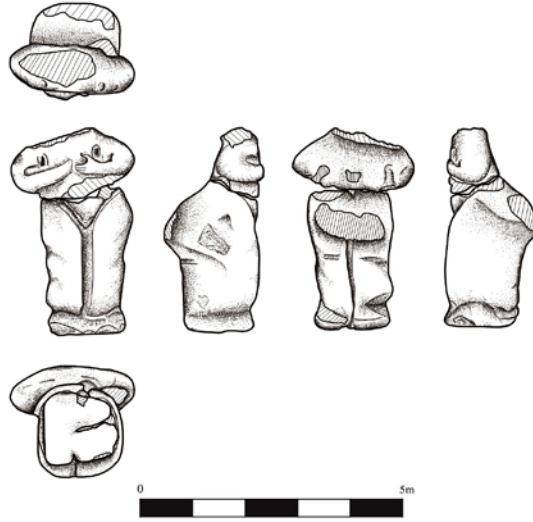


# ÇATALHÖYÜK 2019 RESEARCH REPORT





### **Editors**

Çiler Çilingirođlu, Canan Karataş Yüksel  
with contribution of Justin Morgan

### **Translation**

Çiler Çilingirođlu, Sinan Altun, Ece Sezgin,  
Melis Koruyucu, Canan Karataş Yüksel

**Cover:** Anthropomorphic Clay Figurine

**Photo:** Mateusz Dembowskiak

### **Drawing**

Nilüfer İdikut, Gizem Akcan

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## ÇATALHÖYÜK 2019 TEAM MEMBERS

<b><i>Project Director:</i></b>	Ömer Faruk Türkan
<b><i>Scientific Director:</i></b>	Çiler Çilingiroğlu
<b><i>Honorary Team Member:</i></b>	Ian Hodder
<b><i>Field Directors:</i></b>	Arkadiusz Marciniak & Çiler Çilingiroğlu
<b><i>Government Representative:</i></b>	Enver Akgün
<b><i>Site Custodians:</i></b>	Mustafa Tokyağsun, Hasan Tokyağsun
<b><i>Field Workers:</i></b>	Mevlüt Sivaz, Zekeriya Sivaz
<b><i>House Staff:</i></b>	Keziban Sivaz, Emine Büülüç, Havva Sivaz, Rahime Büülüç
<b><i>Digital Archaeology:</i></b>	Justin Lennon Morgan
<b><i>GIS:</i></b>	Mateusz Dembowiak
<b><i>Drone Imaging:</i></b>	Emre Sözel
<b><i>Photography:</i></b>	Mateusz Dembowiak, Sinem Bejna Demir, Ece Sezgin
<b><i>Finds Illustration:</i></b>	Nilüfer İdikut, Begün Karagöz, Günay Dinç, Gizem Akcan
<b><i>East Area Excavations (In alphabetical order):</i></b>	Beata Piotrowska, Charikleia Kanaroglou, Ebru Gizem Ayten, Ece Ayran, Ece Sezgin, Ege Gülbudak, Emir Yağan, Ercan Esirgemez, Geanina Butiseaca, Gizem Akcan, Günay Dinç, Jędrzej Hordecki, Jękap Wojciech Sabko, Mehmet Karauçak, Mateusz Dembowiak, Metin Dora, Rabia Korkmaz, Rasim İşbilir, Sinem Bejna Demir, Uğur Koray Göydağ
<b><i>Conservation:</i></b>	Ashley Morgan Lingle, Jerrod Seifert, Uğur Koray Göydağ, Rabia Korkmaz, Ercan Esirgemez, Begün Karagöz
<b><i>Finds:</i></b>	Karolina Joka, Nuriye Gökçe, Canan Karataş Yüksel, Gizem Akcan
<b><i>Lithics:</i></b>	Çiler Çilingiroğlu, Günay Dinç
<b><i>Zooarchaeology:</i></b>	Canan Çakırlar, Safoora Kamjan, Pınar Erdil, İlkem Güngör
<b><i>Human Remains:</i></b>	Marco Milella, Meliha Melis Koruyucu, Katarzyna Harabasz
<b><i>Ancient DNA:</i></b>	Mehmet Somel
<b><i>Botany:</i></b>	Burhan Ulaş, Karolina Joka, Ece Dinçerler, Demhat Yaman, Mevlüt Sivaz
<b><i>Heavy Residue Sorting:</i></b>	Ece Dinçerler, Demhat Yaman, Ebru Sivaz, Havva Sivaz, Geanina Butiseaca
<b><i>Pottery:</i></b>	Canan Karataş Yüksel, İrem Karaaslan, Emir Yağan, Merve Kızıllıçay, Pınar Ceylan, Merve Ömür
<b><i>Public Archaeology:</i></b>	Sara Perry, Veysel Apaydın, Chris Lougiakis, Feyza Demircan

## ÇATALHÖYÜK 2019



## Introduction

*Çiler Çilingirođlu*

2019 season at atalhyk lasted eight weeks and was directed by mer Faruk Trkan, the director of Konya Archaeological Museum with the scientific supervision of Ege University Archaeology Department. This year’s work is sponsored by KOTAŐ A.Ő., YaŐar Education and Culture Foundation and Turkish Ministry of Culture and Tourism. I would like to express my gratitude to these institutions for their support of science and culture in Turkey. The work conducted at the site can be categorized as follows:

1. East Area: Excavations at three 10X10m trenches
2. Lab studies: Zooarchaeology, archaeobotany, pottery, human remains, lithics, finds and conservation
3. Digital archaeology
4. Repair of model houses
5. Cleaning and organization of visitors’ routes
6. Public archaeology studies

2019 excavations were carried out in the East Area on the East Mound. We first started working in this area in 2018 and were able to remove the top soil and reach Neolithic features. 2019 work in the same area concentrated on three side-by-side trenches. This year’s work revealed 20 post-Neolithic burials and Late Neolithic architectural features. East Area excavations already proved to be very significant to understand the settlement history on the East Mound and its abandonment processes. We are happy to present our first results from the East Area in this research report.



**Figure 1:** General view of East Area Excavations (Photo by Mateusz Dembowski).

All the labs actively worked this season under the supervision of their new leaders. Zooarchaeology lab organized the modern faunal collection and re-structured protocols while recording new units from this season's excavations. Archaeobotany lab set up the flotation machine and



**Figure 2:** Burhan Ulaş, the archaeobotany lab leader is setting up the flotation machine (Photo by Çiler Çilingirođlu).

organized the season long work of light and heavy residue sorting. Pottery lab

documented and illustrated pottery from 2018 and 2019 seasons. Finds lab took care of the finds log database, circulation of archaeological material in labs and documentation of *Envanterlik* and *Etütlük* finds. Our digital archaeology experts, Justin Morgan and Mateusz Dembowski, concentrated their efforts on database entry, photography, creation of GIS data, on-site digital recording and server maintenance. All of our drone footage from this season is conducted by Emre Sözel from Konya Archaeology Museum. I am grateful to Ömer Faruk Türkan and Emre Sözel for their kind help.



**Figure 3:** Çatalhöyük 2019 conservation team (Photo by Çiler Çilingirođlu).

Beside excavation and lab work, our conservation team worked throughout the eight weeks to conserve Late Neolithic architecture under the North and South shelters. They conducted conservation work on buildings 5, 52, 55, 64, 82, 113, 119, 132 and 139 in the North Shelter and Buildings 4, 17, 89, 97 and 130 in the South Shelter.

We also repaired the model houses and visitor routes at the site. The model houses and visitors' routes have always heavy traffic at the site. Their maintenance is one of our top priorities for a pleasant and efficient visit to the site. All the model houses and their inventories are repaired. One of the houses had a leaking roof, which is now completely fixed. I would like to especially acknowledge my colleague Berkay Dinçer for supervising this work. We also fixed, cleaned and re-organized visitors' routes on the East Mound. I would like to thank Ercan Esirgemez, an undergraduate student of Ege University's Conservation and Restoration Department for overseeing this demanding task.



**Figure 4:** Ahmet Bülüç and Zekeriya Sivaz fixing roof of a model house (Photo by Berkay Dinçer).

## 2019 SEASON

### 1. The excavations of the East Area in the 2019 season

*Arkadiusz Marciniak, Mateusz Dembowiak, Katarzyna Harabasz, Jędrzej Hordecki and Çiler Çilingiroğlu*

#### 1.1 Introduction

The 2019 field season commenced on July 8th with the removing of sand bags and cleaning of the East Area. All the features that were given numbers from 2018 are marked in the field. Following the completion of this work, the excavations began on the 16th of July. All the soil from 2019 excavations is dry-sieved. It was a direct continuation of the work carried out in 2018 (See Research Report 2018). The longitudinal trench 10x50 m in W-E alignment was opened last year. It is crossing out a distinct eminence in eastern part of the East mound at Çatalhöyük that was labeled as the East Area. The area was divided into Squares 1-5, each 10 x 10 m, as seen from the west.

