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## Editorial

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In the many explanation frameworks for the Near Eastern Neolithic, many focusing on key events in the core areas of Neolithisation, the roles of the present-day arid and marine “marginal” regions receive little attention or are explained as intrusions of Neolithic elements from the core area’s developments. Confronted with the ruling hunting/gathering – food-producing dichotomy, colleagues working in the Gulf’s contemporary (shell-) fishing or Badia’s hunting environments, for example, are struggling to explain what the Neolithic of their cultures is. The concept of autochthonous Neolithic food-producing hunter/gatherer/fisher cultures is difficult to accept in such dualistic frameworks since their undomesticated resources and related socio-economic structures do not appear as Neolithic or “fully” Neolithic. Here, our problematic use of the term Neolithic and its mental consequences become evident. If we would accept that surplus production and confined territoriality are the basic characteristic of the Neolithic behaviour, that domesticates, full-fledged sedentism, aggregation processes, among others, may just be potential Neolithic accessories, it would neither be problematic to identify the Neolithic preludes in Epipalaeolithic times nor to accept the productive (if not “industrial”) exploitation of abundant wild food resources as another type of socio-economic organization during the Neolithic. A holistic Neolithic concept that operates with confined surplus productivity – based on confined territoriality and confined commodification (terms used by H.G.K. Gebel) – can integrate new sorts of Neolithic behaviour, as recently presented by Wael Abu Azizeh at ICHAJ 14, Firenze, or by various colleagues in Kuwait City (The 3<sup>rd</sup> Intern. Conference of the Archaeology of the Arabian Peninsula on The Neolithic of the Arabian Peninsula, organised by the NCCAL Kuwait and R. Crassard, CEFAS). And: With such a more open understanding of the Neolithic, able to better evaluate the historic meaning and significance of the Neolithic, we could also integrate more appropriately the members of the Neolithic research family “out-there” in the “marginal” regions and in the Epipalaeolithic.

Hans Georg K. Gebel, Marion Benz and Dörte Rokitta-Krumnow, co-editors

Note on publishing Neo-Lithics: The 2018 Neo-Lithics issue is the first fully coloured online publication of the newsletter. It includes all contributions that appeared successively during the year at [www.exoriente.org/downloads/neolithics](http://www.exoriente.org/downloads/neolithics); in the future, complete issues can be downloaded, too, by the end/beginning of a year. Only members of ex oriente will receive printed b&w issues of Neo-Lithics. The deviation into two issues per year was suspended, and no subscriptions for hard-copies are possible from 2018 (however, running subscriptions are served until their end). The contents list of each year’s Neo-Lithics will be circulated via the mailing list Neo-Lithics, once a year’s issue can be downloaded. Due to these changes contributions can be handed in at any time.

## Stone Beads from Shkārat Msaied

Mette Bangsberg Thuesen and Moritz Kinzel

Shkārat Msaied (30°26'38"N, 35°26'21"E) is an E/MPPNB settlement situated on a plateau in the sandstone desert of the Petra region of southern Jordan, close to contemporary sites such as Beidha and Ba'ja. Since 1999, the site has been excavated by a team from the University of Copenhagen (Hermansen *et al.* 2006; Kinzel *et al.* 2011, 2015). The settlement consists of several clustered circular structures, enclosures, open spaces and passages that seem to have been constantly modified through five major building phases (Kinzel 2013). The site is interpreted as a semi-sedentary settlement and seems to have relied on hunting and gathering; the presence of wild plants, grasses, emmer wheat, legumes and wild pistachio in the archaeobotanical assemblage suggests that no systematic farming took place here, but an intense exploitation of wild crops (Jensen *et al.* 2005: 131; Hermansen 2017).

Excavation of the settlement has revealed an assemblage of beads made from various types of stone and marine shell. The latter have been studied by Abu-Laban (2010, 2014) and the stone beads have recently been investigated as part of M.B. Thuesen's MA-thesis, as a point of comparison to stone bead production at PPNA Shubayqa 6. In total, forty non-organic beads have been recovered during the campaigns conducted by the University of Copenhagen at Shkārat Msaied (Fig. 1). In November 2017, the author undertook macroscopic analysis of eighteen beads and some of the sampled raw material held by the Petra Department of Antiquities. The following variables were recorded: type, raw material, colour, size, production marks, preservation and use wear. Nine of the beads were categorised as a type of greenstone, five as unknown stone, and two as sandstone. One pierced marine shell and one plaster bead were also present among the recently excavated assemblage. The raw material used for the greenstone beads had formerly been identified as turquoise and malachite (Jensen 2004, 2008: 333), and this was confirmed by our reassessment. The unknown stones were either red, white, brown or black in colour, and require further examination.

The assessed raw material samples of malachite and turquoise are tiny fragments that appear to be debris from the production process. The nearest source for these greenstones would have been the Wadi Faynan/Wadi Fidan area, located 25 km north of the settlement, the Sinai, or the Negev desert (Purschwitz 2017: 134-135). The most common type of bead were disc beads, but barrel beads, pendants and one-cylinder beads were also present (see Figs. 2 and 3). This is typical of other PPN stone bead assemblages, and the greater abundance of disc beads is often explained by the fact that these types have fewer manufacturing steps and

can be produced *en masse* (Wright and Garrard 2003; Critchley 2007; Bar-Yosef Mayer 2013). Only two bead roughouts were found amongst the analysed assemblage. These were both made of sandstone, and one had five variously situated perforations (see Fig. 4). One can imagine that this was a preform used for practicing drilling techniques. The rest of the beads were identified as finished products, except two specimens that were indeterminate. The vast majority had evidence of biconical drilling – the roughouts were drilled in a cone shape from both sides. Production marks were also left from the polishing and the abrasion process. Seven of the finished products were registered as possibly worn, because part of their surfaces appeared to have been flattened.

### Production Contexts

Most of the beads (excluding marine shells) were found in the northern area of the site, where two production areas have been identified. These areas have been interpreted as workshops specifically related to greenstone bead manufacturing. One of these was situated in the middle of the outdoor space, referred to as *Area I*, and the other was found just north of Building B and west of *Enclosure a* (Fig. 1). These areas revealed clusters of drills and other types of chipped stone, debris of greenstone raw material, and unfinished and broken beads (Jensen 2004, 2008: 333). Both clusters appear to have been associated with dump or midden contexts, but these are perhaps of later origin.

Of the two clusters, Area I contained the largest abundance of finds and appeared to be a pit just west of a dumping area (Loci 305; 2705; 2950; 2951; 2952; and 3000). The pit included 2,454 chipped stones, representing the entire *chaîne opératoire*. 418 were drills or borers (Jensen 2004). Besides evidence of bead manufacturing, including 348 chipped stones, of which 50% were drills, this pit also included other stone and bone artefacts (Jensen 2004). The waste debris is characterised by small chips, which suggests that the roughouts were probably reduced by chipping (Jensen 2008: 334). The other cluster was deposited over an area of approximately two-by-two meters, after the construction of the main architectural units, but before the construction of *Enclosure a* (Loci 1114 and 1118; 50604; 50606; 50607, and 50608). The number of beads is generally low, but the high density of drills and waste from the production area suggests that more were produced than the recovered finished products account for. Later excavations have also revealed a production area for chipped stone in the south of Area VI, just south of Units G and F (Kinzel *et al.*

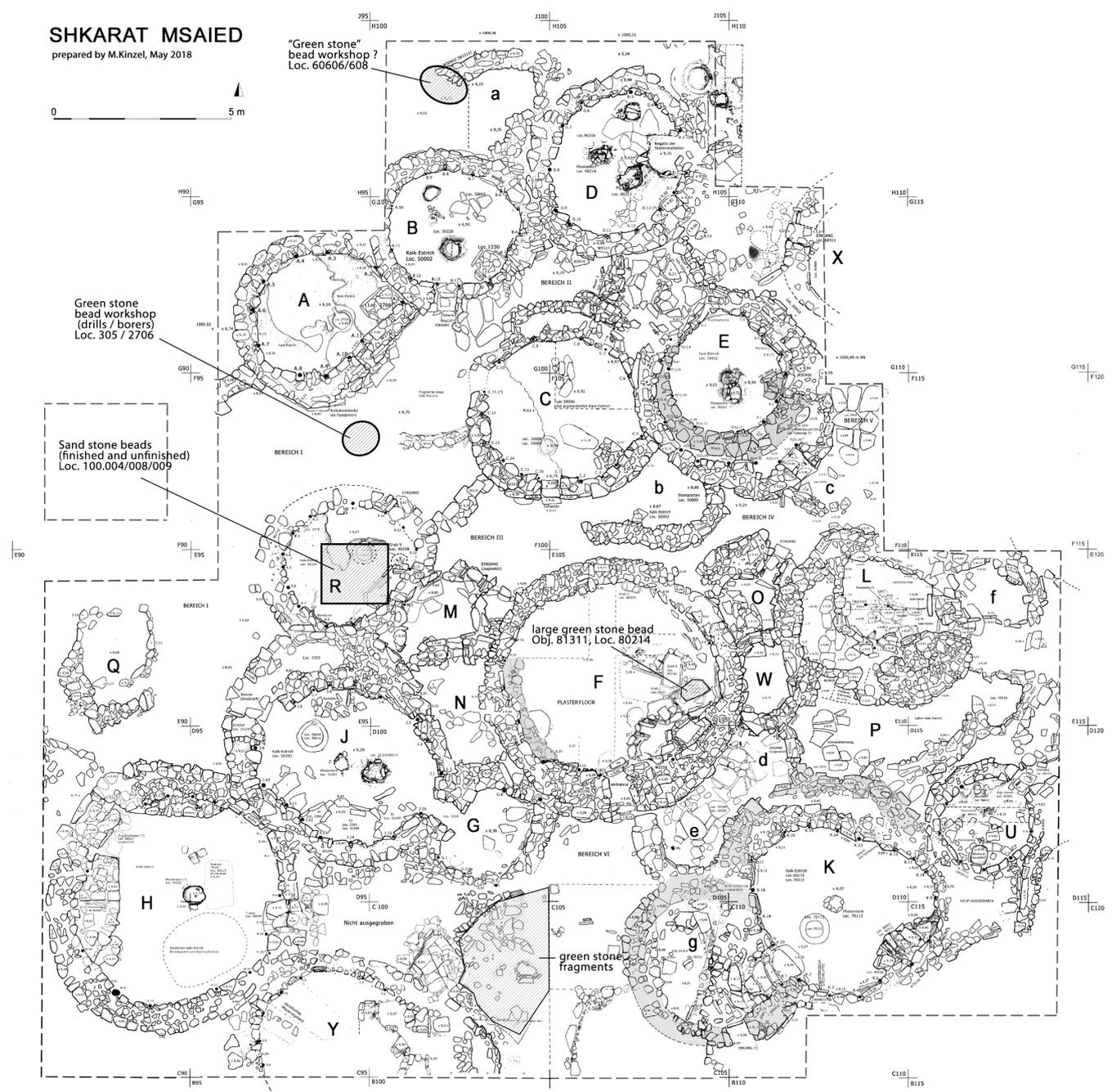


Fig. 1 Plan of Shkárat Msaied with contexts marked with bead finds: The two clusters of bead manufacturing debris in Area I and in Enclosure a; the beads from Unit R and the large green stone bead in Unit F. (plan prepared by M.Kinzel based on Kinzel *et al.* 2017: fig.5)

2015; Purschwitz 2017). Fragments of greenstone were also found in this area during the excavation campaign of 2014, but otherwise there is no apparent evidence for bead manufacturing in this part of the settlement.

In the 2014 and 2015 seasons, three beads were found in the backfill of an illegal sounding (Loc. 100.004) in Unit R, and two more were recovered from a surface layer (Loc. 100.009) and from just below a floor (Loc. 100.008, Kinzel *et al.* 2015). Since the modern backfill contained mixed deposits, the original stratigraphic context is unclear. Two of the beads from Unit R were finished products made of sandstone; one bead is possibly made of bone and the two others were perforated stones of indeterminate material.

In Unit F, one large stone bead of greenstone (Obj. 81311), possibly of the mineral chrysoprase or chalcedony, was found in the fill of an almost empty burial cist (Loc. 80214). The burial cist contained only a few human and animal bone fragments (Hermansen *et al.* 2006: 4-5). The greenstone bead surface is nicely polished and is translucent. It measures 60.7 mm in length, 54.1 mm in width, and is 31.3 mm thick. The bead was longitudinally pierced with a 11.8 to 12.9 mm wide cylindrical shaft (Fig. 5). Another stone bead of unidentifiable raw material has also been found within this unit, as well as an unfinished pendant resembling a miniature axe. Greenstone and cowrie shells also appeared occasionally in some of the burial fills (Kinzel *et al.* 2017: 14-15).



Fig. 2 Disc beads made of greenstone (Photo: Shkārat Msaied Neolithic Project/M.Bangsborg Thuesen, edited by M. Kinzel)



Fig. 3 Sand stone beads from Unit D and R. (Photo: M.B. Thuesen, edited by M. Kinzel)

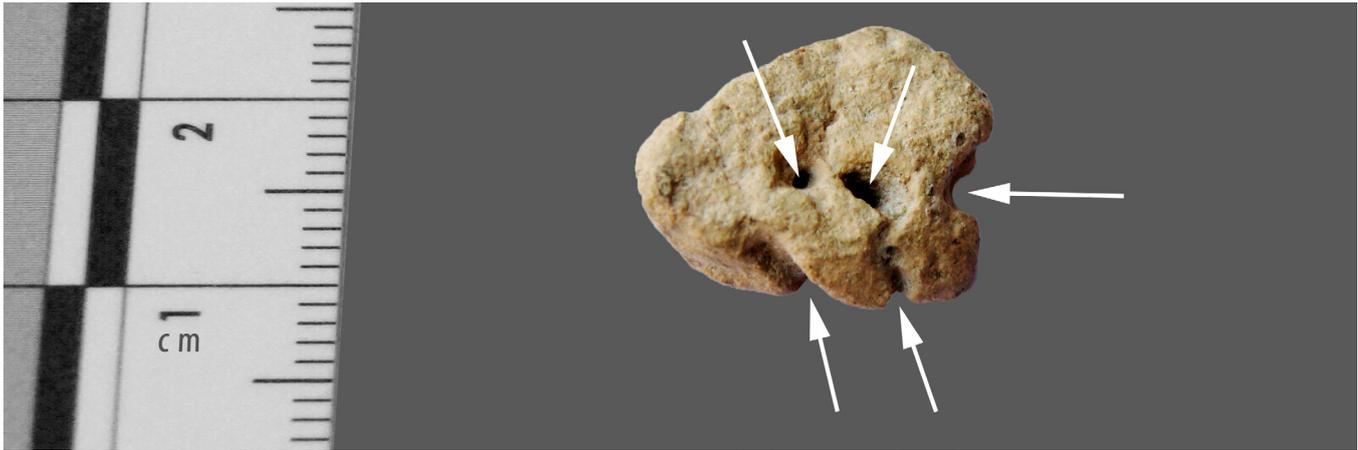


Fig. 4 Multiple perforated rough-out (Photo: Shkārat Msaied Neolithic Project/M. Bangsborg Thuesen, edited by M. Kinzel)



Fig. 5 Large greenstone bead from one of the burial cists in Unit F, Obj. 81311; Loc.80214. (Photo: Shkārat Msaied Neolithic Project/ M. Kinzel)

## Discussion

The density of artefacts related to stone bead production, in comparison to the amount of final products, suggests that the finished beads were utilised outside the settlement (Jensen 2004). As marine shells and fragments of obsidian provide evidence of a long distance trade relationship, the stone beads could have been used as trade goods as part of this exchange (*c.f.* Spatz 2017). It could also be argued that the beads were carried by the settlers when they were travelling. At Shkārat Msaied, there is evidence that structures were blocked and

burned as part of the abandonment process; the inhabitants might therefore have removed their most valued items, such as their stone beads. This is also attested by the large greenstone bead found in the burial cist of Unit F, which could have functioned as a treasured item in the funerary rites meant to venerate the dead (Hermansen 2017). Bar-Yosef Mayer and Porat (2008) have hypothesised that the preference for greenstone in the PPN societies of the southern Levant goes along with the emergence of sedentism and agriculture, arguing that the colour of the greenstone beads had a certain – today not provable – meaning or symbolic value to the

