

New excavations at Tapeh Asiab, Kermanshah, Central Zagros Mountains

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Abstract: Despite the fact that Tapeh Asiab has been described as one of the key sites for studying the emergence of the Neolithic in the central Zagros, previous work at the site has been poorly published. At the same time, fieldwork methods have made a quantum leap since the excavations of Bruce Howe in 1960. We describe new excavations at Tapeh Asiab, which aimed to relocate and document the first excavations at the site, and to recover stratified finds and samples to enable us to better place the site in its regional and chronological context. In particular, our research focused on elucidating the chronology, economy and general character of the Neolithic settlement at Tapeh Asiab. Although the analysis of archaeological finds and samples are mostly ongoing, the preliminary results of our excavations in 2016 suggest that Tapeh Asiab was initially established as a communal or ritual place during the Transitional Neolithic (ca. 9600-8000 BCE) and continued to be occupied during the early Neolithic.

Keywords: Tapeh Asiab, Neolithization, Central Zagros Mountains, Transitional Neolithic

چکیده: علیرغم این که تپه آسیاب به عنوان یکی از محوطه‌های کلیدی در پیوند با پیدایش نوسنگی در زاگرس مرکزی یاد شده گزارش کاوش‌های پیشین آن به‌طور ناقص منتشر شده است. از آن زمان که بروس هو در سال ۱۹۶۰ م. در این محوطه به کاوش پرداخته است؛ پیشرفت‌های شگرفی در روش‌های میدانی رخ داده است. این مقاله به شرح دستاوردهای کاوش‌های جدید که هدف از انجام آن بازیابی یافته‌ها و نمونه‌ها در لایه‌ها و مستندسازی کاوش‌های پیشین است، می‌پردازد تا از این رهگذر بتوانیم به‌نحو بهتری جایگاه منطقه‌ای و گاه‌نگاری این محوطه را مشخص کنیم. این پژوهش به‌ویژه به توضیح گاه‌نگاری، اقتصاد معیشتی و ماهیت استقرار در تپه آسیاب پرداخته است. هرچند تجزیه و تحلیل و مطالعه نهایی اغلب یافته‌ها هنوز به پایان نرسیده است؛ نتایج اولیه کاوش‌های سال ۲۰۱۶ م. نشان می‌دهد که تپه آسیاب نخست به عنوان یک مکان عمومی یا آیینی در دوره نوسنگی انتقالی (۸۰۰۰ تا ۹۶۰۰ پ.م.) پا گرفته و سپس استقرار در آن در دوره نوسنگی قدیم (بی‌سفال) نیز تداوم یافته است.

کلید واژگان: تپه آسیاب، نوسنگی شدن، زاگرس مرکزی، نوسنگی انتقالی

Introduction

In the 1940s-50s R. Braidwood conducted pioneering fieldwork in the Central Zagros Mountains region searching for evidence of the transition from hunting and gathering to agriculture (Braidwood, 1960; 1961; Braidwood et al. 1961; 1983). As part of this project, in 1959 Braidwood started research on the Palaeolithic and Neolithic of Kermanshah. Although the results of the “Iranian Prehistoric Project” (IPP) were not fully published, this work nevertheless laid the foundation for the subsequent investigations carried out by Braidwood’s students and colleagues

in the 1960-70s (Hole et al. 1969; Mortensen, 1974; 2014; Smith, 1976; Smith & Mortensen, 1980; Pullar, 1990). After a long hiatus in archaeological research, recent fieldwork in the Central Zagros started focusing on the emergence of the Neolithic economy and society in this region. Archaeological research at several sites in the last decade, has demonstrated that the emergence of the Neolithic way of life in the Central Zagros occurred differently than elsewhere (Darabi, 2015; Darabi et al. 2011; 2013; Matthews et al. 2013; Riehl et al. 2012; 2013). Despite these new efforts to research the onset of the Neolithic, there are still

