fertile Crescent*. Studies in Early Near Eastern Production Subsistence, and Environment 1: 445-466. Berlin: ex oriente.
- Rosen S.A.
1988 A preliminary note on the Egyptian component of the chipped stone assemblage from El 'Erani. *Israel Exploration Journal* 38(3): 105-116.
1997 *Lithic after stone age. A handbook of stone tools from the Levant*. Walnut Creek, CA: Altamira Press.
- Sadeh S.
1994 *Pottery of the fifth millennium BC in Israel and neighbouring regions*. Tel Aviv: Tel Aviv University. Unpublished Ph.D. Dissertation.
- Schechter H., Gopher A., Getzov N., Yaroshevich A. and Milevski I.
2016 *Obsidian assemblages from the Wadi Rabah occupations at Ein Zippori*. *Paléorient* 42(1): 27-48.
- Schechter H., Marder O., Barkai R., Getzov N. and Gopher A.
2013 The obsidian assemblage from Neolithic Hagoshrim, Israel. Pressure technology and cultural influence. In: F. Borell, J.J. Ibañez and M. Molist (eds.), *Stone tools in transition. From hunter-gatherers to framing societies in the Near East*: 509-528. Barcelona: Universitat Autònoma de Barcelona.
- Shirai N.
2022 The local development and Levantine influence seen in the stone tools of the Fayum Neolithic in Egypt. In: Y. Nishiaki, O. Maeda and M. Arimura (eds.), *Tracing the Neolithic in the Near East. Lithic perspectives on its origins, development and dispersals*: 371-384. Leiden: Sidestone.
- Skłucki J.
2018 Lithic assemblage from the southern part of the Eastern Kom at Tell el-Farka. Seasons 2015-2016. In: K.M. Ciałowicz, M. Czarnowicz and M. Chłodnicki (eds.), *Eastern Nile Delta in the 4th millennium BC*: 125-132. Poznań, Krakow: Jagiellonian University.
- Stekelis M.
1951 A new Neolithic industry: the Yarmukian of Palestine. *Israel Exploration Journal*: 1-19.
1972 *The Yarmukian Culture of the Neolithic Period*. Jerusalem: Magness Press.
- Whitehouse R.
2014-15 Water turned to stone. Stalagmites and stalactites in cult caves in prehistoric Italy. *Accordia Research Papers* 14: 49-62.
- Yeivin E. and Olami Y.
1979 Nizzanim. A Neolithic site at Nahal Evtah: excavations of 1968-70. *Tel Aviv* 6(3-4): 99-135.

Tepe Bahari: The First Evidence of Aceramic Neolithic Occupation in Kuhdasht County, Lorestan Province, Western Iran

Poorya Khadish, Saman Hamzavi Zarghani and Mohsen Zeidi

Introduction

Kuhdasht County is located in the Lorestan Province in the central Zagros region of western Iran at a mean altitude of 1150m above sea level. Lorestan Province has a long history of prehistoric research, which is mainly conducted by non-Iranian scholars (Godard 1931; Schmidt 1938, 1940; Stein 1940; Meldgard *et al.* 1963; Thrane 1965; Young and Smith 1966; Hole and Flannery 1967; Goff 1968, 1971; McBurney 1969, 1970; Mortensen 1974, 1975, 1993; Bewley 1985). Despite this long history of archaeological research, there are still many regions that have not yet been investigated archaeologically. After a long hiatus of archaeological research since the late 1970s, in the last two decades, like in other parts of the Iranian Plateau, archaeological fieldworks resumed in Lorestan Province mainly by Iranian and also the collaboration of non-Iranian researchers (*e.g.*, Roustaei *et al.* 2002, 2004; Moradi 2003, 2006, 2007; Hashemi *et al.* 2006;

Otte *et al.* 2007; Moradi and Bakhtiari 2010; Alibaigi *et al.* 2011; Qobadizadeh and Mohammad Qasrian 2021).

In the winter of 2009 and as part of the Bronze Age archaeological exploration project of Tepe Toubreh Riz in Kuhdasht County of Lorestan Province, an archaeological survey was carried out along the small wadies and valleys of immediate surroundings of the site some 11km south of Kuhdasht city (Fig. 1). The main goal of this survey was to find potential Bronze and Iron Age sites in the vicinity of Tepe Toubreh Riz and also document other archaeological sites. The survey team, under the direction of P. Khadish documented 17 archaeological sites during the survey. One of the interesting finds, however, was Tepe Bahari, a small site with lithic scatters discovered about five kilometers to the southeast of Tepe Toubreh Riz near the modern village of Ganjineh. This short report is the first effort to introduce Tepe Bahari as the only aceramic Neolithic site in this region.

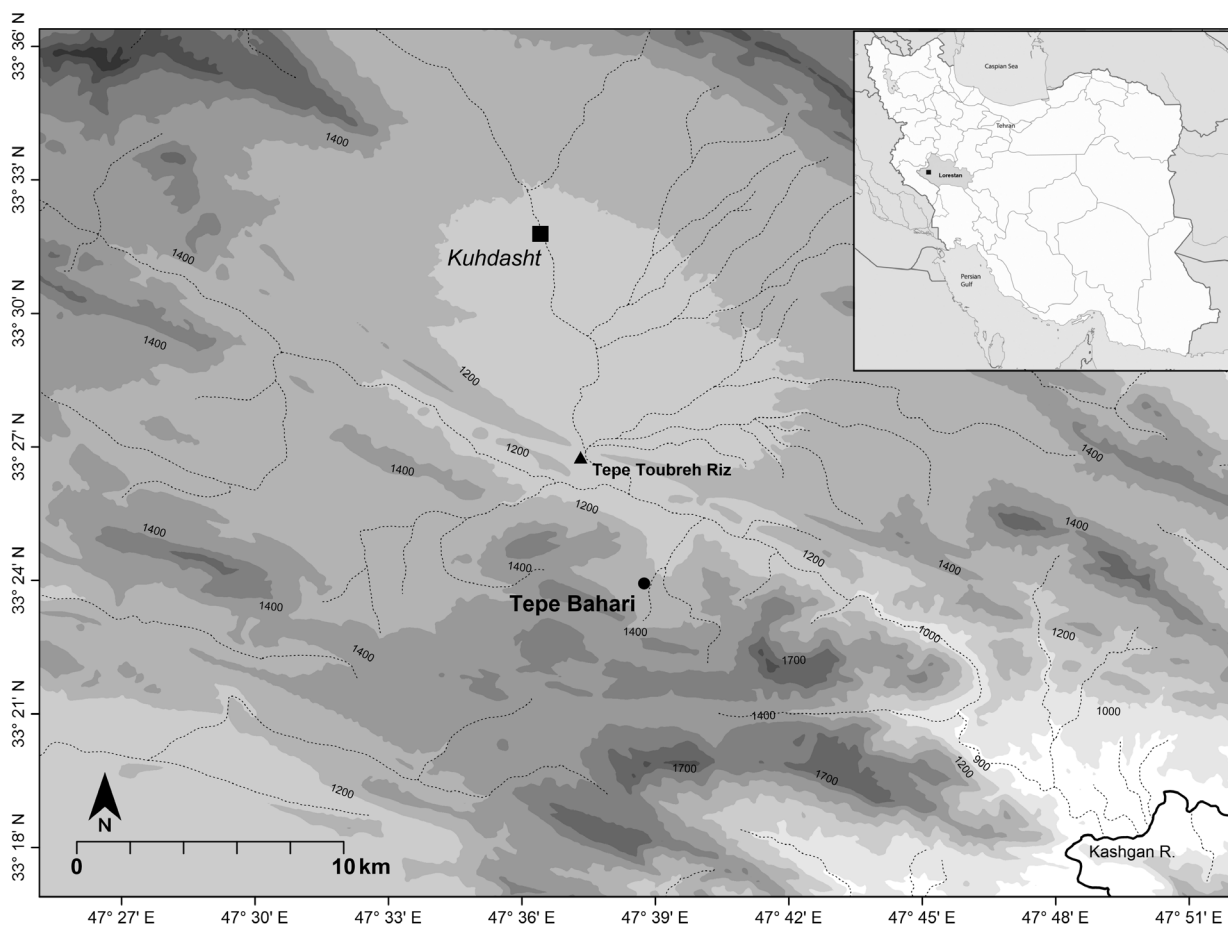


Fig. 1 Map showing the location of the research area and Tepe Bahari in Kuhdasht County. (Map: M. Zeidi, Tepe Toubreh Riz Survey Project)

Tepe Bahari

Tepe Bahari (33.39889N, 47.64583E) is a small tell site at an altitude of 1220m above sea level that is situated about 16km south of Kuhdasht in Lorestan Province (Fig. 1). The site is located in one of the small intermountain valleys of the central Zagros region in western Iran. The Zagros Mountains of up to 1600m above sea level surrounded the site, especially to the south, where the oak forests appear immediately. Tepe Bahari is a very small tell with approximate dimensions of 20×20m and rises a little more than a meter from its immediate surroundings and is located near the junction of two small seasonal streams providing one of the main sources of water for the locals (Fig. 2). A freshwater spring is also located not far from the site to the east (Fig. 3). Nowadays, the site is a part of farming land and usually under intensive cultivation of rain-fed cereals by locals, except for its summit; other parts have been ploughed repeatedly. A pit that has been made by looters and filled with some river pebbles is a visible feature at the apex of the site. On the profiles of this pit, the survey team could document traces of anthropogenic deposits, including layers with ash deposits. The survey team randomly but intensively walked on and around the site and collected all visible finds. The lithic find density was low, and in sum, 21 pieces of stone artefacts were found. A collection of historical and Islamic ceramics, however, was also found on the surface, but neither Neolithic nor later prehistoric potteries were found. The accumulation of later deposits and disturbed surface deposits could influence the low density of lithics on the surface.

Cores, tools, and blanks characterise lithic artefacts at Tepe Bahari (Fig. 4). Various fine to medium-grained cherts of white, pink, grey, brown, and reddish-brown colours were procured as raw material. A piece of exotic obsidian blade tool with greyish-green colour was also found. There are four highly reduced bladelet cores of conical/ bullet-shaped with circumferential bladelet detachments. The number of cores is small, but it is enough in this small collection to indicate that knapping was done on-site. One of the cores contains a



Fig. 2 Overview of Tepe Bahari looking towards the west. (Photo: P. Khadish, Tepe Toubreh Riz Survey Project)



Fig. 3 Freshwater spring near the site. (Photo: P. Khadish, Tepe Toubreh Riz Survey Project)

cortex with a round and smooth surface weathered via fluvial transport. This is fortunate since the cortex can provide important clues about the geological environment from which the raw material originated. The cores are all unidirectional single platform cores, from which bladelets were removed in a very regular fashion, mainly around the entire circumference. Experimental studies (*e.g.*, Wilke 1996; Inizan *et al.* 1999), show that the production of bladelets from bullet/ conical-shaped cores proceeds via pressure flaking. Tools consist of an end-scraper and thumbnail scraper made on a flake and retouched blade and bladelets. A possible sickle blade is another tool type in this collection. The blade and bladelets tools usually have direct or inversely fine lateral retouches on one or both edges. Other blanks do not show any sign of modification.

The presence of bullet/ conical-shaped bladelet cores and tools made of the blade and bladelet blanks, a possible sickle blade, a piece of the obsidian blade, and the absence of any Neolithic or later prehistoric ceramics, place Tepe Bahari within the aceramic Neolithic period (*cf.* Olszewski 1996; Kozłowski 1999; Kozłowski and Aurenche 2005). The characteristics of the chipped lithics at Tepe Bahari are similar to those of other aceramic Neolithic sites in the Zagros region (*e.g.* Hole *et al.* 1969; Hole 1977; Pullar 1990). The presence of obsidian in the lithic collection, however, may put Tepe Bahari in the latter part of the aceramic Neolithic period, which shows the appearance of obsidian artefacts around 7500 BCE in the aceramic Neolithic sites of the Near East (Kozłowski 1999: 63). Tepe Bahari lies at the junction of several habitats including a wetland of several springs and seasonal streams, upland hills which support oak parkland with grasses including wild cereals and acorns, and open alluvium plain. It was, therefore, ideally located to support a broad-spectrum economy, the typical lifeway of early Neolithic communities of the Zagros region. Locally available lithic raw materials procured from surroundings may have also attracted people from the Neolithic period to locate their camps or settlements here.

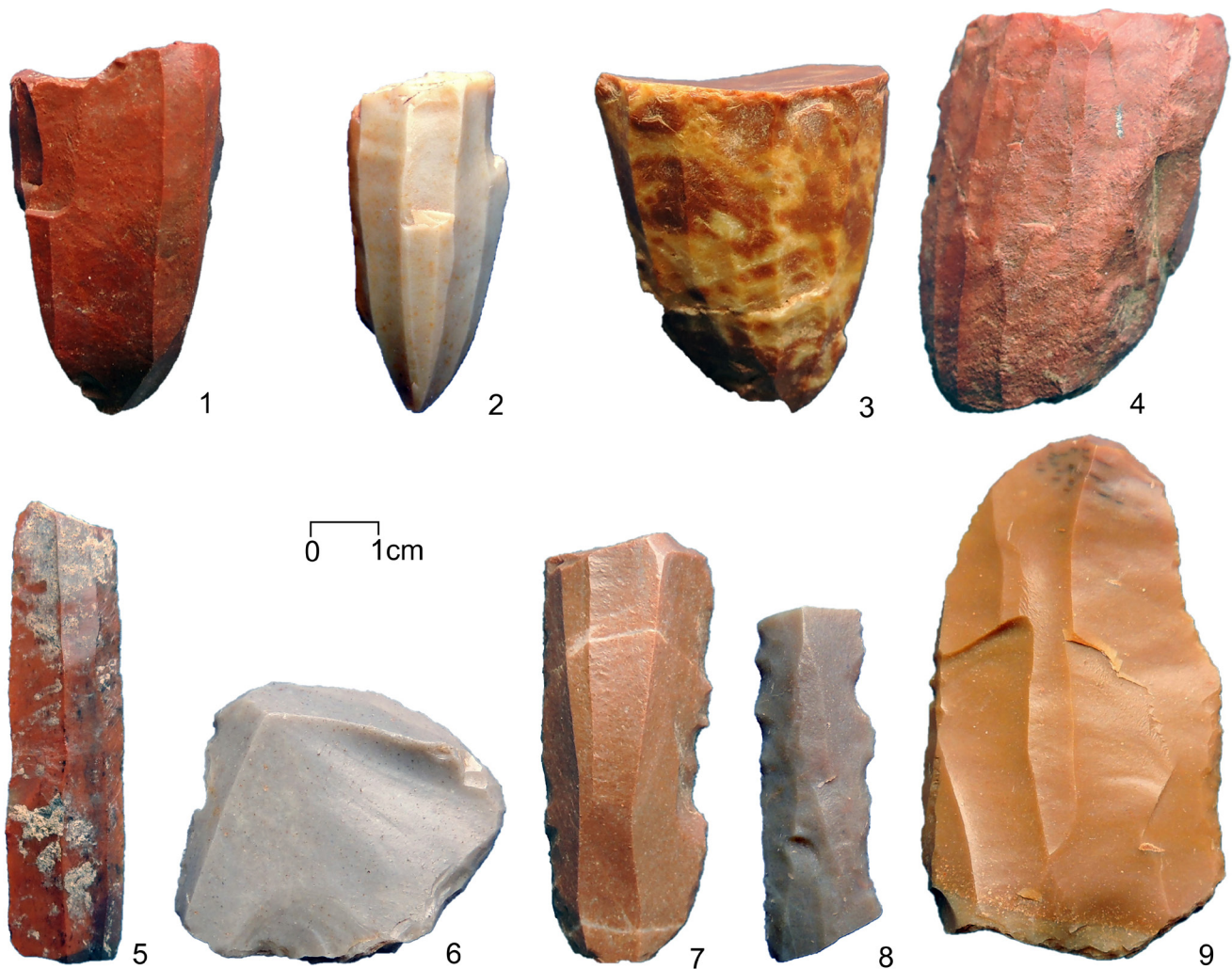


Fig. 4 Selected lithic artefacts from Tepe Bahari. (Photo: M. Zeidi, Tepe Toubreh Riz Survey Project)

Concluding Remarks

To date, Tepe Bahari is the first evidence of aceramic Neolithic occupation reported from the Kuhdasht region. Systematic excavations, however, are needed to determine the nature of occupation at this tell site. The discovery of an aceramic Neolithic site in this region demonstrates the potential importance of Kuhdasht Plain and its vicinities for further studies and adds an important data set and insight for directing future research of the Neolithic investigations in this region. Intensive systematic archaeological surveys of the region may lead to the discovery of further sites like Tepe Bahari.

Acknowledgements: We would like to thank the Iranian Center for Archaeological Research (ICAR) for their support and the Cultural Heritage and Tourism Organization office in Lorestan Province for funding the survey project. Special thanks to the survey team.

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References

- Alibaigi S., Niknami K., Heydari M., Nikzad M., Zainivand M., Manhobi S., Mohammadi Qasrian S., Khalili M. and Islami N.
2011 Palaeolithic open-air sites revealed in the Kuran Buzan Valley, Central Zagros, Iran. *Antiquity* 85(329), Project Gallery.
- Bewley R.H.
1985 The Cambridge University archaeological expedition to Iran 1969: excavations in the Zagros Mountains: Houmian, MirMalas and Bardesepid. *Iran* 22: 3-38.
- Godard A.
1931 *Les bronzes du Luristan*. *Ars Asiatica* 57. Paris: G. van Oest.