The work in the past season revealed a complex stratigraphic situation, in particular in relation to the post-Neolithic occupational history. A strip ca. 2-3m wide located in the westernmost part of the trench was covered by an accumulation deposit resulting the denudation of the southern eminence in the period following the abandonment of the Neolithic settlement. At the same time, two easternmost squares of the trench were covered by very deep and homogenous deposits, most likely remains of a large alluvium covering the area surrounding the mound and being a result of a long-lasting process of an accumulation following the end of the Neolithic. As a result no Neolithic deposits were unearthed in this part of the trench. Hence, it was decided not to continue working in this area.

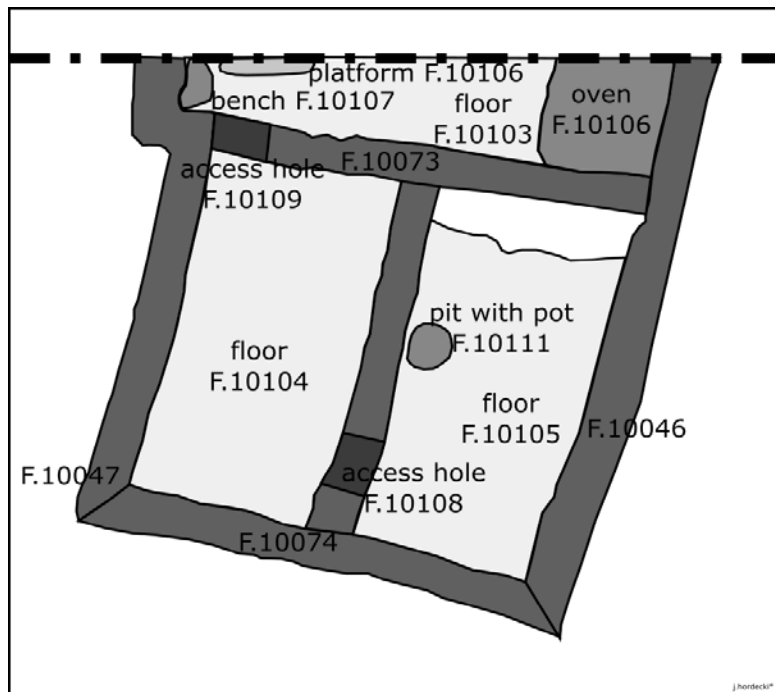
Following the results of the past year season, the research strategy for 2019 was developed. It was decided to work in three westernmost Squares of the trench covering the area 10 x 30 meters. A rich and complex stratigraphic situation was revealed in this part of the trench, comprising six Neolithic buildings, a number of unspecified Neolithic structures (recorded as Spaces), one special purpose room inserted into one of the Neolithic structures (B.173) and a large, distinct midden deposited against the walls of Neolithic buildings and placed along the southern edge of the trench. The other discoveries from the past year comprised a complex of pits and oven, most likely originating from the settlement of yet unspecified chronology. It was followed of a series of burials with superstructures made of stones and tiles. Three of such burials in eastern part of the trench were excavated in 2018. The burials indicate the presence of cemetery, most likely late Roman in age.

The new project in the East Area was initiated in the 2018 season. It has a number of intertwined objectives: (1) to recognize the character of occupation in the eastern zone of Çatalhöyük settlement, (2) to recognize the character of dwelling structures, special purpose buildings, burial practices and diachronic changes in their character in this area, (3) to compare the settlement layout with the occupation of North eminence, both in the North Area and the zone subjected to scraping prior to commencement of the excavation works in early 2000s, and (4) to recognize the abandonment of this part of settlement in relation to abandonment processes in the North Area as well as overall demographic processes in the second half of the seventh millennium BC (Marciniak et al. 2018).

## 1.2 The Neolithic occupation of the East Area

### 1.2.1 Building 175

The 2019 excavation season brought about the unearthing of B. 175 (**Plan 1**). It is located in central-northern part of the East Area. The building is composed of three rooms: northern (Space 680), western (Space 681), and eastern (Space 682). Three its walls are located in the trench: eastern – F. 10046, western – F. 10047, and southern – F. 10074. The northern wall of B. 175 is placed beyond the edge of the trench. The building has two partition walls: E-W wall separating Sp. 680 in the north from Sp. 681 and 682 in the south – F. 10073 and N-S wall separating Sp. 681 in the west from Sp. 682 in the east – F. 10075.



**Plan 1:** The plan of Building 175 (Drawn by Jędrzej Hordecki).

The building is in an excellent state of preservation. The highest preserved wall has 1.25 m. The height of the walls in central part of the building is lower due to the post-occupation truncation that destroyed the topmost part of the building. The preserved height of the walls is as follows: (i) outer walls: western (F. 10047) – 1.18-1.25 m, eastern (F.10046) – 0.80-1.00 m, and southern (F. 10074) – 0.70-1.00 m, (ii) partition walls: N-S wall (F. 10075) – 0.47-0.82 m; W-E wall (F.10073) – 0.70-1.05 m.

The northern room (Sp. 680) is in E-W alignment and is perpendicular to other two rooms of the building further to the south. It is ca. 4 m long. Its width cannot be established as its northern wall, which is most likely the northern wall of B. 175, is placed outside the excavated trench. No doorway into the north room has been recognized to date.

Both rooms in the southern part of the building: Sp. 681 and Sp. 682 have identical shape – they are 1.8 m wide and ca. 5 m long. Both rooms were built at the same time, in the moment of the building construction. It is implied by the partition wall (F. 10075) being bonded with the building southern wall (F. 10074) (**Figure 5**).

The work in the 2019 season revealed the uppermost floors in all three rooms of B. 175. As indicated by holes made by burrowing animals, there are at least two earlier floors beneath the latest floor. The floor in the western room (Sp. 681) was dark brown and had a fatty texture. An indistinct oval burnt surface was recognized on the floor. It may be indicative of some kind of its temporary use after it got abandoned. The floor in the western room Sp. 681 is lower than the corresponding floor in the eastern room Sp. 682 of B.175.





**Figure 5:** Building 175, Spaces 681 & 682 (Photo by Mateusz Dembowiak).

No built-in features were revealed in the eastern room (Sp. 682) of the building. The character of the floor deposits appears to be the same as in Space 681. An extremely interesting arrangements were revealed against the northern wall of the eastern room. A kind of small niche was dug onto the eastern part of the northern partition wall (F.10047). It has a half circle shape and is 30 cm high and 48 cm wide. The floor surface formed a longitudinal depression (40164), parallel to the northern wall of the room (F.10073). The installation of yet unspecified character, made of three horn cores, was found there. Two horn cores appear to be attached to the small walls of unspecified character within the depression and appear to be symmetrically placed. The third one was spotted in central part of the depression, most likely attached to the northern wall of the room. As the season was coming to an end, it was decided to stop excavating this depression. A large vessel was embedded into the floor of the room against its western wall. Its entire rim is preserved and its diameter is 0.40 x 0.34 m. The vessel is larger than any other Late Neolithic vessels. It is unclear whether it was placed there during the room occupation, and hence is to be associated with the final construction of the floor, or belongs to one of the earlier phases of its occupation.

Only a small part the northern room Sp. 680 of B. 175 is located inside the trench and hence only its southern fragment was unearthed. Despite its small size, this room appears to be the most elaborated

out of three segments of the building. A large domed oven was placed in SE corner of the room (F. 10106). It is a large construction with a solid superstructure. As the feature has not been excavated this year, details of its construction remain unknown. Its central and western part appears to be truncated and destroyed. Directly opposite the oven on the western wall of the room, there is an installation made of clay application and horn core. Directly to the north of it there is an edge of yet unspecified platform.

Altogether, three crawl holes were discovered in B.175. One crawl hole is placed in western part of its southern wall (F. 10074). It leads from the western room (Sp. 681) of the building to yet unspecified outer area or another room further to the south, which may be placed beneath yet unexcavated midden. The crawl hole is a half circle in shape and is 0.28 m high and 0.42 m wide. Another crawl hole (F. 10109) leads from the western (Sp. 681) to northern room of the building (Sp. 680). It is located in the western corner of the partition wall F. 10073. It is regularly rectangular shape: 0.55 m high and 0.45 m wide. The third crawl hole links western and eastern room of the building and is placed in the southern part of the partition wall F. 10075. It is also rectangular in shape and is 0.45 m high and 0.60 m wide. Its height was possibly greater as the uppermost part of the wall had been truncated by a large truncation related to unspecified activities following the abandonment of B. 175.