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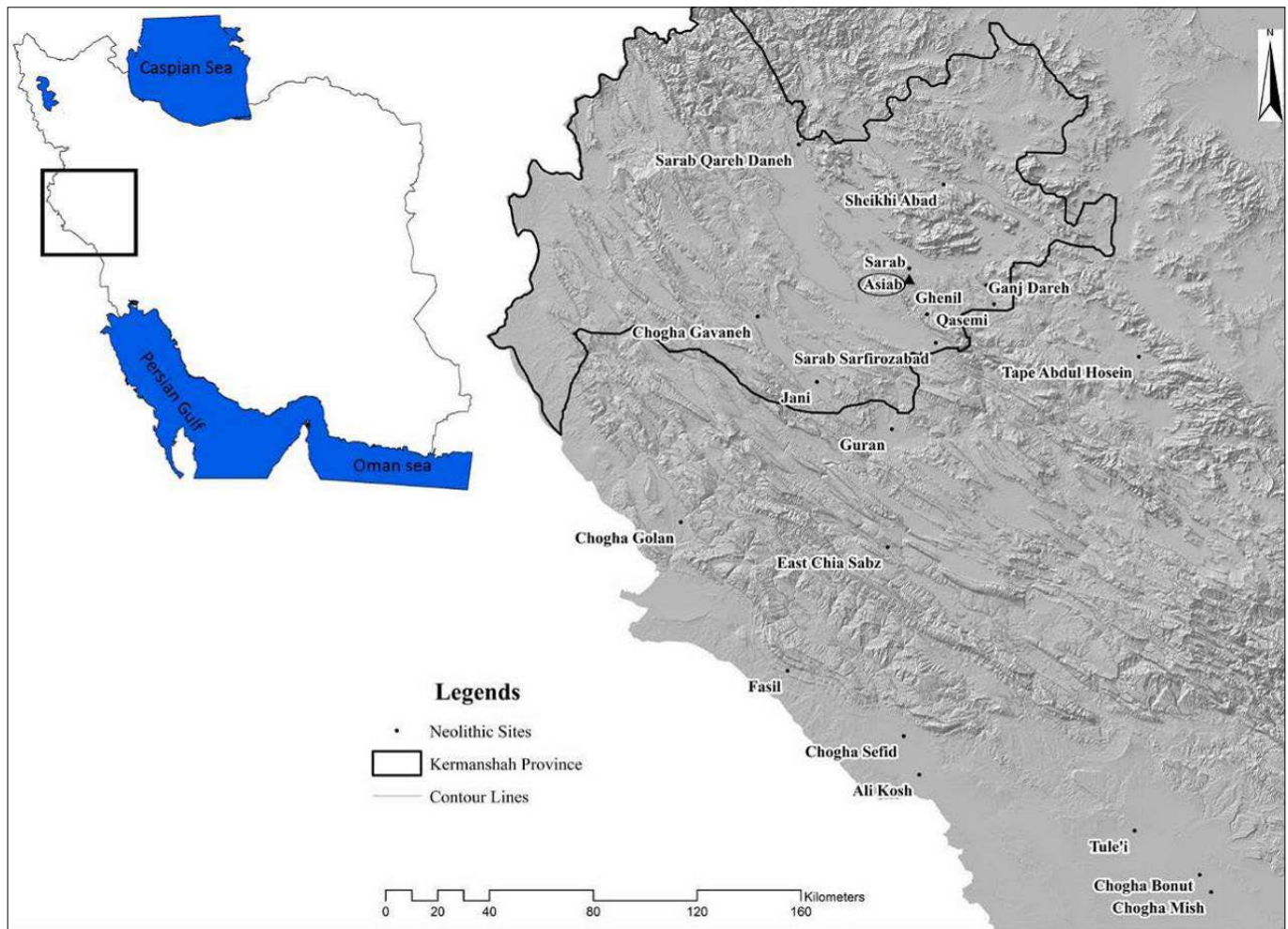


Fig. 1. Map showing the location of Tapeh Asiab encircled among other prominent Neolithic sites in western Iran.

many unresolved questions concerning the late Epipalaeolithic and the earliest Neolithic societies occupied this region.

For answering these questions, a long-term archaeological project entitled “Tracking Cultural and Environmental Change (TCEC): The Epipalaeolithic and Neolithic in the Seimarrh Valley, Central Zagros” was jointly initiated by Razi University and the University of Copenhagen in 2016. The overall objective of the project is to obtain a better understanding of the role of the Central Zagros in the Neolithization process during the late Pleistocene and early Holocene (ca. 13,500–6,000 cal. BCE). Using the latest excavation methods and laboratory analysis, the project aims to reconstruct the late Pleistocene and early Holocene environment and landscape in better detail, tighten the chronological framework and gain a better understanding

of the economic and settlement patterns of Epipalaeolithic and Early Neolithic groups in the Central Zagros. The project focuses on re-examining a number of previously investigated, but poorly documented, sites, as well as survey and excavations at potentially promising newly discovered localities. In this paper, we report on the preliminary results of the first phase of the project at Tapeh Asiab.

Tapeh Asiab: history of research

Tapeh Asiab is situated at an elevation of 1304 meters above sea level on the east bank of the Qara Su River, around 0.5 km south of the village of Bijaneh and 0.7 km from the modern outskirts of Kermanshah (Fig. 1). The site lies on top of a Pleistocene river terrace, which is now ca. 5m above the current floodplain of the Qara Su River (Fig. 2).

Tapeh Asiab was first discovered and excavated



Fig. 2. A general view of Asiab formed on the top of a Pleistocene trace, looking north.