Obj. No	Unit	Locus	Raw material	Colour	Typology	Production marks	Production stage	Size dia.	Usage wear
2400	2050	2950	Turquoise	Blueish green	1A	Biconically perforated, polished	Finished	0.8 cm	n/a
2401	2050	2951	Turquoise	Blueish green	3B	Biconically perforated, polished	Finished	0.8 cm	n/a
3509	2351	2709	Turquoise	Green	Indeterminate	Biconically perforated, polished	Indeterminate	n/a	Possibly
3601	2375	2751	Malachite	Green	4B	Biconically perforated, abraded, polished	Finished	1.6 cm	Possibly
3602	2375	2751	Limestone	Greyish brown	n/a	indeterminate	Indeterminate	2 cm	n/a
4000	2475	3000	Turquoise	Blueish green	1A	Biconically perforated, polished	Finished	0.7 cm	Possibly
24104	2050	2952	Turquoise	Blueish green	1B	Biconically perforated, polished	Finished	0.8 cm	n/a
61219	C115	60205	Turquoise	Blueish green	1B	Biconically perforated, polished	Finished	n/a	n/a
91209	D	90214	Stone	Black	1C	Polished	Finished	0.5 cm	n/a
101.003	R	100.008	Stone	Red/ brown	1A	Polished	Finished	0.5 cm	n/a
101.004	R	100.004	Sandstone	White	Roughout	Biconically perforated	Unfinished	1.4 cm	n/a
101.005	R	100.009	Stone	Red	1A	Biconically perforated, polished	Finished	0.5 cm	n/a
101.007	R	100.004	Stone	Green/black	4B	Polished	Finished	0.8 cm	Possibly
101.009	R	100.004	Stone	Red	1A	Biconically perforated, polished	Finished	0.7 cm	Possibly
111.020	R	110.034	Sandstone	White	12	Biconically perforated	Unfinished	1.7 cm	n/a
111.106	F	110.104	Plaster	White	4E	n/a	Indeterminate	0.7 cm	n/a
121.106	F		Stone	Green/black	Pendant	Polished	Finished	1.8 cm	Possibly

Table 1 Beads from Shkārat Msaied studied in 2017.

bead makers and the consumers of the finished beads, perhaps associated with vegetation and fertility (Bar-Yosef Mayer and Porat 2008: 5549; Maier 2008; Weisgerber 2009). However, the greenstones might also have been chosen for their mineralogical properties – both turquoise and malachite have a lower score on the Mohs scale making them suitable for drilling and working of the stone – or merely for aesthetic reasons.

## Conclusion

Our study of stone beads from Shkārat Msaied has revealed that the majority of the raw material used for bead manufacturing was identifiable as malachite or turquoise. Roughouts of sandstone also appeared. The types of beads produced were mostly disc beads, but a few barrel beads and pendants have also been recovered. Further microscopic studies of the beads and lithic tools may help determine the exact drilling techniques used for perforating the roughouts, but this preliminary analysis has provided evidence for the reduction and shaping of the beads. Most case studies on stone beads in the Neolithic of Southwest Asia locate stone bead production to contexts (usually indoor) where other sorts of domestic activities took place (Wright *et al.* 2008; Bains 2012; Thuesen 2018). At Shkārat Msaied, however, production areas were only recognised in open spaces related to middens. But since both production clusters are interpreted as secondary contexts,

the workshops were possibly located elsewhere on the site, if not outside the settlement. It is also possible that the debris consists of remains that were brushed off the roofs; these are viewed to be the main activity areas of the site (Kinzel 2013: 51-52). Further excavation and examination of the remains of the bead assemblage will hopefully shed further light on the nature of bead manufacturing at Shkārat Msaied, and their role in exchange networks in the southern Levant in the near future.

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### Mette Bangsborg Thuesen

Centre for the Study of Early Agricultural Societies (CSEAS)  
University of Copenhagen  
lkh294@alumni.ku.dk

### Moritz Kinzel

Department of Cross-Cultural and Regional Studies  
University of Copenhagen  
zdr147@hum.ku.dk

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## A Clay Mask Depiction from Göbekli Tepe

Oliver Dietrich, Laura Dietrich, and Jens Notroff

Long before the extensive use of clay in households for the production of vessels and other items of daily use, clay was, in sundried or burned form, an important material to produce figurines. Anthropomorphic and zoomorphic clay figurines are a common occurrence in Pre-Pottery Neolithic (PPN) sites of the Near East (Morsch 2002, 2017; Hansen 2007: 57-94, 2014; Meskell 2007; Kuijt 2017). The find of an anthropomorphic figurine from Hayonim could hint at an even much longer tradition, reaching back into the Epipalaeolithic (Valla 2000: 25, Fig. 11). The quantity of figurine finds in PPN sites differs however, and this may not always be explainable by the size of the excavated areas or the state of research. Two extensively excavated sites sharing several similarities in their architectural features may serve to illustrate these differences. From PPNB Nevalı Çori in southeastern Turkey, 665 figurines are known (Morsch 2017: 189), of which 90% depict men and women (animals or abstract forms are rare). From Göbekli Tepe, which is well-known for its abundant and predominantly male imagery in the relief decorations of architectural features and in the form of stone sculptures, no clay figurines have been published so far.

The late excavator of the site, Klaus Schmidt (2016: 125-127), has repeatedly emphasized this dichotomy. He assumed that the exclusive presence of limestone sculptures and figurines at Göbekli Tepe could hint at different meanings of the two materials – clay and stone – for PPN people. Clay would be relevant to the living and their rituals, while stone belonged to the sphere of the dead, to which he attributed the monumental buildings with T-shaped limestone pillars discovered at Göbekli Tepe<sup>1</sup>. One of his main arguments regarded the peculiar spatial distribution of clay figurines at Nevalı Çori. There, figurines have been found in nearly all domestic areas of Layers III and IV (Morsch 2017: 198). They are however absent from the so-called cult building that features pillars similar to those found at Göbekli Tepe (Hauptmann 1993). Inside the cult building on the other hand, nearly all of the limestone sculptures known from Nevalı Çori have been found (Hauptmann 2011: 95-100). This could hint at distinctions between public and household cult activities. But even with this evidence, Schmidt's interpretation can be discussed controversially. The question whether clay figurines always must be attributed to the cultic realm still is, and probably will remain, under discussion (compare the very diverse and partly controversial approaches to figurines in Insoll 2017). The current contribution however has another aim, and that is to discuss an exception from the clay-stone antagonism at Göbekli Tepe.



Fig. 1 Enclosure D under excavation in 2001, a limestone mask depiction was found at the level of the fox reliefs, the clay mask depiction discussed here, 10 cm deeper in the filling. (Photo: K. Schmidt, © DAI)

### A Clay Mask Depiction from Enclosure D

During the 2001 excavation season, Enclosure D was in the focus of research (Fig. 1). Excavations in area L9-78 soon revealed Pillar 18, the eastern central pillar of the building, as well as some of the pillars in the encircling enclosure wall. At the level at which the fox relief on Pillar 18 was reached, about 2.20 m deep within the enclosure's filling, a small stone object was retrieved in the pillar's vicinity – the miniature representation of a mask made from limestone (Fig. 3b; Dietrich *et al.* 2018: 8, Fig. 5). But the next 10 cm of excavated sediment (*i.e.* Locus 4.7 in excavation area L9-78) held another surprise: a second mask, but this time made from clay (Fig. 2). This find has never been published and has also not been included in a recent article on mask representations from Göbekli Tepe and other early Neolithic sites (Dietrich *et al.* 2018). During work on this find group a closer examination of the



Fig. 2 Clay mask depiction from Göbekli Tepe. (Drawing: K. Schmidt, © DAI)

piece has shown that the interpretation as another mask representation is more likely.

The fragmentarily preserved object was originally ovaloid in form, the back is concave. It features a very prominent nose and large, nearly open-worked eyes. An indentation supposedly depicting the mouth is rather small, on the other hand, and not very deep. The mask measures just 1.3 x 0.7 cm. The surface is darkened-greyish, which indicates burning in reducing conditions. Whether the mask was intentionally burned remains uncertain; a future scientific examination of the object could resolve this issue.

Dating the mask accurately is not easy, as the still ongoing stratigraphic evaluation is revealing a multifaceted history of backfilling through erosion and intentional events for Enclosure D (for a summary see Pöllath et al. 2018). The monumental round buildings had long biographies of use, and radiocarbon data may indicate a partial chronological overlap with the younger phase of site use, the rectangular buildings of the so-called Layer II (Dietrich 2011). Within excavation area L9-78, where the mask was found, Locus 4 marks the uppermost layer of the at least in modern times undisturbed Neolithic backfill inside Enclosure D. It was divided by a loamy layer with numerous small stones from the superposing unit, reddish in colour, with fist-sized stones and numerous lithic finds. The excavators described it as “heterogenous”, which may indicate a complex formation process. This layer can possibly be interpreted as the youngest event of the refilling of the enclosure, because below this locus, color and composition of the sediment changed, probably indicating another, older backfilling. Thus, the mask would have been deposited during the last stages of backfilling. Its provenience therefore does not give a clear evidence about its use. However, we consider a date for its deposition in the backfill not younger than the early PPNB probable. The find also bears some resemblance to a PPNB miniature mask discovered at Nevalı Çori – which was made from limestone however (Hauptmann 2011: Fig. 17).

### Stone Miniature Masks at Göbekli Tepe

Stone miniatures of masks have recently been highlighted as an important feature of Göbekli Tepe and other PPN sites with special buildings (Dietrich et al. 2018). Four such depictions of masks are known from Göbekli Tepe. Before the start of excavations in 1995, a larger-than-life-sized and complete human mask was found during surface cleaning (Fig. 3a; Dietrich et al. 2018: 7, Fig. 4). The depiction of the face is minimalistic, almost abstract. The eyes are very faint, and the mouth is absent. The forehead and nose are carved in a geometrical manner, almost resembling a ‘T’ – not unlike the characteristic faces of contemporary human sculptures (Dietrich et al. in press). With a height of 42 cm it seems too large to be worn, it could have been intended to be fixed on a wall or another kind of support. The second mask is miniature (5.7 cm high), also made from limestone (Fig. 3b; Dietrich et al. 2018: 8, Fig. 5), and was, as already mentioned, found in the upper layers of the filling of Enclosure D in 2001. It has a concave backside; the features of the face are depicted minimalistic similar to the large mask. The third

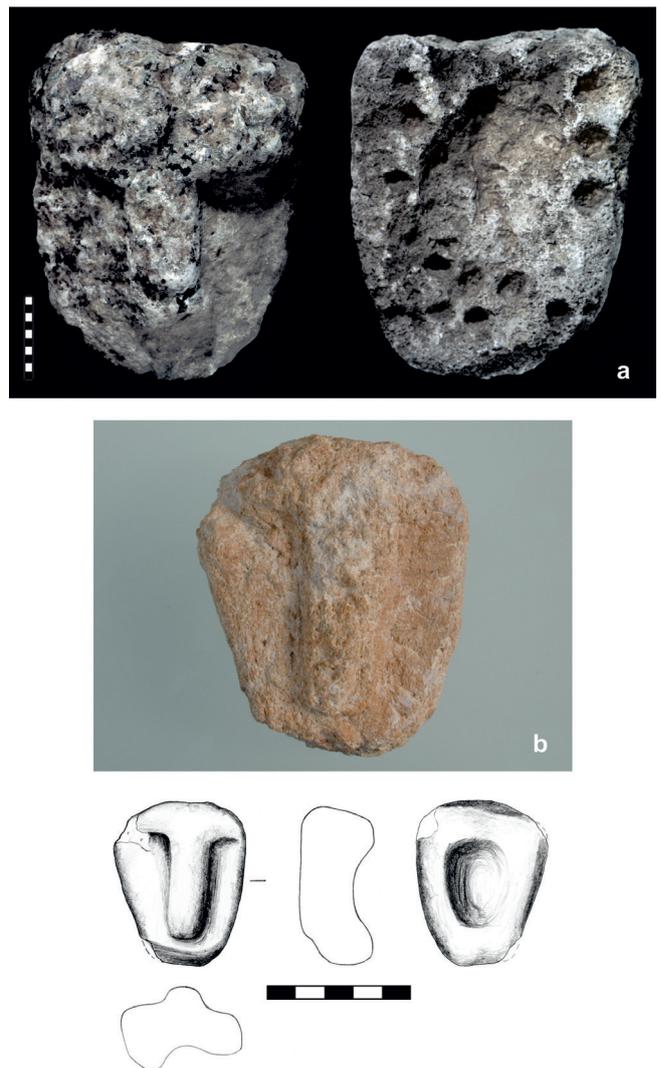


Fig. 3 Limestone mask depictions from Göbekli Tepe. (Photos: K. Schmidt, drawing Ç. Köksal-Schmidt, © DAI)



Fig. 4 Limestone mask depictions from Göbekli Tepe. (Photos: N. Becker, © DAI).

mask, another miniature (4.7 cm high) was made from a flint cortex (Fig. 4a; Dietrich *et al.* 2018: 8, Fig. 6). It shows curved chevrons engraved into its forehead and was found in 2010, rather high in the stratigraphy, during excavations in Enclosure H, next to (central) Pillar 51. Finally, the fourth miniature mask depiction (4.5 cm high) is again made from a flint cortex (Fig. 4b; Dietrich *et al.* 2018: 8, Fig. 7). Its form follows the reduced depiction of the face of the first two examples, with more pronounced eyes. It was found in 2008 next to the eastern central pillar of Enclosure C.

## Discussion

The group of now five mask depictions leaves room for a wide range of interpretations. Are we dealing with personal, transportable mnemonic devices with a connection to possible ritual performances at the site? Are they insignia of participation in certain rites, of initiation? Other than different anthropomorphic representations, for example stone heads, which were regularly deposited deep in the filling next to the pillars (Dietrich *et al.* in press), they do not seem to be linked to the initial biographies of the monumental enclosures, but rather to the final stages of use and their final backfilling. Garfinkel (2017: 147-148) has proposed three principal uses of masks, based on a review of ethnographic literature: performance masks (often used

in dances: Garfinkel 1998, 2014, 2018), funerary masks, and protective masks. The last category comprises miniatures, not supposed to be seen by other people than the owner except for special ritual occasions and meant to ward off evil. Garfinkel places the miniature mask from Nevalı Çori in this category, and it is certainly tempting to interpret the miniature masks (not so much the larger than life mask discovered in 1995) from Göbekli Tepe along the same lines.

Coming back to the clay/stone dichotomy mentioned at the beginning of this short contribution, one<sup>2</sup> figurative clay item from Göbekli Tepe does not negate the observation that such objects are generally absent from the site. No such representations were found in the lower layers of the enclosures so far, which could be linked to the buildings' use life or the first stages in their abandonment. But the find raises the question to what degree the presence of clay depictions may be obscured by bad preservation of unburnt or only slightly burned/sundried clay objects. The sediments at Göbekli Tepe are very rich in limestone rubble and flint debitage, which may have had a negative impact on the 'survival rate' of such items. Although a massive presence of clay objects cannot be proven, such objects could have been in use in smaller numbers in the rectangular build-

ings surrounding the enclosures, in some cases ending up in the last strata of sediment in the lower lying monumental buildings due to erosion processes. To prove or falsify this hypothesis is a task for future research.

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## Endnotes

<sup>1</sup> Parker-Pearson and Ramilisonina (1998) have argued for a similar dichotomy of perishable wood for the living and stone for the ancestors regarding Stonehenge and contemporary timber monuments drawing on analogies from Madagascar.

<sup>2</sup> It should be mentioned here that another figurative clay item, fragmentary but resembling an aviform Nemrik scepter in shape (Dietrich *et al.* 2017: 121, fig. 5.24 for the stone counterparts) exists from Göbekli Tepe. It was however discovered in a disturbed rubble layer within Enclosure C and cannot be associated with the use life of the building. As this layer has also produced wheel-thrown pottery, the dating of this item remains unclear and will have to await a complete evaluation of the site's Nemrik scepters.