- Goff C.L.
1968 Luristan in the first half of the first millennium B.C. *Iran* 6: 105-134.
1971 Luristan before the Iron Age. *Iran* 9: 131-152.
- Hashemi N., Darvish J., Mashkour M. and Biglari F.
2006 Rodents and Lagomorphs remains from late Pleistocene and early Holocene caves and rock shelter sites in the Zagros region. *Iranian Journal of Animal Biosystematics* 2(1): 25-30.
- Hole F.
1977 *Studies in the archaeological history of the Deh Luran Plain: The excavation of Chagha Sefid*. Memoirs of the Museum of Anthropology 9. Ann Arbor: The University of Michigan.
- Hole F. and Flannery K.V.
1967 The prehistory of Southwest Iran: A preliminary report. *Proceedings of the Prehistoric Society* 33: 147-206.
- Hole F., Flannery K.V. and Neely J.
1969 *Prehistory and human ecology of the Deh Luran plain. An early village sequence from Khuzistan, Iran*. Memoirs of the Museum of Anthropology 1. Ann Arbor: University of Michigan.
- Inizan M.L., Reduron-Ballinger M., Roche H. and Tixier J.
1999 *Technology and terminology of knapped stone*. Paris: Cercle de Recherches et d'Études Préhistoriques.
- Kozłowski S.K.
1999 *The eastern wing of the Fertile Crescent*. BAR International Series 760. Oxford: Archaeopress.
- Kozłowski S.K. and Aurenche O.
2005 *Territories, boundaries and cultures in the Neolithic Near East*. BAR International Series 1362. Oxford: Archaeopress.
- McBurney C.B.N.
1969 Report on further excavations in the caves of the Kuh-Dasht area during August 1969. *Bastan Shenasi va Honar-e Iran* 3: 8-9.
1970 Paleolithic excavations in the Zagros area. *Iran* 8: 185-86.
- Meldgaard J., Mortensen P. and Thrane H.
1963 Excavations at Tepe Guran, Luristan. *Acta Archaeologica* 34: 97-133.
- Moradi B.
2003 Preliminary survey report of Dar Mareh rockshelters in Kuhdasht, Lorestan. *Iranian Journal of Archaeology and History* 35: 70-72. (in Farsi)
2006 *Survey report of the first season of Paleolithic survey in the Kuhdasht Region*. Khorramabad: Iranian Cultural Heritage, Handicrafts, and Tourism Organization of Lorestan. Unpublished report. (in Farsi)
2007 *Survey Report of the Second Season of Paleolithic Survey in the Kuhdasht Region*. Khorramabad: Iranian Cultural Heritage, Handicrafts, and Tourism Organization of Lorestan. Unpublished report. (in Farsi)
- Moradi B. and Bakhtiari F.
2010 A note on recent paleolithic surveys in the Kuhdasht Region, the Lorestan Province, Iran. *Iranian Archaeology* 1(1): 38-41.
- Mortensen P.
1974 A survey of prehistoric settlements in Northern Luristan. *Acta Archaeologica* 45: 1-47.
- 1975 Survey and soundings in the Hulailan Valley 1974. In: F. Bagherzadeh (eds.), *Proceedings of the IIIrd Annual Symposium on Archaeological Research in Iran*: 1-12. Tehran: Iranian Centre for Archaeological Research.
- 1993 Paleolithic and Epipaleolithic sites in the Hulailan Valley, northern Luristan. In: D. Olszewski and H.L. Dibble (eds.), *The Paleolithic Prehistory of the Zagros-Taurus*: 159-186. Philadelphia: University of Pennsylvania.
- Olszewski D.I.
1996 The lithic transition to the early neolithic in the Zagros region: Zarzian and M'lefatian industries. In: S.K. Kozłowski and H.G.K. Gebel (eds.), *Neolithic chipped stone industries of the Fertile Crescent and their contemporaries in adjacent regions*. Studies in Early Near Eastern Production, Subsistence and Environment 3: 183-192. Berlin: ex oriente.
- Otte M., Biglari F., Flas D., Shidrang S., Zwyns N., Mashkour M., Naderi R., Mohaseb A., Hashemi N., Darvish J. and Radu V.
2007 The Aurignacian in the Zagros region: new research at Yafteh Cave, Lorestan, Iran. *Antiquity* 81: 82-96.
- Pullar J.
1990 *Tepe Abdul Hosein: a neolithic site in Western Iran, excavations 1978*. BAR International Series 563. Oxford: Archaeopress.
- Qobadizadeh H. and Mohammadi Qasrian S.
2021 Archaeological survey of Darb Gonbad District, Kuhdasht County, Lorestan. In: R. Shirazi (ed.), *Proceedings of the 18th Annual Symposium on Iranian Archaeology*: 667-672. Tehran: Research Institute for Cultural Heritage and Tourism (RICHT).
- Roustaei K., Biglari F., Heydari S. and Vahdati Nasab H.
2002 New research on the Paleolithic of Lorestan, West Central Iran. *Antiquity* 76(291): 19-20.
- Roustaei K., Vahdati Nasab H., Biglari F., Heydari S., Clark G.A. and Lindly J.M.
2004 Recent Paleolithic surveys in Luristan. *Current Anthropology* 45: 692-707.
- Schmidt E.F.
1938 The second Holmes Expedition to Luristan. *Bulletin of American Institute of Persian Art and Archaeology* 4: 205-216.
1940 *Flights over ancient Iran*. Chicago: University of Chicago Press.
- Stein M.A.
1940 *Old routes of western Iran*. London: Macmillan.
- Thrane H.
1965 Archaeological investigations in Western Luristan. *Acta Archaeologica* 35: 153-169.
- Wilke P.J.
1996 Bullet-shaped microblade cores of the Near Eastern Neolithic: experimental replicative studies. In: S.K. Kozłowski and H.G.K. Gebel (eds.), *Neolithic chipped stone industries of the Fertile Crescent, and their contemporaries in adjacent regions*. Studies in Early Near Eastern Production, Subsistence and Environment 3: 289-310. Berlin: ex oriente.
- Young C.T. and Smith P.
1966 Research in the prehistory of Central Western Iran. *Science* 153: 386-391.

The Ibex, the Triangle and the Lentoid: A Sixth-Fifth Millennium BCE Stone Stamp Seal from Khirbet Harsis, Judean Shephelah, Israel

Yitzhak Paz and Annette Landes-Nagar

Introduction. Horned Animals in Glyptic Art from the Ancient Near East

Horned animals were very commonly depicted in glyptic art of the Ancient Near East from the 7th to the 3rd millennia BCE. These animals include both domesticated and wild species and were often accompanied by additional elements *e.g.*, other animals, human figures and various emblems that were often called “space fillers”. The current paper discusses a stone stamp seal that was found during a salvage excavation at Khirbet Harsis (Sha‘ar Ha-Gāy) in the Judean Shephelah of Israel. The seal depicts a crouching ibex and associated lentoid and triangular emblems. We believe they represent the symbolic realms of the Late Neolithic-Early Chalcolithic with their cultural and social aspects.

Horned wild animals, such as gazelles, antelopes, and ibexes, are the stamp seals’ main features at sites

like Tepe Gawra (Schmandt-Besserat 2006: Fig. 2.123, 103). These animals appear in the centre of the seal, being the main element, and sometimes they are accompanied by various objects that were defined in literature as “space fillers” (see *e.g.*, Ben-Tor 1992: 157-158).

Horned animals can also be found alongside human figures. A human figure is depicted in a Pre-Literate seal impression from Tepe Gawra, dated between 5500-4000 BCE. Its broad shoulders and narrow hips may point to a man, possibly masked, flanked by a horned quadruped and a bird. His arms are bent at an obtuse angle and in a way that the spread fingers of the open palm don’t rise above the shoulder line (see in Schmandt-Besserat 2006: Fig. 3.94).

In another seal impression from Tepe Gawra, dated between 4000-2900 BCE, a human figure of an unknown gender is seen, flanked by a horned quadruped and a schematic bird. In this case, the figure’s legs are

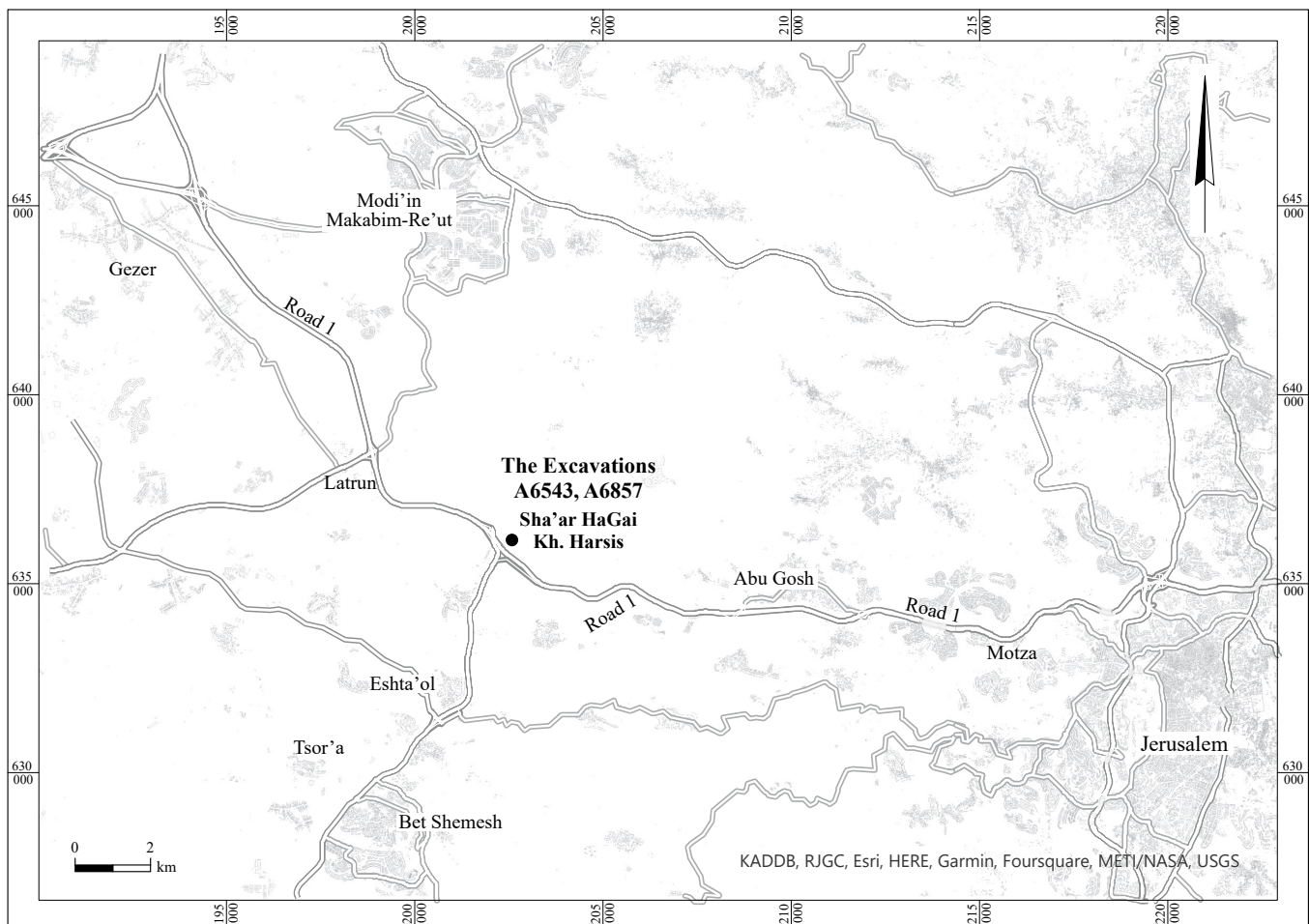


Fig. 1 Location map of Khirbet Harsis and sites in Israel discussed in this paper (Map: I. Delerson)

bent in a motion that looks like a walk or a dance. The hands are bent in the orant posture, palms open, and fingers spread; however, in an upper elevation above the shoulder line, but not above the forehead line (Schmandt-Besserat 2006: Fig. 4.96).

The connection with horned animals is well attested in further references (Matthews 1990: nos. 55, 64, 78, 138; see here Fig. 6.4). Generally, the horned animals described are wild antelopes, deers, or other undomesticated quadruped horned beasts.

During the 3rd and 2nd millennia, domesticated horned animals and human figures or other animals can also be seen in glyptic art (see *e.g.*, Matthews 1990: No. 156).

The stone stamp seal from Khirbet Harsis (Sha'ar Ha-Gāy) can be cautiously dated between the 6th-5th millennia BCE based on its glyptic style. We will focus on stamp seals in which wild horned animals are the main feature, and, as will be demonstrated below, this composition accompanied by meaningful emblems appears continuously from the 6th through the 3rd millennia BCE.

The Site

The seal discussed in this paper was discovered in 2012 during salvage excavations at Khirbet Harsis (Sha'ar Ha-Gāy) due to installing a fifth waterline to Jerusalem (Landes-Nagar 2013, 2020a).¹

The site is located within the Judean Shephelah-Nahal Ilan National Park, on the edge of a slope extending northwest, right to the north of Sha'ar HaGay Interchange on Highway 1 (Fig. 1). About 700m northwest of the excavation is the dry spring of 'Ein Ayub. Khirbet Harsis is situated along an ancient main road leading from Jaffa to Jerusalem via Emmaus, upper Nahal Nahshon (Wadi 'Ali) and Abu Ghosh. Another ancient main road that led to Jerusalem along the Neve Ilan Ridge to Abu Ghosh, paved in the Roman Period, has been documented to the north of the site (Fischer *et al.* 1996: 87-98; Landes-Nagar 2020b).

The excavations unearthed settlement remains of the Iron Age II (late 8th-6th centuries BCE) and the Byzantine period (4th-7th centuries CE).

The seal, which we suggest to date to the 6th-5th millennia BCE, Late Neolithic-Early Chalcolithic, was found in the topsoil south of the built remains from the Byzantine period (Fig. 2) along with flint artefacts scattered throughout the site dating generally to the Neolithic period. These finds attest to activity in Khirbet Harsis or nearby sites within the Shephela region during these periods, such as Motza (Khalaily and Vardi 2020; Milevski *et al.* 2020), Abu Ghosh (Milevski *et al.* 2015), Eshta'ol (Golani *et al.* 2016; Ben-Ari and Golani 2021), Tluliot Zora (Brailovsly and Milevski, Permit No. A9030; pers. comm.) and Gezer (Macalister 1912).

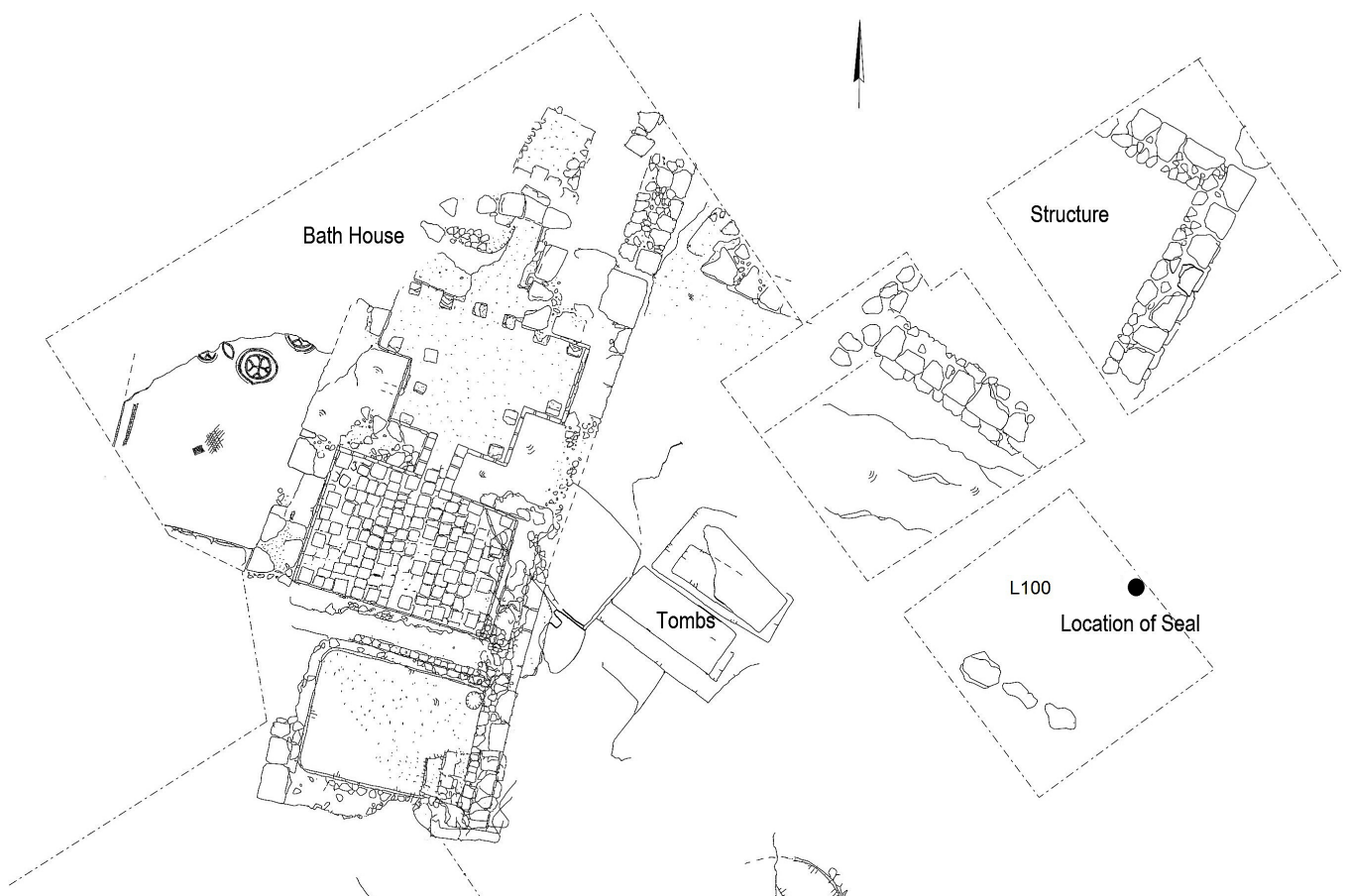


Fig. 2 Location of seal from Khirbet Harsis. (Plan: M. Kunin, A. Hajian and N. Zak)

The Stamp Seal. General Traits

- Shape: A complete flattened hemispheroid-shaped stone seal (Fig. 3a-e; Reg. No. 33776, Basket 1034, Locus 100)
- Material: black stone (steatite or hematite)
- Dimensions: diameter 27 x 26mm, height 9mm

The seal is perforated and drilled to its full width through the sides. The hole was plausibly used for threading a string and hanging it around the neck.

The rounded back of the seal and one of the sides are slightly defective. The base was engraved with a relief depicting a horned animal. The rounded shape of the horns may indicate a wild animal rather than a domesticated one. The exact species cannot be determined (e.g., gazelle, antelope, ibex), but we prefer to identify it as an ibex. The latter is seen crouching with its forelegs bent and with rounded horns and ears pronounced.