Fig. 3. An aerial view of the Howe's excavation at Asiab in 1960 (photo courtesy: F. Hole).

by B. Howe, under the direction of R. Braidwood during a short, two-week season in early 1960 (Braidwood, 1960; 1961; Braidwood et al. 1961; Howe, 1983). Braidwood's team briefly published the results and only a few photographs from their excavation were released. A more detailed report on the site was presented in Howe's publication on Karim Shahir in Iraqi Kurdistan (Howe, 1983: 115-17). He described Tapeh Asiab as covering an area of 20,000 m². While no plan of the excavation areas or trenches was published, Howe wrote that 130 m² of the site were exposed in a series of smaller and larger trenches (Fig. 3). The two main excavated areas were 6×8 m and 4×10 m, however, only the 6×8 m area was

excavated to virgin soil. Howe reported the depth of archaeological deposit between 2.5–3 m. These are described as a “chaotic jumble” of worked flint and other stone, faunal remains, ash, freshwater clam shells and burnt rocks. Throughout the 2.5–3 m sequence, Howe observed only a single change in colour from grey to tan-grey further down the strata. At the base of the 6×8m trench, one quarter of a circular cut was exposed that had been excavated into the virgin soil by the site's inhabitants. In the interior of this feature several pits and two human burials were found. One of the individuals was buried in a flexed, the other in an extended position. Numerous faunal remains were recovered from within the

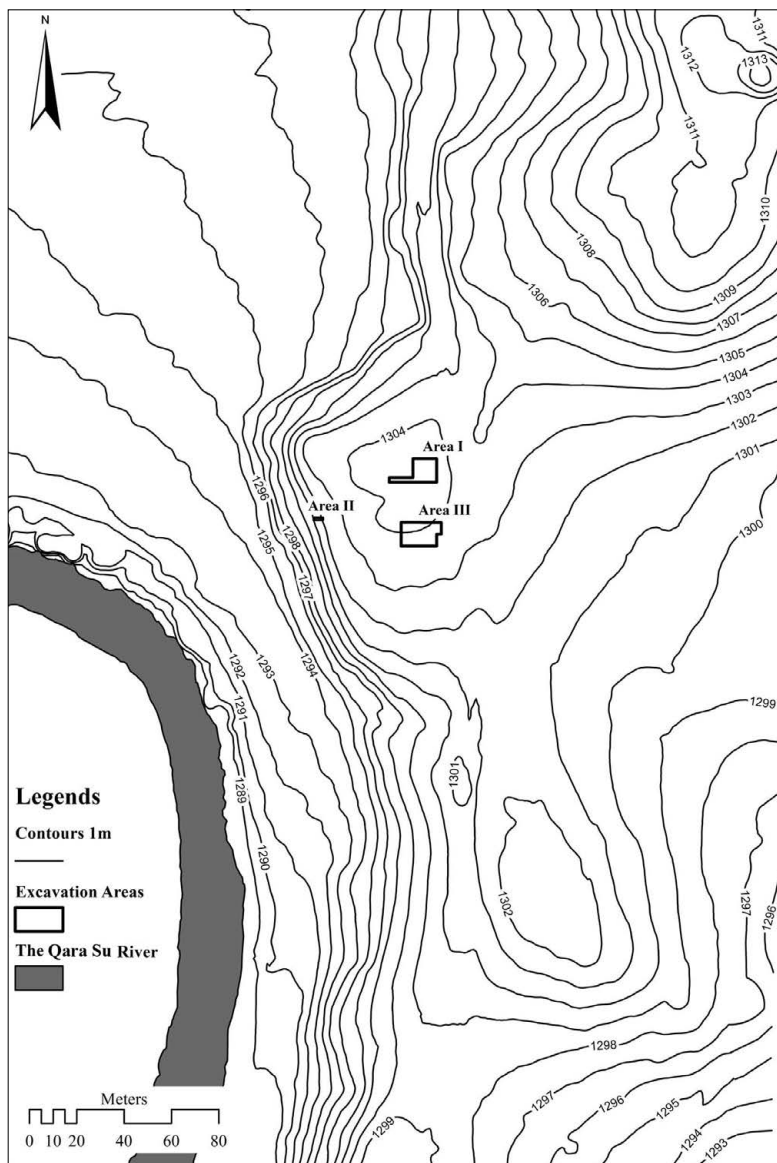


Fig. 4. Topographic map showing the location of excavation areas at the site.

large circular feature with 8-10m diameter. Howe hypothesised that this feature was either a large pit or a semi-subterranean structure. From his brief descriptions, it is fairly clear that the upper part of the sequence yielded a number of discreet features, which Howe described as fire pits, cooking pits and hearths, but it is unclear whether these are of an early Neolithic date or not. Howe also reports the presence of Bronze Age pottery down to nearly virgin soil suggesting considerable disturbance of the upper deposits either through human activity or from bioturbation.

Objectives of the new excavation

Although Tapeh Asiab is a well-known and almost iconic Early Neolithic site, there is a significant lack of secure knowledge about the site. There is no comprehensive publication on it. The stratigraphy of the site, features that were found, material culture, faunal and botanical remains are all poorly documented. However, the site has featured prominently in discussions of the emergence of Neolithic societies in the Central Zagros. The nature of the occupation (short-term versus long-term), function of the circular feature in the basal layers (refuse pit versus building), chronology of the occupation, and the site economy, as well as data on fauna and flora are all incomplete and of uncertain quality. Flotation for botanical remains was not carried out during the original excavations, as the technique was unknown at the time. The previous absolute dates of the site range from 9310 to 6528 cal. BCE, which reflect quite a wide time span (Howe, 1983; Zeder and Hesse, 2000). The dates obtained by Howe used bulk radiocarbon dating; a method nowadays considered to be unreliable. Given the lack of any detailed description we are uncertain about the exact provenience of the dated samples within the site. The exact dating of the site is therefore far from clear.