**Oliver Dietrich**

German Archaeological Institute, Orient Department  
oliver.dietrich@dainst.de

**Laura Dietrich**

German Archaeological Institute, Orient Department  
laura.dietrich@dainst.de

**Jens Notroff**

German Archaeological Institute, Orient Department  
jens.notroff@dainst.de

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# Qal'at Surmagh: A Pre-Pottery Neolithic Site from Neyriz Plain, Eastern Fars, Iran

Meisam Nikzad, Hassan Moradi, and Habib Emadi

## Introduction

The Fertile Crescent is one of the world's major zones for the formation of food production (Zeder 2011; Özdoğan 2014). From here, subsistence economy based on agriculture spread from the eastern wing of the Fertile Crescent to Fars region, from Fars to Kerman region and Mehrgarh in Pakistan and ultimately to South Asia (Weeks 2013; Gangal *et al.* 2014). The eastern Fars region, located between the Kur River Basin in the southern Zagros and the southeastern parts of Iran, represents a gap of knowledge in the regional dispersal of the Neolithic: Until recent times, no Neolithic sites have been reported from this region. Despite the presence of Pre-Pottery Neolithic sites such as Tepe Rahmatabad in the vicinity of Marvdasht (Azizi *et al.* 2013), the TB130 and TB75 caves in the Bolaghi valley (Tsuneki 2013), some Proto-Neolithic sites in Arsanjan (Ikeda 1979; Tsuneki 2013), and Pre-Pottery Neolithic sites such as Tell Atashi near Bam (Garazhian 2016),

the absence of Neolithic sites in the eastern region of Fars would seem to be unusual.

In terms of cultural-geography, Fars province includes the southern parts of Zagros Mountains. In the decades before the 1979 Islamic Revolution, no Pre-Pottery Neolithic sites were reported for the Kur River Basin. In other words, there appeared to be an occupational gap after the end of the Epipalaeolithic period (Sumner 1990). During the past decade, however, evidence of the Pre-Pottery Neolithic has been reported from excavated sites such as Rahmatabad (Azizi *et al.* 2013) and the caves of TB130 and TB75 in the Bolaghi valley (Tsuneki 2013) to the west, and Tell Atashi of Darestān Bam to the east (Garazhian 2016). Considering the wide cultural scope of Fars and the various climatic and environmental conditions, major studies in Neolithic archaeology have been limited to the northern parts of this area, such as the Kur River Basin. Recently, during survey of the Fasa and Jahrom areas, there is evidence from two

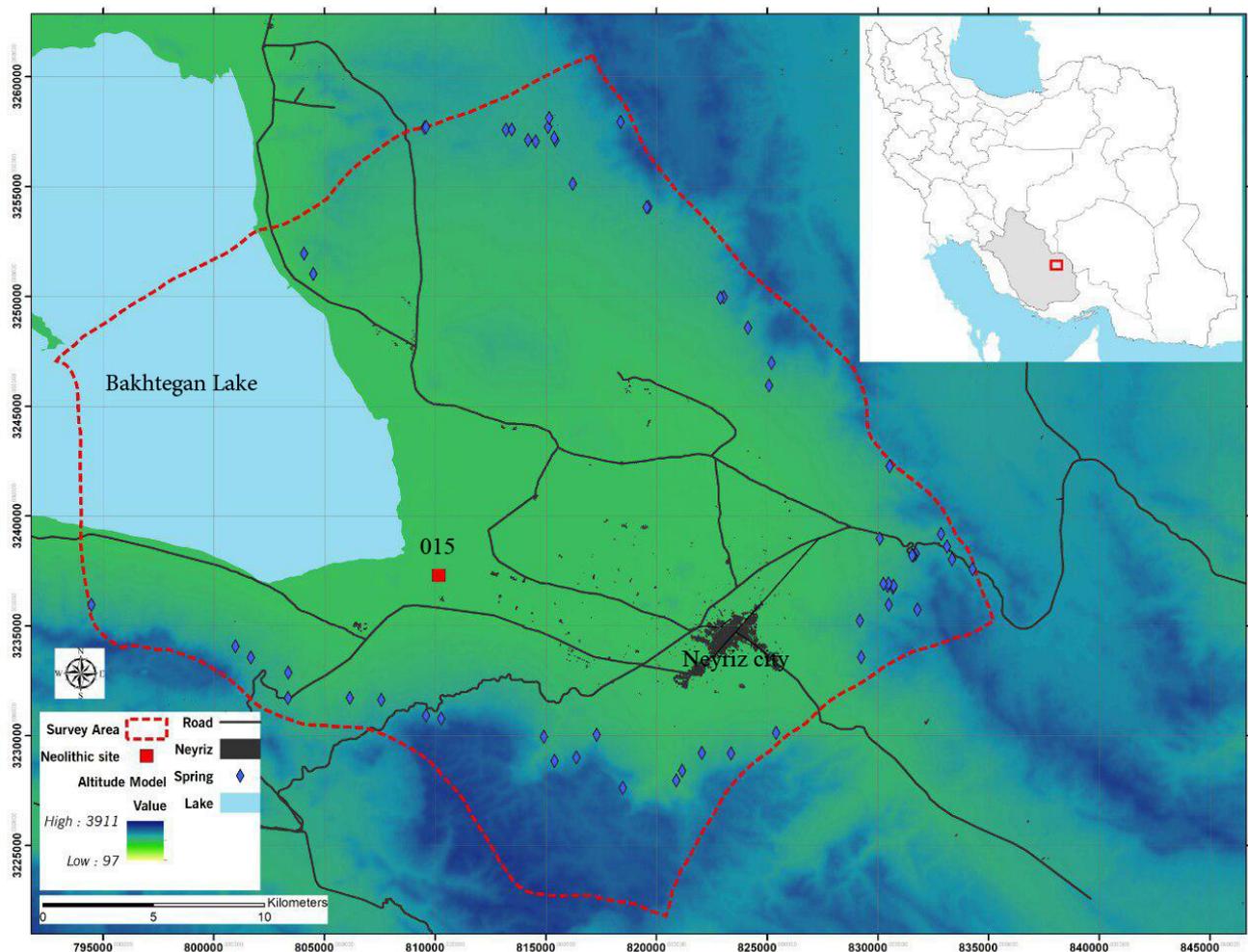


Fig. 1 Map of Neyriz Plain. (Map: H. Moradi)



Fig. 2 General view of Neyriz Plain. (Photo: H. Emadi)

open air sites of the Pre-Pottery Neolithic (Mansori 2011, 2016). Furthermore, during a survey launched in spring 2017 in the Neyriz district of Fars, located between Fars and Kerman, a new Pre-Pottery Neolithic site was identified. The present article is a brief note about this site.

### Geographical Setting of Neyriz Plain

The survey area includes the Rostagh District of Neyriz County in eastern Fars province, which includes the Neyriz Plain and the surrounding mountains; the city of Neyriz is located here (Fig. 1). Neyriz is a “sedimentary plain” with a gentle eastern-western slope surrounded by mountains on three sides (north, east and south), and limited to the west by Lake Bakhtegan. The study area includes parts of the plain and mountains (Fig. 2). The climate is dry and semi-arid. The Neyriz has no permanent rivers, although there is a seasonal river in the east. A *qanat* is the main source of water supply to the area. In addition, some parts of the plain are rocky without agricultural potential.



Fig. 3 General view of Qal'at Surmagh. (Photo: M. Aali Pur)

### The 2017 Survey

In order to provide an archaeological map, the central part of the Neyriz was surveyed by one of the authors. The survey was conducted by walking in areas suitable for settlement, and carried out by vehicle in the rocky areas. The survey identified 110 sites, dating from the Palaeolithic through to the late Islamic period. Based on the results of the survey, it seems the area was occupied in the Islamic period due to the development of *qanat* technology, so that most identified sites belong to that era. Among them, one Pre-Pottery Neolithic site can be recorded.

### The Qal'at Surmagh

Qal'at Hussein-e Abad Surmagh is a single ridge about 100 meters above the surrounding land in the southwestern part of Neyriz Plain, on the edge of Lake Bakhtegan (Figs. 1 and 3). This natural ridge runs east-west, and is about 1200 meters long and 680 meters wide. Due to mining activity, the western part of Qal'at Surmagh is damaged, and mining operations are still ongoing. The land surrounding Qal'at Surmagh rep-



Fig. 4 Aerial photo of Qal'at Surmagh and the location of scatters A and B. (Photo: H. Emadi)



Fig. 5 A view of Scatter A. (Photo: H. Emadi)

resents sedimentary soil environments which appear to have been underwater during the rise of the lake. In the survey of Qal'at Surmagh, four sites of different periods were identified, consisting of two scatters of stone tools, a vast Islamic period site and a historical castle.

The two scatters of stone tools are located on: A) the southwest slope, and B) on the eastern side of the ridge (Fig. 4). Scatter A is 65 meters long and 48 meters wide (Fig. 5). This scatter is fairly even with a slight north-south slope. Its surface has been severely damaged by mining activities and the use of bulldozers *etc.* As a result, the stone artifacts in Scatter A were dispersed; more artifacts were observed in soil dumps. The assemblage of Scatter A yielded 31 chipped stones of chert and tuff in light brown, red, green and gray colors, representing medium to high qualities. The assemblage in-

cludes 7 cores, 3 blades, 3 micro-blades, 10 flakes and 6 debris (Figs. 6-7). The cores include 3 pieces with amorphous removals and 4 pieces with unidirectional micro-blade removals. The largest flake core's dimensions is 39 x 29 x 21 mm. All irregular flake cores have no cortex and show no micro-blade removals. The micro-blade cores include 4 pieces, of which the largest is a bullet core with dimensions of 31 mm in length and 15 mm diameter. Pressure technique is not seen in the core knapping. Among the flakes, there are one notched (Fig. 6: 16) and a platform preparation flake.

Scatter B is a small scatter of lithics located on the ridge's southeast side. This scatter is sloping east-west, is limited by sedimentary deposits on its east, and measures 200 x 180 m. In total, 22 lithic artifacts were collected from Scatter B. These are made from light brown, brown, red and gray, medium to high quality cherts. The assemblage includes 7 micro-blades, 5 cores, 2 borers and 8 flakes (Figs. 7-8). The largest core is 31 mm long, 23 mm wide and 19 mm thick; all removals represent those of micro-blades. The largest borer is 29 x 19 x 5 mm; all borers of the assemblage are made on flakes.

### Conclusions

Given the presence of unidirectional micro-blade cores, blades and micro-blades in the assemblage, Qal'at Surmagh can be attributed to the Pre-Pottery Neolithic. The surface scatters seem to have no con-

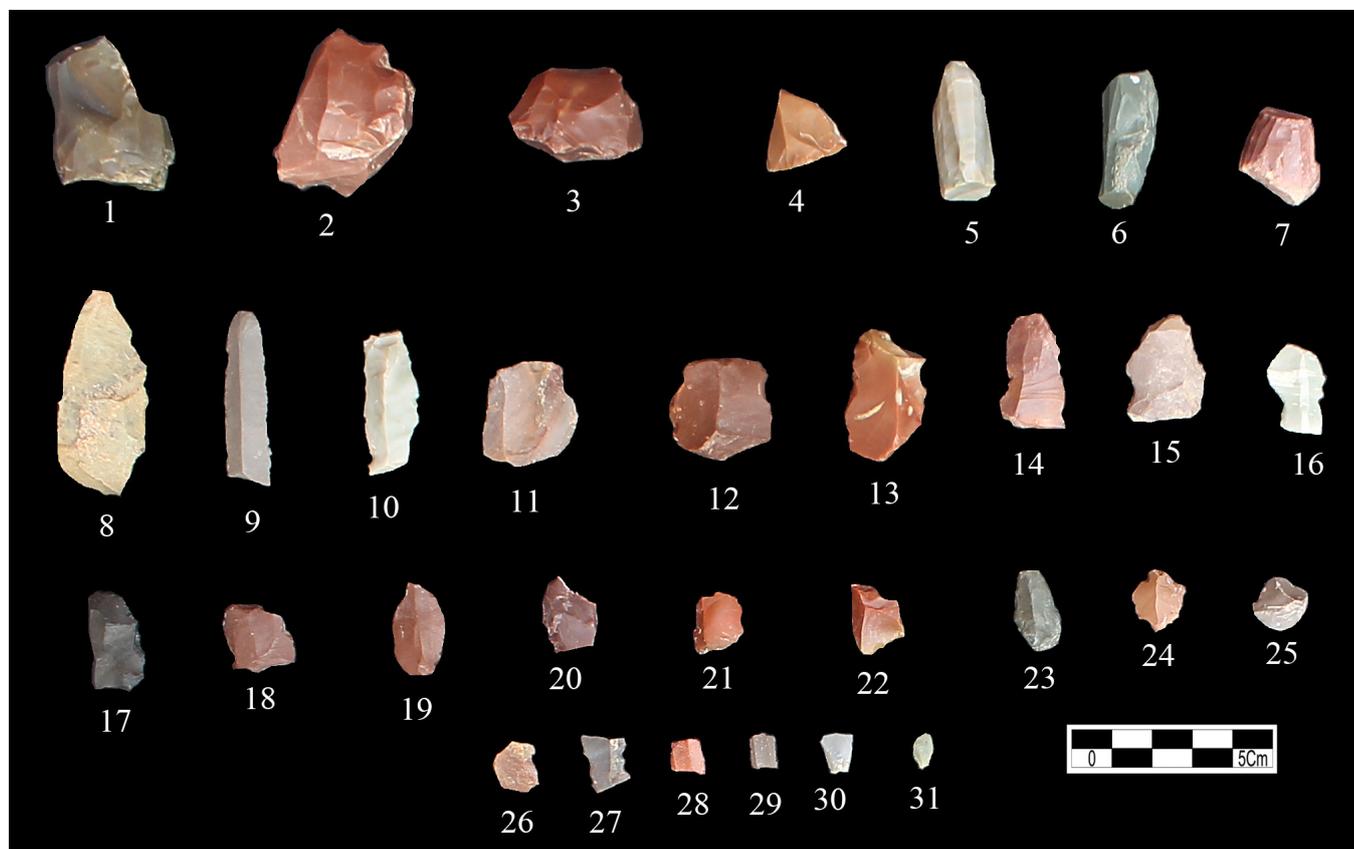


Fig. 6 Lithic artifacts of Scatter A. (Photo: H. Emadi)

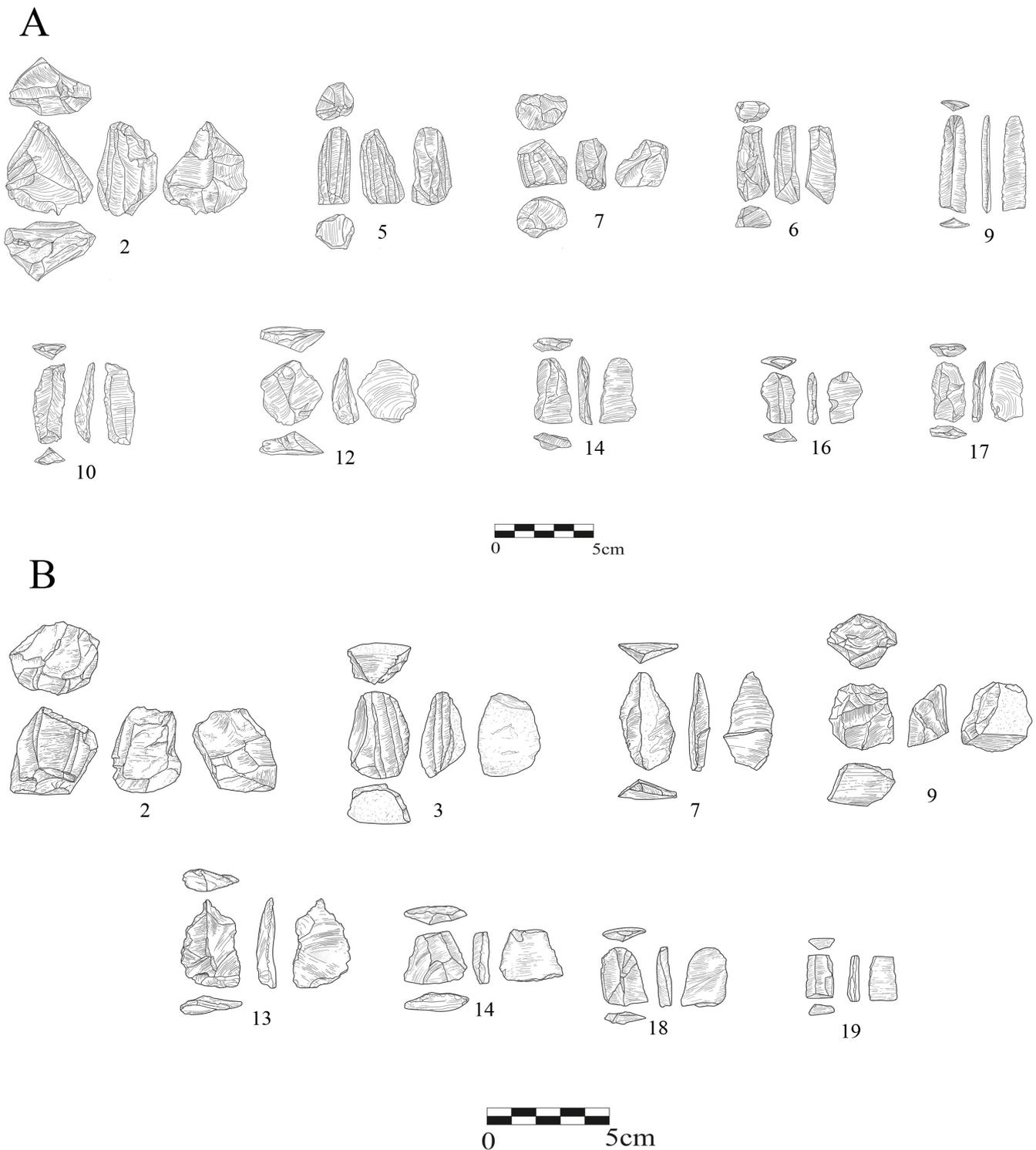


Fig. 7 Sketch of lithic artifacts of Scatters A and B. (Drawing: E. Mohamadi)

tact to cultural deposits underneath. Given their location near the Bakhteghan Lake, they might represent ephemeral-temporal sites with a special function rather than representing base camp sites. The lithic assemblages are comparable to the Pre-Pottery Neolithic assemblage of Tepe Rahmatabd (Nishiaki *et al.* 2013), meaning that the site can be dated to the late eighth and early seventh millennium BCE.