Three emblems are seen floating within: one lentoid-shaped element between the ibex's legs, another in front of its chest and one triangular shape above its back.



Fig. 3 a-d seal and seal impression from Khirbet Harsis; e modern clay impression. (a Drawings: C. Hersch, b-d photos: C. Amit, e modern clay impression: A. Landes-Nagar)

The Composition of the Various Elements in the Seal

As described above, the ibex seems to cover most of the round seal's area. The three emblems are located

in open or "empty" spaces; the triangular is the largest and therefore covers the larger open space.

The whole composition of the motifs within the seal integrates well into the generally round shape of the seal in what appears to be a round fluidity: the horns and legs of the ibex follow and go parallel to the contour line of the seal. Moreover, the hovering emblems (two lentoids and a triangular object) follow the same pattern and create an impression of continuous fluid and round movement.

This composition seems to be related to what was termed as *vacui horror*, the fear of empty spaces that dictated their filling with various elements known as "space fillers", especially during the Pre- and Proto-Literate Periods (6th-4th millennia BCE). Accordingly, artistic designs on seals were arranged in rounded compositions rather than in a straight, continuous, narrated way that was common during the Literate Period (3rd millennium BCE; Schmandt-Besserat 2006).

As will be demonstrated below, while we generally agree with Schmandt-Besserat that the rounded arrangement of the various elements in the seal belongs to the Pre-/ Proto-Literate Period in Mesopotamia, we disagree with her identification of the emblems that accompany the ibex as "space fillers". We believe they had significant meanings commonly understood between the 7th and 3rd millennia BCE.

The crouching ibex is well-known in the glyptic art of the 6th-5th millennia BCE in the Ancient Near East. A similar stamp seal was found at Tepe Gawra (Speiser 1935: Pl. LVII:17-19), and various emblems that float above the ibex are also known in similar seals (Speiser 1935: Pl. LVII.17; Buchanan 1967: Figs. 7-9).

The Triangular Emblem and its Relationship with Horned Animals

The triangular emblem is seen hovering below the ibex's head, located right above its back. The emblem is not a geometric triangle, its ribs are not straight but slightly curved in a way that it creates a continuous line with the ibex's horns, the general round shape of the seal and the other lentoid emblems, as mentioned below.

While we cannot establish the exact meaning of the triangular emblem, we can at least suggest several possibilities, that derive from the common occurrence of similar emblems with horned animals in the glyptic art of the Ancient Near East.

The triangular element is described as a bird; the inner lines within the triangle are probably its spread wings. In another seal, from the same period, found at Tepe Gawra, two wild horned animals are depicted and right above their backs, well-illustrated birds with spread wings indicating flight (Schmandt-Besserat 2006: Fig. 2.173).

Birds, whether schematically or detailed depicted, continue to be shown in glyptic art with a clear relation to wild horned animals, located above their back or right below them in 4th millennium BCE Tepe Gawra

(Buchanan 1967: Figs. 7-9) well into the late 3rd millennium BCE (Felli 2015: Pl. 10.4,8). While Felli (2015: 216) tends to see the depiction of these birds as mere filling motifs, their consistent relation to wild horned animals and the exact location in the seal between the two components (horned animal-bird) calls for another explanation.

Another interpretation for the triangular shape relates to cylinder seal impressions found in northern Syria, dated to the early 3rd millennium BCE and considered to be inspired by the late Uruk style. One of the impressions depicts two horned animals, and several lentoid and triangular objects found between their legs and in front of them. Felli identifies the triangular objects as ladder motifs employed as space fillers (Felli 2015: 205-206).

The combination between horned animals and triangular motifs may also be seen in the iconography of the “composite female”, depicted on various objects. In this case, the horned animals seem to be directly connected with a female figure, represented by a schematic body with large eyes and a representation of the vulva, depicted as a triangle (see in Milevski *et. al* 2016: Figs. 2, 7, 10).

Horned Animals and Oval Lentoid Motifs

Two motifs, known as lentoids, oval shapes, or eye motifs, can be seen in the seal from Khribet Harsis. One is located between the ibex’s legs, the other is in front of its chest.

The lentoid emblem is known in Eastern glyptic styles throughout southern Mesopotamia, Egypt, and Syria (see *e.g.*, Collon 1993: 16, 19). A catalogue of ancient Near Eastern cylinder seals from the Ashmolean Museum, Buchanan (1966) presents Jemdet Nasr and post-Jemdet Nasr seal impressions, depicting a row of running antelopes. These antelopes are separated by oval shapes resembling an eye or mouth, known as lentoids (Fig. 5:1; Buchanan 1966: Pls. 4.34,38, 7.83). Although the composition of these lentoids suggests that they are decorative elements (Space Filler Type 1; see above and Fig. 1.1), there is also a relationship between this shape and the horned animals (see below).

A seal impression found in Tomb U-134 at Abydos, Egypt (Naqada IId, c. 3510-3370 BCE) features horned animals with the same oval motif. This motif is depicted between the horns and backs of the animals (Hill 2004: Figs. 7b, 5.2). Horned animals and the oval motif are frequently depicted together in seal impressions from Tell Gubba (late 4th-early 3rd millennia BCE; located in the Hamrin Basin, eastern Iraq, adjacent to the border with Iran; Li 1988). The oval motif occurs between the horns. It seems significant that horned animals depicted alongside the oval motif are usually wild animals such as gazelles, antelopes, or ibexes.

Animals that may be identified as domesticated, such as goats, are rarely depicted with this motif. As Hill (2004: 25) emphasised, the animals depicted with the oval motif may signify wild forces and chaos,

especially when confronted with symbols of order (see below).

Another interpretation of the lentoid and its angular lozenge form is focused on its general resemblance to the female vulva, which was considered a fertility symbol. Its relation to horned animals, plough scenes and “Sacred Marriage” scenes (see below) may lend credence to this possibility (see Gohde 2000: 405). Gohde himself (2000: 404-407) suggested a somewhat different interpretation of the lozenge. He related it to the astral constellation Lyra, associating it with the Babylonian goddess Gula, or with the healing capacity of the Assyrian goddess Ishtar.

The lozenge, or its simplified shape as a lentoid or “eye motif”, was, most likely, an emblem that symbolised a deity or a divine quality of this deity. It was incorporated into the “cultic” scenes engraved on stamp and cylinder seals. The information encoded in these seals reached great distances after the seals were rolled or stamped into clay (pottery vessels of *cretulae*, see *e.g.*, Frangipane 2016).

Discussion: Socio-Political-Cultural Implications

The stamp seal from Khirbet Harsis is a rather unique find in the local southern Levantine sphere, and its characteristics may help cautiously date it according to shape, composition and artistic style to the 6th-5th millennia BCE, with close parallels at Tepe Gawra (see Schmandt-Besserat 2006). The glyptic style reflected in the seal generally accords with what Schmandt-Besserat described as a “joyous chaos” that was created by the circular rotating composition of the elements engraved in the seal. (Schmandt-Besserat 2006: 187). The social-cultural implication for this notion is that the various components of the seal (the animals and accompanying emblems) may have had meaning, but they did not reflect a coherent story or narrative. For this reason, Schmandt-Besserat’s asserts that during the Pre-Literate and Proto-Literate periods (6th-4th millennia BCE), stamp seal glyptic art reflects social perception of world circularity and all-inclusiveness (Schmandt-Besserat 2006: 192).

Having said all this, the view reflected by Schmandt-Besserat (2006), Felli (2015: 216), and shared by other scholars, that interpret the various emblems that accompany horned animals as mere “space fillers”, inserted as a result of *horror vacui* should be rejected. The thorough discussion explaining how the whole perception of “space fillers” should be changed and that these motifs were meaningful symbols is found elsewhere (Porada 1948: 60; Collon 1995; Paz 2011). Here, we would like to stress that the combination of the lentoid and triangular motifs with wild horned animals depicted in glyptic style is of no coincidence, and furthermore, it is continuously represented in glyptic art until the 3rd millennium BCE.

Therefore, we suggest that lentoids and triangular motifs, alongside horned animals, had a close affinity to

fertility cult that may have also been manifested in the “composite female figurines” during the Late Neolithic-Early Chalcolithic 6th-5th millennia BCE at sites in the Southern Levant and Mesopotamia (see Milevski *et. al* 2016). During the 4th-3rd millennia, BCE, this cult was best reflected in the “Sacred Marriage” ceremonies and festivities (*e.g.*, de Miroschedji 1997; Paz *et al.* 2014).

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Endnote

¹ The excavations (Permit No.s A6543, A6857; map ref. 202320/636010), undertaken on behalf of the Israel Antiquities Authority (IAA) and financed by the Mekorot Water Company, were directed by the author Annette Landes-Nagar, between the years 2012-2013 with the assistance of Amit Melman (area supervision), Ielena Delerson (location map), Mark Kunin, Avraham Hajian and Natalia Zak (surveying and drafting), Clara Amit (seal photograph), Carmen Hersch (seal drawing), and Annette Landes-Nagar (modern clay seal impression). The authors would like to thank the IAA Publication Committee for permitting this article to be published in an external venue. Special thanks are forwarded to Baruch Brandl (IAA) for the preliminary research and to Ianir Milevski and Nathan Ben-Ari (IAA) for insights, comments, and references.

References

- Ben-Ari N. and Golani A.
2021 Eshta'ol. *Hadashot Arkheologiyot- Excavations and Surveys in Israel* 133. https://www.hadashot-esi.org.il/report_detail_eng.aspx?id=26031&mag_id=133
- Ben-Tor A.
1992 New light on cylinder seal impressions showing cult scenes from Early Bronze Age Palestine. *Israel Exploration Journal* 42: 153-164.
- Buchanan B.
1966 *Catalogue of the Near Eastern seals in the Ashmolean Museum I. Cylinder seals*. Oxford: Ashmolean Museum.
1967 The prehistoric stamp seal. *Journal of the American Oriental Society* 87: 265-279.
- Collon D.
1993 *First impressions. Cylinder seals in the Ancient Near East*. London: British Museum Press.
1995 Filling motifs. In: U. Finkbeiner (ed.), *Beiträge zur Kulturgeschichte Vorderasiens (Festschrift Rainer Michael Boehmer)*: 69-76. Wien: Austrian Academy of Science Press.
- Felli C.
2015 Glyptic and art. In: U. Finkbeiner, M. Novak, F. Sakai and P. Sconzo (eds.), *ARCANE IV. Middle Euphrates*: 203-266. Turnhout: Brepols.
- Fischer M., Isaac B. and Roll I.
1996 *Roman roads in Judea II: The Jaffa-Jerusalem road*. British Archaeological Reports - Int. Series 628. Oxford: Oxford University Press.
- Frangipane M.
2016 The origins of administrative practices and their developments in Greater Mesopotamia. The evidence from Arslantepe. *Archeo-Nil* 28: 9-32.
- Gohde H.E.
2000 The rhomb, a god's symbol. In: S. Graziani (ed.), *Studi sul vicino oriente antico, dedicati alla memoria di Luigi Cagni* 1: 395-415. Napoli: Istituto Universitario Orientale.
- Golani A., Storchan B., Be'eri R. and Vardi J.
2016 Eshta'ol, Areas H and J-2013. *Hadashot Arkheologiyot – excavations and surveys in Israel* 128. http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=24911&mag_id=124
- Hill J.A.
2004 *Cylinder seal glyptic in predynastic Egypt and neighboring regions*. British Archaeological Reports - International series 1223. Oxford: B.A.R.
- Khalailiy H. and Vardi J.
2020 The new excavation at Motza: An architectural perspective on a Neolithic ‘megasite’ in the Judean hills. In: H. Khalailiy, A. Reem, J. Vardi and I. Milevski (eds.), *The mega project at Motza (Moza): The Neolithic and later occupations up to the 20th century*: 69-100. Jerusalem: Israel Antiquities Authority.
- Landes-Nagar A.
2013 Khirbet Harsis. Sha'ar Ha-Gäy. *Hadashot Arkheologiyot-Excavations and Surveys in Israel* 125. http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=4376 (Accessed 6/04/2022)
2020a Khirbet Harsis. Sha'ar Ha-Gäy. *Hadashot Arkheologiyot-Excavations and Surveys in Israel* 132. http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=25790 (Accessed 6/04/2022)
2020b *The settlement layout along the ancient road Emmaus-Moza-Jerusalem in light of new archaeological data*. Ramat-Gan: Bar-Ilan University. MA Thesis. (in Hebrew).
- Li H.
1988 Seals and seal impressions from Tell Gubba. *Al-Rafidan* IX: 97-135. (in Japanese).
- Macalister R.A.S.
1912 *The excavation of Gezer: 1902-1905 and 1907-1909*. London: Murray.
- Matthews D.M.
1990 *Principles of composition in Near Eastern glyptic of the later second millennium BCE*. Orbis Biblicus et Orientalis Series Archaeologica 8. Freiburg and Göttingen: Academic Press Fribourg.
- Milevski I., Getzov N., Galili E., Yaroshevich A. and Kolska-Horwitz L.
2016 Iconographic motifs from the 6th-5th millennia BCE in the Levant and Mesopotamia: clues for cultural connections and existence of an interaction sphere. *Paléorient* 42: 135-149.
- Milevski I., Lupu R. and Bischoff E.
2020 The Late Pottery Neolithic/ Early Chalcolithic period at Motza and its surroundings: A new horizon emerging in the Judean Hills. In: H. Khalailiy, A. Reem, J. Vardi and I. Milevski (eds.), *The mega-project at Motza (Moza): The Neolithic and later occupations up to the 20th century*: 241-264. Jerusalem: Israel Antiquities Authority.
- Milevski I., Marder O., Mienis H.K. and Horwitz L.K.
2015 Abu Ghosh, Jasmine Street: A pre-Ghassulian site in the Judean hills. *'Atiqot* 82: 85-130.
- Miroschedji P. de
1997 Le Bronze ancien. In: A. Caubet (ed.), *De Chypre à la Bactriane – Les sceaux du Proche Orient ancien*: 189-227. Paris: La Documentation Française.

Paz Y.

- 2011 Re-examining space fillers and potmarks: a new perspective on their role in Early Bronze Age Canaanite glyptic and ceramic traditions. *Journal of Mediterranean Archaeology* 24(1): 3-26.

Paz Y., Milevski I. and Getzov N.

- 2014 Sound-track of the "Sacred Marriage"? A newly discovered cultic scene depicted on a 3rd millennium BCE cylinder seal impression from Bet Ha-Emeq, Israel. *Ugarit Forschungen* 44: 243-259.

Porada E.

- 1948 *Corpus of Near Eastern seals in North American collections I, the Pierpont Morgan library collection*. The Bollingen Series 14. Washington: Pantheon Books.

Schmandt-Besserat D.

- 2006 The interface between writing and art: The seals of Tepe Gawra. *Syria* 83: 183-193.

Speiser E.A.

- 1935 *Excavations at Tepe Gawra* 1. Philadelphia, PA: American Schools of Oriental Research.

Tepe Qaterchi: A New Aceramic Neolithic Site in Fars Province, Southern Zagros Mountains, Iran

Mohsen Zeidi, Saman Hamzavi Zarghani and Cyrus Barfi

Introduction

For many years, the transitional period between the end of the Epipalaeolithic and the beginning of the ceramic Neolithic was unknown and considered a large cultural gap in archaeological evidence of human occupation in Fars Province, southern Zagros. Although Vanden Bergh (1954: 396) reported aceramic Neolithic localities in the Kur River Basin, further archaeological surveys of the region failed to relocate them. However, this is not surprising, because the fertile plains in the Kur River Basin have always been under very intense agricultural activities, and low-levelled or open-air sites must have been scraped off. Nevertheless, the 2005-2006 salvage archaeological excavations by the Irano-Japanese team at two cave sites in Tang-e Bolaghi revealed the transitional phase of the early aceramic Neolithic and shed new light on the Neolithisation of southern Zagros (Tsuneki *et al.* 2007; Tsuneki and Zeidi 2008). At the same time, the rescue excavations at Tepe Rahmatabad on the right bank of the Sivand River also yielded late aceramic Neolithic deposits (Azizi Kharanaghi *et al.* 2012a, 2013; Nishiaki *et al.* 2013). Altogether, these findings and other early Neolithic discoveries (*cf.* Azizi Kharanaghi *et al.* 2012b; Tsuneki 2013; Kamjan *et al.* 2018; Nikzad *et al.* 2018; Shidrang and Nishiaki 2019; Khanipour 2020; Zeidi and Hamzavi Zarghani forthcoming), filled an essential gap in the early Neolithic cultural sequence of Fars Province. We can now add



Fig. 1 Map showing the location of the site in Fars Province. (Map: M. Zeidi, Qir-Karzin Survey Project)

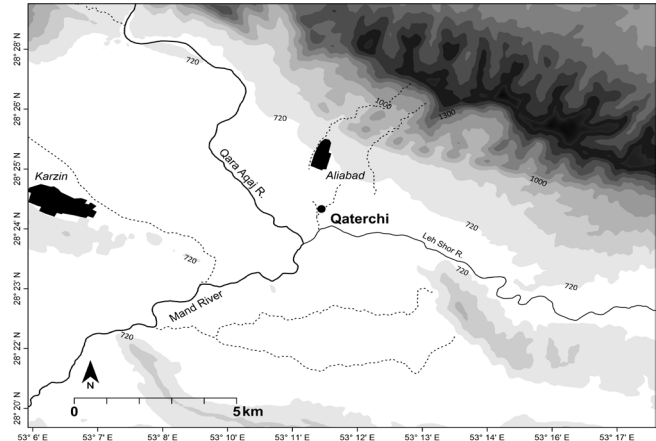


Fig. 2 Map showing the location of the site in the Qir-Karzin District. (Map: M. Zeidi, Qir-Karzin Survey Project)

Tepe Qaterchi to this increasing list of early Neolithic sites in the Fars Region.