The aims of the 2016 TCEC project at Tapeh Asiab were, then, to identify the function of the circular feature at the base of the site and to recover more archaeological finds, faunal and botanical remains in order to reconstruct the past environment and landscape, as well as the economy and function of the site. To achieve these objectives, we decided to relocate, re-excavate and record the old main trench and to open a new trench to obtain finds and samples from stratified deposits.

Excavation areas

Three excavation areas were opened across Tapeh Asiab in order to fulfil the aims and objectives (Fig. 4). Significant archaeological traces of *in situ* Neolithic occupation were only found in Area III. The other areas mainly provide evidence of the geological sequence.

The main aim of excavation at Area I was to



Fig. 5. Overview of Area III after removal of topsoil, looking south-west (note the outline of Howe's trench visible to the right).

locate the original trenches excavated by B. Howe and R. J. Braidwood in 1959-60. This area was opened in the northern part of the site. First, the initial test trench measured 2×10 m east to west. Following the removal of the ploughed topsoil across this area, we found no trace of the original excavations. We expanded this area further totaling 140 m², but again found no clear trace of Howe's trench. To check that no sub-surface archaeological remains were present in this area, we sampled a 5×5 m area within this larger trench. Excavation to a depth of 0.2 m in this area suggested that no traces of Neolithic settlement were present here, although some ephemeral pits of unknown date were found. We decided to excavate a 1×1 m geological pit to document the natural stratigraphy of the Tapeh Asiab terrace in one corner of this excavation area.

Area II is located at the edge of Tapeh Asiab terrace overlooking the river. It was chosen to provide a section of the geological deposits of the mound. The trench was 1 m wide, north-south, and 4 m long, east-west. The stratigraphy of Area II consists of only two deposits sitting above a conglomerate formation: the first deposit

represents the topsoil; an intensely ploughed loose light-brown silty-clay with few sub-rounded pebbles and sometimes rare occurrence of chipped and ground stone pieces. Under the plough-zone is a natural clay layer in which a few chipped stones were found, though they seemed to have been washed or eroded down the slope. Therefore, no *in situ* archaeological materials were found from the trench.

When Area I failed to locate the original excavation trench of Howe and upon re-considering the available photographs of the old excavations, an area in the southern part of the site was opened (Area III). First, in order to locate the old excavation trench, a 15×15 m area was opened and sub-divided into nine 5×5 m squares. However, the south-western and southern 5×5 m squares were not excavated. Clearing of the topsoil and cleaning of the underlying sub-soil revealed the cut of Howe's 1960 trench within the northern part of Area III (Fig. 5). Two 1×1 m sondages were excavated to the east of Howe's trench to locate the most suitable area targeting *in situ* deposits. Finally, a 5×5 m area to the east of Howe's trench was opened based on the findings



Fig. 6. Late Chalcolithic ceramic vessels found in association with human skull fragments.

from the sondages. The remains of four disturbed late Chalcolithic burials were found across Area III, after the topsoil had been removed. These burials were located at the interface between the topsoil and the underlying subsoil and had been disturbed by ploughing. They were associated with complete or broken ceramic vessels and isolated fragments of human bone (Fig. 6).

In order to document Howe's trench, we, firstly, removed the original backfill in the trench and cleaned the entire area, so that all the features such as remnants of pits and transitional Neolithic structure became visible at the base (Fig. 7). We, then, proceeded to document the entire trench using photogrammetric recording, digital photography, hand drawings and descriptions of all features and deposits. Every fourth bucket of the backfill from the trench was sieved to recover samples of artefacts. This resulted in the recovery of a significant number of finds, suggesting that the original excavations had not applied sieving carefully. The dimension of Howe's trench measured 8.0 m east-west to 6.0 m north-south with a varying depth of up to 2.7 m. Re-excavation of Howe's area revealed aspects of his excavation methodology. Howe, presumably, first excavated a series of test pits across the site. Two 2×1 m large sondages were found in the northwest and