The identification of Qal'at Surmagh and two newly

discovered sites in Fasa and Jahrom show that Neolithic communities were present in the eastern Fars. With continuing systematic studies it will be possible to shed more and new light on the processes of the Neolithic transitions in the Fars and in the southeastern regions of Iran: The paucity of (Pre-Pottery) Neolithic sites in Fars and the identification of new such sites is of challenging and increasing importance for reassessing the Neolithic processes in the southeastern of Iran.



Fig. 8 Lithic artifacts of Scatter B. (Photo: H. Emadi)

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#### Meisam Nikzad

Tarbiat Modares University, Tehran  
meisam.nikzad@gmail.com

#### Hassan Moradi

Tehran University, Tehran  
hmoradi25@gmail.com

#### Habib Emadi

Tehran University, Tehran  
hemadi@ut.ac.ir

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## Hormangan Site. New Evidence for Neolithic Occupations in the Southern Zagros, Iran

Morteza Khanipour, Habib Emadi, and Afshin Akbari

The periods from 6300 until 5600 BCE in Fars region are known as the Mushki and Jari periods. Since the 1950s, and until recent years, a lot of discussion has evolved around the origins of these societies and their development (e.g. vanden Berghe 1951-1952: 54; 1953-1954; Fukai *et al.* 1973; Sumner 1977; Maeda 1986; Alizadeh 2004; Alizadeh *et al.* 2004; Nishiaki 2010a,b; Azizi Kharanaghi *et al.* 2013; Weeks 2013). However, a new cultural phase, known as Bashi, is proposed to be a transitional phase between the Mushki to Jari periods (Pollock *et al.* 2010). The architectural remains as well as geometric stone tools, wild animals' bones, particularly horses, are all indicating the existence of a seasonal settlement based on hunting in Tol-e Mushki which is transformed into a sedentary settlement with a distinct type of architecture and a subsistence based on agriculture in Tol-e Jari B (Nishiaki and Mashkour 2006). The distinct cultural phenomenon probably linked to Mushki period could have been caused by a sudden climate change (Weeks *et al.* 2006: 24; Nishiaki 2010a; Flohr *et al.* 2016). It is suggested that the weather

became cold and dry for centuries, until around 6200 BCE when the conditions again improved (e.g. Clarke *et al.* 2004; Alley and Aguslsdotiir 2005). Furthermore, these climate changes have had direct influences on socio-economic strategies of Neolithic societies in the Fars. However, the relationship between culture and climate is only one of the possible explanations for the observed cultural changes; more studies are needed. The majority of archeologists believe that severe climate changes following the 8.2 ka Event forced Neolithic societies to adapt to new conditions. It is possible that some of them migrated to regions with more tolerable conditions while others found alternative survival strategies such as hunting or food collecting instead of cultivating (Nishiaki 2010a). Intermountain valleys in Fars region are required to be studied precisely and extensively in order to achieve a more comprehensive understanding of this period. During a survey by the authors in 2015 in the Bavanat River Basin in northeastern Fars, the most prominent Neolithic occupation of the region was identified in Hormangan, a site first excavated in 2016.

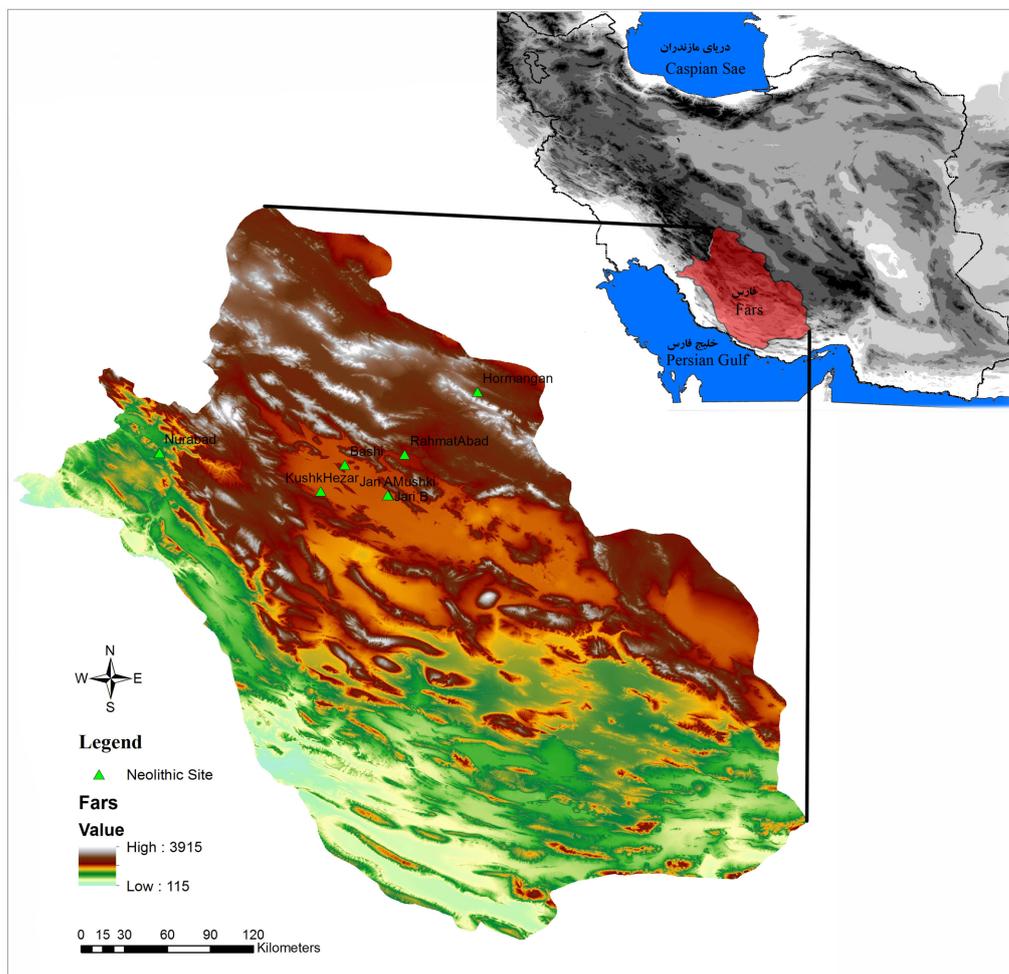


Fig. 1 Location of Neolithic sites in Fars. (Map: M. Khanipour)

## Hormangan Site

Hormangan is located west of Jeshnian (UTM: 39 R 741396 3377711) in the southern basin of Bavanat River, at an altitude of 2364 m a.s.l. (Figs. 1-2). The site was discovered during an archaeological survey conducted in the Bavanat district by M. Khanipour (Khanipour 2015: 156). The site is extending north-south; its eastern parts were disturbed by agricultural activities. The first season of excavation took place for 45 days during March - April 2016. Major goals were: 1) to understand the settlement's stratigraphy, 2) its relative and absolute chronology, 3) to investigate the site's regional interaction, 4) retrieving faunal and botanical remains to reconstruct subsistence patterns, 5) to identify evidence of cultural and commercial exchange, 6) to identify site functions during the different occupations, and, in general, 7) to trace political and social evolutions.

In order to determine the site's extent, some fourteen 1×1 m test trenches were dug in the different parts of the mound, followed by the excavation of three trenches (8×8, 5×5, and 4×4 m). They reached depths of some 1 m, exposing cultural layers from the late 7<sup>th</sup> millennium BCE. As the test trenches revealed, the Neolithic village of Hormangan might have had a size of 0.5 ha.

After the removal of disturbed levels, Trench II exposed traces of a wall with several right-angled structures (Fig. 3). The walls were made of chaff tempered clay (*pisé*). There were also three eastward spaces, one with a width of about 220 cm and an unknown length; the other has the shape of a narrow corridor of about

1 m width and 6 m length. It contained traces of several hearths and ash deposits, indicating cooking places. The northeastern trench exposed walls meeting a main wall's construction and a floor of cobbles and clay. Stone walls with red-stained plaster appeared. A space with 150 cm width and unknown length resulted from destructions. Continued excavations revealed cultural deposits under this structure which included several ovens, burnt soil, ash layers *etc.*, altogether less than 30 cm thick. They indicate the existence of two settlement phases.

As mentioned above, the earliest phase revealed no architectural remains whereas the ovens and ash deposits indicate a seasonal occupation. The later phase included architectural remains, and indicates sedentary lifestyle in a permanent settlement. Excavations at Trench II revealed traces of walls including several spaces (Fig. 3). There has been also a space with architectural remains characteristic to internal walls, floors, and red ochre decorations; they occurred in the southeastern part of the trench, and next to the painted room of Trench I. Ovens, burnt soil, and ash deposits under the architecture of Trench II again indicate the two settlement phases.

Trench III exposed a burnt structure, with heavily burnt surfaces; a wall surrounded the burnt structure. It was nearly destroyed, only little remained at its south. Excavations around the structure revealed small *pisé* walls dividing spaces of special function. Considering all features and the discovered potsherds around the structure, one must assume that the structure was an open pottery kiln used to produce the local Hormangan wares (Fig. 4) (Khanipour 2017).

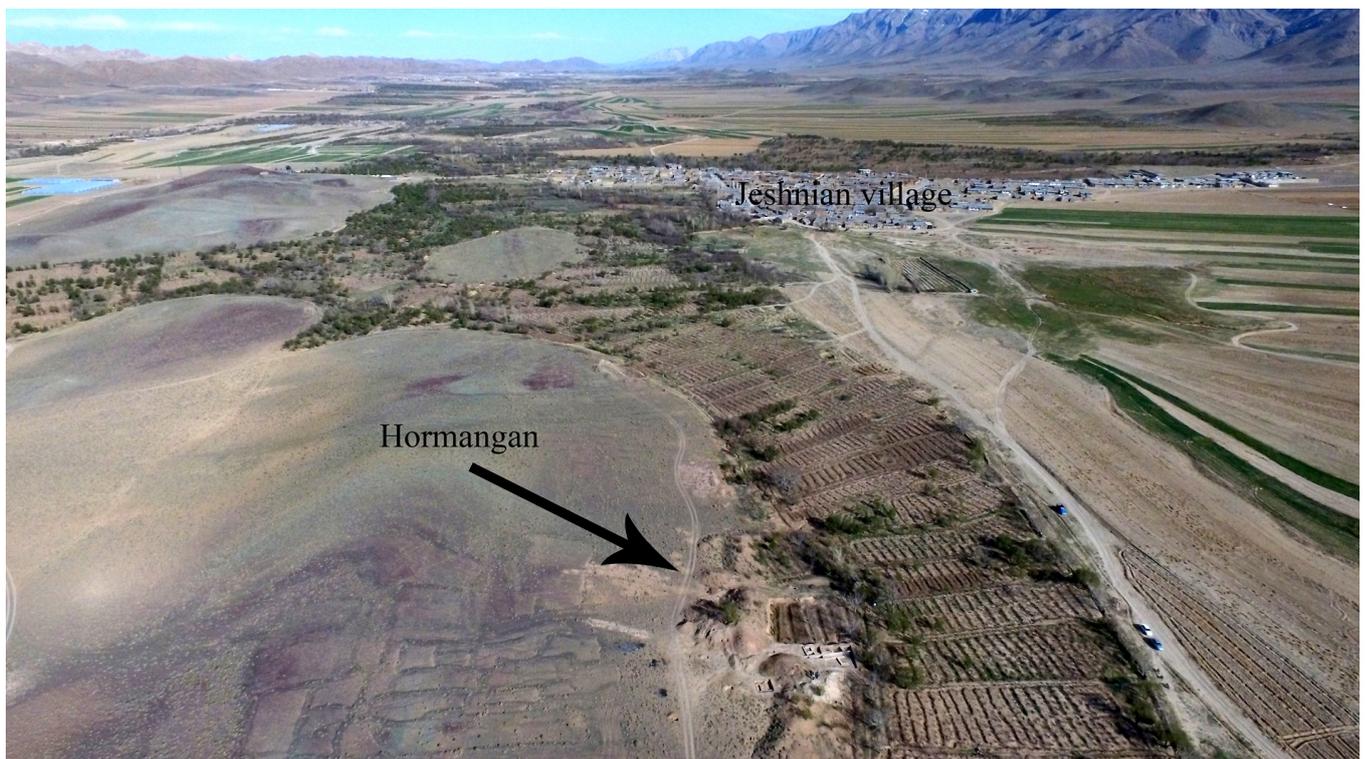


Fig. 2 Location of Hormangan site and Jeshnian village. View towards W. (Photo: M. Khanipour)



Fig. 3 Neolithic architecture at Hormangan. (Photo: M. Khanipour)



Fig. 4 The surface of the kiln and its wall remains. (Photo: M. Khanipour)

## Findings

The discovered ceramics can be divided into the two general categories: 1) simple rough pottery with a mixture of straw, and 2) red or buff pottery with black or dark brown geometric motifs. All pottery is grass-tempered and not well-fired (Fig. 5). The observed motifs are geometrical which are comparable with ceramics from Tol-e Mushki (Fukai *et al.* 1973; Maeda 1986: 86), Tol-e Jari B (Nishiaki 2010b: 125), Tol-e Koshk Hezar (Alden *et al.* 2004: 32-34), Tol-e Bashi (Bernbeck 2010) and Tol-e Rahmatabad (Azizi Kharanaghi *et al.* 2013; Azizi Kharanaghi and Khanipour 2013).

The discovered chipped stone material includes blades, bladelets, cores, flakes, chips, geometric microliths and debitage (Fig. 6). These tools are comparable with tools discovered in Tol-e Bashi (Ghasidian *et al.* 2010) and Tol-e Mushki (Fukai *et al.* 1973; Nishiaki 2010a; Abe 2011) which are interpreted as late M<sup>le</sup>-

fatian by Nishiaki. The changes in subsistence are also visible by the stone tools, like an increase of geometric microliths testifying the society's practice of a hunting economy. This subsistence phenomenon started in early sixth millennium BCE and stopped once the agricultural subsistence became established (Nishiaki in press).