In autumn 2019, one of the authors (C. Barfi) surveyed the central part of the Qir-Karzin District, with the aim of creating an archaeological map of the region. During this survey, 68 sites were identified from the Stone Age to the Islamic periods (Safarzadeh and Barfi 2020). However, it is worth mentioning that, previously and based on old reports and publications, one of the authors (M. Zeidi), and by using Google Maps, could locate a potential site near Aliaabad, where Stein (1936) had reported a locality with flint scatters. We informed the survey team about this site, and with C. Barfi's invitation, M. Zeidi and S. Hamzavi joined the survey team for one day to check if the tell site still exists and if it is possible to relocate it. Fortunately, we could find the tell site that was described first by Stein in 1936 and, later reintroduced by Sumner (1977) as a potential pre-ceramic settlement.

Between November 1933 and May 1934, Sir Mark Aurel Stein (1936: 111) conducted an archaeological exploration through a significant part of Fars Province in southern Zagros. Tepe Qaterchi was discovered during his quick survey in December 1933 on the way to Jahrum. He stated that:

“After passing Aliabad, the last village of the tract on the route to Jahrum, I noticed a small mound to the south rising about 13 ft. above the level grassy plain well beyond the present limits of irrigation. A number of small worked flints were picked up on the surface, but no painted potsherds such as might have proved prehistoric occupation (Stein 1936:132).”

Unfortunately, he did not provide any other information, and nothing further was known about this site. Later, William Sumner (1977: 293) and during his

review of early settlements in Fars Province, reintroduced the site that Stein mentioned as a possible pre-ceramic sedentary occupation in the Qir-Karzin region.



Fig. 3 View of the site towards the northeast. (Photo: S. Hamzavi Zarghani, Qir-Karzin Survey Project)

Tepe Qaterchi

Tepe Qaterchi is a small tell site located *c.* 140km south-east of the city of Shiraz and 7km to the east of Karzin (Figs. 1-2). This tell site is situated in an intermountain alluvial plain in the Zagros Crush Zone of central Fars Province, extending over an area of approximately 0.5ha at an altitude of 700m a.s.l. The site is circular and rises *c.* 4m from surrounding fields (Fig. 3). At *c.* 1400m toward the southwest, the Qara Aqaj and Leh Shor Rivers join and form Mand River. These permanent rivers and several other seasonal springs provide the major sources of water in this region. Based on the short description made by Stein (1936: 132), Tepe Qaterchi is the only site that was easily visible from the road near Aliabad village. Other characteristics, such as morphology and find scatter on the site's surface, resembles the description made by Stein during his visit. Nowadays, the site is located in the middle of farming fields and is partially damaged through agricultural activities. Tepe Qaterchi has been looted at its apex with a depth of about one meter, which causes cultural deposits and ashy layers to be exposed. The eastern part of the site has also been damaged by making a road and dredging the base of an old spring water channel where the survey team found most of the Neolithic artefacts. Due to the current utilisation by nomads and local farmers, the site's surface has been cleaned for daily tasks, and it is difficult to find any artefacts. By doing an intensive survey, however, only a handful of lithic artifacts, and grinding stones were collected from the site's surface.

Between the surface finds, there are 11 lithic artefacts (Figs. 4-5) and six grinding stone tools (Fig.

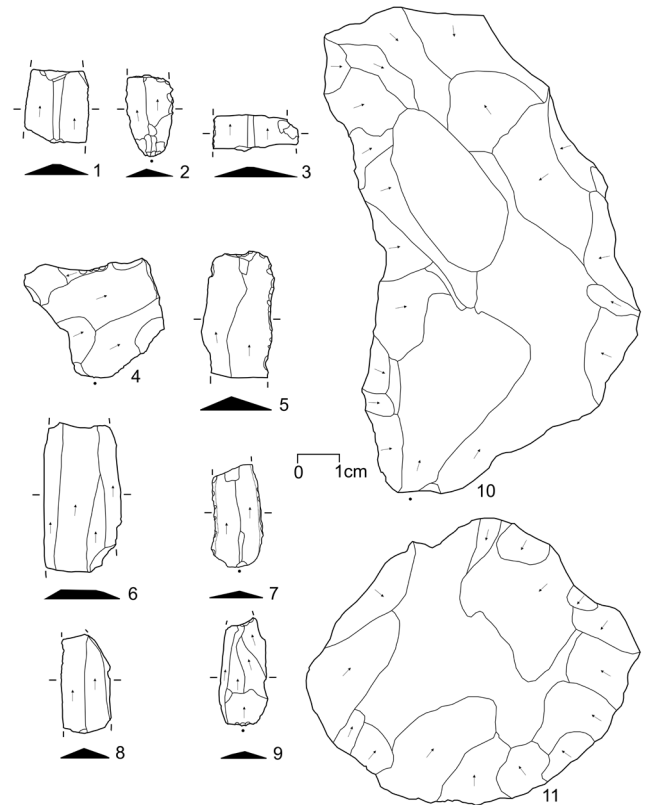


Fig. 4 A selection of lithic artefacts collected from the surface: 1-3, 5-9 blade fragments (chert); 4 flake fragment (chert); 10-11 flake cores (limestone). (Drawing: M. Zeidi, Qir-Karzin Survey Project)

6). The lithic artefacts include eight blade fragments (Fig. 4.1-3,5-9), one flake (Fig. 4.4), and two flake cores (Fig. 4.10-11). One of the blade fragments bears sickle gloss on both lateral edges (Fig. 4.7). Other blade fragments are either unused or have use-wear damage on their lateral edges. All of the blade fragments are made of chert, and grinding stone tools are made of locally available limestone. The grinding stones include grinding slabs (Fig. 6.1,4), a pierced stone (Fig. 6.2), and pounders (Fig. 6.3,5-6). The survey team did not find any Neolithic or later prehistoric ceramics on the site's surface.

Concluding remarks

Neither Stein in 1933 nor the survey team in 2019 could find any prehistoric ceramics but just stone artefacts at the site. Tepe Qaterchi is the southernmost aceramic Neolithic site known to us in Fars Province, southern Zagros Region. The Neolithic lithic artefacts and grinding stone implements collected from the site indicate an aceramic Neolithic occupation in the Qir-Karzin District. However, systematic excavation at the site will help us to determine the nature of occupation at this tell site. Overall, the increasing number of early Neolithic sites in Fars Province has changed our previous thoughts about the Neolithisation processes in the southern Zagros and suggests that this part of the Zagros Mountains was continuously occupied throughout the early Holocene.

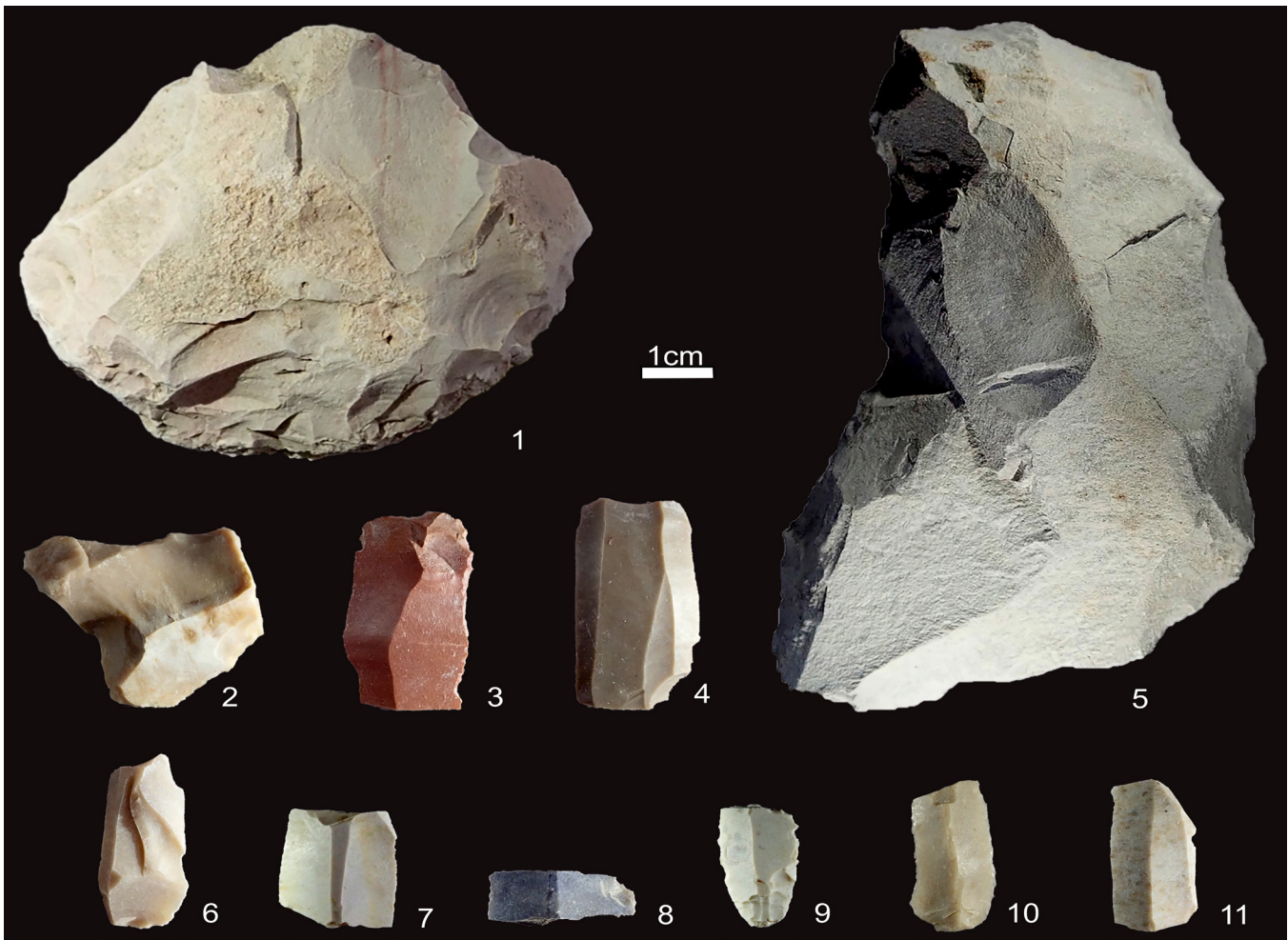


Fig. 5 A selection of lithic artefacts collected from the surface (Photo: M. Zeidi, Qir-Karzin Survey Project)

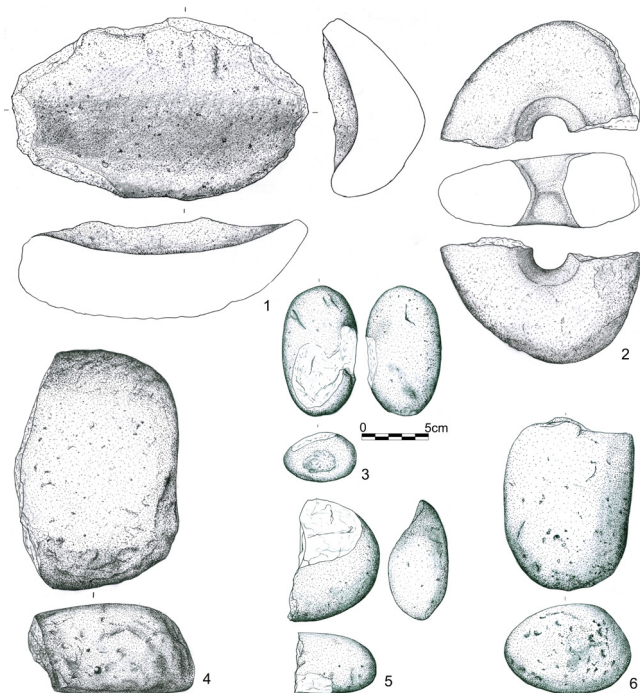


Fig. 6 Grinding stone tools collected from the surface. 1 saddle grinding slab (limestone); 2 pierced stone (limestone); 3, 5-6 pounding elements (limestone); 4 grinding slab (limestone). (Drawing: M. Zareh Khalili, Qir-Karzin Survey Project)

Acknowledgements: We thank the Iranian Centre for Archaeological Research and the Cultural Heritage Office of Fars Province for their support. We would like to thank the survey team, and all other people who helped with the survey project; Saeid Safarzadeh, Samira Jafari, Mohsen Mosadegh, Mohammad Hasan Paknejad, and Reza Bidari. The Cultural Heritage Office of Fars Province funded the survey project.

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References

- Azizi Kharanaghi H., Fazeli Nashli H. and Nishiaki Y.
2013 Tepe Rahmatabad: a Pre-Pottery Neolithic site in Fars Province. In: R. Matthews and H. Fazeli Nashli (eds.), *The Neolithisation of Iran: The formation of new societies*: 108-124. Oxford: Oxbow.
- Azizi Kharanaghi M.H., Khalouei F., Khanipour M., Khosravi S., Razi S., Komijani S. and Tahmasebi M.
2012b The first season of archaeological excavation at Tell-e Qasr e Ahmad, Kavaar District, Winter 2011, Fars. In: A. Moghaddam and K. Roustaei (eds.), *11th Annual Symposium of Iranian Archaeology: Abstracts volume*. Tehran: Iranian Cultural Heritage Handicraft and Tourism Organisation (ICHHTO).
- Azizi Kharanaghi M.H., Nishiaki Y. and Khanipur M.
2012a Tepe Rahrnatabad, Pasargadae: the absolute and relative chronology. *Iran Nameh* 27(2-3): 78-101. (in Farsi)
- Kamjan S., Mashkour M., Mohaseb F.A., Fathi H. and Azizi Kharanaghi H.
2018 Zooarchaeology of the Pre-Pottery and Pottery Neolithic site of Qasr-e Ahmad (Iran). In: C. Çakırlar, J. Chahoud, R. Berthon and S. Pilaar Birch (eds.), *Archaeozoology of the Near East* 12: 27-40. Groningen: Barkhuis Publishing and University of Groningen.
- Khanipour M.
2020 Excavations at Toll-e Sangi in Pulvar River Basin, Fars Province. In: R.A. Shirazi, M. Khanipour and O. Ghafuri (eds.), *Proceedings of 18th Annual Symposium on the Iranian Archaeology: A collection of archaeological finds from excavations in 2019-2020*: 293-300. Tehran: Research Institute of Cultural Heritage and Tourism. (in Farsi)
- Nikzad M., Moradi H. and Emadi H.
2018 Qal'at Surmagh: a Pre-Pottery Neolithic site from Neyriz Plain, eastern Fars, Iran. *Neo-Lithics* 18: 12-16.
- Nishiaki Y., Azizi H. and Abe M.
2013 The late aceramic Neolithic flaked stone assemblage from Tepe Rahmatabad, Fars, south-west Iran. *Iran* 51: 1-17.
- Safarzadeh S., and Barfi C.
2020 Short Report on the Archaeological Survey in Qir and Karzin County. In: R. A. Shirazi (ed.), *Proceedings of 18th Annual Symposium on the Iranian Archaeology, 2019*: 519-524. Tehran: Research Institute of Cultural Heritage and Tourism. (in Farsi)
- Shidrang S. and Nishiaki Y.
2019 Short report on the first season of excavation at Anjiri Cave, Marvdasht, Fars Province. In: R.A. Shirazi (ed.), *16th Annual Symposium on the Iranian Archaeology (a collection of short articles, 2016-2017)*: 223-226. Tehran: Research Institute of Cultural Heritage and Tourism. (in Farsi)
- Stein M.A.
1936 An archaeological tour in the ancient Persis. *Iraq* 3 (2): 111-225.
- Sumner W.M.
1977 Early settlements in Fars province, Iran. In: L.D. Levine and T.C. Young Jr. (eds.), *Mountains and lowlands: essays in the archaeology of Greater Mesopotamia*. Bibliotheca Mesopotamica 7: 291-305. Malibu: Undena Publications.
- Tsuneki A.
2013 Proto-Neolithic caves and Neolithisation in the southern Zagros. In: R. Matthews and H. Fazeli Nashli (eds.), *The Neolithisation of Iran: The formation of new societies*: 84-97. Oxford: Oxbow.
- Tsuneki A. and Zeidi M.
2008 *Tang-e Bolaghi. The Iran-Japan Archaeological Project for the Sivand Dam Salvage Area*. Al-Shark 4. Tsukuba: University of Tsukuba.
- Tsuneki A., Zeidi M. and Ohnuma K.
2007 Proto-Neolithic caves in the Bolaghi Valley, south Iran. *Iran* 44: 1-22.
- Vanden Bergh L.
1954 Archaeologische navorsingen in de omstreken van Persepolis. *Jaarbericht Ex Oriente Lux* 13: 394-408.
- Zeidi M. and Hamzavi Zarghani S.
forthc. The human use of cave and rock shelters in the Neolithic period of southern Zagros Mountains, Iran. In: K. Taheri, C. Groves, Z. Mohammadi, F. Biglari, A. Sharifi and R. Khosh Raftar (eds.), *Caves and karst research in Iran*. London: Springer Nature.

Yelözer, Sera

Detecting individual and collective identities during the Early Neolithic: gender, age, and the intersectionality of identities at Aşıklı Höyük. 2022.

PhD Thesis, Istanbul University.

Supervisor: Mihriban Özbaşaran

Throughout the Neolithisation process in Southwest Asia, the early sedentary communities underwent significant transformations. These include changing patterns in demography and labour, as well as the emergence of new social roles and identities (Molleson 1994; Peterson 2002; Bolger 2010; Croucher 2012). On this premise, this thesis focuses on the relationships between daily activities and identities during the Early Neolithic period. Its methodology relies on the integration and cross-examination of multiple lines of evidence. The main questions of this study are: (1) did the daily activities of different sex and age groups substantially differ from one another, (2) did the identities of different social groups (based on sex, age, and social roles) intersect and/ or differ from one another, and (3) if and how were identities manifested through mortuary customs, bodily appearances, and material culture? To be able to tackle these questions, a unique Early Neolithic site, where the entire process of the transition to sedentism can be tracked continuously, was chosen as a case study: Aşıklı Höyük (8350-7350 cal BCE) in Central Anatolia. With the further aim of contributing to the contextual and data-driven methodologies in studying past identities, the intersections between different layers of identities at Aşıklı Höyük are discussed with a gender archaeology approach, inspired by feminist theories that understand identity as a plural and fluid concept constituted by the relations between bodies and material culture (e.g., Geller 2009; Sofaer 2012).