Altogether, four infill layers were unearthed in the western room (Space 681) of B. 175, as seen from the top to the bottom: 40076, 40092, 40111, and 40129. The layers are made of brown clayish sand and are pretty homogenous. More fragments of constructional materials were found towards the bottom of the fill and closer to the floor. Surprisingly, the fill layers had little archaeological material. Both bottommost layers: 40111 and 40129 are stratigraphically completely secure as they are sitting between the western wall of B. 175 (F. 10047) and N-S

partition wall (F. 10075). Considering later activities (see below), the eastern extent of the two uppermost layers 40076 and 40092 might not have been accurately defined. Hence, the material from these layers may not be homogenous enough making the analysis of material originating from both layers problematic to some extent. Altogether two infill layers (40137 and 40164) were distinguished and unearthed in the neighboring eastern room (F.682) of B. 175. Due to its homogenous character, only one fill layer (40093) was distinguished and excavated in the northern room (F. 680) of the building.

A history of B. 175 after its abandonment was complicated. The large section of the area of the former building, particularly their central, northern and eastern parts, was cut by the large U-shaped truncation in S-N alignment. It destroyed a significant portion of the building, in particular its southern wall (F.10074), the partition wall between Spaces 681 and 682 (F.10075) and northern room of the building (Sp. 680). This large truncation removed also a significant portion of infill of B. 175, deposited there right after the building was abandoned. The cut is particularly well visible in the northern section of the trench. Altogether, three layers 40062, 40075 (a cluster of ashy material recorded somehow arbitrary) and 40099 made up the deposits post-dating the use and abandonment of the building itself. No permanent remains of any occupation were revealed, however one can expect that the area might have been temporarily explored or exploited by the settlement inhabitants. The layers were deposited some unspecified time after the abandonment of this dwelling structure. However, it is most likely these layers were deposited not long after its abandonment. It is possible the truncation was made by the Neolithic groups that were unable cope with excess of midden materials deposited south the B.175 in the open area between the houses. Deliberately destroying a significant part of the remaining parts of the abandoned house made it possible to resolve a problem of the lack of space.

Particularly midden-like is layer 40062. It covered the entire area of the former B. 175 stretching out between its eastern (F. 10046) and western walls (F. 10047). It is composed of ashy and charcoal striations indicative of long and continuous accumulation of the house debris. It must have been accumulated as a result of daily activities by the inhabitants of another house, yet unrecognized, building further to south-east to B.175. The layer had numerous archaeological material, including animal bones and pottery. A number of painted early Chalcolithic sherds was found in this layer, which may indicate Late Neolithic/Early Chalcolithic date of this layer, and correspondingly the date of yet unspecified dwelling structure whose inhabitants were responsible for depositing this midden. The layer 40999 was deposited only in central and eastern part of the building as the truncation was small in its bottommost part. Directly to the west, layers 40076 and 40092 were deposited, which are believed to be fills of the western room (Sp. 681) of B. 175. Hence, the composition of this layer can be mixed up and made of

both room infill and post-abandonment deposits. The uppermost part of this unit is made of ashy material from midden being a continuation of layer 10062, while it became more sandy beneath.

### **1.2.2 Space 669 and 676**

Space 669 is made of a sequence of heterogeneous deposits placed between the western wall of B. 175 (F. 10046) and eastern walls of B. 172 (F.10004) and 173 (F.10006). It is made of four superimposed layers (40056, 40112 and 40143 and 40144). Their character is not easy to specify but it seems to be indicative of an open space – an area between two buildings that was temporarily occupied. The northern and central part of the Space looks more like an fill while its southern part is more midden-like. It is most likely a continuation of the large midden (U.40175) in southern part of the trench 40175 in Space 683.

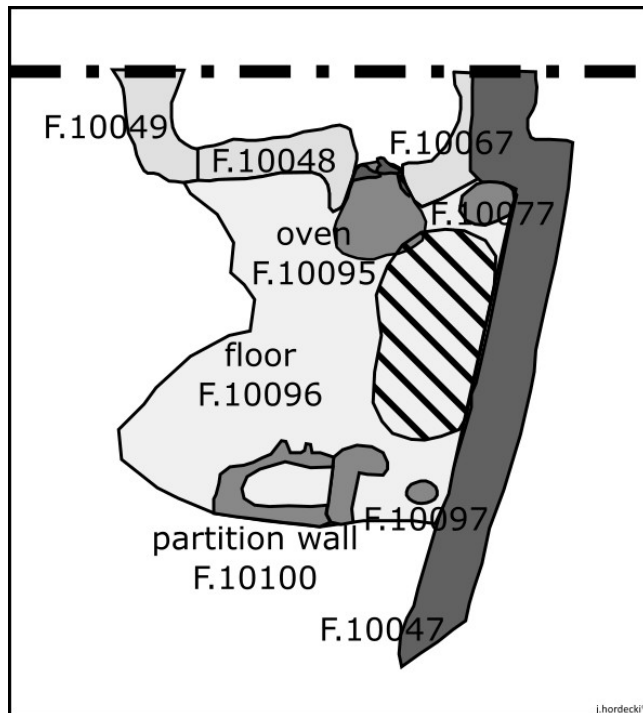
The uppermost layer of this Space (U.40056) is made of a range of brownish materials in mixed up with broken bricks and other constructions material in its northern part and more blackish midden-like deposits further to the south. The layer is very rich in archaeological material, in particular in its NE corner, directly above the occupational area (Space 676) (see below). It comprised a number of complete animal bones, including sheep and goat horn corns as well as cattle scapula. Their completeness, presence in the form of cluster, additionally accompanied by distinct obsidian tools, may indicate a deliberate placement of this cluster, most likely as a part of post-abandonment activities. This may indicate a reuse of the already abandoned houses at the very end of the classic occupation of the settlement, as recognized in B. 150 in the TPC Area (Marciniak et al. 2019). It needs to be pointed out that while excavating the layer 40056, it proved impossible to distinguish a border between it and the midden deposits further to the south (Space 683) (see below). Hence, archaeological material, such as pottery or lithics, may have mixed up and cannot be reliably used for the chronological analysis.

Similarly rich materials were found in the second layer (U.40112) of Space 669, in particular in its NE corner. It is indicated by rich material, mostly animal bones and horn cores. This activity area seems to be placed within the fill/midden and may be indicative of not permanent occupation of this open space. These materials are placed directly below similar deposits from the layer 40056.

The third layer (U.40143) in Space 669 is made of a pretty distinct, albeit significantly destroyed, occupational layer made of marly matter. This may well be the remains of eroded floor. The layer is c. 1.50 x 2.00 meters. It continued further to the south where was recorded as 40144. It has a surface of c. 2.00 x 3.00 meters. It is less distinct than the layer to the north in terms of its character. However, a huge cluster of animal bones (U.40128) was placed in this layer. It is made of a large number of horn

cores, mainly caprines, but also few cattle, mandibles and other long bones as well as worked bones, work stones, figurine and stamp. It is certainly a deliberately deposited cluster, most likely in relation to some kind of feasting and post-abandonment rituals. The layer 40144 may well be the room fill. It is was considerably heterogeneous and contained a small number of archaeological material.

Space 676 is located directly beneath Space 669 (**Plan 2**) and is defined as the occupational area. It is made of a white surface with a range of built-in structures. They were constructed against western of B. 175, which means they clearly post-date its construction. From the north, its built-in structures were constructed against the southern wall of Space 678 (F. 10048), which is the white structure inserted into the fill layer of this open space (see below). Hence, Sp. 669 marks the latest Neolithic occupational activity in the part of the excavated area. Based upon stratigraphy, the area is later than Sp. 678 and B. 175. Considering analogous stratigraphic relations, it is likely that the area is contemporary to B.177 further to SE. In any case, Sp. 669 is indicative of the presence of unspecified type of non-permanent occupation at Çatalhöyük towards the end of its occupation in the Neolithic. It is most likely contemporary with similar light structures in TP and TPC Areas (see Marciniak 2019, Marciniak et al. 2019).



**Plan 2:** The plan of Space 676 (Drawn by Jędrzej Hordecki).

This occupational area is made of the surface made of marl made and deposits of unspecified character. Its overall condition is bad as it was significantly eroded away and destroyed by different post-depositional processes. The most distinct is the northern part of the occupational area. A sequence of

bricks, most likely used to back fill this part of the area, was placed on its floor. The first in the sequence was the floor F.10099 (3.10 x 2.57 m). It was white in colour and was lying directly on the layer of midden. Fragments of indistinct N-S partition (F.10100) wall were revealed on this floor, which possibly split up the area into its western and eastern sections. It was a little structure irregular in shape with the dimension 1.10 x 0.97 x 0.20. It was made by little grey mudbrick. The second floor of Sp. 676 F.10096 was made after the construction of the partition wall. It had a dimension 2.5 x 1.87 m and was made of marl and clay. It was mostly white in the north and more yellowish towards the south. The surface from the south was pretty distinct and it became less pronounced in its central and northern parts. Its western and southern extent is less distinct and its boundary is partly arbitrary. There was also fragments of badly preserved partition wall F. 40180.