southwest corner of Howe's main excavation area. The north-western sondage cut into the Neolithic deposits at its western edge. Howe might have, therefore, decided to extend his main excavation area outward from this sondage, linking it with the southwestern sondage. Removing Howe's excavation backfill revealed the outline of the shallow-basined oval feature that Howe described, as well as a number of post- and stake-holes, pits and tunnels dug by animals. Except for one pit in the northeast corner sector of the trench, Howe had excavated the entire area down to virgin soil. The profiles of Howe's excavation pit provided an overview to the site's stratigraphic sequence. The sections confirm Howe's observation of two main layers changing from gray at the top to tan coloured at the bottom (Howe, 1983: 115). However, the sections also revealed a number of vertical shafts that cut through the archaeological sequence. These shafts were connected to some of the animal tunnels found at the base of the trench, suggesting that the shafts are collapsed animal burrows. Thus, much of the stratigraphic sequence at Tapeh Asiab is heavily disturbed by the animal activities. Between the animal shafts, pockets of *in situ* (transitional) Neolithic sediments remained towards the bottom of the sequence. These are (transitional) Neolithic midden deposits that filled the circular feature reported by Howe. We can now show that this circular feature was indeed the cut excavated for a transitional Neolithic building. Several post- and stake-holes inside the circular cut, as well as two very clear floors visible in the north and east section confirm this. The floors were not reported by Howe, which is puzzling, and suggests that he may have missed them during excavation. Had he realized that these were floors he would have surely identified the circular pit clearly as part of a building.

One feature apparently unnoticed or left unexcavated by Howe was an oval ca. 1 m long shallow pit, situated in the north-eastern part of the trench. This pit was difficult to notice, since it was refilled using re-deposited natural sediment. This suggests that once excavated the pit was left open only briefly and filled in with the excavated spoil very quickly afterwards. This pit contained



Fig.7. The Howe's trench after removal of backfill showing the previously exposed base of the transitional Neolithic cut.

Fig. 8. the intentionally placed skulls of wild boars.

the skulls of at least 19 wild boars and also a boar cranium which were tightly packed on top and next to each other (Fig. 8). The mandibles and crania were packed tightly into the pit in separate groups with mandibles to one side and crania to the other. The crania were all neatly arranged in an east-west alignment. These characteristics clearly suggest that they were intentionally placed. They probably represent the remains of a feast or a ritual offering. Adjacent to Howe's 1960 trench,

we opened a new excavation area, measuring 5×5 m. This area was opened to further expose the structure uncovered by Howe's excavation and to recover *in situ* archaeological remains from the deposits associated with this structure. Under the topsoil, the top of the transitional Neolithic cut was visible in the western portion of the trench while natural deposit was exposed in the eastern portion. However, a pit and some disarticulated human bones associated with a ceramic vessel



Fig. 9. the newly exposed part of the transitional Neolithic construction, note the presence of the clay structure, patches of floor and the installed animal horn cores.

were also found, indicating a disturbed grave from the late Chalcolithic period. Once this layer of topsoil was cleaned off, a circular cut emerged. This cut is the continuation of the circular feature that Howe exposed in his trench. In our area, however, this feature was, actually, cut into the sub-soil immediately under the plough zone/topsoil horizon. We then proceeded to excavate the midden deposits in-filling the feature. The upper part of the midden deposit was very disturbed by animal burrows. The earliest phase starts with a pit that cuts two transitional Neolithic floor surfaces from the earlier occupation phase of the structure. This pit was not fully exposed during the excavation as it continued into the northern baulk of the excavation area. In addition to chipped stone and bone, two antlers, a horncore and a broken ground stone quern were recovered from this fill. The horncores appeared to be especially numerous in the northern-most part of the excavation area. The frequency of charred plant remains and finds in this context led us to describe it as a “midden deposit”, which was disturbed by intense bioturbation.