The first two chapters of the thesis outline its theoretical, conceptual, and methodological frameworks. The first chapter is dedicated to a discussion on the conceptualization of gender and identity in humanities. This is followed by a historiographic overview of gender studies in archaeology and how approaches and methodologies diversified through time as feminist theories, as well as praxis, moved beyond the gender binary and began focusing on the intersections between different layers of identities (e.g., Gilchrist 1999). The second chapter deals with methods and approaches of identifying identities in the archaeological record. The cross-cultural examples in this section bring us closer to human agency, however, this study intends to embrace identity as the “outcome of the relations that constitute bodies, things and people” (Harris 2016: 20). The second chapter, therefore, provides an overview of Neolithic personal ornamentation with its precursors, focusing on the changes and continuities in material preferences and technological innovations in bead-making practices (see also Alarashi 2014; Baysal 2019). Reiterating the role personal ornaments played in conveying multiple messages and creating

socio-cultural affinities within and between communities (e.g., Hodder 1982; Kuhn 2014), this chapter suggests that the entire bead *chaînes opératoires*, including the transmission of knowledge between different artisans (Costin 1998), as well as the different material preferences of bead-makers and wearers, constructed and signified distinct cultural and social identities. To provide a chronological and regional background for the case study of Aşıklı Höyük, the third chapter discusses the mutual relationship between social roles, identities, and material culture from the Epipalaeolithic to the Neolithic in Central Anatolia, Northern Mesopotamia, Southern Levant, and the Zagros (Fig. 1). This overview concludes that during the Early Neolithic, social identities were not forged by the biological differences between the sexes. Identities were rather related to age and life-course, and were constructed and conveyed through the embodiment, adornment, and altering of bodies. All reflected temporal, regional, and culture-specific variations.

Aşıklı Höyük is a key Early Neolithic site in Central Anatolia: a community transitioning from broad-spectrum hunting of wild prey and plant gathering, as well as the early management of caprines, to intensifying cultivation practices of cereals and the eventual domestication of caprines (Özbaşaran *et al.* 2018). However, defining identities at Aşıklı was a challenging task for the lack of symbolic production, a key aspect that differentiated the site from its contemporaries. The rare anthropomorphic figurines from the site are the stylised and ambiguous depictions that render aspects of male, female, human, and non-human bodies. Thus, questioning the dynamics that constituted identities in this community requires a study that compares different lines of evidence coming from human remains, burial customs, and material culture.

Demographic, palaeopathological, and stable isotope analyses provide a bioarchaeological background to discuss social roles and identities. Among the 103 individuals so far recovered at the site, Erdal’s (2018) study concentrated on 82 individuals. Apart from the 33 sub-adults in her dataset, adult females make up 65% (Erdal 2018: 413). In terms of daily activities, analyses of osteoarthritis, a pathological condition caused by mechanical stress often related to workload and activity, indicate that adults of both sexes routinely engaged in physically demanding activities (Erdal 2018). However, there were subtle differences in labour organisation; males mostly conducted activities that affected their elbows, shoulders, and hips, and females were routinely engaged in activities such as working in a crouching position that affected their ankles, shoulders, and hips (Erdal 2018: 420). An interesting pattern is the lack of degenerative joint diseases in young adult males (between 15-22 years of age; four individuals). Females, however, developed osteoarthritis from young adulthood onwards (Erdal 2018: 411). In terms of diet, carbon and nitrogen isotope analyses indicate that individuals buried inside the same house were consuming similar foods, differentiating them from other

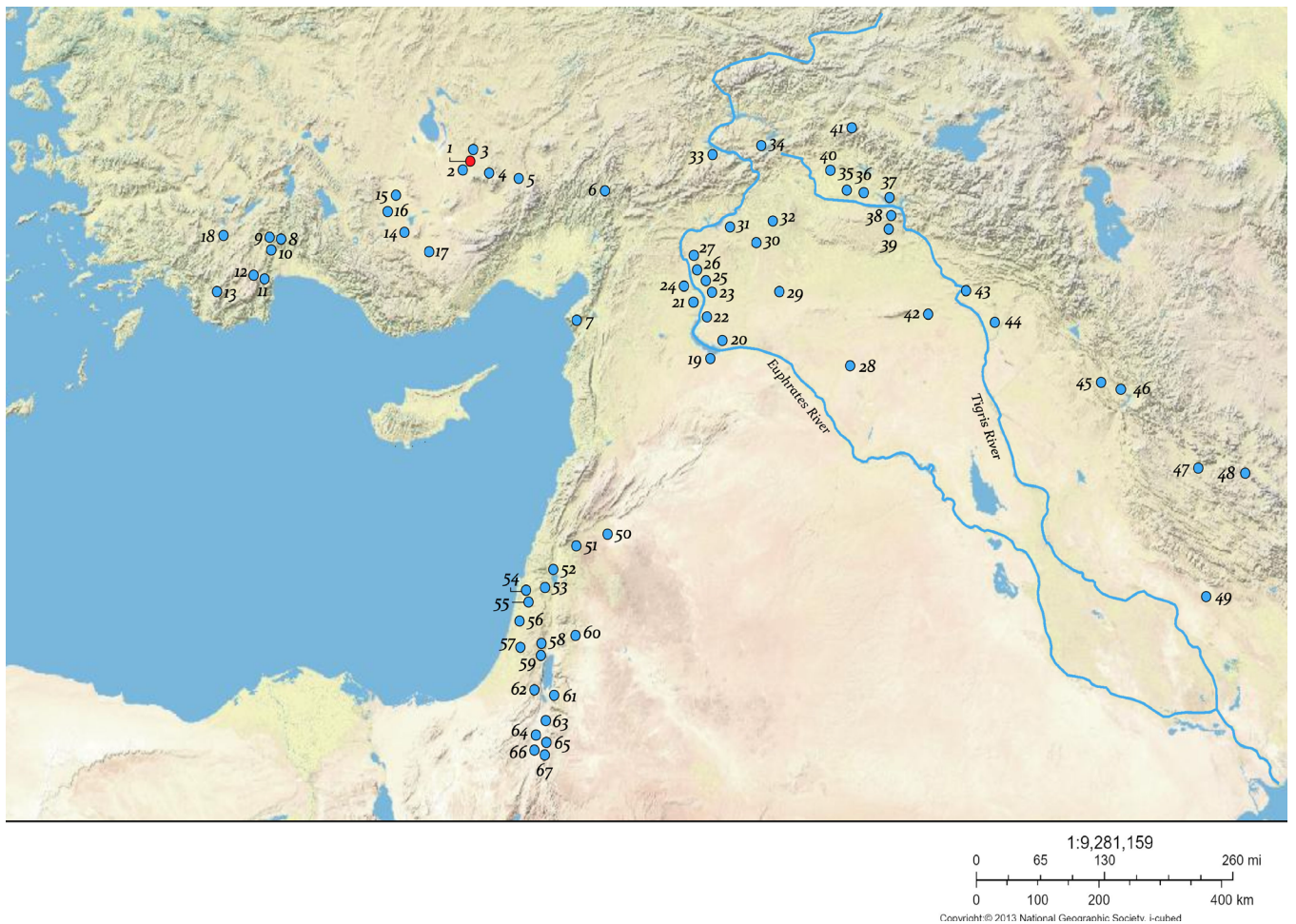


Fig. 1 Aşıklı Höyük and the major Epipalaeolithic and Neolithic sites in Southwest Asia. Sites shown in the map: 1. Aşıklı Höyük; 2. Mulsar; 3. Balıklı; 4. Kaletepe; 5. Köşk Höyük; 6. Direkli Mağarası; 7. Uçağızlı Mağarası; 8. Öküzini Mağarası; 9. Karain Mağarası; 10. Kızılin Mağarası; 11. Beldibi Mağarası; 12. Belbaşı Mağarası; 13. Girmeler Mağarası; 14. Pınarbaşı; 15. Boncuklu; 16. Çatalhöyük; 17. Can Hasan; 18. Hacilar; 19. Abu Hureyra; 20. Mureybet; 21. Tell Halula; 22. Jerf el-Ahmar; 23. Dja'de; 24. Tell Qaramel; 25. Tell 'Abr 3; 26. Akarçay Tepe; 27. Mezraa Teleilat; 28. Bouqras; 29. Tell Sabi Abyad; 30. Göbekli Tepe; 31. Nevalı Çori; 32. Yeni Mahalle; 33. Cafer Höyük; 34. Çayönü; 35. Körtik Tepe; 36. Hasankeyf Höyük; 37. Gusir Höyük; 38. Çemka Höyük; 39. Boncuklu Tarla; 40. Demirköy; 41. Hallan Çemi; 42. Qermez Dere; 43. Nemrik; 44. M'lefaat; 45. Jarmo; 46. Bestansur; 47. Sarab; 48. Ganj Dareh; 49. Ali Kosh; 50. Tell Aswad; 51. Tell Ramad; 52. Beisamoun; 53. Ain Mallaha; 54. Nahal Oren; 55. Kfar HaHoresh; 56. Yiftahel; 57. Hatoula; 58. Gilgal; 59. Jericho; 60. 'Ain Ghazal; 61. Dhra'; 62. Nahal Hemar; 63. Wadi Faynan 16; 64. Shkârat Msaied; 65. Ba'ja; 66. Beidha; 67. Basta. (Map prepared by: S. Yelözer, base map: National Geographic Society)

houses to some extent during the Level 2 occupation at the site (corresponding to the 8th millennium cal BCE) (Itahashi *et al.* 2021).

As the funerary and body adornment practices and the tempo of inter-regional communication exhibit chronological changes at Aşıklı, a discussion of their implications for the construction and display of social roles and identities requires a temporal overview of these practices. Starting from the end of Level 3 (corresponding roughly to the end of the 9th millennium cal BCE) and throughout Level 2 (8th millennium cal BCE) some individuals were buried with 'grave goods', mostly in the form of ornaments but also with few examples of baskets and stone tools. Among the overall number of burials ($n=103$), only 36% had such items. These items could be divided into two groups as possible indicators of the social roles and identities of the individuals they were interred with: items relating to daily activities/ social roles (baskets and stone tools)

and items relating to bodily appearances (personal ornaments/ beads and pendants as single objects, pairs, or groups). The earliest 'grave good' belonged to a child (Level 3, late 9th millennium cal BCE): three stone beads found on the neck, displaying traces of use (Fig. 2). The first adult individuals with 'grave goods' were the three individuals buried with stone tools and baskets, all buried inside the same house during the earliest phases of Level 2/ early 8th millennium cal BCE. Around the same period, infants and children were buried with single greenstone beads. During the mid-8th millennium cal BCE, adults also began to be buried with ornaments. This period also reflects a diversification of burial practices: double burials, rare examples of the placement of ochre on different parts of the body, and also rare instances of body modification.

The adorned burials constitute 29% of the overall number of individuals, while the individuals buried with baskets and stone tools are much fewer ($n=6$).

Statistically, being buried with ornaments does not seem to be a sex-specific practice. However, some individuals stand out in terms of the number of beads they had and the variety of materials, forms, and colours of the beads composing the ornaments they were buried with. These include two children (around the age of three) who had ornaments similar to those of the adult individuals. One other aspect connecting the children's world to the adults' is the presence of use-wear on their beads, suggesting the prior circulation and use of these items before the burial event, as well as their transmission, possibly between individuals of different age groups. Based on the fact that both adult males and females had access to a high quantity and variety of beads, the suggestion that there was no differentiation based on biological sex in the display of identities through these elements of material culture is plausible. Furthermore, among these are the individuals with the highest amount of non-local materials (carnelian butterfly beads and marine shells) as well as individuals who were buried with reused beads with prolonged use-lives, possibly as transmitted items. Two other instances too suggest that access to non-local materials and transmission, this time on a temporal scale, was central to identity construction and display: these are the two adult females, one buried with a bead group composed of ten carnelian butterfly beads, making her the individual who had the highest number of this imported material at the site and the other buried with red deer canine pendants bearing traces of repair and reuse (elements that were in use at the site since the earliest phases as opposed to the stone beads that became numerous in Level 2) combined with copper beads.

A subtle difference between males and females concerns bead colours and ochre use: adult females and children had similar amounts of red and green beads, while the ornaments of adult males are mostly green.

The use of single green beads was exclusively for children under the age of 3 and females above the age of 40. The rare example of ochre use is also exclusive to an infant, a child, and a female above the age of 40. Such material ties can be seen among different age classes: no newborns were buried with ornaments. Infants who had died after 1-month were buried with single beads, and this practice was shared only between infants, children under the age of 3, and females above the age of 40. After 1.5 and until 2.5 years of age, some children had bead pairs too. No children below the age of 3 had bead groups. Weaning, a strong indicator of the beginning of childhood and personhood and identity attribution in ethnographic contexts (*e.g.*, Fisher 2001) began around the age of 1 and was completed around the age of 2 at Aşıklı (Pearson *et al.* 2010). It was after the complete ending of breastfeeding, around the age of 3, that some children were buried with bead groups similar to the ornaments of adults. Thus, 'social age' was an axis of identity construction at Aşıklı. Different practices in body adornment, as well as burial rituals, indicate that beads signified socio-material ties between individuals (*e.g.*, infants and females above the age of 40) while also marking the transition to different stages of life.

The funerary bead groups were made of assembled elements that were a product of distinct *chaînes opératoires*, made by different artisans who had varying degrees of skill and experience. The carnelian butterfly beads (Fig. 3), as well as the butterfly beads made from softer stones, hint at interaction with communities from the Middle Euphrates, Southern Levant, and the Zagros. Through the technological analysis of the butterfly beads from funerary contexts, this study reveals that these items were brought to the site in finished state after an almost identical technological process to the ones from the abovementioned regions, and thus suggests that participation in inter-regional interaction

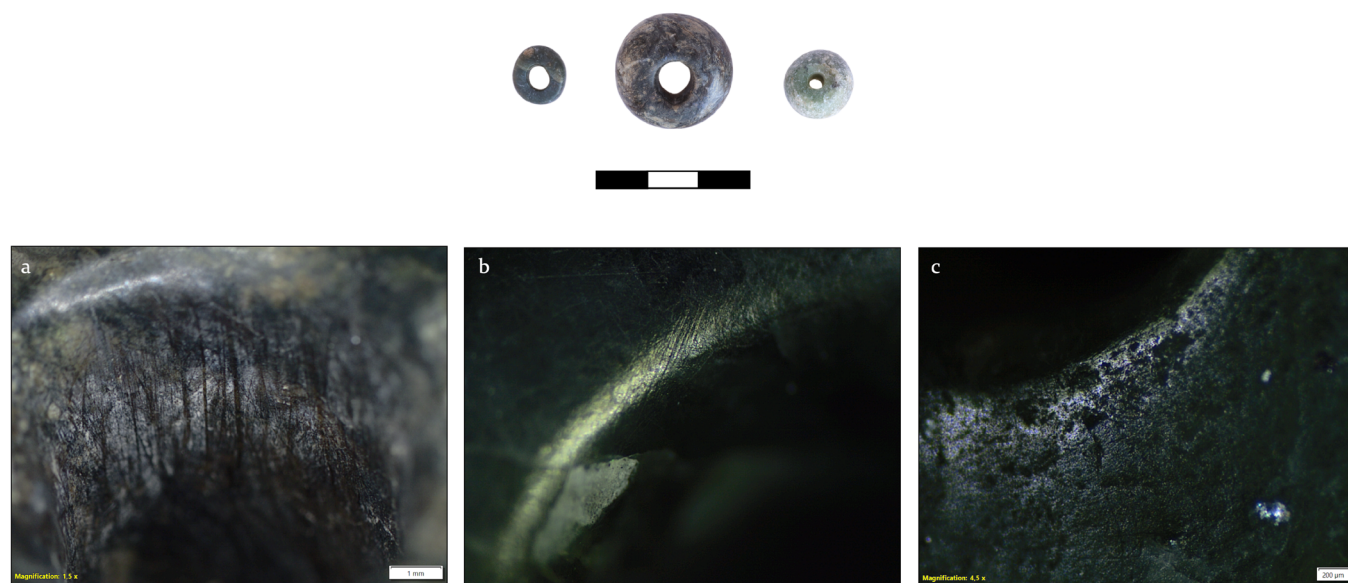


Fig. 2 Stone beads found on the neck of a child at Aşıklı Höyük. Use-wear traces on the beads: vertical striations on the perforation tube (a), polish and striations on the perforation edges (b-c). (Micro-photos: S. Yelözer; photo of the beads: E. Gökcan, Aşıklı Höyük Research Project Archive)



Fig. 3 Carnelian butterfly beads from Aşıklı Höyük. (Photo: E. Gökcan; Aşıklı Höyük Research Project Archive)

networks and access to these materials attributed these individuals with certain identities. The presence of these beads in the graves of sub-adults, on the other hand, postulates the idea that through these beads, the social and/ or biological ties (*i.e.*, kinship) between certain adults and sub-adults were manifested.

Individuals with baskets and stone tools include one young adult male, as well as adult males and females above the age of 30. The most prominent differentiation between the adorned burials and the burials with stone tools and baskets is the exclusion of infants and children from the latter practice. Half of the individuals with baskets and stone tools were buried inside the same house. The isotopic evidence suggests a shared diet among these individuals (Itahashi *et al.* 2021). For this instance, then, it can be suggested that individuals who shared tasks and food tended to be buried closely and with similar items related to their respective social roles and identities. The spatial distribution of different types of ‘grave goods’ and burial practices also indicates that such practices tended to concentrate in certain houses. Some houses were invested in with more numbers of graves, and more varied practices of burial rituals. However, while this may indicate that individuals buried inside the same houses shared social ties that were manifested through certain practices, the socio-material ties manifested mostly through technologies, materials, colours, and uses of personal ornaments cross-cut possible household affiliations as they can be found between individuals buried in different houses. Thus, places and materials together created ties between individuals and constructed identities at the site.

Based on the bioarchaeological data, one can argue in favour of a subtle, yet existent, sexual division of labour in some tasks, and thus, suggest distinct social roles for adult males and females. However, this study proposes a reconsideration through a cross-comparison of bioarchaeological and material culture data. Based on

statistical and descriptive comparisons between datasets supplemented with the technological and use-wear analyses of the funerary beads, this study explores the role that material culture, inter-regional interactions, and spatial relations played in the construction of multi-layered and intersecting identities at Aşıklı Höyük. It can be concluded that there were no distinct gendered identities at play. Body adornment was rather a way of marking the different stages of life-course as well as social roles, identities, and social ties. It appears that emerging household affiliations, bodily appearances, and socio-material ties, as far as it was reflected in the funerary sphere, were relevant to the construction and display of identities during the Early Neolithic period.