The most distinct feature related to this occupational area is the oval oven (F. 10095) located in its northern part. It had a dimension 1.30 x 0.70 m. The oven had a very distinct base (U.40169) placed in a small cut (about 0.1 m deep), which was covered by a superstructure. The base was highly burnt, and the infill was also indicative of burning. A fragment of the southern wall F.

10048 of Space 678 was deliberately chopped off to make the place for the oven. This clearly shows the stratigraphic relation between these structures. The oven is placed directly on the later floor F. 10096 of the occupational area.

Another interesting features in the occupational area comprise potholes, most likely indicative of the presence of light structure with light roofing. This may imply a temporal character of this dwelling structure. The most distinct was the posthole F. 10077 in the very NE corner of the occupational area. It has around 0.30 m in diameter and was 0.20 m deep. The cut was carefully plastered over. Another posthole F.10048 was built against the southern wall of Space 678, directly south to the oven. Yet another post F. 10097 is located further to the south against the western wall F. 10047 of B. 175. It was rounded in shape with the diameter of 0.14 m and the depth of 0.25 m.

### **1.2.3 Space 683**

This is a large midden located in the southern part of Trench 2 and 3. It was only partly excavated in the 2019 season and hence its depth remains unknown. As revealed in sections of the post-Neolithic burial cuts (see below), it is at least 0.30 m deep. The midden was arbitrarily divided into two parts: western F.10175 and eastern F.10151. A part of the midden F. 10062 was deposited in the unspecified truncation, which largely destroyed the previously abandoned B. 175 (see above). A similar situation took place in an open area west of B. 175 (Spaces 669 & 676) – in particular in the northern part of its infill F. 10112. The

midden was very fine and homogenous and was composed of a number thin striations made of ash and charcoal.

Considering the midden continues into B. 175 and covers the truncated southern wall of that building, it is clear that it is later than the construction, use and abandonment of B. 175. It is very likely that the midden is also later than Space 676. However, its stratigraphic relation with this Space is yet to be clarified. It is quite possible that the midden was deposited against the walls of B. 176, which makes it possible that it has been accumulated as a result of activities carried out by the inhabitants of that building. There is no doubt that this midden is earlier than B. 177 as its eastern part was truncated from the east by the foundation cut (F.10093) of the western wall F. 10041 of B. 177 (see below).

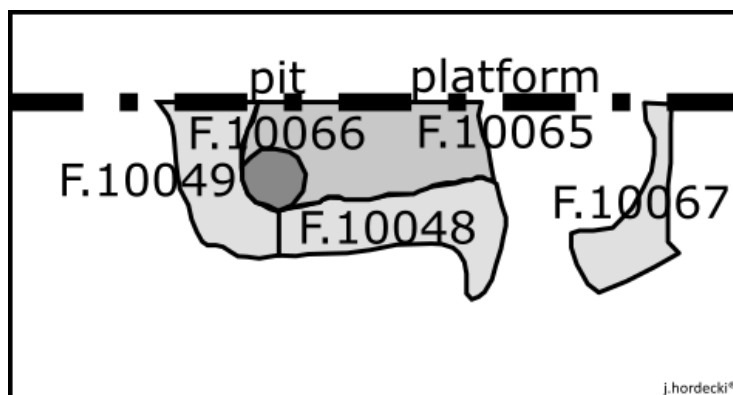
The midden was also deposited against the eastern wall of B. 173 and southern wall F. 10074 of B. 175. It is indicated by a concavely placed striations of ash and charcoal. However, it looks as if the accumulation the midden continued after the abandonment of B. 175 and ultimate truncation of the uppermost parts of its outer and inner walls (see discussion of B. 175 above). As a result, the midden layer 40062 was then deposited at the bottom of this large cut as well as in Space 669, directly west of the western wall of B. 175.

As of the end of the 2019 season, it is believed that the midden was accumulated as a result of daily activities of inhabitants of three houses: Space 678 in the north, B. 173 in the west, and B. 176 in the east. The midden deposit is mostly likely also a result of activities of the inhabitants of another building further to the south, which is located beyond the southern edge of the trench.

After removing the midden layer (U.40175) in Sp. 683, two small fragments of E-W wall were revealed. The may be indicative of a complete destruction of yet unspecified dwelling structure directly to the east of B. 173. It may have been destroyed by the inhabitants of B.173 in order to make room for the rubbish dumping originating from daily activities. When this space was completely filled in, the dump area may got extended by truncating the uppermost parts of B.175 and mostly likely western parts of B. 176. This interpretation is corroborated by a complete lack of midden deposits on top of building 172 and 173 directly to the west. This may indicate that both buildings are later than B. 175 and maybe also B. 176. However, this does not rule out a possibility that some part of the bottommost sequence of midden was also accumulated by daily activities by inhabitants both B. 175 and B. 176, as indicated by presence of midden directly against wall of both buildings.

### 1.2.4 Space 678

Space 678 is placed in the north-central part of Square 2 (**Plan 3**). The revealed elements most likely belong to an unspecified dwelling structure placed directly to the north beyond the edge of the excavated trench. Only its southernmost room is placed inside the trench. The room was defined by three solid walls made of white bricks with little pebbles: southern – F. 10048, western wall – F. 10049, and eastern – F. 10067. The preserved size of the walls is as follows: F. 10048 – 1.84 x 0.29 m, F. 10049 – 0.86 x 0.37 m, and F.10067 – 0.77 by 0.52 m. The western wall was constructed inside the deliberately prepared foundation cut (F.10076). The eastern wall was firmly placed against the western wall F. 10047 of B.175. This indicates that Space 678 is later than B. 175. At the same time, the southern wall F. 10048 appears to be a later addition to the structure and hence seems to define the latest phase of occupation of this space.



**Plan 3:** The plan of Space 678 (Drawn by Jędrzej Hordecki).

Within the walls, a pretty distinct platform/floor F. 10065, directly north of the wall F. 10048, was unearthed. It has a dimension of 1.34 x 0.50 m. It is made of white matter mixed with white pebbles, which from the constructional standpoint is pretty similar to the walls of the room. The extent of the platform is unknown as it goes into the section of the trench. However, its eastern edge is very distinct and most likely was built in relation to pretty indistinct N-S wall, which is seen in the northern section of the trench. The whereabouts of this wall is to be clarified in due course when the work in this part of the trench will continue. A circular posthole pit (F.10066) 0.34 m in diameter was dug into the south-western corner of the Space. A cluster (U.40063) of animal bones including: scapula, horn cores, mandible, as well as some worked stones, was deposited directly on the platform F.10065.

The Space was exposed but not excavated in the 2019 season. Taking into consideration the character of building material, Space 678 seems to be contemporary with B. 176 (Space 674).

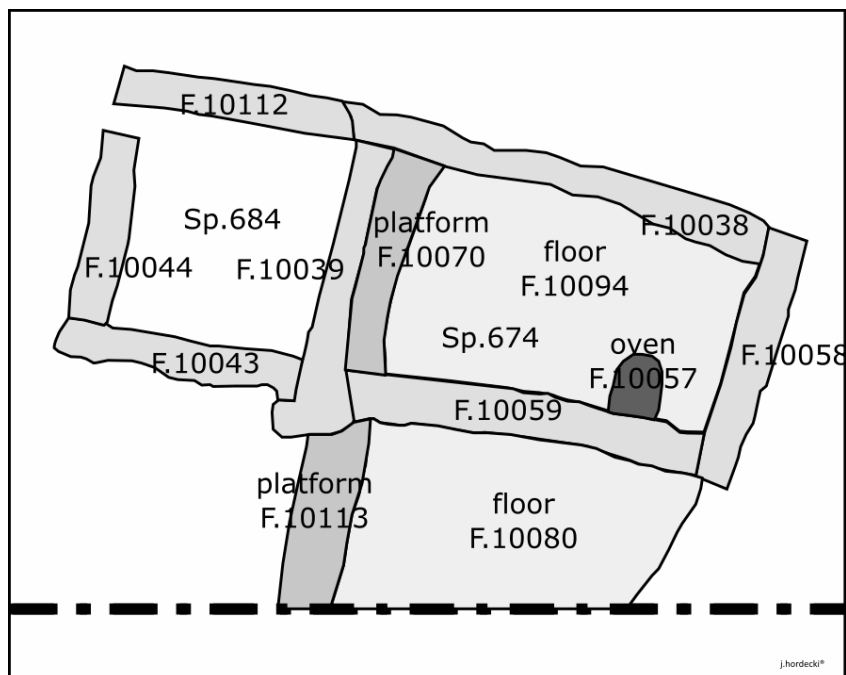


### 1.2.5 Building 176

B. 176 is located in the southern part of Squares 2 & 3 (**Plan 4**). It is a multi-roomed large building in a NE-SE alignment. It is composed of at least two separate rooms recorded as Spaces 674 and 684. The southernmost part of the building is located outside the southern edge of the excavated area. This part was destroyed by the construction of later B. 177 (Space 679).