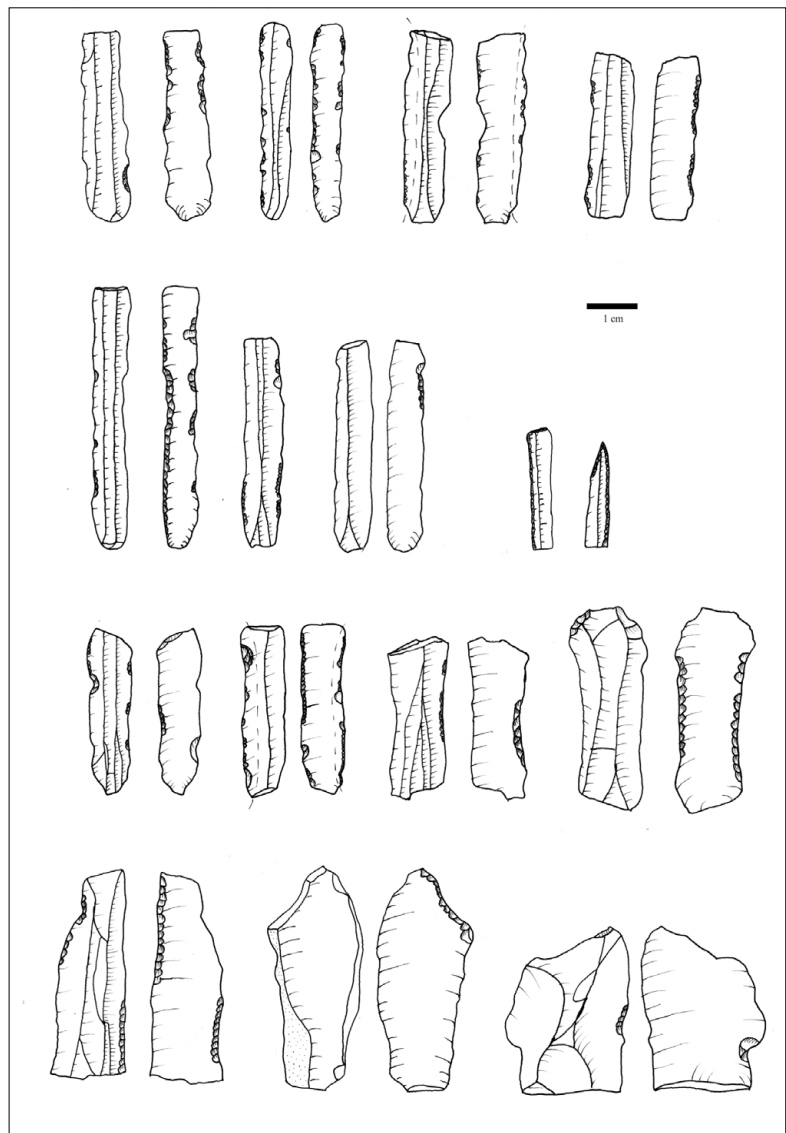
The lowest remains included the large construction cut and associated interior features of the transitional Neolithic structure. The cut has a sharp break of slope at the top and at the bottom with near-vertical sides. As mentioned above, it cut through the natural clay layer of the mound. The cut is approximately 1.20 m deep in the exposed part and continues into the northern section of the excavation area and into the section between the 2016 trench and the old Howe’s trench where it was also exposed. In the old trench, the upper part of the natural clay was removed during the Howe’s excavation and thus the original shape of the cut, there can only be assumed. A feature made out of clay, was exposed inside the cut and roughly followed its circular shape. Initially, this feature was considered as simply dug out of the natural clay. However, the presence of an antler and a horncore under the clay “bench” suggests that it was constructed after the original construction cut. The earliest floor surface exposed immediately westward and in association with this “bench” (Fig. 9). Fragile and dark greyish-brown clay presented between

the natural clay and the actual floor surface and, therefore, is a compound layer probably representing the floor covering and floor surface. The surface is compact greyish-yellow fine clay and was heavily disturbed by bioturbation. The floor is best preserved in the central part of the exposed area, where it is covered with a thin white-grey, possibly lime, wash. This probably represents the appearance of the undisturbed *in situ* floor. Another interesting feature of this floor was the presence of ochre, presumably, mixed with the surface and contained a horncore. The floor surface was constructed above virgin soil.

Overall, we distinguished four phases in the new excavation area; phases 1 and 2 represent the topsoil and the upper fill of the transitional Neolithic structure with some pits dating to the late Chalcolithic. Phase 3 includes the lower or initial fill of the transitional Neolithic structure, which is also dated to later than the construction itself, referred to as Phase 4.

Artefacts

Apart from various samples taken from the site, different artefacts including a large amount of chipped stone, a few grinding stones and some miscellaneous special objects made of stone, clay and bone were also found. Preliminary analysis, with regards to the diversity of types, however, suggests that chipped stone production at the site was surprisingly limited. There are a few scrapers, backed and truncated bladelets among the collection (Fig. 10). No perforators and geometric microliths such as crescents or triangles were recovered. Techno-typologically, cores suggest that Tapeh Asiab assemblage belongs to an intermediate stage between the Zarzian and the Mlefatian proper, which is known as 'Pre-Mlefatian' tradition. Bullet-shaped, conical cores, reduced by pressure technique, are absent. Most of them are unidirectional cores using pressure technique for flake and bladelet production. The assemblage appears to share cultural and technological similarities with Sheikhi Abad, Chogha Golan, East Chia Sabz and Ganj Dareh E, all dated to the Transitional Neolithic (ca. 9500-8000 BCE).



Twelve pieces of ground stone were recovered, but mostly derived from the topsoil. They include hand stones, querns, mortars and pestles, as well as two grooved stone fragments. Five shells, two marble and three clay beads, a clay token, a broken clay figurine, two clay objects, four broken bone awls, and four other items of worked bone are the other special finds. In addition, as previously noted, late Chalcolithic burials accompanied by four ceramic vessels as well as a painted small vessel was also recovered from the upper deposits.

Fig. 10. Samples of the Chipped stone artefacts from the 2016 Asiab excavations.

Faunal remains

Area I yielded a small number of faunal remains, majority recovered from mixed topsoil deposits.

Fig. 11. Presence of various animal species from Asiab.