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References

- Alarashi H.
2014 *La parure épipaléolithique et néolithique de la Syrie (12e au 7e millénaire avant J.-C.): Techniques et usages, échanges et identités*. Lyon: Université Lumière-Lyon 2. Unpublished PhD Thesis.
- Baysal E.L.
2019 *Personal ornaments in prehistory. An exploration of body augmentation from the Palaeolithic to the Early Bronze Age*. Oxford, Philadelphia: Oxbow.
- Bolger D. (ed.)
2010 *A companion to gender prehistory*. Blackwell Companions to Anthropology. Oxford: Wiley-Blackwell.
- Costin C.L.
1998 Introduction: craft and social identity. *Archaeological Papers of the American Anthropological Association* 8: 3-16.
- Croucher K.
2012 *Death and dying in the Neolithic Near East*. Oxford: Oxford University Press.
- Erdal Ö.D.
2018 Lifestyle and health conditions of the Neolithic people of Aşıklı Höyük. In: M. Özbaşaran, G. Duru and M.C. Stiner (eds.), *The early settlement at Aşıklı Höyük: essays in honor of Ufuk Esin*: 405-425. Istanbul: Ege.
- Fisher W.H.
2001 Age-based genders among the Kayapo. In: T.A. Gregor and D. Tuzin (eds.), *Gender in Amazonia and Melanesia*: 115-140. California: University of California Press.
- Geller P.L.
2009 Identity and difference: complicating gender in archaeology. *Annual Review of Anthropology* 38: 65-81.
- Gilchrist R.
1999 *Gender and archaeology: contesting the past*. London: Routledge.
- Harris O.J.
2016 Becoming post-human: identity and the ontological turn. In: E. Pierce, A. Russell, A. Maldonado and L. Campbell (eds.), *Creating material worlds. The uses of identity in archaeology*: 17-37. Oxford, Philadelphia: Oxbow.

- Hodder I.
1982 *Symbols in action: ethnoarchaeological studies of material culture.* Cambridge: Cambridge University Press.
- Itahashi Y., Stiner M.C., Erdal Ö.D., Duru G., Erdal Y.S., Miyake Y., Güral D., Yoneda M. and Özbaşaran M.
2021 The impact of the transition from broad-spectrum hunting to sheep herding on human meat consumption: multi-isotopic analyses of human bone collagen at Aşıklı Höyük, Turkey. *Journal of Archaeological Science* 136: 105505.
- Kuhn S.L.
2014 Signalling theory and technologies of communication in the Paleolithic. *Biological Theory* 9: 42-50.
- Molleson T.
1994 The eloquent bones of Abu Hureyra. *Scientific American* 271(2): 70-75.
- Özbaşaran M., Duru G. and Stiner M.C. (eds.)
2018 *The early settlement at Aşıklı Höyük: essays in honor of Ufuk Esin.* Istanbul: Ege.
- Pearson J., Hedges R.E.M., Molleson T.I. and Özbek M.
2010 Exploring the relationship between weaning and infant mortality: an isotope case study from Aşıklı Höyük and Çayönü Tepesi. *American Journal of Physical Anthropology* 143: 448-457.
- Peterson J.
2002 *Sexual revolutions: gender and labor at the dawn of agriculture.* Walnut Creek: AltaMira.
- Sofaer J.R.
2012 *The body as material culture. A theoretical osteoarchaeology.* Cambridge: Cambridge University Press.

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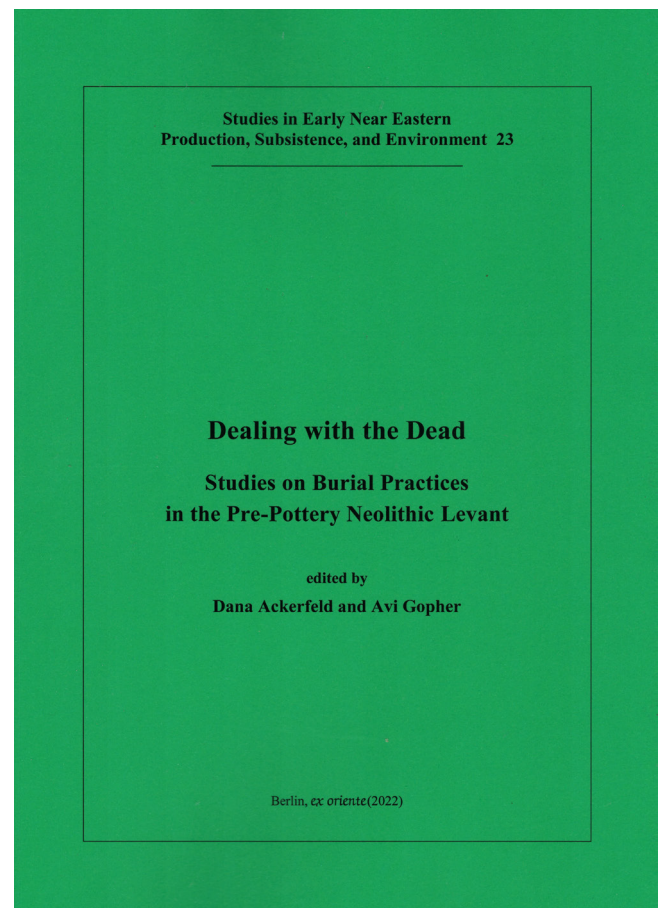
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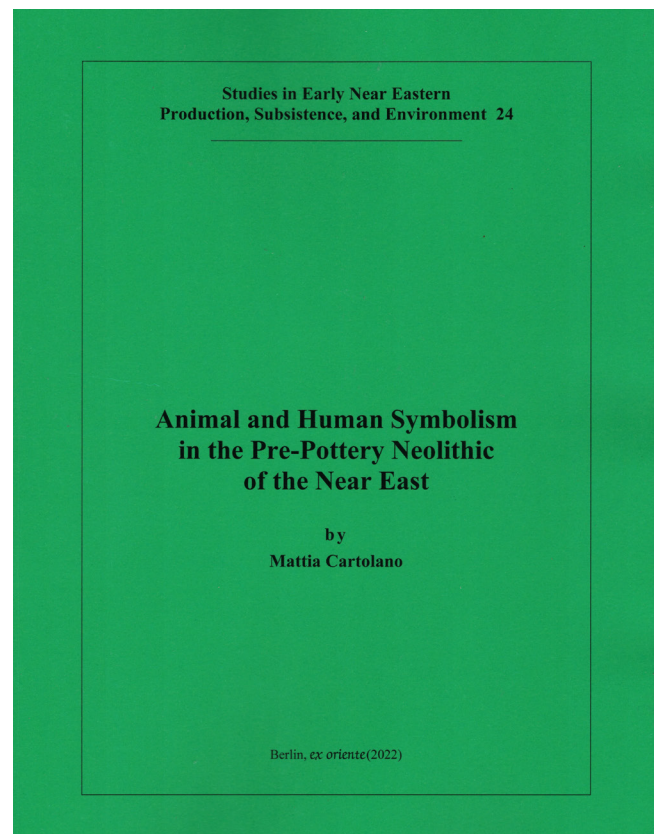
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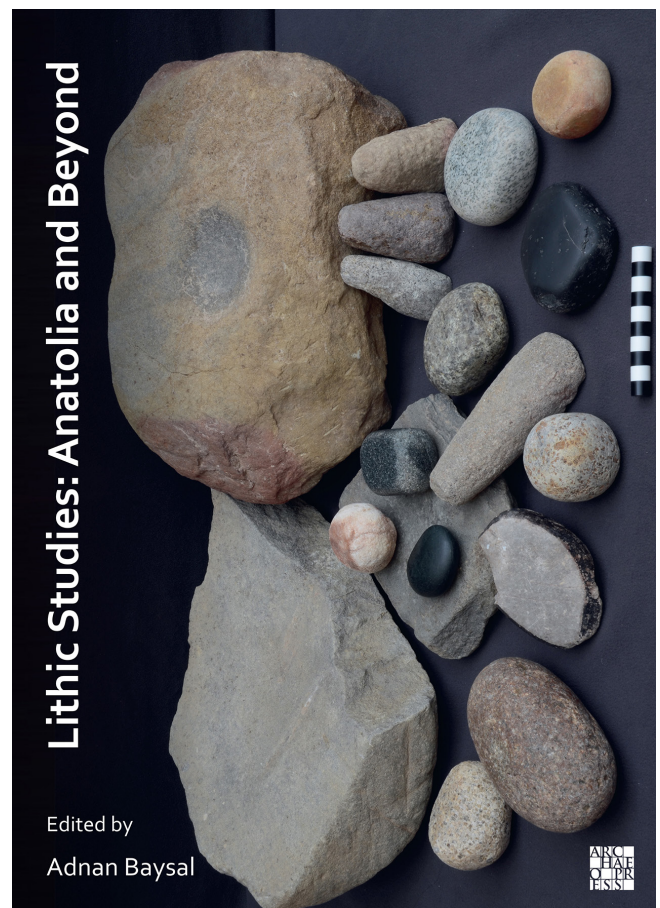
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Nishiaki, Yoshihiro

Review of Adnan Baysal (ed.), 2022. *Lithic Studies: Anatolia and Beyond*. Oxford: Archaeopress. ISBN: 978-1-789699-27-2. € 54.89.

This edited book consists of 17 specialist papers that cover the latest studies on Neolithic flaked and ground stone artefacts from West Anatolia and its surrounding regions. Following a preface by Mehmet Özdoğan, who acknowledges the considerable development of Neolithic lithic studies in recent decades in Anatolia, the introductory article by the editor, Adnan Baysal, addresses three main goals of the present volume. The first goal is to assess the degree to which the results of lithic analyses in Anatolia follow the Neolithisation theories proposed thus far for Southwest Asia. The second is to examine “the connected nature, continuities, interactions and influences from the Neolithic societies of northwest Anatolia to the contemporary societies of the Danube Plains from the perspective of lithic studies.” Third, Baysal presents a more comprehensive aim, which is to “connect the loose ends of perpetually increasing data created by excavations and surveys of the Neolithic in the western part of Anatolia” and the neighbouring regions. In other words, the most important goal of the present book is to bring together the ongoing Neolithic lithic studies in West Anatolia and beyond to build up a bigger picture for understanding Neolithisation processes from the viewpoint of lithic analysis.

Indeed, these aims are well justified for current Neolithic research in Southwest Asia. Since the times of Gordon Childe and the Braidwoods, who developed fundamental theories of the Neolithisation processes in the early-mid 20th century, Neolithic research in Southwest Asia has centred on the “core” region or the Fertile Crescent stretching from the Levant, southeast Anatolia, to the Zagros foothills. The evaluation of those early theories has also been conducted in the Fertile Crescent, leaving rather aside neighbouring regions, such as West Anatolia, away from this chief stream of research despite its geographic proximity. This is likely because the main research interest among Neolithic archaeologists has long been directed to primary Neolithisation, which can be conducted only in limited regions of the world. However, with the development of increasing field investigations and related studies, secondary Neolithisation processes have attracted more researchers’ interest because they can be studied anywhere in the world. Therefore the revealed patterns can be interpreted to develop a global model. The current research no longer surmises a simple diffusion model, either in immigration or acculturation but has developed more realistic approaches that incorporate complicated processes involved with the interactions between indigenous and incoming societies. Moreover, this field is characterised today by the extensive employment of cutting-edge archaeometric methods; for example, radiometric data for high-resolution chronology allows determining dispersals of pottery use, genetic data provide



a view of population movements, and lipid residue analysis reveals the introduction of milk use.

Lithic analysis stands at the centre of this main research trend, especially for the ubiquitous availability of research materials, regardless of the site condition and period, which allows analysing of cultural processes in the period of Neolithisation from a consistent view of a single industry. Given this, the present volume aiming to explore the potential of lithic studies in the modern context of Neolithic dispersal research is most welcome.

This book does not supply a straightforward table of contents; the articles are not assigned to specifically numbered chapters or grouped under proper headers. However, they appear roughly lined up by category covering similar subjects. According to the editor’s introductory paper, the first two articles deal with general subjects. The article by Elizabeth Healey provides an overview of the lithic raw material environments, which likely conditioned Neolithic regional cultural groups in Anatolia, to highlight the unique position of the Neolithic lithic industries in West Anatolia and to the west. On the other hand, Laurence Astruc’s article focuses on the functional study of Neolithic industries. It presents a concise history of and describes the prospects for microscopic approaches to determine the use and function of the Neolithic tools of Anatolia.

The next six articles present specific techno-typological studies of lithic artefacts of West Anatolian sites. Lilian Dogjama takes up two groups of bifacially flaked tools recovered from the Neolithic levels of



Fig. 1 An example of a diamond-shaped biface from Çatalhöyük.
(Photo: Lillian Dogiama)

Çatalhöyük (Fig. 1). Her analysis of the *chaîne opératoire* of these tools reveals contrasting natures, one group being hunting tools for daily use and the other including ritual tools for non-daily use. The next article, by Neyir Kolankaya-Bostancı, analyses the flaked stone assemblages from Kanlıtas Höyük to interpret the function of this early Chalcolithic settlement, assigning it to a locale seasonally visited for hunting and herding. The article by Zehra Fűrüzten Taşkıran and Harun Taşkıran also takes a functional view. It argues the distinct nature of the Neolithic occupations at the cave of Suluin, which may have differed from mound settlements. A study by Betül Fındık and Zafer Derin reports on Neolithic lithic assemblages from Yesilova Höyük of West Anatolia, containing obsidian from Melos, the Aegean Sea, and Eşref Erbil's study describes techno-typological features of projectile points from the late Neolithic site of Ege Gübre. The two remaining papers in this block differ from those above in that they provide a broader view of the study region. The paper by Ian Gatsov and Petranka Nedelcheva focuses on the chrono-spatial distribution pattern of pressure debitage for blank production. It points out the usefulness of the lithic technological analysis to trace cultural and populational dispersals during the Neolithic dispersals. Bogdana Milić, on the other hand, refers to an even more general view needed to interpret the cultural connectedness between West Anatolia and Southeast Europe.

While the above-mentioned papers are concerned with techno-typological issues, the next two examine the circulation of one particular raw material: obsidian. The exploitation and consumption of obsidian rocks have attracted Neolithic archaeologists since the early times of Neolithisation research, notably since the pioneering work by Colin Renfrew addressed in the introduction (Baysal). The paper by Marina Milić provides a useful overview of the circulation of obsidian from sources in Central Anatolia toward the west, and that by Lia Karimali and Stella Papadopoulou provides a comprehensive summary of the use of obsidian from sources at Melos in Greece among the Neolithic communities in the Aegean Sea.

The remaining five articles, placed at the end of the volume, cover ground stone tools. As stated in the preface by Özdoğan, research on ground stone tools is a rather new arena of Neolithic studies in Southwest Asia, particularly in West Anatolia. The papers compiled in this block sufficiently demonstrate how this research subject developed recently in the Neolithic archaeology of West Anatolia and beyond. The paper by Christina Tsoraki actually shows us an array of important perspectives obtained through this research: it revealed that, with the aid of microscopic studies, a unique practice of ground stone use for plastered floor/ wall preparation in the Neolithic architecture of Çatalhöyük. The paper by Abdulkadir Özdemir and A. Onur Bamyacı points out the validity of an ethnographic analogy to interpret the function and use of prehistoric ground stone tools from the Neolithic Aegean industries. In the next paper, Emre Güldoğan adds new data on the ground stone studies on the basis of materials from the Marmara region, while Dragana Antonović and Vidan Dimić mention the situation of Neolithic ground stone research in Serbia. In contrast, Danai Chondrou not only reports on new data from northwest Greece but also explores the potential of groundstone analysis for understanding the social identity of manufacturers and the role of groundstone tools in Neolithic society.

Overall, the above collection of articles undoubtedly contributes to our better understanding of the Neolithic development in West Anatolia and its neighbouring regions. It is notable that these papers cover the entire facets of the *chaîne opératoire* in the flaked stone tool production and use from raw material (Healey), core reduction (Gastov and Nedelcheva), tool typology (Dogiama, Erbil), function (Astruc), and their relationship to the settlement organisation (Kolankaya-Bostancı, and Taşkıran and Taşkıran). This important collection of papers is, needless to say, enriched by the other chapters reporting new discoveries of lithic assemblages. It is also to be noted that the present volume in its entirety matches one of the editor's expectations, evaluating the Neolithisation theories: a diffusionist cultural history model defined by Childe, processual approaches advocated by Lewis Binford, and a post-processual approach opened by Ian Hodder addressed in certain chapters (e.g., Baysal, Tsoraki and Dogiama).

For readers of *Neo-Lithics*, the papers discussing the pressure debitage of blank production technology in this volume should be particularly attractive. The paper by Ian Gatsov and Petranka Nedelcheva directly tackles this issue, while two more articles also emphasise the importance of technological study in obsidian circulation studies: Marina Milić and Lia Karimali and Stella Papadopoulou suggest the use of lever pressuring as an important marker of the westward diffusion of the Neolithic technology originated from the Fertile Crescent of Southwest Asia. This view is based on the fact that the technological expertise required for lever pressuring is unlikely to have been transmitted without social learning, as some experimental studies suggest.

On the back cover of this volume, the editor reinforces the idea that the main aim of this work is to bring together the latest lithic studies related to Neolithic Anatolia and beyond and to connect them. I conclude that the present volume is a significant step in this direction. For those interested in the Neolithic dispersals from the Fertile Crescent, like me, the present volume serves as an important dataset to be referred to when studying the secondary Neolithisation processes in the

other neighbouring regions, for example, the south Caucasus to the north, the southeast Zagros plain to the east, the Nile Valley to the southwest, and the vast desert to the south.

As such, and all the more emphasised as it comes from a reader who enjoyed this book, I would like to offer a few tips. One is that the title of the book, *Lithic Studies: Anatolia and Beyond*, does not suggest anything about the Neolithisation processes in Anatolia. In addition, the table of contents should be reconsidered. Readers have far easier access to a desired paper when the articles in one volume are classified by group according to editorial policies. In the present volume, even the paper structures are inconsistent (e.g., the lack of an abstract and inconsistencies related to paragraph headings). Despite these technical issues, I certainly celebrate Baysal and his colleagues for sending this fine volume to readers gathering around the *ex oriente* and beyond.