Sp.674 is most likely the easternmost room of B. 176. Two superimposed large post-Neolithic pits F. 10063 and F. 10064 (see below) were dug into the room interior exposing its layout in its entirety. The cut of larger pit F.10063 luckily terminated at the level of the room floor.

All four walls of the room were preserved, albeit to different extent. The best preserved is its western wall F. 10039. The northern wall F. 10038 got partly truncated from the south. The other two walls: eastern: F. 10058 and southern F. 10059, were truncated by the large post-Neolithic pit F. 10063.



**Plan 4:** The plan of B.176 (Drawn by Jędrzej Hordecki).

The westernmost sections of both northern and southern walls, as well as the western wall of the building, were preserved in the form of six courses of bricks. They were made of white marl substance and small white pebbles. These pebbles seem to be similar to pebbles used for the construction of floor in B. 61 and 62 in the TP Area (Marciniak 2019). The preserved size of the bricks are as follows: F. 10039 – 2.39 x 0.36 m; F. 10038 – 3.72 x 0.4 m; F. 10058 – 1.93 x 0.43 m; F. 10059 – 3.36 x 0.40 m. The room

had a surface of 5.67 m<sup>2</sup>. The floor of the room appears to be well preserved (F. 10094). It is plastered in white. The details of its construction are unknown as it has not been excavated. A narrow entrance to the room was located in the southern wall of the room F. 10059. A circular oven F. 10057 was placed in SE corner of the room, just right to the entrance. A solid, albeit partly preserved, platform F. 10070 was built against the western wall of the room (**Figure 6**). A significant portion of the platform was truncated by the large post-Neolithic pit F. 10063. The platform constructed of a range of heterogeneous materials. Its uppermost part (U.40082) was made of rubble material mixed up with animal bones. It also contained a cluster of animal bones (U.40085), which were clustered along with the burnt phytoliths and charred material in a very loose dark brown soil. Fragments of burned ceramics were placed underneath some large animal bones. The lower infill (U.40086) was compact, it consisted of rubble material, clay, and animal bones. Except for the platform, no other constructional elements and built-in structures were excavated in the 2019 season.

Sp.684 marks the north-western room of the building. All four walls of the rooms were recognized: western – F. 10044; northern – F. 10112, eastern – F. 10039, and southern – F. 10043. The room has 2.30 m<sup>2</sup>. The work in 2019 made it only possible to unearth the uppermost parts of the walls.



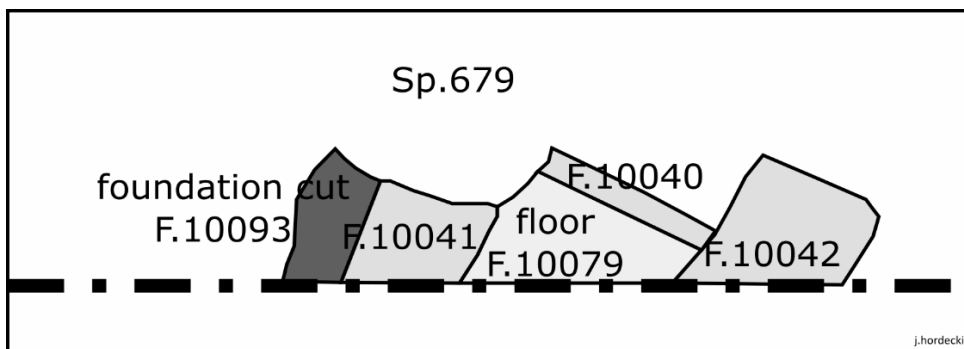
**Figure 6:** Building 176, Space 674 (Photo by Mateusz Dembowski).

Another floor F. 10080 is located directly south of the southern wall F. 10059 of Space 674. It most likely belong to another room of this multi-roomed building. Its preserved surface is 3.9 m<sup>2</sup>. However, neither size nor extent of this room was recognized as its southern parts are located outside the excavated area. A kind of unspecified platform or threshold F. 10113 was revealed. Altogether two infill layers were excavated: U.40139 and U.40169. They were placed on the room floor. The fill was loose brown in colour and made of a small number of little clay intrusions.

The stratigraphy of this part of the excavated area implies that B. 176 was built against earlier B. 174, located directly to the north (see Marciniak et al. 2018). The building was made of a completely different constructional material, mostly brown mudbricks. At the same time, B. 176 is certainly earlier than B. 177 (Space 679), which nethermost part was constructed directly above its southern part. However, it has to be stressed that no stratigraphic and physical relation between the two structures exist at present. They may have originally existed but were destroyed by smaller of the late pits destroying this sequence.

### 1.2.6 Building 177, Space 679

B. 177 is certainly the latest dwelling structure in the East Area revealed to date. It is located in the southernmost part of Square 3. Only a very small fragment of this unspecified structure is placed in the excavated area. It is triangle in shape and is made of fragments of two walls making up the NW corner of the building (**Plan 5**). Considering the unprecedented size of its walls and presence of Late Neolithic pottery, one can predict we are dealing here with a large Neolithic structure of unspecified character. Its very corner was truncated by two large post-Neolithic pits (F.10063 and F.10064).



**Plan 5:** The plan of B.177 (Drawn by Jędrzej Hordecki).

The building was constructed on top of the fill of earlier B. 176. The preserved dimension of the eastern wall F.10042 is 0.80 x 0.70 m. The massive western wall F. 10041 had the following preserved dimension: 1.10 x 0.90 m. The walls were made of a combination of white and brownish bricks that are bonded with each other. They have the dimension of 0.40 x 0.35 x 0.08 m. The eastern wall F. 10042 was placed inside the deliberately prepared foundation cut. It is very regular and is ca. 23-25 cm wide. The western wall F. 10041 of B. 177 was also built in a similar truncation cut F.10093. It was ca. 45 cm wide that is significantly wider than a corresponding foundation cut from the northern side. The preserved surface of the floor F.10079 has a dimension of 1.50 m by 0.75 m. It was pretty compact and made of dark brown/grey fatty clay. The floor was not plastered. No traces of its intense use were detected, however phytoliths were placed on its surface. The floor was constructed on a thin and relatively loose make-up layer, which was grey in color.

The floor of the unearthed part of the building was filled in by a sequence of horizontally placed bricks. They were laid down in different alignments and were not bonded with each other. Altogether two such sequences of bricks were recognized: F. 10040 on top and F. 10072 at the bottom. The uppermost sequence of bricks F. 10040 is 1.20 x 0.63 m and is made of four rows of bricks, each of them got a separate unit number: 40122, 40120, 40126 and 40123. The lower layer of bricks F. 10072 was recorded under one unit number 40127. The bricks were carefully placed one next to the other. Bricks in U.40122 had a standardized dimension: 0.37 x 0.18 x 0.08 m. Three of

them are completely preserved. The easternmost brick was made of dark brown clay. Bricks in U.40020, directly south of U.40122, had size 0.35 x 0.35 m and were made of brown clay. Altogether three complete bricks made up the unit. They were significantly eroded. The westernmost brick got truncated by Hellenistic pit while the easternmost brick goes into the trench section. The second layer of bricks F.10072 in Space 679 was made of brownish bricks of different color. The bricks must have been carefully placed on the floor right after the building went out of use. They filled in the entire space between the walls. The most viable explanation is that this is a deliberate filling of the building interior following its abandonment. This kind of filling of the empty space was also found in B. 122 in TPC Area (Marciniak et al. 2015).

The foundation cut F. 10093 of the western wall F. 10041 of B.177 truncated a distinct layer of midden Space 683, which got accumulated against the southern wall of B. 176, Space 674. This defines a clear stratigraphic relations between these structures. Not only is B. 177, Space 679 later than B. 176 Space 674, but it is significantly later as it was constructed after quite some time during which this midden (Space 683) was accumulated.

### **1.3 The post-Chalcolithic occupation of the East Area**

#### **1.3.1 Space 677**

Altogether seven features dated back to post-Chalcolithic phase of the East Area occupation were excavated in the 2019 season. One of the features was oven (F.10053), while the remaining six were pits (F.10052, F.10054, F.10055, F.10056, F.10063, F.10064).

Oven F.10053 is placed in the northern part of Sq.2, next to the western wall of B. 175 (F.10047). It is in the NE-SW alignment. It had a rectangular shape but it was getting narrower towards SW. The oven has the following dimension: 0.89 x 0.53 x 0.30 m. This is an ovoid construction with well-preserved superstructure built around the circumference of its cut. It is made of bricks and it got plastered over. A distinct base was made of clay. Fragments of burnt surface was also found, which is indicative of the presence of burning inside the oven.