The total number of 90 small stone and baked clay objects have been discovered on the surface of the site (Fig. 7). They can be categorized into rounded or spherical objects, cones, disk- and pyramid-shaped objects. Their function is not clear, and different interpretations are around for them (ear or nose plugs, tokens or even toys: Fukai *et al.* 1973: 57-63; Hole 1987: 53; Hori 1988-89: 36-37; Schmandt Besserat 1992; Bernbeck 2004). The only certain point is that these objects have been identified in many early villages from Jeiton in Turkmania, Sang-i Chaqmak and Sialk to Kur River Basin, in the Susiana Plain, Deh Luran, Mesopotamia and the Levant (Schmandt-Besserat 1992). The small clay and stone objects of Hormangan are mainly comparable with discoveries in Tol-e Mushki (Fukai *et al.* 1973), Tol-e Bashi (Pollock 2010: 182) and Kushk Hazar (Alden *et al.* 2004: 44).

A metal awl and several small metal pieces were discovered during the excavations; they probably are made from copper minerals; similar samples have been reported from the excavations in Tol-e Mushki (Fukai *et al.* 1973). In fact, these objects are very early examples of metal use. Metallographic studies would lead to better understanding of the early use of copper minerals in this region.

Several beads were found by sieving and excavating the surface soil. Grinding and crushing stones, the latter probably used for preparing red ochre, were also found.

### Conclusions

The finds from Hormangan increase our knowledge about the material culture of Mushki period (hunting societies), especially with regard to pottery variability, chronology and site distribution. Information from the site, especially on the technical and cultural aspects of the Neolithic community including its pottery production, long-distance contacts, subsistence patterns, chipped stone inventory, provided a better understanding of the Mushki culture. Regarding climate changes during the seventh millennium BCE in Middle East, we observe alterations in settlement patterns in this period, also supported by evidence from other sites in Fars province.

The two recognized settlement phases might be an evidence for migration from the Kur River Basin to the Bavanat region during latter half of the 7<sup>th</sup> millennium, expected to be caused by climate change. The earlier phase is assumed to show a seasonal settlement (absence of architecture), represented by thin layers and several hearths. The later phase could be regarded as

a sedentary settlement with substantial architectural remains. The burnt structure was probably a primary open kiln which have not been reported from the Fars Neolithic sites yet. It should be noted, however, that the kiln existed contemporaneously with the site's later phase. By comparing the findings of this site with the sites of the Kur river basin (Tol-e Mushki, Tol-e Jeri, Tol-e Bashi, RahmatAbad and Kushk-e Hezar), the earlier phase of the site currently can be dated to between 6375 and 6200 BCE while the later phase has to be dated between 6200 to 6000 BCE.

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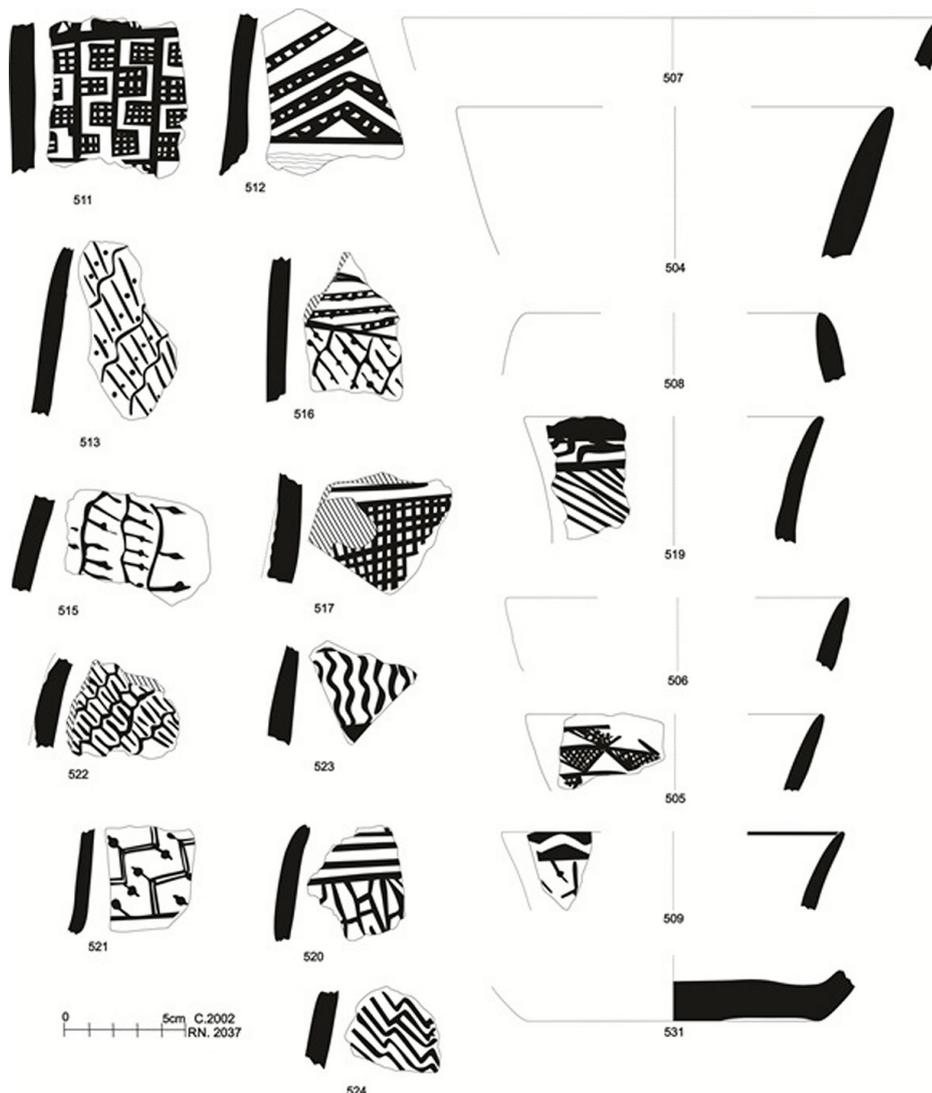


Fig. 5 Neolithic pottery from Hormangan. (Drawing: M. Khanipour)



Fig. 6 Selected chipped stone artifacts from Hormangan. (Photo: M. Khanipour)



Fig. 7 Clay and stone objects (token?). (Photo: M. Khanipour)

**Morteza Khanipour**  
University of Tehran  
khanipour.m@ut.ac.ir

**Habib Emadi**  
University of Tehran  
hemadi@ut.ac.ir

**Afshin Akbari**  
University of Tehran  
afshinakbari182@gmail.com

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## Mushash 163: A Site of the 9<sup>th</sup> Millennium BCE in the Jordanian Badia. Results From the Investigations in 2016 and 2017

Karin Bartl

The Neolithic site of Mushash 163 is located in the north-western part of the Jordanian desert steppe (*badia*) and about 40 km east of Amman (Fig. 1). It was discovered during a survey in the surroundings of the Islamic site of Qasr Mushash in 2012. Further archaeological investigations followed between 2014 and 2017. The aim of the work was to determine the stratigraphic sequence, as well as to obtain information about the built structures of this 0.25 ha large settlement.

The collected surface finds from the 2012 survey pointed to the site's occupation between the Early and Late Neolithic Period, *i.e.* between the 10<sup>th</sup>/9<sup>th</sup> and the 7<sup>th</sup>/6<sup>th</sup> millennium BCE. The former period is not well-

known in the north-western Badia, but it has been evidenced for example at Wadi Jilat, about 40 km south of Mushash 163 (Garrard *et al.* 1994).

The area surrounding Mushash 163 lacks perennial watercourses and springs. The only drainage today comes from winter precipitation that briefly causes flash floods in wadis and depressions, but that also collects in ground water reservoirs. Exploitation of the area's high groundwater table has until the present day therefore been a traditional way of getting access to the water in this region.

Today the area's landscape is that of a desert steppe deprived of its former vegetation. Its overexploitation

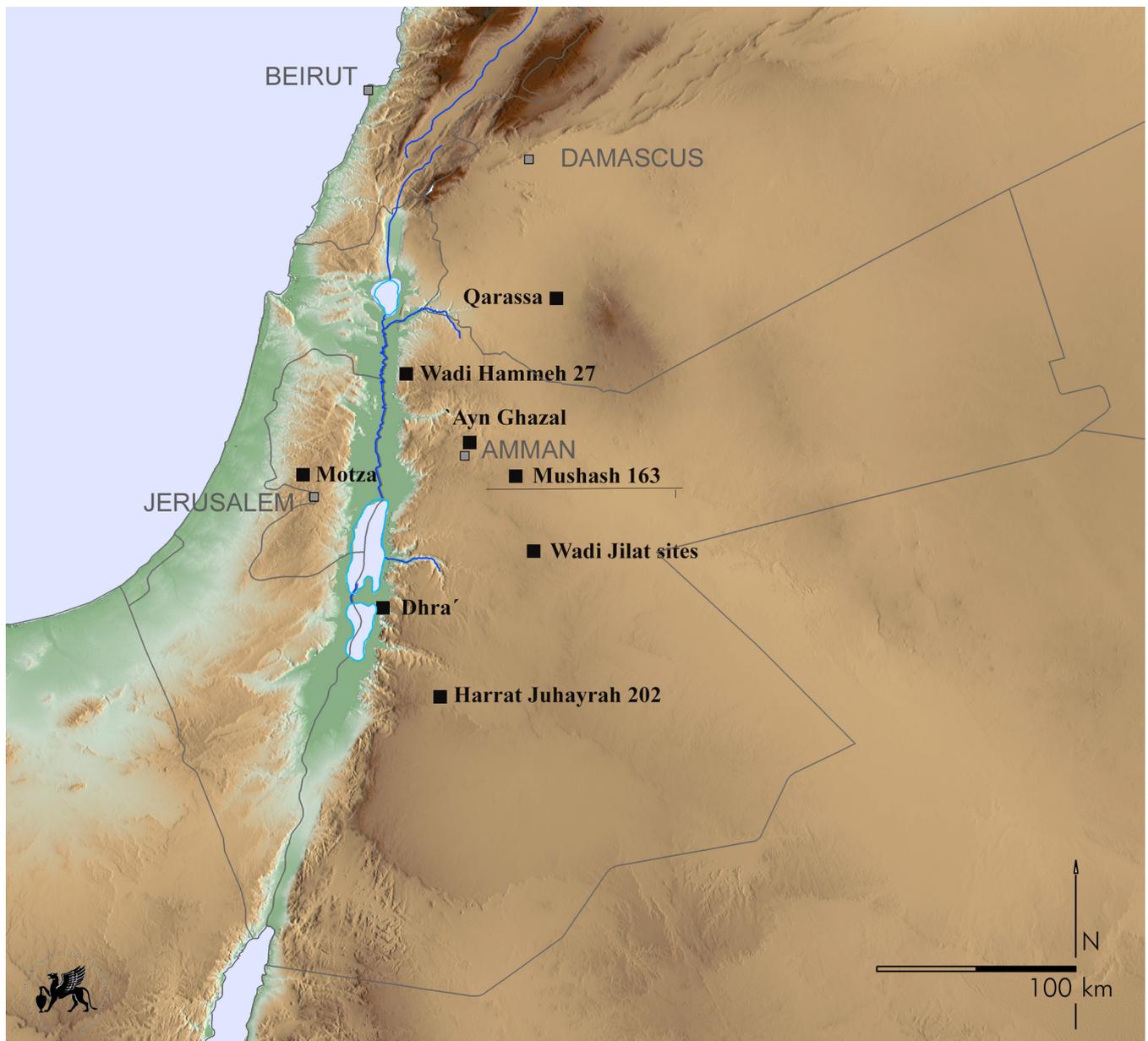


Fig. 1 Sites mentioned in the text. (Map: DAI Orient Department, K. Bartl)



Fig. 2 Mushash 163, Trench 1-south with Structures 2 (foreground) and 3 (background). (Photo: DAI Orient Department, Th. Urban)



Fig. 3 Mushash 163, Trench 2 with Structure 4. (Photo: DAI Orient Department, Th. Urban)

has been persistent on over the millennia, for the most through intensive grazing. The natural environment in the Neolithic Period must hence have been characterised by a denser vegetation and accordingly, a richer wildlife. However, more data is needed for the reconstruction of the area's former natural environment.

Work in 2014 focused on the settlement's north-western area, where two small test trenches were cut (1-north and 1-south). The decision was underpinned by a beforehand geophysical prospection carried out in 2013 that had revealed a number of circular structures (Bartl *et al.* 2014: Fig. 11). The excavation grid was arranged in such a way that the wall structures plotted in the geomagnetic plan would coincide with the soundings' centres. As a consequence in each trench a building was cleared: Structure 1 in Trench 1-north, Structure 2 in Trench 1-south. In two short excavation campaigns in 2015, both test trenches were expanded what led to the discovery of another structure to the west of Structure 2 (= Structure 3). The latter was characterised by a complex interior layout displaying several upright standing stones. All radiocarbon dates obtained from the deposits in Structures 1-3 in the first two campaigns pointed to the first half of the 9<sup>th</sup> millennium BCE, in other words to the transition from the PPNA to the EPPNB (Lelek Tvetmarken and Bartl 2015).

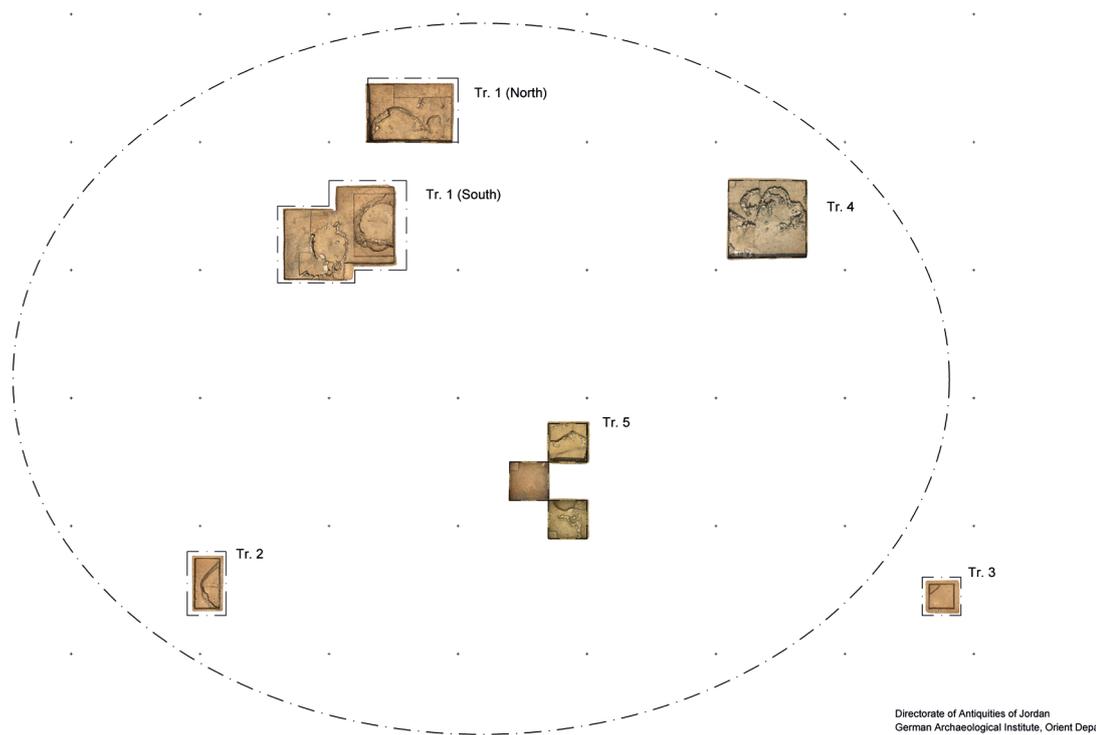


Fig. 4 Mushash 163, site map with excavation areas. (Map: DAI Orient Department, Th. Urban)

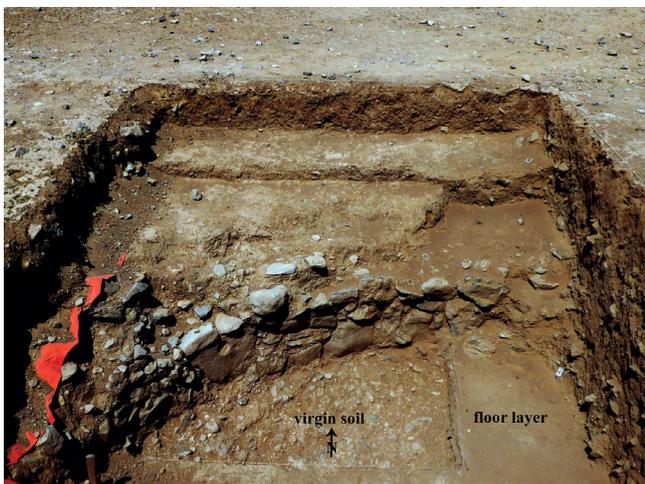


Fig. 5 Mushash 163, Trench 1-south, Structure 2, deep sounding. (Photo: DAI Orient Department, Th. Urban)



Fig. 6 Mushash 163, Trench 1-south, Structure 2, cattle bone in the inner façade of the building. (Photo: DAI Orient Department, Th. Urban)

### Trenches 1-south, 2 and 3

Three short excavation campaigns were carried out in 2016 and 2017 (Bartl 2017; Bartl and Rokitta-Krumnow 2017). The aim was to investigate more architectural features, also at the site's margins. In addition to the finishing fieldwork on Structure 3 in spring 2016, by which the building's southern end (Fig. 2) was cleared, new investigations in the SW and SE of the settlement were initiated. Trench 2 was opened 25 m southwest

of trench 1-south, where another circular building (Structure 4) was found. As with Structures 1 and 2, the upper edge of the outer wall was only reached at about 0.80 m below the actual surface. The preserved parts of the wall concentrated in the southern part of the trench, whereas the northern part of the wall had been lost. Structure 4 was like 1 and 2 a semi-subterranean house, whose outer wall and floor had been lowered into the surrounding terrain (Fig. 3). Trench 3 was opened at the site's outermost edge, 55 m east of Trench 2. However,



Fig. 7 Mushash 163, Trench 4, Structures 5 and 6. (Photo and montage: DAI Orient Department, Th. Urban)

no structures were recorded here, except for a small pit in the north-western corner.