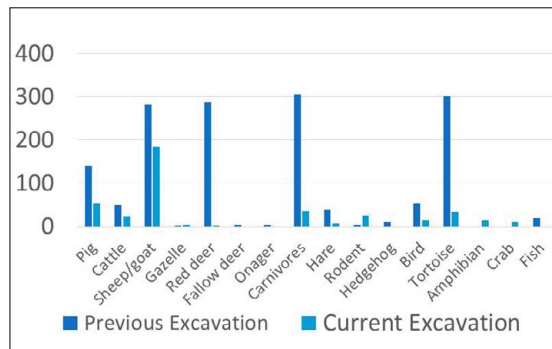
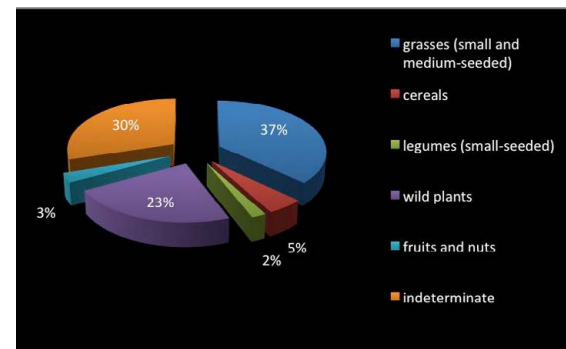


Fig. 12. Proportion of plant remains recovered from Asiab.



While no bones were recovered from Area II, most of the faunal remains were from Area III both previous and current excavations have yielded a variety of species though our new collection is much smaller (Fig. 11). Phase 2 is still heavily disturbed as evidenced by the presence of animal burrows. As yet, no bone has been identified from Phase 3. As this phase represents the initial infilling of the structure much of the deposits were sampled for flotation and analysis of the material waits final processing. The faunal remains from Phase 4 are the largest in quantity and relate to the use of the transitional Neolithic structure. Those recovered during our excavations are dominated by pig/boar. Analysis of the measurements of the dentition indicates that, where determinable, only wild boars are present while domesticated pigs absent. Based on the measurements of the lower molar 3, Bökönyi (1977) also identified only wild boar in the original assemblage of *suidae* bones. There is, however, a discrepancy between the relative frequencies of the species identified from the old excavations compared to those from the 2016 excavation. Transitional Neolithic deposits from the new excavations produced an assemblage dominated by boar with very low number of deer and wild caprines. A few horncores found on the surface of the structure still need to be studied but there are insufficient post-cranial bones of caprines from secure transitional Neolithic deposits are too few to examine the mortality profiles for males and females.

As already mentioned, cut into the base of the structure at Tapeh Asiab was a pit packed with boar skulls and mandibles. The pit contained both male and female animals ranging from

juvenile to adult with different age ranges.

Many of the boar mandible and crania have been cut during dismemberment and meat removal activities. A few post-cranial bones of boars were also found in the pit and these also displayed evidence of the butchery process.

Plant remains

One of the main aims of the archaeobotanical work in Tapeh Asiab was to recover plant macro-remains (wood charcoal, seeds, chaff, parenchyma, nutshells, ...) and micro-remains (pollen and phytoliths) in order to obtain new information on: 1) the plants exploited at the site and their possible uses; 2) the role of cereals versus wild plants in the subsistence strategy; 3) plant management activities (e.g. plant cultivation, tree management); 4) past vegetation and the exploitation of the available resources; and 5) impact of natural and anthropogenic activities in the landscape. A total of 79 soil samples were recovered from different contexts and 1606 litres of soil were processed during the 2016 season. The remaining samples are currently being processed. Overall, the preservation of plant remains in Tapeh Asiab is low. In particular, wood charcoal remains were found in very low quantities and usually only as small fragments. Non-woody plant macroremains (seeds, fruits and nutshells, etc.), instead, are present in several samples and seem to be better preserved (Fig. 12). Since the analyses are still ongoing, providing quantification of the remains is not possible at this stage. Here, we report on the presence/absence of plant remains and their preliminary interpretations.

Within the wood charcoal remains, taxa such

as *Pistacia* (pistachio), *Amygdalus* (almond) and *Salicaceae* (willow/poplar) were identified. The presence of these trees in the assemblage suggests that the inhabitants of Tapeh Asiab exploited two types of plant to gather their fuel resources. The presence of pistachio and almond indicates a woodland-steppe formation, characterised by open areas with scattered trees and understory of grasses. This type of plant formation is typical in the Irano-Turanian region, which extends from Central Anatolia, Iran and Iraq to the Syrian plateau east of the coastal plain and the Jordanian Mountains and ends on the Palestine coastal plain (Zohary, 1973). *Pistacia* and *Amygdalus* woodland-steppe comprising species such as *P. atlantica*, *P. khinjuk*, *A. korschinskii* and *A. orientalis* are typically found at altitudes between 500-1200 m in the Zagros and the Jabal al-Arab in Southern Syria. Other typically woodland-steppe trees include shrubby Rosaceae (hawthorn, blackthorn, and pear), buckthorn and maple, which could have grown in the area (*ibid*). On the other hand, the presence of Salicaceae wood indicates wetland areas close to the site. Gallery forests could have been established around the banks of the Qara Su River, very close to where Tapeh Asiab is located. Several annual and perennial non-arboreal wetland taxa would also have colonized these areas. In fact, the non-woody plant macro-remains from Tapeh Asiab indicate the presence of plants of Cyperaceae (sedges) family, such as *Bolboschoenus* (club-rush), *Eleocharis* (spikerush) and *Carex* (sedge), which commonly inhabit marshlands. There are also plants of the Poaceae (grasses) and Fabaceae (legumes) family. Within the grasses, small-seeded species are present (e.g. *Lolium* (ryegrass), *Bromus* (brome grass), which commonly constitute weeds of cultivated fields, “low-ranked” food resources, of remains related to the burning of animal dung as fuel. Their presence in Tapeh Asiab will be evaluated in the future. Within the Fabaceae, the small-seeded specimens predominate (e.g. *Astragalus/Trigonella/Trifolium*, milk-vetch, fenugreek, clover). These taxa are commonly related to animal fodder in the literature (Butler, 1995)