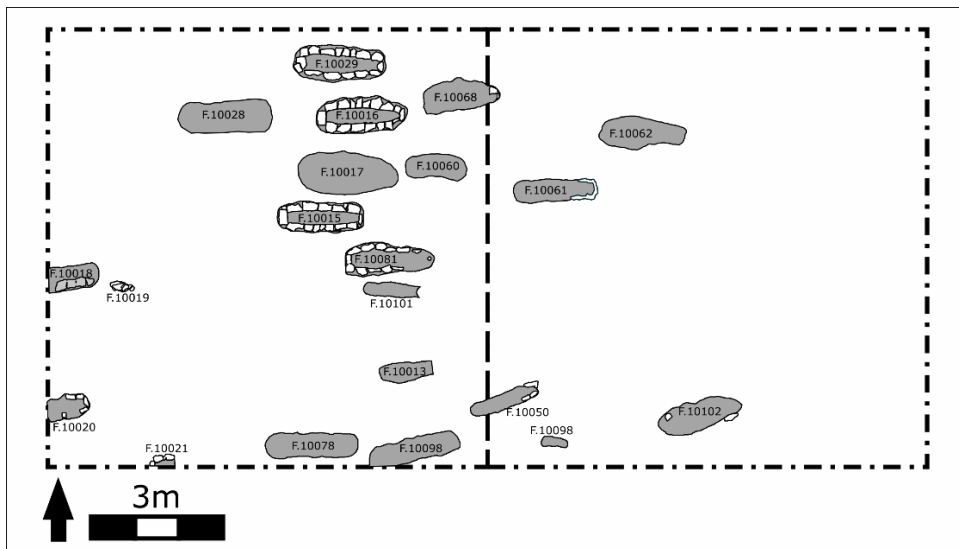
Pit F.10054 is placed in NE part of Sq.2. It has a circular shape with the dimension of 0.70 x 0.60 x 0.13 m. The pit cut truncated the walls of B.175 (F.10046) and B.174 (F.10045).

A sequence of three pits was placed directly SE from pit F. 10054. The earliest of them was the ovoid pit F.40052. It had the dimension 0.80 x 0.60 x 0.08 m. It was truncated by the second pit F.10055. This large ovoid pit had the dimension 3.50 x 2.50 x 0.16 m. The latest pit F. 10056 was avoid in plan and had the dimension 0.90 x 0.50 x 0.22 m.

Two large pits are placed in SW corner of Sq.3. The earlier of them F. 10063 had the dimension 4.00 x 3.90 x 0.55 m. Its western edge was distinguished arbitrarily as it was placed east of the area excavated in the 2019 season. The pit significantly truncated the Late Neolithic building B.176 (see above). It was truncated by another pit F. 10064 in its SE part. This pit had the dimension 1.70 x 1.70 m. However, their shape and infill was virtually indistinguishable, most likely due to their very similar character and infill. Their number and size can only be partly reconstructed by an outline of the cut and their depth – cutting off adjacent walls at different elevations. The infills of both pits were highly mixed, including midden elements from the neighbouring midden area (Space 683).

### 1.3.2 The post-Chalcolithic burial ground

During the 2019 excavation season, 20 post-Chalcolithic burials were excavated. All of them are placed in Sq.1 and Sq.2 of the East Area (**Plan 6**). The following burials were unearthed: F.10061, F. 10068, F. 10020, F. 10102, F.10028, F. 10060, F. 10062, F. 10098, F. 10013, F. 10101, F. 10014, F. 10069, F. 10015, F. 10016, F. 10029, F. 10078, F. 10081, F. 10019, 10021, and 10050. Another burial F. 10018 was identified but left unexcavated in the 2019 season (Table 1; see Milella et al. 2019). No graves good were found in any of the burials. However, a number of small finds, such as animal bones, obsidian, pottery were found in their fills.



**Plan 6:** The plan of the post-Chalcolithic cemetery (Drawn by Jędrzej Hordecki).

The excavated burials represented four different types in terms of their superstructure, shape of burial and character of the inhumation:

- (1) Empty burial - F. 10019, F.10021, F.10050. This type is characterized by the presence

of burial cut and superstructure but is devoid of any human remains

- (2) Burial without grave marker and superstructure - F. 10013, F. 10028, F. 10060, F. 10062, F. 10098, F. 10101
- (3) Burial with grave marker in the form of standing walls around the feet of the deceased F.10020, F. 10061, F. 10068, F. 10102
- (4) Elaborated burial with stone superstructure and burial cut covered with stones and/or tiles F. 10014, F. 10015, F. 10016, F. 10029, F. 10069, F.10078, F.10081

Feature	Location	Burial type	Dimensions
10013	S part/ Sq.1	no grave marker & superstructure	1.24 m x 0.45 m x 0.55 m
10014	E part/ Sq.1	elaborated burial	1.91 m x 0.66 m x 0.42 m
10015	C-E/ Sq.1	elaborated burial	1.87 m x 0.31 m x 0.35 m
10016	N part/ Sq.1	elaborated burial	1.99 m x 0.81 m x 0.50 m
10019	C-W part/ Sq.1	empty burial	0.47 m x 0.23 m x 0.40 m
10020	S-W/ Sq.1	burial with grave marker	0.97 m x 0.66 m x 0.28 m
10021	S-W part/ Sq.1	empty burial	0.57 m x 0.27 m x 0.18 m
10028	S-W/ Sq.1	no grave marker & superstructure	1.67 m x 0.85 m x 0.62 m
10029	N part/ Sq.1	elaborated burial	1.74 m x 0.42 m x 0.56 m
10050	S part/ Sq.1&2	empty burial	1.06 m x 0.04 m x 0.04 m
10060	N-W part/ Sq.1	no grave marker & superstructure	1.21 m x 0.52 m x 0.04 m
10061	W part/ Sq.2	burial with grave marker	2,14 m x 0,60 m x 0,08 m
10062	N part/ Sq.2	no grave marker & superstructure	1.79 m x 0.79 m x 0.30 m
10068	S part/ Sq.1&2	burial with grave marker	1.64 m x 0.80 m x 0.13 m
10069	S part/ Sq.2	elaborated burial	1.88 m x 0.52 m x 0.37 m
10078	S part/ Sq.2	elaborated burial	1.46 m x 0.52 m x 0.48 m
10081	E part/ Sq.1	elaborated burial	1.48 m x 0.72 m x 0.43 m
10098	S part/ Sq.1	no grave marker & superstructure	0.55 m x 0.37 m x 0.13 m
10101	S part/ Sq.1	no grave marker & superstructure	1.34 m x 0.42 m x 0.35 m
10102	S part/ Sq.2	burial with grave marker	1.94 m x 0.80 m x 0.24 m

**Table 1:** Burial types and their dimension excavated during the 2019 season.

#### 1.4 Final remarks

The work in the 2019 season was split two into two major segments. The first segment comprised the excavation of a range of structures and deposits dated back to the Late Neolithic and Early Chalcolithic. These are placed in Squares 2 and 3. The second segment involved the intense work on the post-Chalcolithic cemetery. All burials from the cemetery from Square 1 and 2 were excavated in 2019. The associated task involved also the excavation of different domestic features,

mostly pits, that are post-Chalcolithic in date. All features belonging to this phase of the East Area occupation and located in Squares 1, 2 and 3 has been excavated to date. The work in the coming excavation season will involve a continuation of excavating the remaining Neolithic structures in Squares 2 and 3. It will also involve excavations of corresponding Neolithic structures in Square 1, which is now possible thanks to a completion of the work on the post-Chalcolithic cemetery, located in this part of the excavated area.

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## **2. Biological Anthropology Studies**

*Marco Milella, Katarzyna Harabasz and M. Melis Koruyucu*

### **2.1 Introduction**

The Human Remains team for 2019 comprised Marco Milella (University of Bern), Katarzyna Harabasz (University of Poznan), and Melis Koruyucu (Hacettepe University).

The activity of the team has been focused on the excavation, restoring and cataloguing of the skeletal remains associated with each funerary feature, and in the elaboration of a short- and long-term research strategy.

### **2.2 East Area burials and skeletal remains**

21 burial features, tentatively dating to Hellenistic or Roman times, have been excavated in the first and second squares of the East Area.

With the exception of three features (F.10019, F.10021, and F.10050), which resulted empty upon excavation, all burials represented single inhumations in pits with-or without the presence of funerary superstructures and grave goods. An additional late funerary structure (F.10018) was identified but its excavation was postponed to the 2020 season.

After excavation, age-at-death and sex of each individual were estimated in laboratory. As well as standard osteometric measurements of long bones were taken. Age-at-death of subadults was estimated on the basis of the development of the dentition (Ubelaker 1989). Age-at-death of adults was estimated on the basis of the morphological changes at the level of the auricular surface of the ilium and pubic symphysis (Brooks & Suchey 1990; Buckberry & Chamberlain 2002). Sex was determined on the basis of the dimorphic features of the cranium, mandible, and innominate (Buikstra & Ubelaker 1994).