The 2017 spring campaign focused on re-investigating Structure 2 excavated in Trench 1-south in 2014-2016, as well as on work in the new Soundings 4 and 5 at two other locations in the settlement's north-eastern and south-western areas (Fig. 4). Here again, the choice of the excavation areas was based on the geophysical data, which indicated massive building structures at these locations.

The supplementary investigations at Structure 2 in Trench 1-south were aimed at verifying the nature of the virgin soil below the floor level that had been reached in 2016, and hence at shedding light on doubts as to the presence of possible earlier layers below this building.

Through excavating below the building's western floor, an approximately 0.20 m thick sequence of anthropogenic soil and ash deposits could be confirmed (Fig. 5).

The deposits directly superseded the virgin soil which is composed of pebbles and reddish clay mixed with white lime inclusions. A sample extracted from the culture deposits, which also contained charcoal fragments, was recovered for micro-morphologic analysis. A radiocarbon sample of the charcoal deriving from short-lived *Chenopodiaceae* pointed to the interval  $9560 \pm 50$  BP/ $8970 \pm 130$  BCE, *i.e.* the so far earliest date from Mushash 163. The site's foundation may therefore go back to the PPNA (9800-8600 BCE). The discovery of a naviform flint core inside this earliest deposit above the virgin soil evidences the existence of



Fig. 8 Mushash 163, Trench 4, Structures 5 (background) and 6 (foreground). (Photo: DAI Orient Department, Th. Urban)

the therewith connected technology, which in the subsequent development proliferated as a typical marker for the PPNB (8600-7000 BCE). A unique find was made during investigation and cleaning work inside Structure 2. In the lower section of the western interior face, a large cattle bone (N. Benecke, pers. comm.) was recovered that had been placed between several large stones, perhaps as an intentional deposit (Fig. 6).

Trench 4 was dug at the north-eastern edge of the site, 25 m east of Trench 1-south. It revealed a complex building (Structure 5) covering a surface of approximately 5.00 m E-W by 3.50 m N-S, but whose southern walls were not preserved.

The house's room structures group like cloverleaves around a central area measuring 1.20 x 1.20 m. A corridor-like appendix formed by two crescent-shaped stone alignments were recorded at the house's north side. In the east was a semi-circular niche of 1.00 x 0.60 m, and in the south another, partially preserved semi-circle. The house's preservation was better on the west side, where an oval structure (Unit 22/28) of 1.00 x 0.80 m, had survived to a height of *c.* 1.00 m, consisting of ten stone courses (which may have formed the original core of the building).

Noteworthy were several upright stones in an E-W alignment (Fig. 7). The one furthestmost west (Unit 55) had the shape of a pillar and a roughly square section. It had been placed directly on the mud floor where it had survived to a height of approximately 0.80 m. The stones may have served as bases for wooden posts supporting a roof construction. A function as a device for bearing a raised wooden floor that warranted for ventilation below as with storage purposes seems however unlikely, given the reduced dimensions of the walls,

which then would have been completely covered.<sup>1</sup> Indications for ritual purposes suggested by recent findings from sites like 'Ayn Ghazal are still indistinct (Kafafi 2011).

The entire area north of Structure 5 yielded numerous, highly fragmented animal bones contained in partly ashy and powdery soil. This approx. 40 cm thick waste layer extended over a wide area immediately next to the building.

The investigations of the architecture in Trench 4 were continued and completed for the time being in autumn 2017. The so far L-shaped trench was extended to a square of 6 x 6 m, and the area in structure 5 was fully excavated down to virgin soil. As in Structure 2, the latter consisted of reddish clay with white lime inclusions. The areas of the main structure are less well preserved than the western area with Unit 22/28. The walls here were considerably taller and may therefore represent later additions or extensions.

In the western area of Trench 4 various stone structures and agglomerations were cleared, of which Structure 6 was particularly remarkable. It was excavated immediately southwest of Structure 5 and its northern wall (Unit 32) displays the thus far best preservation of all cleared structures. The existing wall remains suggest a rectangular building, of which, however, the greater part still is in the unexcavated settlement area further west. The north wall of the house was preserved to a height of 1.20 m in twelve stone courses. The eastern wall (Unit 87) was only partially preserved, whereas the one in the south (Unit 78) was traced over a very short distance only. It continued into the west section in an area displaying substantial combustion traces that persisted south-west of the wall. However, most



Fig. 9 Mushash 163, Trench 4, Burial/Unit 82 with stone cover. (Photo: DAI Orient Department, Th. Urban)



Fig. 10 Mushash 163, Trench 4, pit of Burial/Unit 82. (Photo: DAI Orient Department, Th. Urban)

of this burnt area to the west of Trench 4 awaits excavation yet. In the northeast a short stone wall (Unit 77) was recorded next to the house's north wall, although without a bond at its corner. The floor of the associated room was not reached, at least in the area of Unit 32. The north-eastern room corner displayed a circular stone installation. Immediately east of it was a large pestle of 50 cm length (Fig. 8).

A radiocarbon sample from the northeast corner of Structure 5 points to a date of around  $9170 \pm 80$  BP/  $8393 \pm 69$  BCE, thus the end of the EPPNB (8600-8200 BCE).

#### Trench 4: A Burial of the Roman Period

An unexpected burial of the Roman period was found immediately south-east of Structure 6. The initial suspicion that the burial dated to the Neolithic period was eventually refuted by two radiocarbon probes on the bones. Both analyses were carried out independently in different laboratories and resulted to dates in the 2<sup>nd</sup>/3<sup>rd</sup> centuries AD, thus attributing the burial to a Roman Period intrusion into Neolithic deposits. Similar burials in stone cists with capstones are known from slightly later contexts (3<sup>rd</sup>/4<sup>th</sup> centuries AD), as



Fig. 11 Mushash 163, Trench 4, basalt beakers found near Burial/Unit 82. (photo: DAI Orient Department, K. Bartl)

in the desert region near Ma'an (al-Salameen and Falahat 2009).

The burial was orientated in East-West direction and displayed a cover of five undressed stone slabs in a N-S orientation that sealed an oval burial pit of 0.40 m depth, 1.30 m length, and 0.50 m width. Smaller stones had been wedged in-between the slabs in order to fill the gaps. The large stone at the row's eastern extremity had an E-W orientation and may therefore have slipped out of its original position (Fig. 9). The burial pit had been lowered down into the surrounding soil, but the stone slabs had simply been laid onto the ground.

The individual had been buried in a crouching position, its eyes facing north (Fig. 10). A relatively large limestone bead was recorded near the feet. Two pierced cone snails from the 300 km distant Red Sea (N. Benecke, pers. comm.) were recovered from the fill. The skeleton's state of preservation was poor, its bones being relatively brittle with all body parts present but in a highly fragmented condition (J. Gresky, pers. comm.). The skeleton was covered with a 5-10 cm thick layer of soil that apparently had been deliberately applied onto it. An 'Amuq type point was recovered from its top surface. There was a gap of about 3 cm between this layer and the slab cover.

Some objects recorded to the west of the grave's capstone cover (Fig. 11) are of special interest. They consist of a pestle and two small, cup-like vessels made from basalt. They were recovered immediately adjacent to the westernmost capstone, near the location of the skull. The objects were found at an equal level with the surface next to the grave pit. The area immediately west of the objects consisted of black ashes, which according to the western trench section seemed to continue into the unexcavated deposits further west (see above).

The mentioned pestle was made of a coarse porous basalt and displayed chipped areas at both extremities. Both vessels were almost intact and consisted of a rel-



Fig. 12 Mushash 163, Trench 4, western part of the Burial/Unit 82 and objects beside the grave. (Photo: DAI Orient Department, Th. Urban)

atively light-coloured basalt with fine pores. They are of similar but not identical shape and size, and each has a short stem (Fig. 12). They had probably been used for drinking or pouring purposes. There were no visible traces of what they may have contained. Both artefact groups are known from other areas of Mushash 163. Basalt cups are, however, known almost exclusively from Epi-Palaeolithic contexts, as for from Wadi Hammeh 27, where they were classified as mortars according to the find contexts (Edwards 2013: 215, Fig. 5.26).

This burial, which is about 70 cm below the modern surface, raises several questions for instance pertaining to the visibility of the Neolithic ruins in Roman times, but also to the identity of the buried individual. The latter may have some connection with the neighbouring Early Islamic site of Qasr Mushash. Since the foundation of the fortification there was dated by its pottery to the Roman Period, probably the 3<sup>rd</sup> but possibly even the 2<sup>nd</sup> century AD, there may be a link between both (Bartl *et al.* 2014).

## Trench 5

Another excavation area, no. 5, is located about 15 meters southeast of Trench 1 and 18 meters southwest of Trench 4. Here, the geophysical data revealed a major anomaly, indicating a large circular structure. However, the excavations only displayed a so-to-speak 'negative impression' in the form of a large, oval to round depression filled with ashes and lowered into the virgin soil (Structure 8). It seems therefore likely that a former lining wall had been dismantled and its stones used for other purposes. This removed construction layer was superseded by a layer with multiple curvilinear walls, which had been erected onto the ground and were not embedded into natural soil (Structure 7). Just like House 5 in Trench 4, this structure's layout was characterised by relatively small room units. A



Fig. 13 Mushash 163, Trench 5, part of Structure 7, skull-like limestone and limestone pestle in the interior of the semicircular structure. (Photo: DAI Orient Department, K. Bartl)

semi-circular feature containing an oval stone with shallow depressions at the surface was an unusual discovery (Fig. 13). The stone's anthropoid shape may have had a symbolic significance.

The now available twenty radiocarbon dates from all soundings at Mushash 163 point to a settlement period between 8900/8800 and 8200 BCE. They thus prove a period, which has so far been detected

relatively rarely in the southern Levant, but has been increasingly documented in recent times, as *e.g.* at Motza (Khalaily *et al.* 2007), Harrat Juhayrah 202 (Fujii *in press*), and Qarassa (Ibáñez *et al.* 2010). In other words, there is now a greater database for the controversial discussion about the initial stages of the PPNB in the southern Levant (Finlayson *et al.* 2014; Edwards 2016).



Fig. 14 Mushash 163, grinding plate of basalt (photo: DAI Orient Department, K. Bartl)

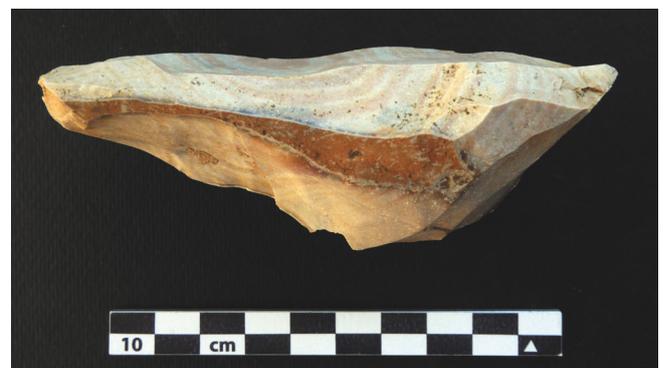


Fig. 15 Mushash 163, Trench 1-south, Structure 2, naviform core from the deep sounding, situated immediately above virgin soil. (Photo: DAI Orient Department, K. Bartl)

## Finds

The finds mainly comprise chipped stones but also grinding equipment, including grinding plates (Fig. 14) as well as grinding stones from basalt and limestone pestles. Surprisingly, the chipped stone industry counts a large number of naviform cores in all stages of processing, which may indicate that manufacture had been in excess of local demands (D. Rokitta-Krumnow, pers. comm.) (Fig. 15). The projectile points include both early types such as Khiam, Helwan, Aswad points as well as late forms like Jericho, Amuq, and Byblos points (Rokitta-Krumnow in press). Among the surface finds were two retouched flint daggers that, like the mentioned later points, hint to LPPNB as well as PPNC occupation phases of the 8<sup>th</sup>/7<sup>th</sup> mill. BCE (Rokitta-Krumnow 2017). Further noteworthy is the gaping absence of bone tools, whilst the mentioned basalt cups are rare artefacts witnessing to an advanced know-how in stone processing techniques.

## Subsistence Strategies

The investigations at Mushash 163 also included floatation of soil samples from selected find contexts. Despite the rather poor conservation of the botanical samples, different species could be detected, including *Fabaceae*, *Pistacia*, *Tamarix*, *Hordeum sp.* There were no indications concerning cultivated varieties (R. Neef, pers. comm.).

The animal bones stem almost exclusively from wild fauna. The most common species are gazelle, wild ass, camel, deer, and cattle, and also smaller animals like hare and hedgehog (N. Benecke, pers. comm.). The only domesticated species is the dog.

## Summary

Mushash 163 is among the relatively few sites in the southern Levant that witness the transition from the PPNA to the PPNB. The excavations at this multi-phased site have traced the presence of both round and oval structures of various types, as well as at least one rectangular building from the later occupation phase in the second half of the EPPNB.

The results from Mushash 163 so far raise questions relating to the type of this settlement. The site's reduced size suggests a relatively small community, and the comparatively elaborate architecture may be an indication for a long-term or even permanent occupation, whose durable subsistence was made possible by the resources of the local habitat.

The duration of the settlement's occupation is unknown. Thus far, the excavated architecture has fallen short of matching the youngest lithic evidence from the

site's surface (G. O. Rollefson, pers. comm.). Therefore, the question arises whether after the main settlement phase in the 9<sup>th</sup> millennium BCE the site remained permanently occupied in the 8<sup>th</sup> and 7<sup>th</sup> millennia BCE with a permanent architecture at possibly other, yet unexcavated locations at the site, or whether it was occupied merely on a temporary basis during this period, with structures made from perishable materials. It is also conceivable that during its recent phases the site was only used as a meeting place for settling hunting matters, without there being any settlement at all.

The likelihood that the location of Mushash 163 may have had a special attraction, possibly within a hunting context, is sustained by its long-lasting occupation as verified by the tool typology covering more than 2000 years.

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Special thanks go to the cooperation partner of the Qasr Mushash Survey Project, from which the 'Mushash 163 project' emerged, the former Director General of the DoA, Dr. Ghazi Bisheh. He supported and facilitated work in every respect at this fascinating archaeological site from the beginning. I am also much obliged to the German Research Foundation (DFG) for its financial support for the implementation of the excavations.