and they are common when dung is used as a source of fuel. The absence of the wild ancestors of domesticated cereals (e.g. wheat, barley) and legumes (pear, chickpea, lentil etc.) is striking. However, archaeobotanical investigations in other sites in the Zagros and Northern Iraq have shown that these plants apparently became important in the later periods (Savard et al. 2006; Riehl et al. 2013; Arranz-Otaegui et al. 2016). It is possible that the inhabitants of Tapeh Asiab exploited other types of plant-foods, but we still need to evaluate the whole specimens to explore this issue.

Concluding remarks

Tapeh Asiab has been referred as a key site in the debates on transition from hunting and gathering to agriculture and food production in the Central Zagros. However, the old excavation at the site has been poorly published. With our excavations, and the ongoing analyses of the finds and numerous samples from the site, we hope to be able to answer some questions regarding Transitional Neolithic period and the Neolithization process in the region.

Before the 2016 excavations, the function of the circular pit at the base of B. Howe’s trench was unclear. Howe himself was apparently uncertain whether this feature was a rubbish pit or a kind of structure (Howe, 1983). The discovery of living floors, pise wall and post-holes clearly suggest that this feature was indeed a large transitional Neolithic building. In the context of other known early Holocene sites in the central Zagros, this building is somewhat unusual. With a diameter of 10 m, it is of considerable size with an interior space covering ca. 78 m². The structure was (semi)subterranean, which is similar to the structures of a comparable size at other Neolithic sites in Southwest Asia (e.g. Jerf el-Ahmar). These types of structure have often been described as ‘communal structures’. Furthermore, some elements indicate the ritual practices within this structure: the pit contains boar crania and other animal remains, as well as cattle horncores placed in a depression in the building’s floor that was painted with red pigment. It suggests that

feasting and/or sacrificial practices took place there. We can therefore say with certainty that this feature was indeed a transitional Neolithic building with an unusual character.

Our work also suggests that B. Howe overestimated the size of the Tapeh Asiab settlement. Howe argued that the site measured 20,000 m² in total area. Our work could only confirm a dense spread of chipped stone and some isolated ground stone artefacts in an area measuring ca. 3800 m². Furthermore, our work has shown that the (semi)subterranean structure in Area III is the only surviving transitional Neolithic building at the site. The rest of the settlement has been eroded away. The structure in Area III survived simply because it was excavated deep into the sub-soil of the Tapeh Asiab terrace. Bioturbation by animals is a significant issue at Tapeh Asiab. Much of the stratigraphic sequence was disturbed by animal burrows and only careful separation of the sediments within and outside of these tunnels ensured that we obtained stratigraphically secure archaeological data. We are less certain that such care was taken during the excavation in 1960. Thus, many of the previously finds are of uncertain location at the site and may have come from disturbed parts of the sequence. Therefore, the assessment of diachronic change in Tapeh Asiab based on this data, is probably unreliable. However, further analysis might allow us to re-evaluate previously obtained datasets.

While awaiting new radiocarbon dates for reconstruction of the site's chronology, we tend to place the site within the 'Transitional Neolithic', which is regarded as the period of "food resource management" (Darabi, 2012; 2015). In this regard, faunal and plant remains are of great importance. Based on the analysis of the horncores from Tapeh Asiab, Bökönyi (1977) suggested that goats were already domesticated at Tapeh Asiab. In her re-analysis of the Tapeh Asiab material, however, Zeder (2008) rejected this idea. She argued instead that the evidence suggested a hunting strategy focused on larger males. Further work on the faunal material from Tapeh Asiab will yield more evidences on this issue. Recent archaeobotanical work at Chogha

Golan, East Chia Sabz and Sheikh e-Abad suggested that pre-domestic plant cultivation was seemingly practiced during the transitional Neolithic (ca. 9500-8000 BCE) in the Central Zagros. This may suggest that the eastern wing of the Fertile Crescent may have been a separate centre for early plant cultivation in Southwest Asia and that a different pace toward emergence of agriculture is considered there. Although botanical remains at Tapeh Asiab are not well preserved, we hope further analysis will provide more data for this emerging picture.

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