Follows the description of the burial features including skeletal remains. For each feature we provide in brackets the unit numbers corresponding to the skeleton, burial cut, burial fill, and, if present, funerary superstructures.

*Feature 10013, Sk. (40186), Cut (40041), Fill (40181)*

The feature is represented by a primary inhumation of an adult ( $\geq 20$  years old), male individual. The individual was lying supine and extended, with the head oriented toward West. The burial was composed by a simple pit without the presence of additional structures. The skeletal remains were mostly disturbed due to animal activity. No grave goods were found associated with this burial.

*Feature 10014, Sk (40106), Cut (40079), Fill (40078), Upper and lower superstructures (40077 and 40102)*

A pit provided with superstructures formed by stones and surrounding the pit perimeter and inner walls, and tiles covering the burial space, Feature 10014 includes the skeletal remains of a mature adult (35-49 years old) male individual, lying supine, extended, and with the head oriented toward West. Postburial animal activity resulted in the partial disturbance of this primarily deposited skeletal remains. Unidentified metal objects, still under investigation, were found near the skeleton at the level of the right and left fibulae, tibiae, and feet.

*Feature 10015, Sk (40130, 40130.b2, 40130.b3), Cut (40118), Fill (40117), Upper and lower superstructures (40115, 40116)*

Feature 10015 is a pit provided with stones and tiles superstructures along its perimeter and internal walls. It contains the primary deposition of an old adult ( $\geq 50$  years old, Sk 40130) female individual (**Figure 7**). The latter was lying supine and extended, with the head oriented toward West. Postdepositional animal activity partially disturbed the skeletal remains.

Few, isolated bones found in the burial fill allowed to identify the remains of additional two individuals, both of undetermined sex: a child (3-12 years of age, Sk. 40130.b2) and an adult ( $\geq 20$  years old, Sk. 40130.b3). No grave goods were found associated with this deposition.



**Figure 7:** Feature 10015, Sk 40130 upon excavation.

*Feature 10016, Sk (40113, 40113.b2), Cut (40108), Fill (40107), Upper and lower superstructures (40105 and 40114)*

This feature is represented by a pit provided with stones as superstructures along its perimeter and internal walls, and covered by tiles. It contained the skeletal remains of an old adult ( $\geq 50$  years old) female (Sk 40113), lying supine and apparently extended, with the head oriented toward West. This primary deposition was heavily disturbed by animal activity, resulting in the displacement of the

upper- and lower limb skeletal elements (with the exception of the femurs). Few scattered bones found in the burial fill pertain to a second adult ( $\geq 20$  years old, Sk. 40113.b2) individual of unknown sex. No grave goods were associated with this deposition.

*Feature 10020, Sk (40100), Cut (40084), Fill (40083), Grave superstructures (40104)*

This feature is represented by a pit provided with a stone superstructure along its Eastern edge. The grave intercepted the Western limit of the excavation area. It was therefore decided to only partially excavate this feature, focusing on its Eastern half. The burial includes the remains of an adult ( $\geq 20$  years old) individual, whose sex was not possible to determine based on the few available skeletal elements (Sk. 40100). The relative position of the lower limbs (partially disturbed by postdepositional animal activity) suggests that the individual was lying supine and extended, possibly partially rotated toward the right side and with the head oriented toward West. No grave goods were found associated with this deposition.

*Feature 10028, Sk (40061), Cut (40043), Fill (40042)*

Feature 10028 is a simple pit without superstructures, containing the primary deposition of a mature adult (35-49 years old) male individual (Sk 40061). The skeletal remains were severely disturbed by animal activity at the level of the thorax, upper-, and lower limbs. From the overall position of the preserved elements it is however possible to postulate that the individual was lying supine and extended, with the head oriented toward West and the left lower limb partially superimposed on the right one. No grave goods were found associated with this deposition.

*Feature 10029, Sk (40167, 40167.b2), Cut (40149), Fill (40140), Upper and lower superstructures (40148 and 40156)*

This feature is represented by a primary deposition of an old adult ( $\geq 50$  years old) male individual (Sk 40167). The funerary structure is composed by a pit surrounded along its perimeter and internal walls by stones. The individual was lying supine and extended with the forearms overlying the abdomen and the head oriented toward West. Also in this case post-depositional animal activity led to the partial disturbance of the skeletal remains. Few scattered bones of an infant (2 months-3 years of age, Sk. 40167. b2), and a single bead were found in the burial fill.

*Feature 10060, Sk (40064), Cut (40066), Fill (40065)*

Feature 10060 is a simple pit and represented by a primary inhumation of a child (3-12 years of age, Sk. 40064), whose skeletal remains were heavily disturbed by animal activity. Only elements of the vertebral column, pelvis and lower limbs were recovered. The individual was lying apparently supine

and extended, with the head oriented toward West. No grave goods were found associated with this deposition.

*Feature 10061, Sk (40088), Cut (40068), Fill (40067), Upper and lower superstructures (40069 and 40098)*

Feature 10061 is represented by a pit provided with stones surrounding the eastern perimeter of the pit. It contained the primary deposition of an old ( $\geq 50$  years old) male individual (Sk. 40088), whose skeletal remains were heavily disturbed by animal activity. The individual was lying supine, extended, with the forearms superimposed on the abdomen and the head oriented toward West. A coin from the Hellenistic period was found associated with the skeletal remains.

*Feature 10062, Sk (40072), Cut (40070), Fill (40071)*

Feature 10062 is represented by the primary deposition of a young (20-34 years old) male individual (Sk. 40072) lying supine, extended, and with the head toward West in a simple pit without associated grave goods.

*Feature 10068, Sk (40091, 40091.b2, 40091.b3), Cut (40080), Fill (40081), Superstructure (40110)*

This feature is represented by a primary deposition of a young (20-34 years old), probably male individual (Sk. 40091), lying in a pit provided with stones superstructure surrounding its Eastern edge. The individual was lying supine and extended, with the head oriented toward West and the forearms superimposed on the abdomen. The remains were heavily disturbed by animal activity. In the fill were identified isolated skeletal elements pertaining to a second adult ( $\geq 20$  years old, Sk. 40091.b2), and an infant (2 months-3 years old, Sk. 40091.b3). No grave goods were found associated with this burial.

*Feature 10069, Sk (40121), Cut (40096), Fill (40097), Superstructure (40087)*

Feature 10069 corresponds to the primary deposition of a young adult (20-34 years old) male individual (Sk 40121) deposited in a pit surrounded by tiles along its perimeter (**Figure 8**). The individual was lying supine, extended with the forearms over the abdomen and the head oriented toward West. No grave goods were found associated with this deposition.

*Feature 10078, Sk (40161), Cut (40147), Fill (40146), Lower superstructure (40145)*

This feature corresponds to a pit covered by tiles and containing the skeletal remains of an old ( $\geq 50$  years old) male individual (Sk 40161). The latter was lying supine, extended, with the head oriented toward West. No grave goods were associated with this deposition.

*Feature 10081, Sk (40172), Cut (40155), Fill (40153), Upper and lower superstructures (40162 and 40154)*

Feature 10081 corresponds to the primary deposition of a mature adult (35-49 years old) female individual (Sk 40172) deposited in a pit provided with superstructures composed by stones and tiles. The individual was lying supine, and extended with the head oriented toward West. Post-depositional disturbance from animal activity heavily affected the upper- and lower limbs, hampering a full understanding of the original position of the relative skeletal elements. No grave goods were found associated with this deposition.



**Figure 8:** Feature 10069, Sk 40121 upon excavation.

*Feature 10098, Sk (40178), Cut (40176), Fill (40177)*

This feature is represented by a heavily disturbed primary deposition of a child (3-12 years old, Sk 40178), deposited in a simple pit. Phytoliths were found near the upper limbs and were sampled for further analysis.

*Feature 10101, Sk (40189), Cut (40183), Fill (40182)*

This feature is represented by a primary deposition of an adult ( $\geq 20$  years old) male (Sk 40189). The individual was lying supine, extended, with the head oriented toward West. Animal activity heavily disturbed the skeletal remains. No grave goods were found associated with this deposition.

*Feature 10102, Sk (40187), Cut (40185), Fill (40184), Superstructure (40188)*

This feature is represented by a pit with stones along its eastern edge, and containing few, disturbed skeletal elements pertaining to the lower limbs of an adult ( $\geq 20$  years old)

individual of unknown sex. Animal activity completely disturbed the skeletal remains. The position of the few available fragments suggests that the individual was lying supine, possibly extended, with the head oriented toward West. No grave goods were found associated with this deposition.

### 2.3 Synthesis

Table 2 provides an overview of the age, sex, and funerary typology associated to each excavated features. Individuals represented by isolated bones (b numbers) are not included.