## Karin Bartl

German Archaeological Institute, Orient Department  
karin.bartl@dainst.de

## Endnote

<sup>1</sup> A corresponding reconstruction was proposed for the PPNA site at Dhra', in which the upright stones inside a round building served as support for the floor beams, hence suggesting the building's use as storage facility (Kujit and Finlayson 2009: Figs. 2-5; Finlayson *et al.* 2011: Fig. 5).

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# An Early Neolithic Flint-Knapping Spot from Ali Kosh, Southwestern Iran

Hojjat Darabi, Saman Mostafapour, Hafez Ghaderi, and Saeid Bahramiyan

## Introduction

The Neolithic mound of Ali Kosh is located in the Deh Luran Plain, southwestern Iran (*c.* 150 m a.s.l.; Fig. 1). It rises *c.* 4 m above the surrounding fields, containing *c.* 7 m of archaeological deposits in thickness. Ali Kosh was first investigated by a French mission in 1903 (Gautier and Lampre 1905: 81-83). However, thanks to later excavations directed by F. Hole in the early 1960s (Hole *et al.* 1969), it has become one of the most informative sites yielding evidence of early agricultural societies in the eastern wing of the Fertile Crescent. Although Hole and his colleagues have published their excavations at a high standard, the site's chronology deserves a revision. More recently acquired radiocarbon dates have also

increased ambiguities in this regard (*cf.* Zeder and Hesse 2000). Therefore, a stratigraphic trench was excavated under direction of H. Darabi in 2017 (Darabi *et al.* 2017). In order to gain new samples from save contexts, a small area (2.5 x 2.5 m) was first opened on the southern edge of the trench remaining from the former excavations (not filled back). Then, this new area was reduced to 2 x 2 m down to virgin soil (Fig. 2). This could provide us with a sequence of layers as close to Hole's stratigraphy as possible. Generally speaking, the new stratigraphy indicates the remains of 18 occupational phases: Of interest was a "knapping spot" of a thickness between 3-8 cm, resting above virgin soil. This paper discusses a preliminary analysis of the chipped flints recovered from this lowermost layer of the site.

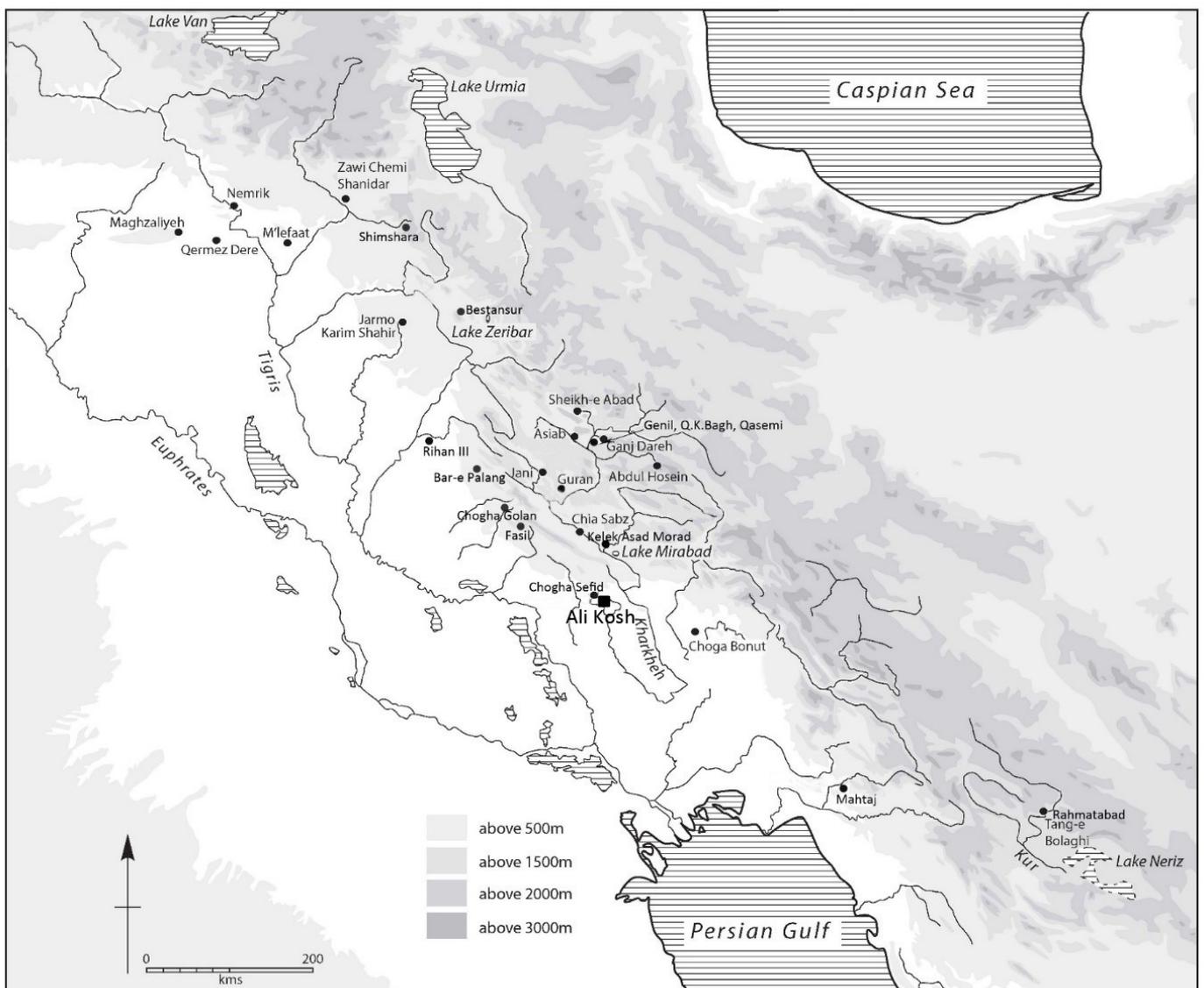


Fig. 1 Map showing the location of Ali Kosh and other prominent Neolithic sites. (Modified by H. Darabi from Matthews *et al.* 2013: 2, Fig.1.1)

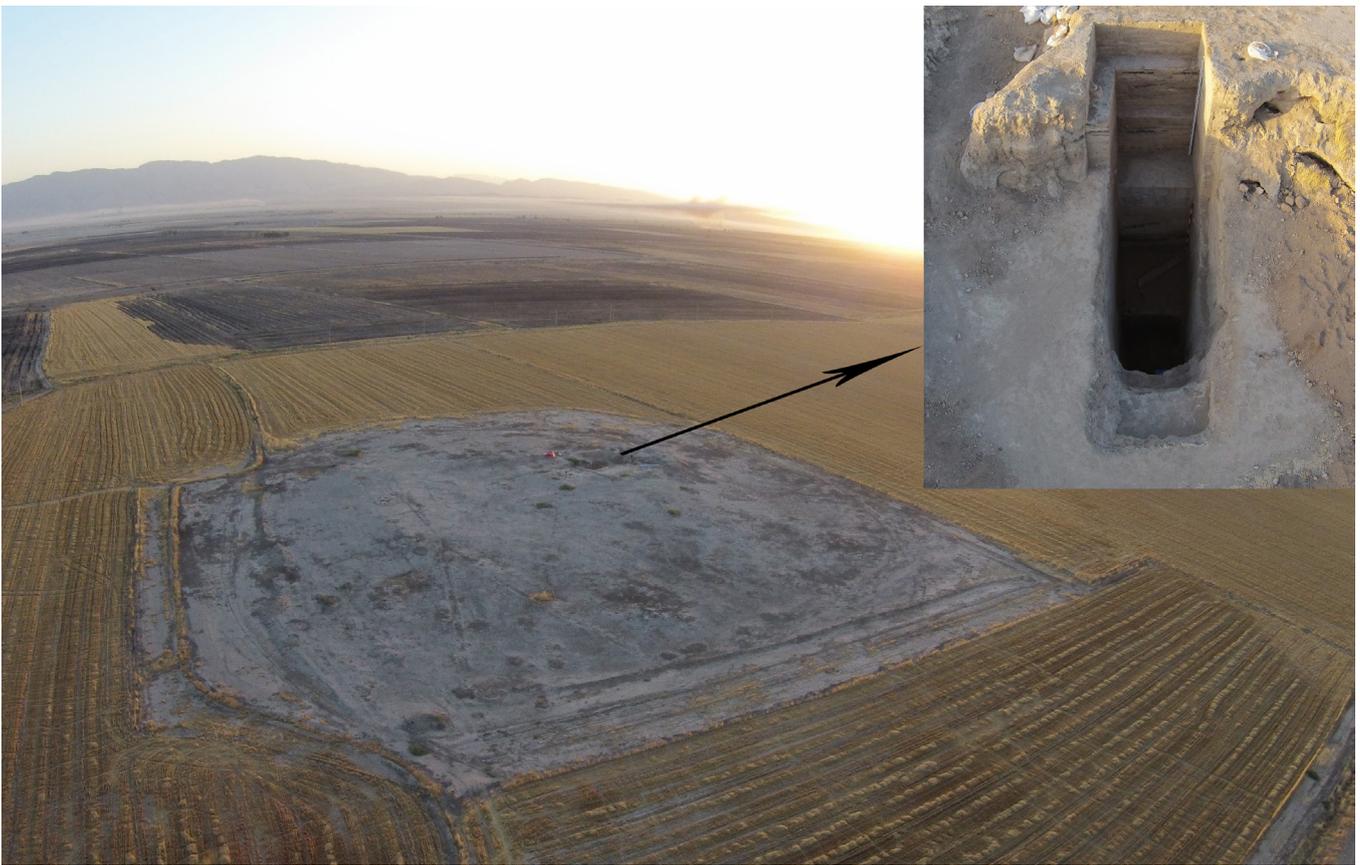


Fig. 2 Aerial view of Ali Kosh and the new stratigraphic trench in 2017. (Photo: L. Ahmadzadeh)



Fig. 3 Concentration of chipped flints revealed in the excavation (A) and the collected assemblage (B). (Photos: H. Darabi)

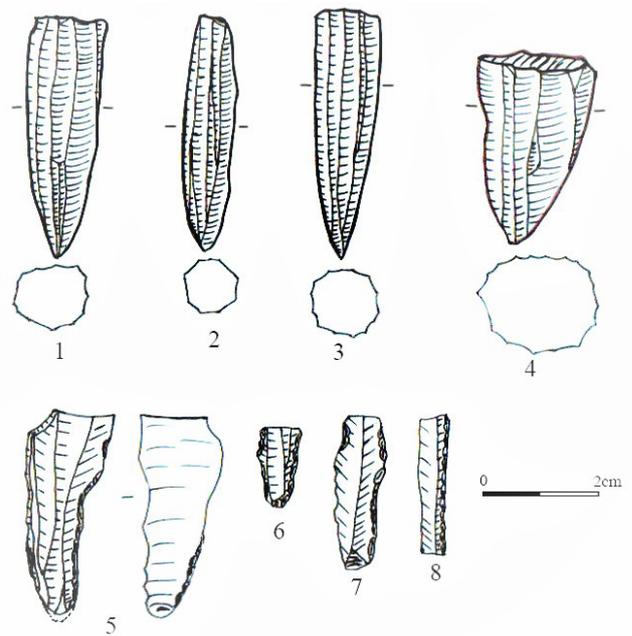


Fig. 4 Samples of the cores and tools (1-4: bullet-shaped cores; 5-6: drill; 7-8: backed bladelet). (Drawing: H. Darabi)

### The Knapping Spot

Former excavations in the early 1960s offered a notable amount of chipped stone that was previously well published (cf. Hole *et al.* 1969: 74-105) whereas our new stratigraphy has yielded a much smaller assemblage, c. 5,000 pieces in total. In Neolithic sites, stone tools are usually found in residential contexts where they were used and finally wasted. This explains the importance of any *in situ* knapping floors, an interesting issue seen in the lowermost layer of Ali Kosh. Due to the suitable location of the new stratigraphic trench we could recover a new part of an *in situ* flint concentration (Fig. 3) that had also been reported previously from the site (cf. Hole *et al.* 1969: 34). Although Hole and his colleagues have correctly interpreted this dump as a spot where a knapper had worked (*ibid.*: 74) they did not give further information. As mentioned above, a part of the knapping spot was reached in 2017. As the result, a total of 2,036 pieces of flint was found, including tools, cores, debitage and debris (Figs. 4-5). Of these, a small amount (10%) are tools. Most of the tools were made on bladelets (90%). Such biased blank production is also shown by the scars of the bullet-shaped cores, varying between 1.5-8 mm in width. Utilized bladelets are statistically much higher than other types (Fig. 6). Apart from a few reddish-brown samples, a medium-grained grey flint was thoroughly used indicating a homogenous raw material. No obsidian pieces were found.<sup>1</sup> Flint nodules and evidently cortical pebbles were used for knapping. Based on our analysis around 50% of the assemblage is more or less cortical. In this regard, highly cortical flakes (85%) and blades (59%) were rarely used as tool, while cortical bladelets (12%) are much less in quantity.

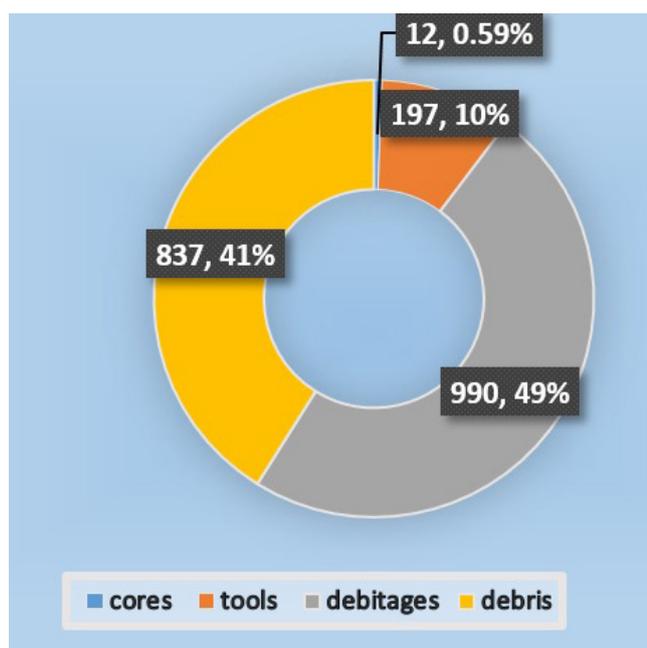


Fig. 5 Preliminary classification of the assemblage by piece numbers and percentages. (Graph: H. Darabi)

### Concluding Remarks

As seen from our analysis, bladelet blanks were preferred for tools; many flakes are the result of core trimming. In general, as shown by previous investigations (e.g. see Kozłowski 1999), the assemblage relates techno-typologically to M'lefatian industries. It seems that the initial occupants of Ali Kosh might have not yet been familiar with obsidian and even fine-grained flint (mid-8<sup>th</sup> millennium BCE). Instead, they exploited local cortical nodules to produce their desired tools on-site. In terms of spatial analysis, this flint-knapping spot perhaps shows a specific location devoted to tool production. The first settlers of the Deh Luran Plain, however, founded their socio-economic and technological structures on earlier foundations seen in the high-land central Zagros.

#### Hojjat Darabi

Razi University, Kermanshah  
hojjatdarabi@gmail.com

#### Saman Mostafapour

Razi University, Kermanshah

#### Hafez Ghaderi

Razi University, Kermanshah

#### Saeid Bahramiyan

University of Tehran

### Endnote

<sup>1</sup> Obsidian was previously reported from Buz Mordeh phase (see Hole *et al.* 1969; Renfrew 1969). However, no sample was recovered from the lowermost deposits, c. 80 cm in thickness, in 2017. Therefore, it is unclear whether obsidian was introduced into the site since the earliest time of occupation or became available through time.