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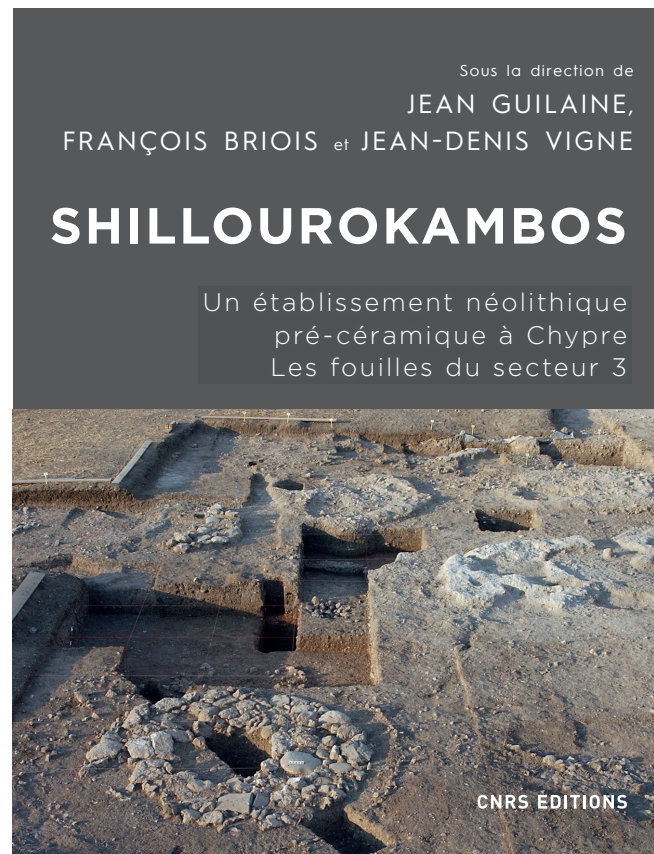
Review of Jean Guilaine, François Briois and Jean-Denis Vigne (eds.), 2021. *Shillourokambos. Un établissement néolithique pré-céramique à Chypre. Les fouilles du secteur 3*. Paris: Éditions CNRS. ISBN: 978-2-271-13063-1. € 49.

In the final years of the last millennium, a significant shift occurred in the archaeology of Cyprus, with the discovery of a previously unknown phase of the Neolithic, an aceramic phase which has since been designated the Cypriot Pre-Pottery Neolithic B (PPNB, c. 8500-7000 BCE). This period became known through the excavations at Kissonerga-Mylouthkia and Parekklisha-Shillourokambos, and two edited volumes appeared assessing these new discoveries in the early years of the new millennium (Swiny 2001; Peltenburg and Wasse 2004). I remember, as a student how exciting these developments were: even on an archaeologically well-investigated island such as Cyprus, sudden advances in our understanding of the past could occur.

It was also apparent why this phase had eluded archaeologists for so long. The PPNB data from Kissonerga-Mylouthkia derives almost exclusively from wells and pits found at the site (Croft 2013). At Parekklisha-Shillourokambos the remains of the early PPNB, located in Sector 1, are also quite ephemeral and include numerous enclosures, pits, and wells. However, for the later part of the PPNB, located in Sector 3 of the site, there are remains of buildings and structures, although often incomplete and in very shallow deposits. The team published the Sector 1 results in 2011 (Guilaine *et al.* 2011), and the book under discussion here presents the results of Sector 3. However, the two books should be considered as a set. Thus, in the first volume, some chapters discuss the discovery of the site, its geological setting, the broader context of prehistoric settlements, and where various excavation areas of the site are located. This essential information is also summarised in the second volume, but one really needs both volumes to make sense of the site.

The volume on Sector 3 is slightly less voluminous than that of Sector 1, being 'only' 775 pages instead of 1248! Still, it is a substantial book. It has been executed to very high standards, with a good layout and many very useful colour figures and photos to illustrate the features and finds discovered and printed on good quality paper. At the back of the volume, there is a number of fold-out maps in colour of Sector 3. All in all, this book is published to a high standard and is remarkably affordable, given its scope and execution.

Apart from a final synthetic chapter that is bi-lingual (English and French), the volume is written entirely in French. The book has a very clear, although not always logical, structure and all the chapters are well-written and illustrated. The book starts with a brief introduction to site phasing and the history of research. In the book's first part, all the structures, features, and con-



texts of Sector 3 are presented per period (early and later PPNB). These include hearth structures, wells, and small round platforms, whose purpose is not entirely clear. Apart from the wells (Fig. 1), all these structures are quite ephemeral, often standing a few centimetres high only and only partially preserved. The excavators must be applauded for their careful excavation work. All the same, how to understand these structures remains challenging, and this can be contrasted with the more recent data obtained at the same time at the PPNA site of Ayios Tichonas-Klimonas (Vigne *et al.* 2019).

In the second part of the volume, the stratigraphic sequence is presented, as well as the radiocarbon dates and the developments in various find categories, such as chipped stone and faunal remains. This is followed by the third part, which presents the botanical remains, building materials such as pisé with imprints, chipped stone, ground stone, stone vessels, beads, ornaments and figurines, shells, faunal remains, and worked bone. Subsequently, the section discusses human remains. This Chapter 45 discusses the inhumation of a young man and the cat that has become very famous (Fig. 2). The chapter structures in this part of the volume is somewhat confusing, for example, ecological data (botanical and faunal) are not clustered, and worked artefacts are presented as a material (worked bone is grouped after faunal remains), but one can find one's ways in the structure easily enough.

Finally, in the last part of the volume, there are several synthetic chapters on the Shillourokambos wells and cisterns, ornaments and figurative objects, and phasing. The very last chapter is, as already stated,

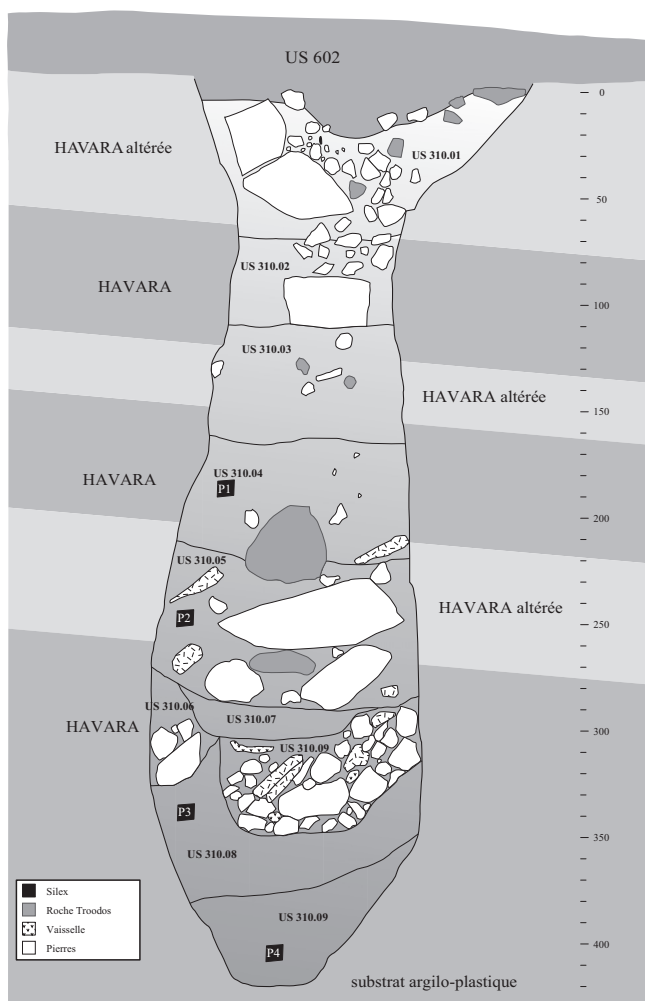


Fig. 1 A The well (US 310) seen from the bottom. Photo: J. Guilaine, Mission néolithisation, Collège de France. B Stratigraphy of the well's (US 310) filling. (Drawing: Y. Bellès, EHESS)

bi-lingual, and discusses the Shillourokambos results in the broader context of PPNB Cyprus. This is a very welcome synthetic evaluation of the site which will undoubtedly be the most consulted section of the volume, also because it is in English. This volume will have less impact than the earlier publication of Sector 1

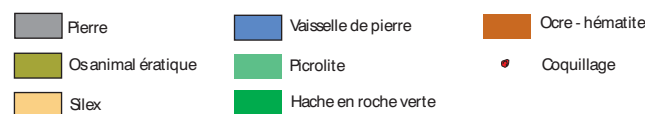
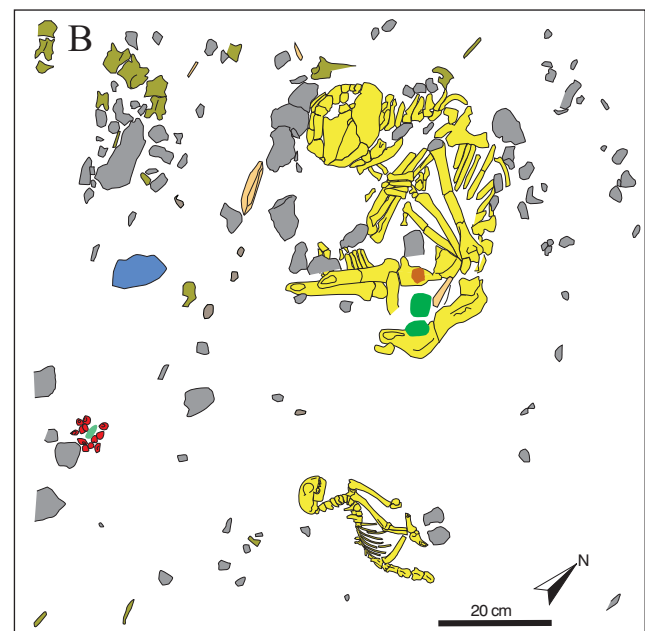


Fig. 2 A The inhumation of a young adult man (St 283) and a cat, which was uncovered only later next to the human burial (bottom right side), B drawing of the same burials. (Photo: P. Gérard, Collège de France, CAD: J.-D. Vigne, CNRS)

(Guilaine *et al.* 2011), which at the time was crucial in completely changing our understanding of the Cypriot Neolithic, but it is an important building stone for what happens next and up to the transition to the later Aceramic Neolithic of Cyprus (the Khirokitian), a topic that has recently become in the focus of research again (Clarke and Wasse 2019). This volume provides essential data on subsistence economy, especially on changes in the exploitation of animals, crucial funerary data, and evidence on structures, such as wells, pertaining to this later part of the PPNB sequence.

The primary purpose of a volume such as this one is to provide a transparent and clear resource for other researchers interested in particular aspects of the site (for example, the stone vessels), to see where objects were found, what materials they were made of, what their characteristics and dimensions were, *etc.* Here I felt that something is missing, as neither a list of contexts is provided in a table, nor is there – as far as I can see – an open access repository of the primary data. Thus, the challenge would be considerable for a research student interested in reconstructing in what types of contexts specific categories of objects were found. I recommend the authors to publish their primary data online for other researchers. Further, I think that the manner of presentation in this volume, with 50 chapters on specific categories, is suitable for those interested in specific matters, but it makes it hard to gain a general sense of the phasing and the developments at the site, in which these data are to be understood. Other than that, this is an exemplary publication of very high quality that I most happily recommend to all interested in prehistoric Cyprus and its connections. I applaud the Shillourokambos team for this achievement.

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References

- Clarke J. and Wasse A.
2019 Time out of joint: a re-assessment of the Cypriot Aceramic Neolithic site of Kalavassos-Tenta and its regional implications. *Levant* 51(1): 26-53.
- Croft P.
2003 The wells and other vestiges. In: E. Peltenburg (ed.), *The colonisation and settlement of Cyprus. Investigations at Kissonerga-Myllouthkia*: 3-9. Göteborg: Aström.
- Guilaine J., Briois F. and Vigne J.-D. (eds.)
2011 *Shillourokambos. Un établissement néolithique pré-céramique à Chypre. Les fouilles du secteur 1*. Paris: Éditions Errance.
- Peltenburg E. and Wasse A. (eds.)
2004 *Neolithic revolution, new perspectives on Southwest Asia in light of recent discoveries on Cyprus*. Oxford: Oxbow.
- Swiny S. (ed.)
2001 *The earliest prehistory of Cyprus, from colonization to exploitation*. Boston: American Schools of Oriental Research.
- Vigne J.-D., Briois F. and Guilaine J.
2019 Klimonas: the oldest Pre-Pottery Neolithic village in Cyprus. In: L. Astruc, C. McCartney, F. Briois and V. Kassianidou (eds.), *Near Eastern lithic technologies on the move. Interactions and contexts in Neolithic traditions*. Studies in Mediterranean Archaeology 150: 3-11. Nicosia: Aström.

In Memoriam Stefan Karol Kozłowski (1938-2022) A Personal Obituary

Hans Georg K. Gebel

Prof. Dr. hab. Stefan Karol Kozłowski was an outstanding researcher. He was a professor of the old style and a teaching tradition that survived in some European humanities faculties until the 1970s and 1980s. He belonged to Poland's educational elite, which often had close links with "Western" research and, like Stefan, was Francophile in cultural orientation. Stefan had made the same effort to network in socialist countries, paving the way for many connections between Eastern and Western prehistoric research after 1989.

He was just as home in European prehistory as in Middle Eastern prehistory. Before he turned his attention mainly to Polish and Eastern European prehistory, he worked in the Middle East between 1979 and 1990 as an excavator for the Polish Centre of Mediterranean Archaeology of the University of Warsaw in Iraq, including at the important sites of M'lefaat and Nemrik 9. For almost two decades, his main activities were site evaluations, material analyses and syntheses on the lithic traditions of the Neolithic of the Fertile Crescent; numerous books and articles document this scientific legacy (Aurenche and Coqueugniot 2022).



Fig. 2 Stefan K. Kozłowski and late Peder Mortensen talking during the Basta Final Symposium in Berlin (2008). (Photo: H.G.K. Gebel)

This is a personal memory of Stefan and the period of our academic and private life together, in which we also had a very close engagement for more cooperation and exchange within the Near Eastern Neolithic chipped stone family (1992-1998).

Our cooperation was sometimes not easy. Stefan's commanding understanding of the Neolithic as a development of lithic facies made it difficult for me to emphasise the role of lithic industries in their general Neolithic socio-economic contexts and trajectories. However, his conservative professorial dominance was ultimately compensated by his ability to be amicable.

Stefan and I first met in February 1991 through an enquiry I had made about Nemrik 9. This was followed in November by his visit to Berlin, where the idea of a prominently attended workshop on PPN Chipped Lithics first came up; at this time, however, a workshop series still was out of focus (Gebel 2011).

Stefan pursued his ideas with passion, authority and eccentricity, but always with a neckerchief. And if his ideas were only tentatively accepted by students and colleagues, he could become quite imposing. Based on his thorough knowledge of the material, syntheses were his strength and – of course – followed his axioms. It was a characteristic of his scientific practice and collegiality to push for his lithically orientated syntheses along his basic ideas of the Neolithic, and seeking fellow campaigners for this: He was a master at mobilising and assembling colleagues and students around the mostly lithic research topics that captivated him throughout his life. Lithic perspectives always motivated and determined his few forays into social or theoretical archaeology.

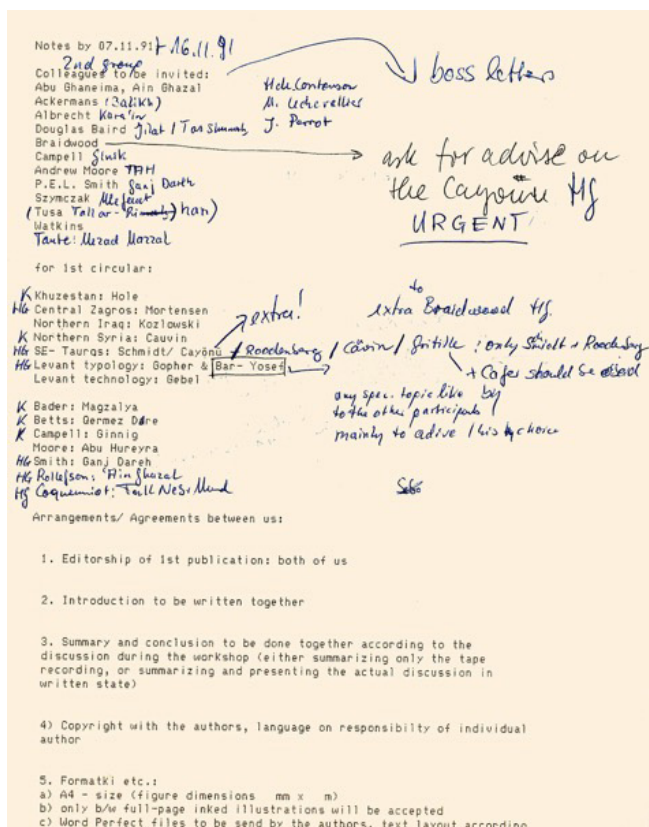


Fig. 1 One of the original planning documents of the 1st Workshop on PPN Lithic Industries in Berlin 1993.

Stefan's contributions to symposia, workshops and conferences were inspiring (e.g., his concept of the Agro-Standard in tool traditions of the alluvial lands) and provocative. He propagated his approaches and understandings with intensity and his very own type of decidedly synthetic disposition. Especially in the early years of the Neolithic Family formation, when co-organising the PPN Chipped Lithics Workshops in Berlin and Warsaw, my diplomatic investment was needed. When a colleague finally commented in 1998 that one should not spend one's time following Stefan's "19th-century Montelian attitude" and agendas, someone close to Stefan commented: "Bon courage pour la négociation - ou la guerre !!!????". I mention this because such research-historical side notes say a lot about the sociological situation and tensions in Neolithic chipped stone research in the 1990s.

Stefan's narrative depictions of Neolithic expansions are also unforgettable, for example, the one of Ahmad, who had made his way south from the Middle Euphrates teaching his core technology (at the Basta Symposium 2008, Freie Universität Berlin); Stefan was provocative and unflinching in his "scientific aphorisms", but it is also part of Stefan's legacy that the controversies, the provocation and his syntheses brought Neolithic research forward in many ways.