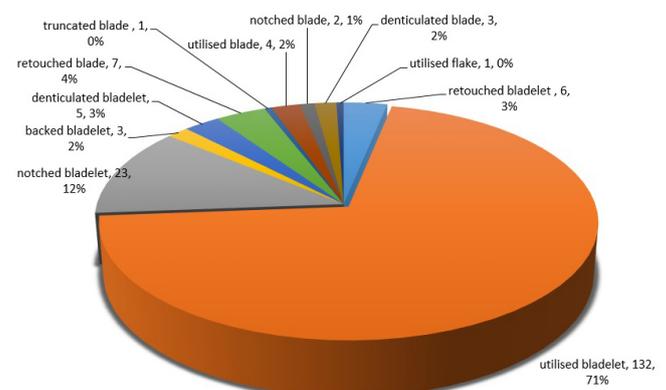


Fig. 6 Proportion of various tool types. (Graph: H. Darabi)

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**Harald Hauptmann**  
**April 19<sup>th</sup>, 1936 – August 2<sup>nd</sup>, 2018**  
**Eminent Scholar and Good Friend**  
**Reminiscences of a Life Devoted to Archaeology**

Mehmet Özdoğan

Prof. Dr. Harald Hauptmann, one of the last luminary representatives of the generation of great archaeologists who prized hardcore knowledge, has passed away on August 2, 2018 at the age of 82. Prof. Hauptmann, or as best addressed in Turkey “Hauptmann Bey”, had been conducting fieldwork in various parts of Turkey since 1966, having previously attained experience in Thessaly excavating under Vladimir Milojević. He began his career in Turkey in 1966 as a research assistant at the German Archaeological Institute in Istanbul, assigned to be a part of the Boğazköy team.

During those years, the capital city of the Hittites, Boğazköy-Ḫattuša, was the only early site in Turkey under excavation by the German Archaeological Institute; Boğazköy is a very complex site covering vast areas: Hauptmann was summoned to excavate the location known as Yarikkaya. As it was with Milojević at Thessaly, Kurt Bittel, then the director of Boğazköy excavations, considered 3<sup>rd</sup> Millennium as the earliest possible date of habitation in areas west of Syro-Mesopotamia, evidently also of the Anatolia Plateau. The material recovered at Yarikkaya was evident to be different from what had yet been known from other parts of Boğazköy, with apparent similarities to Chalcolithic assemblages elsewhere. During that time, Bittel was still refusing to accept the presence not only of Neolithic, but also of Chalcolithic settlements on the Anatolian Plateau; thus the Yarikkaya assemblage, in accordance with Bittel’s chronological system, was taken and published as of Early Bronze Age - of course now we know it to be of a much earlier date.

Implementation of a large-scale international undertaking to carry rescue excavations within the reservoir area of the Keban Dam on the Euphrates, provided the means for Hauptmann to work on his own name. The project, came to be known as the Keban Project, was found in 1966 after the initiative taken by Halet Çambel in collaboration with Kemal Kurdaş – former minister of finance and at that time the running rector of the Middle East Technical University (METU). Even though the primary objective of the project was to organize salvage excavations within

the reservoir of the Keban Dam, which was already under construction, through time the project developed as a multidisciplinary driving force of Turkish archaeology. Preliminary survey of the dam reservoir area in 1967 had revealed the presence of over 50 sites in this hitherto unexplored region, some being substantial settlement mounds. During these years, the ranges of East Taurus Mountains were considered to be the northernmost possible limit of early civilizations that had emerged and developed in the lowlands of Syro-Mesopotamia extending down to Levant. Keban Dam is on the north side of the East Taurus range, the reservoir lake extend in the intermountain plains between the Eastern Taurus and Munzur Mountains further to the north; accordingly, nothing worth excavating was expected to be present in this area, thus the international call to join the Project did not find the anticipated response, “big names” restrained, only four foreign and four Turkish teams applied, three of them with no previous experience directing an excavation on their name. The managing committee of the Project, in spite



Fig. 1 Hauptmann Bey during lunch break at Toulouse Neolithic of the Mediterranean Region Congress. (Photo: Mehmet Özdoğan)

of their previous anticipations, had to yield important mound-sites to inexperienced young archaeologists. Hauptmann got Norşuntepe, the second biggest site in the region, regardless of the protests of some senior academicians who had not accepted the call. The fallacy of the trivialising assumptions on the cultural history of the region became evident even by the first seasons' work: The picture of cultural developments on the northern flanks of the East Taurus range turned out to be as complex as those in the south, with

Hauptmann Bey's site, Norşuntepe, playing a key role.

Along with the significance of what is being recovered, the remarkable exposures of Norşuntepe presented a previously unattested picture of what a masterly excavation it is or should be. From our site, Tepecik which was only at 5 km distance from Norşuntepe, we watched with amazement the rapid but orderly removal of soil and the changing view of the mound. Even the grid-system of the trenches was a novelty at that time. Trenches of Norşuntepe were going deep and deeper while profiles remained perfectly upright. I have never experienced another example of a large mound's excavation going at such a pace, with over 70 workmen, remaining always orderly clean and receiving a high-quality documentation. Hauptmann Bey was a virtuoso excavator. His work at Norşuntepe revealed an unbroken sequence running from Late Chalcolithic to Early Iron Age, but the most unpredicted was the EBA III palace with extensive storage facilities; at present it still is the most significant EBA palace building excavated in Turkey. Likewise, the Chalcolithic levels of Norşuntepe, together with those of Tepecik, Tülintepe and Korucutepe revealed an autochthonous system of administration that developed on the northern side of the Taurus range, though with strong connections with the south. During these years, there were no means to contextualize the Chalcolithic layers of Norşuntepe, or of the Uruk complex recovered at Tepecik; modalities of this administrative system became fully apparent only some years later after the excavations at Arslantepe.

Regretfully, excavations at Norşuntepe had to stop without reaching virgin soil, though the site remained as an island, and still is. The importance of Norşuntepe is now, almost half a century later, much more evident than before, particularly the critical role it played to exemplifying changing spheres of interaction of East Anatolian highlands, through time swaying



Fig. 2 Norşuntepe aerial view, 1973. (Photo: Norşuntepe Project Archive)

from Central Anatolia to Caucasus, to Western Iran, to Syro-Mesopotamia and even to the littoral Mediterranean; apparently by the later part of the Early Bronze Age, Norşuntepe must have been the central site of the region monitoring long-distance relations.

After the completion of the Keban Dam, the project, still under the umbrella of the Middle East Technical University, was extended to cover the Karakaya and Atatürk Dam reservoirs, both on the Euphrates. This time there was a larger participation, but the number of sites to be destroyed was much more, exceeding 600; there the mound sites were incomparably bigger than of Keban area. Hauptmann decided to work at Lidar Höyük, on the left bank of the Euphrates, the second biggest mound after Samsat. As to be expected from any mega-site in that region, Lidar revealed cultural levels of almost every period, all with monumental architectural remains; most significant were the Bronze Age cemetery and the pottery kilns.

The Neolithic site of Nevalı Çori, the site that I had missed in my survey of the dam reservoir area, being in close vicinity of Lidar had initially been noted by Hans Georg Gebel in 1980 during his survey for Hauptmann's Lidar project; in spite of his ongoing macro-scale work at Lidar, Nevalı Çori became another component of Hauptmann Bey's field activity from 1983 onwards, exemplifying his endless energy. Excavating in large trenches, in the style of Hauptmann excavations, Nevalı Çori, along with a medium-size Halaf settlement, manifested the intricacy of a village of the Pre-Pottery Neolithic period. The ground-breaking sculptured depictions of Nevalı Çori had revolutionizing consequences, necessitating to redefine even what is implied by the term "Neolithic". Prior to Nevalı Çori, the region of Southeastern Anatolia, and as well the neighbouring regions of northern Syria were not considered within the region of primary neolithization; it was generally



Fig. 3 Norşuntepe 1968, Hauptmann Bey and Halet Çambel. (Photo: Istanbul University Tepecik Archive)

assumed that the Neolithic way of living firstly appeared further in the south and expanded northwards only by the late stages of PPNA through the “Levantine Corridor”; thus, SE Anatolia was denominated as the area of secondary neolithization. Until Hauptmann Bey’s work at Nevalı Çori, Çayönü had been the only excavated PPN site in Southeastern Turkey. In this respect, it is of interest to note that even by the first excavation campaign of 1964, Çayönü had drawn the picture of a highly sophisticated complex Neolithic settlement covering the entire time span of PPN. Primary modalities of Southeast Anatolian Pre-Pottery culture, such as the antiquity of Neolithic, sedentarism preceding food production, the presence of cult build-

ings with standing stones and indications of stratified social structure during the early stages of neolithization had all been manifested at Çayönü. However, due to the prevailing biases, the evidence of Çayönü, lacking an explicit artistic inventory like that of Nevalı Çori, was mostly overlooked or underestimated. In this respect Nevalı Çori succeeded in making the ground-breaking impact, almost forcing to redefine every aspect related to the formation processes of primary neolithization. Even the location of the site, being on a river terrace and hill not at all located on arable land, challenged the interception of environmental preference

of early Neolithic communities; a few kilometres away, there were the fertile alluvial plains, if they would have been looking for farmlands. Sculptured depictions and sophisticated status objects not only testified the high level of craftsmanship, but more significantly justified the presence of an elite decision-making group selecting craftsmen with artistic talents; this could only have taken place in a stratified society.

What is of interest is an overview of the similarities and differences between Nevalı Çori and Çayönü being highly informative on the modalities of interaction that took place among different sites of the core area. For example, evolutionary stages of domestic architecture, from “grill plan” to “channelled” to “cobble paved” structures were so similar between the two sites that one even wondered if there were mobile constructors moving between Nevalı Çori and Çayönü; while terrazzo flooring is present at both sites, Çayönü lacked the sculptured depictions. Likewise, there were also several striking similarities and differences among the artefactual assemblages of both sites, most apparent in the use of obsidian, which is practically absent at Nevalı Çori while comprising over 50% of Çayönü’s lithic assemblage. The presence or absence of certain types strongly suggest that a distribution pattern was monitored by mobile craftsman, each



Fig. 4 Norşuntepe palace with the northernmost heights of Eastern Taurus, 1972. (Photo: Norşuntepe Project Archive)

having a distinct trajectory of its own. Excavations at Nevalı Çori lasted with some interruptions from 1983 to 1991 when it inundated earlier than planned by the sudden rise of the Atatürk Dam reservoir.

While working at Nevalı Çori, Hauptmann Bey was also engaged in excavations at the Bronze Age cemetery of Titriş Höyük, a site previously worked on by G. Al-gaze. In 1995 Hauptmann began working at two other Pre-Pottery Neolithic sites, Gürcütepe and Göbekli Tepe, the latter through time turned out to be a ground-breaking site of the Neolithic era overriding Nevalı Çori. Due to the overwhelming workload

Göbekli Tepe necessitated, work at Gürcütepe discontinued. Following his retirement, he commended Göbekli Tepe to his field director Klaus Schmidt, though keeping his interest in the region and in Turkey. Before his retirement, he had initiated an extensive field project on the easternmost part of Pakistan, documenting endangered rock reliefs of the Hindukush region. He, with full energy kept his pace in the field in spite of growing political problems in what can be justified as one of the most difficult and dangerous regions of our world. Like his work in Turkey, his recent achievements at Pakistan revealed the potentials Hauptmann Bey had in establishing genuine relations with local communities, regardless of who they are; there are not many who can achieve this as securely as Hauptmann Bey did.



Fig. 5 Norşuntepe section through Early Bronze Age layers. (Photo: Norşuntepe Project Archive)

Hauptmann believed in hard core information which could only be attained through extensive excavation, exposing areas large enough to yield dependable information. His assessments were based on facts, not on contemplations, avoiding to fall into the trap of hypothetical biases. He had a broad-spectrum interest in entire sequence of cultural history, from prehistory to late Medieval, following current research, scrutinizing details in depth though still succeeding to be compendious. He was a connoisseur of antiquarian books, particularly of maps and cultural relicts; in any discussion, the historic depth of his knowledge was immediately apparent. There are not many left in his calibre; we shall miss him greatly.



Fig. 6 Norşuntepe 2018: Visible upper Norşuntepe as an island in the Keban Reservoir lake. (Photo: Mehmet Özdoğan )

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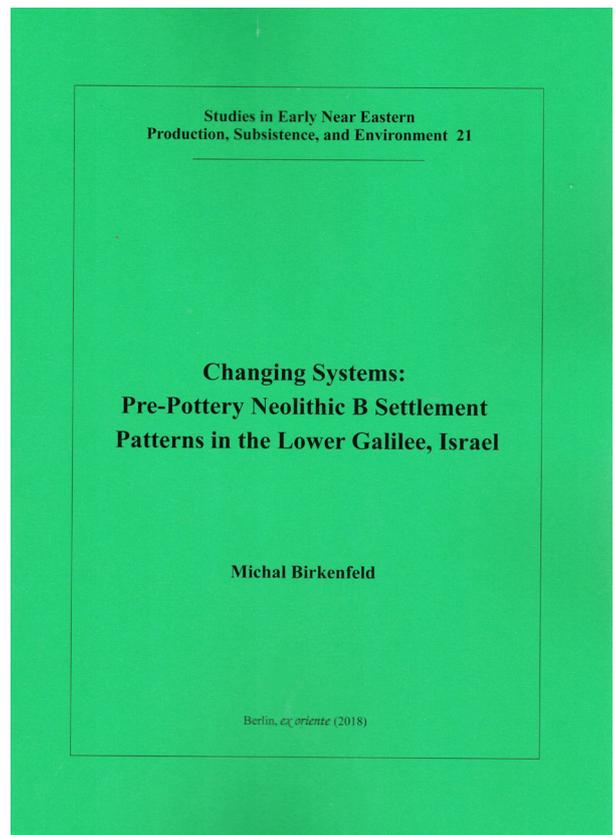
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Natufian Art Items. A Contextual Analysis**

by Janine Major

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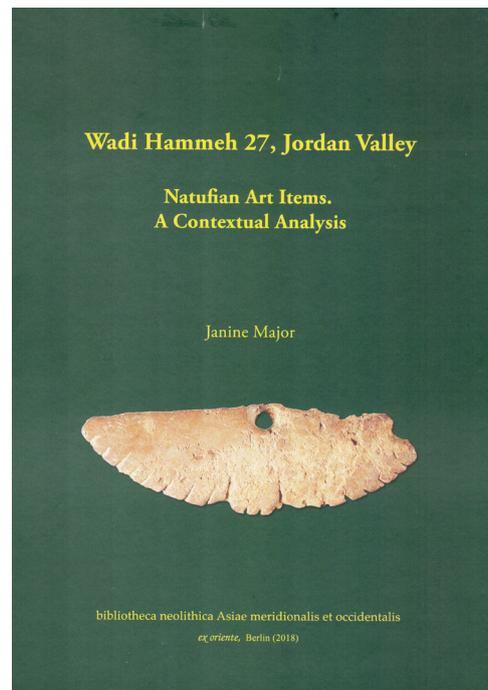
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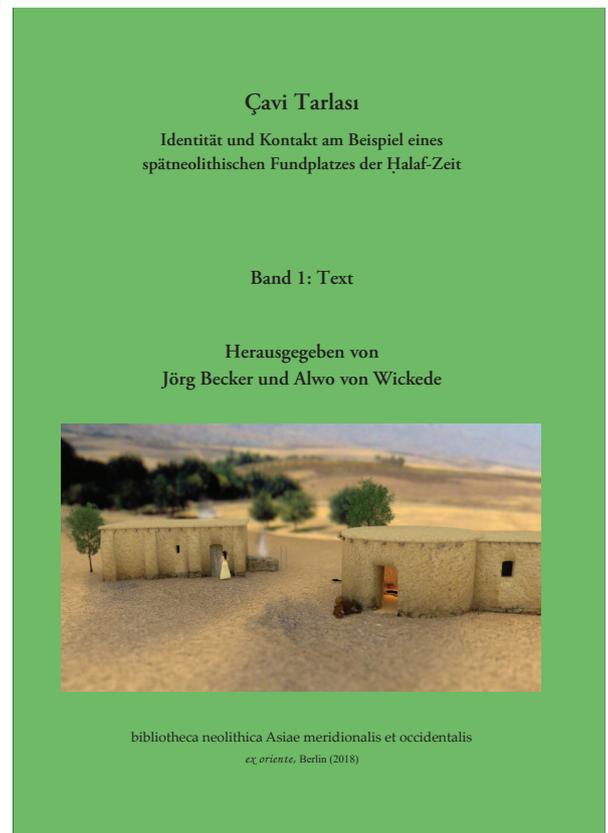
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