Stefan was never comfortable with Neo-Lithics or ex oriente, although both were an outcome of our joint efforts for the PPN Chipped Lithic Workshops and the cohesion of the Neolithic research community. Neo-Lithics and its concept needed to be more academic for him, and he never became a member of ex oriente.

After the joint work on the Berlin and Warsaw proceedings of the PPN Chipped Lithic Workshops 1 and 2 (Gebel and Kozłowski 1994; Kozłowski and Gebel 1996) was completed, our direct contacts (between 1998 and 2000) were limited to Stefan's and Elżbieta's overnight stops with us in Berlin-Steglitz. Despite, or perhaps because of, all the family-type contacts

between the Kozłowskis and the Gebels, he always had small work assignments for me.

Between 2000 and 2003, contact with Stefan dwindled, interrupted by a few cordial, mostly handwritten letters from him. It was also the time of our move from Berlin to Lindenberg and thus the end of his and Elżbieta's stopovers on their way to Lyon.

I do not want to miss Stefan's influence on me and my academic work: Everything from him shaped and guided me intensely in one direction or another. And for that, I remain forever grateful to him and honour his memory from the bottom of my heart.

For Stefan's academic obituary, I refer to the article by Olivier Aurenche and Éric Coqueugniot in *Paléorient* 48.2.

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References

- Aurenche O. and Coqueugniot É.
2022 Stefan K. Kozłowski (1938–2022). *Paléorient* 48(2): 5-8.
- Gebel H.G.K.
2011 The PPN1-6 workshops: agendas, tendencies, future. In: E. Healey, S. Campbell and O. Maeda (eds.), *The state of the stone: terminologies, continuities and contexts in Near Eastern lithics*. Studies in Early Near Eastern Production, Subsistence, and Environment 13: 1-22. Berlin: ex oriente.
- Gebel H.G. and Kozłowski S.K. (eds.)
1994 *Neolithic chipped stone industries of the Fertile Crescent. Proceedings of the First Workshop on PPN Chipped Lithic Industries*. Studies in Ancient Near Eastern Production, Subsistence, and Environment 1. Berlin: ex oriente.
- Kozłowski S.K. and Gebel H.G.K.
1996 *Neolithic chipped stone industries in the Fertile Crescent and their contemporaries in adjacent areas*. Studies in Early Near Eastern Subsistence, Production, and Environment 3. Berlin: ex oriente.



Fig. 3 Stefan K. Kozłowski energetically explains something to Inge Demand Mortensen during a boat trip of the Basta Final Symposium in 2008 on Spree River, Berlin with Hans J. Nissen and late Ofer Bar-Yosef to his left. (Photo: H.G.K. Gebel)

The 10th International Conference of the Pre-Pottery Neolithic Chipped and Ground Stone Industries of the Near East (PPN10) Advancing Current Methods in Lithic Analysis. Copenhagen University, 17th-22th, Oct. 2022

Hans Georg K. Gebel

General Information

Organised by Tobias Richter and Anne Jörgensen Lindahl, the PPN10 was held in a hybrid format within the premises of the Department of Cross-Cultural and Regional Studies, Centre for the Study of Early Agricultural Societies, Copenhagen University. The hybrid format was a novelty for the Pre-Pottery Neolithic Chipped and Ground Stone Industries Conferences, as was the internal organisation of contributions structured in three research methods-oriented workshops. Of course, both directed the different atmosphere of the gathering when, *e.g.*, compared to Tokyo or other previous meetings. Fewer colleagues (Figs. 1-2; about 25-30) were present (with about the same number of online participants), resulting in a less vivid and more limited personal/ private exchange and come-together. The PPN10 conference gave an idea about the commonly experienced consequences of using hybrid formats for our Neolithic family's future academic and social cohesion, which was not really a topic during the meeting. It was felt, however, that COVID-19 had also basically changed rules, attitudes, and atmospheres for gatherings, introducing zooming as an option that eased budget problems and promoted selective attention. Our triennial aggregations and their atmospheres will witness new conditions of exchange if future hosts choose to promote hybrid formats on account of physical presence meetings (the PPN11, our next meeting, will be held in 2025 in Lyon and Jalès, organised by Frédéric Abbès and the colleagues from Lyon, *cf.* below).

In the following, I select only some aspects of the conference for this report.

Possibly also due to a higher share of participating younger colleagues, our Copenhagen gathering activated *déjà-vus* accompanying us older from PPN1 times in Berlin in 1993. They relate to reoccurring basic discussions and demands – often described as freshly identified or “new” and “pressing” from the perspectives of new research/ topic contexts. They remind us of carried-on problems of lithic research and the struggle to find a mutually agreed language and standards. While some older colleagues arranged themselves to live with this over the decades, our academic offspring and less disillusioned colleagues engage in new proposals and activity calls. This re-addressing of old problems is a natural phenomenon and testifies to a permanently high conscience for rejuvenating research and promoting its momentum. Questions like if we still can classify a tool with an arrowhead morphology as an arrowhead when it was used as a burin after it passed a life-cycle as a cutting tool, were seen as novel. Or: the imperative demand for commonly accepted definitions and statistic conventions in addressing and analysing blanks to allow inter-site comparability in primary production was presented as if the issue had been overlooked. While such questions and demands were repeatedly posed without success during the past PPN meetings (*cf.* also below on the Final Discussion) and failed due to existing limits in data processing, PPN10 showed ways out for the first time by using artificial intelligence in analysis. Although the competent initial research question will always remain decisive, AI will likely dramatically improve our future evaluation options. Perhaps we will soon see the first lithic persons combining extended lithic expertise (that included experimental and



Fig. 1 View of the PPN10 physically attending audience. (Photo: H.G.K. Gebel)



Fig. 2 Anna Belfer-Cohen and her academic daughter Leore Grosman, concentrating. (Photo: H.G.K. Gebel)

replicative competencies) and AI lithic software engineering. The first of these made themselves heard in Copenhagen, led by Denis Štefanisko.

Workshops 1 and 2 and General Session (*cf.* the contributions listed below)

In addition to the General Session, assembling “any topic relating to the overall conference theme” presented as verbal or poster communications, two major workshops were organised. (Roundtable) Discussions followed each of the session parts.

Workshop 1 (organised by Tobias Richter and Leore Grosman) concentrated on new approaches to artefact analysis. It aimed to discuss new methods in classifying technological, typological, and functional analysis of Neolithic artefacts, with emphasis on tackling systematic large-scale classifications and related issues of classifying formal and non-formal types.

Workshop 2 (organised by Danielle Macdonald and Anne Jörgensen-Lindhäl) aimed to explore “how use-wear and residue analyses inform our understanding of Epipalaeolithic and Neolithic communities.” Themes were related to the development of new methodologies, the integration of functional and techno-typological studies, and use-wear as it relates to wider cultural or landscape-based questions. Two roundtable discussions concentrated on the *Integration of use-wear analysis with other data to understand the past* and on *Methodological challenges and future directions for use-wear analysis*. During the latter, some essential points were raised, *e.g.*, how and what has to be recorded in which detail during the experimental/ replicative work. The discussion illustrated the problems by, *e.g.*, addressing recording the number of blows executed by what materials using which energy.

Final Discussion

The main focus of the final session’s discussion concentrated on the need for standards and standardisations in PPN lithics research (T. Richter), *e.g.*, to make

results comparable through the development of shared definitions, type lists, best practices, dictionaries, *etc.* Questions about the integration of different analysis levels were also raised.

In the following discussion, it was doubted that such things are possible and applicable in a binding manner (A. Belfer-Cohen, H.G.K. Gebel and others) because standardisations of diversities have repeatedly proved to be inappropriate in objective and factual terms and practically impossible due to different traditions of analysis (schools), individual understandings and geographical and temporal diversity. A.N. Goring-Morris reminded the audience that standardisation was already not feasible with the five workshops established by the PPN1 in 1993 and that a renewed approach for a PPN lithic dictionary at PPN5 (Fréjus) also failed. Much would have been achieved if at least applied standardisations and definitions were made transparent and explicit in research contributions, which all too often does not happen. While L. Grosman suspected fewer problems for the work on standardisations because many things are self-evident (“everyone knows what a flake is, for example”), A. Gopher countered that even seemingly self-evident answers can give rise to clearly differing opinions, especially when it comes to putting them down in writing.

T. Richter noted that the use-wear and experimental working groups are currently in advanced and enthusiastic contact and are an exemplary best practice field for cooperative work on standardisations (T. Richter).

Accordingly, H.G.K. Gebel contributed that the digital tools and formats developed today – in contrast to the “imperative” concepts of 1993-2004 (Berlin, Warsaw, Niğde, Venice, Fréjus) – would certainly make it possible to create online definitional corpora/ dictionaries over the years, in which competing and constantly testable edited definitions and variants are presented. This permanent editing option would not only guarantee the necessary work progress and its verifiability, it would also mitigate the obligation to adopt generally valid definitions and allow regional adaptations, including adaptations of experimental perspectives. Whether such a corpus should be designed – also conceptually – like a Wiki-Lithics or whether it should be set up more flexibly would still have to be discussed carefully; however, intentions should go in this direction. T. Richter mentioned the DRH (Database for Religious History, <https://religiondatabase.org>) as an example of this, where entries could be identified by doi’s (digital object identifiers). S. Campbell mentioned that there are also other suitable formats than Wiki.

F. Borell pointed out the immense amount of time that would be required for permanent standardisation work, which many of us cannot afford. This was only partially agreed with, with reference to the slow and years-long dynamics with which such a corpus for PPN standardisation could be developed.

The meeting ended with the decision to accept Frederic Abbès’s invitation (presented by Fiona Pichon) to hold the PPN11 conference in 2025 with Jalès as its basis.

Hands-on and Flint Knapping Session

Other highlights of Copenhagen's PPN10 included a hands-on session with materials from Copenhagen's Centre for the Study of Early Agricultural Societies collections and a vivid closing flint knapping (Fig. 3) session on Friday.



Fig. 3 Presenters in the Flint Knapping Session. (Photo: H.G.K. Gebel)

Social Events

Social events accompanying the gathering included a reception in a small private brewery by the conference hosts on the first evening, a visit to the National Museum of Denmark on Tuesday and trips to Vedbæk and Roskilde Viking Ship Museums on Saturday.

Documentation of the Conference's Presentations

Monday, 17th, October 2022: Workshop 1

The long lives of blades: a documentation approach and its bearing on possible interpretations of flint tools made on bi-directional blades in PPNB assemblages, by Dana Ackerfeld and Avi Gopher

Neolithic axes, adzes, chisels: a 3D approach (online), by Antoine Muller, Timna Raz and Leore Grosman

A network approach to quantifying stone-tool production processes (online), by Jordan Brown and Felicia De Peña

Merging the divisive: blanks, big data and why we need overarching conventions (online), by Jonas Breuers

Aegean before the Neolithic: a review of the lithic evidence (online), by Denis Guilbeau

Bayesian modelling applied to lithic artifacts: Northern Levant occupations from Middle PPNB to Late Halaf periods, by Gironès Rofes, Pardo Gordó, Bach Gómez and Miquel Molist Montaña

Workshop 1 Discussion

Evening Keynote Lecture: *Lithic technology in Palaeolithic and Mesolithic Southern Scandinavia*, by Mikkel Sørensen (SAXO Institute, University of Copenhagen)

Tuesday, 18th, October: Workshop 2

Regional variability and functional aspects of the PPNB large points' phenomenon: insights from Yiftahel, Lower Galilee (Israel), by Alla Yaroshevich, Ianir Milevski and Hamoudi Khalaily

Beyond lithic technology: potential of use-wear analysis of chipped stone tools for understanding Ba`ja LPPNB household activities, by Denis Štefanisko

Projectiles or versatile? Revisiting the function of lunates and el-Khiam points, by Anne Jörgensen-Lindahl

Patterns of use – the function of arrowheads at the Pre-Pottery Neolithic site of Kharaysin (Jordan) (online), by Bogdana Milić, Juan José Ibáñez, Fiona Pichon, Ferran Borrell and Lionel Gourichon

An experimental ballistic study of Levantine Pre-Pottery Neolithic B period arrowheads, by Maria Piliponsky, Dani Nadel and Iris Groman-Yaroslavski

Traceological analyses of the JKSH P52 and JKSH19 site lithic assemblages from occupational layers (Jibal al-Khashabiyeh, Jordan): implications on our understanding of the desert kites users during the Late PPNB (online), by Fiona Pichon, Remi Crassard, Juan Antonio Sánchez Priego, Mohammad Tarawneh and Wael Abu-Azizeh

The "life-history" of PPNB sickle blades from Ahihud, northern Israel, by Iris Groman-Yaroslavski, Maya Shemuel, Ytzhak Paz and Jacob Vardi

Roundtable Discussion: integration of use-wear analysis with other data to understand the past

Wednesday, 19th, October 2022: Workshop 2 continued

Quantifying Aesthetics: using confocal microscopy for the analysis of Epipalaeolithic artistic objects, by Danielle Macdonald and Lisa Maher

Searching the light: characterizing Neolithic polishing techniques of the butterfly beads in Northern Mesopotamia and Anatolia, by Hala Alarashi and Sera Yelözer

The production and utilization of the plaster beads from Nahal Hemar Cave: a multi-disciplinary approach, by Yaara Shafrir, Iris Groman-Yaroslavski, David Friesem and Daniella E. Bar-Yosef Mayer

Qualitative and quantitative use-wear and residue approaches on ground stone tools for understanding wild plant consumption at the onset of agriculture in the Levant, by Andrea Zupancich, Emanuela Cristiani, Juan José Ibáñez and Avi Gopher

Two hafted blades from PPNB Qumran cave 24 (Dead Sea, Israel): insights on function, adhesives and hafting (online), by A. Gopher, I. Caricola, C. Lemorini, A. Nucara, S. Nunziante Cesaro, H.C. Schechter and I. Pinkas

Setting the stage: relationship between morphology, macroscopic and microscopic wear, and a way to approach this, by Patrick Nørskov Pedersen

Exploring food and craft activities in the early Neolithic site of Bestansur (EFC): glimpses from a functional perspective of stone tools (online), by Fiona Pichon, Juan José Ibáñez, Roger Matthews, Amy Richardson

Roundtable Discussion: methodological challenges and future directions for use-wear analysis

General Session

What's in a point? Evidence for east-west interactions north of the Taurus during the 9th mill. Cal BC, by Güneş Duru, Nigel Goring-Morris, Mihriban Özbaşaran and Nurcan Kayacan

Technology and iconography of stone items in the Neolithic of the southern Levant (online), by Ianir Milevski

Thursday, 20th, October 2022: General Session (continued)

Motza Final Pre-Pottery Neolithic B toolkits, by Jacob Vardi, Hamoudi Khalaily, Avraham Levy, Dmitri Yegorov

Two Early Natufian Sites in the Lower Jordan Valley and their contexts, by Nigel A. Goring-Morris and Anna Belfer-Cohen
Recent excavations at Shubayqa 6 in northern Jordan, by Tobias Richter

The state of replication experimentation in Southwest Asian Archaeology and future directions in research, by Theresa Barket

Utilizing lithic replication in the identification of technical concepts. The structured production of blades, bladelets and blanks during the Natufian and PPNA at Shubayqa 1 and 6, by Johan Villemoes

Time, value, and meaning: insight from the replication of ground and polished flint nodules from the Neolithic site of Wadi Shu'eib, by Theresa Barket

Neolithic sickles of the South Caucasus and North Mesopotamia, by Yoshihiro Nishiaki

Another lithic tradition in the Pottery Neolithic of the Eastern Fertile Crescent? (online), by Osamu Maeda

Friday, 21st, October 2022: General Session (continued)

Elements of continuity and discontinuity from Caspian Mesolithic to Neolithic: chipped stone assemblage of Hotu Cave, Mazandaran, Iran (online), by Mozghan Jayez, Hassan Fazeli Nashli and Judith Thomalsky
Evolution of sickle manufacturing technologies and ways of use during the origins and consolidation of agricultural systems in the Euphrates Valley (8200-6500 cal. BC), by Ferran Borrell

The Hamrian Punch. Cone shell meat extraction in coastal Oman's later prehistory. A replicative system analysis, by Hans Georg K. Gebel

Seeking obsidian exploitation/ exchange networks of the Neolithic communities at Göytepe, West Azerbaijan (online), by Fumika Ikeyama, Farhad Guliev and Yoshihiro Nishiaki
60 years of obsidian sourcing: legacy data and issues of compatibility and curation, by Stuart Campbell, Osamu Maeda and Elizabeth Healey
General Session Discussion

Poster Session

Hunting practices at the Cypro-PPNA village of Ayios Tychonas-Klimonas (Cyprus), by Laurence Astruc, Bernard Gassin, Niccolò Mazzucco, François Briois, Jean-Denis Vigne

The Early PPNB lithic industry of Aḥihud, Galilee, Israel, by Hannah Parow-Souchon, Yitzhak Paz, Jacob Vardi

Manchester Obsidian Laboratory, by Elizabeth Healey *et al.*

By the source: the lithics of PPNC Ain Miri in the Upper Galilee and the nearby flint quarry PQ1, by Alex Kuklin and Avi Gopher

Final Discussion

Hands-on Session of Institute Collections and
Flint Knapping Session

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**Death in Ba`ja:
Sepulchral Identity and Symbolism in an Early Neolithic Community of the Transjordanian Highlands.
Household and Death in Ba`ja 2**

edited by Marion Benz, Julia Gresky,
Christoph Purschwitz and Hans Georg K. Gebel

2024, bibliotheca neolithica Asiae meridionalis et occidentalis. Berlin, ex oriente.
XXIV+538 pages, 395 figs. incl. 345 in colour, 4 plates,
135 tables, 10 appendices, hardcover – € 160.-
[ISBN 978-3-944178-22-6]

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NEO-LITHICS. The Newsletter of Southwest Asian Neolithic Research

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The Co-Editors of *Neo-Lithics*

© ex oriente e.V., Berlin - ISSN 1434-6990, eISSN 2750-2910

DOI: 10.48632/nl.2022.1

Neo-Lithics is published and distributed by ex oriente, Berlin.



map by the Tübingen Atlas of the Near East

Co-edited by
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Production, Subsistence, and
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