The skeletal sample excavated during the 2019 season is mostly composed by adult individuals (15/17), with the majority represented by old adults. As for the sex distribution, males are more numerous (9 out of 12 sexed individuals). This bias in sex representation is interesting, since it may suggest some form of funerary selection. However, one needs to consider the possibility of a simple random effect due to the small size of the sample.

When considering the three main types of funerary features (I: simple pits, II: pits surrounded by stones and/or tiles, and III: pit covered by stones on their eastern edge), males are present in all types of funerary structures. Conversely, all three female individuals were buried in pits surrounded by superstructures (type II). A similar explorative analysis of patterns in age-at-death reveals that, while adults are represented in all the burial types, subadults were found only in simple pits (type I).

Feature	Skeleton	Age	Sex	Burial type	Associated objects
10013	40186	Adult	M	I	
10014	40106	MA	M	II	Metal objects
10015	40130	OA	F	II	
10016	40113	OA	F	II	
10020	40100	Adult	NR	III	
10028	40061	MA	M	I	
10029	40167	OA	M	II	Bead in fill
10060	40064	Child	NR	I	
10061	40088	OA	M	III	Coin (Hellenistic period)
10062	40072	YA	M	I	
10068	40091	YA	M	III	
10069	40121	Adult	NR	II	
10078	40161	OA	M	II	
10081	40172	MA	F	II	

10098	40178	Child	NR	I	Phytoliths on upper limbs
10101	40189	Adult	M	I	
10102	40187	Adult	NR	III	

**Table 2:** Age and sex distribution of individuals excavated during the 2019 season (only primary inhumations are included). *Child*=3-12 years old; *A*= adult (≥20 years old); *YA*= young adult (20-34 years old); *MA*= mature adult (20-34 years old); *OA*= old adult (≥50 years old). I: simple pits, II: pits surrounded by stones and/or tiles, and III: pit covered by stones on their eastern edge.

These frequencies suggest the possible presence of specific demographic patterns associated to the different burial typologies. Also in this case, however, we need to stress the small sample size, which make any interpretation strictly tentative. A complete paleopathological analysis of the individuals (in progress) may contribute further data about the possible social factors linked to the observed funerary variability. In addition, detailed <sup>14</sup>C dating of the skeletal remains (in preparation) will provide the opportunity to test for the presence of chronological patterns among the archaeological and anthropological evidence collected so far.

## 2.4 References

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### **3. Zooarchaeological Studies**

*Canan Çakırlar, Safoora Kamjan, Pınar Erdil, İlkem Güngör*

#### **3.1 Introduction**

The zooarchaeology team was at the site between 09-07 and 28-07. The team consisted of two University of Groningen (=RUG) Groningen Institute of Archaeology (=GIA) researchers, lecturer C. Çakırlar, and PhD student S. Kamjan; an MSc Archaeology student at RUG, Pınar Erdil. PhD student İlkem Güngör from Ankara University Palaeoanthropology was a much-welcome surprise addition to our team.

The main aim of this season was to set up the lab and get familiar with the work-flow, the database, and the faunal remains themselves. The second aim of the season was to start a pilot study on pathologies.

#### **3.2 Methods**

##### **3.2.1 Preparations (before summer 2019)**

We started our preparations in winter 2018 by getting in touch with the former zooarchaeological team leaders Kathy Twiss and Jessie Verhagen (Stony Brook), Louise Martin (UCL), David Orton (UofYork), Nerissa Russell (Cornell University), and Jacquie Mulville. We are grateful to these researchers for the time they took to explain how their methodologies changed over the past >20 years, the whereabouts of the exported faunal remains, and their publication plans. Lessons learned were of course an important part of the conversations. Thanks to them, we came to the site aware (to some degree) of the potential challenges of zooarchaeological analysis at Çatalhöyük. It was of course a pleasure to have the opportunity to work at the field with Arek Marciniak this summer. We benefited greatly from his experience and expertise.

##### **3.2.2 Reference collection, lab and equipment**

We spent the first days cleaning the lab, putting out the reference collection and assessing its status, finding and ordering appropriate standard mesh-size sieves to process the light and heavy residues. The former members of the zooarchaeology team also informed us about the status of the reference collection collected over the years from nearby village dumps. This way we could assess which species we still needed in addition to the several specimens in the reference collection. We brought with us three specimens of *Sus* representing different age stages, *Lepus*, *Martes*, an adult *Dama dama*, and an adult *Capreolus*. Some essential equipment, e.g. digital callipers, we figured might also be missing, so we brought these with us as well. Two sparrows has been found dead in the camp



area. We buried them in front of the zooarchaeology laboratory (together with a label containing the necessary information) to add it into the reference collection in the next year. I. Güngör made a list of the specimens in the reference collection. A copy of this list is placed in the shared drive of the Çatalhöyük database.



**Figure 9:** Çatalhöyük zooarchaeology laboratory.

### **3.2.3 Protocols: changing methodologies (again)**

Zooarchaeological methodologies have changed several times before at Çatalhöyük (Twiss et al. 2014, 2017, and personal communication with K. Twiss and D. Orton). First of all, excavators suggested to discontinue the so-called Priority Units system and we agreed. We still, of course, visit the excavations regularly to discuss the progress in general and in relation to faunal remains. Animal Bone Groups (=ABGs) ABGs, especially horn core clusters are usually lifted after having been consolidated by a conservator. This season, on-site consolidation was not possible. When excavators found ABGs, the zooarchaeology team attempted first-aid recording on site.



**Figure 10-11:** Canan Çakırlar and Pınar Erdil from the zooarcheology lab in the field lifted the horns after measuring them in situ.

At the lab, in order to keep the speed of faunal analysis as a steady pace and produce as much useful information as possible, we decided to proceed with a system of tiered analysis: Notes on paper (which are digitized at the end of each week); assessment (similar to unit description); and detailed analysis of ‘good’ and ‘excellent’ contexts. Assessment meant that we looked at all the remains in a faunal unit bag, sorted human bones out returned them to the finds lab, we rough-counted the remains, noted the taphonomy, noted the number of potentially identifiable remains, and recorded the bone tools and ABGs in the database.

### 3.2.4 Preparing visual guides

The East is covered by post-Chalcolithic graves (See Excavations Report). In 2018 and 2019, human remains were found mixed with faunal remains while removing the topsoil. P. Erdil started preparing a visual guide in order to distinguish between human and animal bone fragments found in Çatalhöyük. The human remains, which were separated from the faunal remains by the zooarchaeology team, were photographed for the visual guide. Same elements of both human and animal remains were selected and photographed. The most often misidentified remains were also photographed together, such as human cranium and tortoise carapace fragments (**Figure 12**).



**Figure 12:** Human skull fragment from East topsoil vs. tortoise carapace (i.e. shell) fragment from the reference collection (Image: Pınar Erdil - Canan Karataş Yüksel).

As a continuation of this project, P.Erdil also assisted Marco Milella from the Human Remains team on the site between the dates of 25.07 and 28.07 and worked on excavating two human burials (Unit 40061 and Unit 40091).

### 3.2.5 Training

In the afternoons, we introduced interested students (from Ege University and Poznan) to comparative mammalian skeletal anatomy. Some came to the lab in the afternoons more regularly to train themselves using the reference collection and selected archaeological specimens. I. Güngör and

P. Erdil received advanced training. While on site, we learned that we received a start-up grant to organize an Advanced Zooarchaeology summer school at the site, in collaboration with Dr. David Orton (University of York) and Mehmet Somel (METU) among others.

### 3.3 Results

We used the topsoil units excavated in 2018 for training purposes, and while doing that, we sorted the human remains and ceramics from the faunal bones, and returned them to the Finds lab.

We assessed 9 units (A4 or A5 in the database. Form: Faunal unit description). This is the sum of all closed units in this year's excavations by 25-07-2019. Almost all of these units were contaminated with post-Neolithic (probably Hellenistic, Roman or Islamic) human remains. Almost 40% of Unit 4042 were human bones. In this unit, one formal bone tool was found. Otherwise, similar to middens, there were very few diagnostic long bones in this unit.

Unit 40031, a midden deposit, contained more than 400 specimens representing diverse taxa. Sheep, goat, cattle, equids, sus, hare, fox, dog remains, and 6 petrous bones (probably sheep, one possible dog). There are also remarkably few ribs in the midden units. Unit 40032 was similar to 40031 in character (ashy very fragmented bones) and taxonomic diversity. Both units contained some human remains as well. In Unit 40036, we identified a bone "needle".

Units 40056, 40058, and 40063 contained bone clusters, including horn cores. We took in situ measurements on site, as much as possible. Seven horn cores (MNI=9) in these units were tentatively identified as male sheep or wild male sheep. Further osteometric comparison with previous horn core finds in TP and TPC will clarify their domestication status. We think one of these to be a male goat, and there was also one juvenile male sheep horn core. They were mostly set against the north bank of the East Area. In addition to horn cores, bone clusters contained aurochs(?) scapulae (MNI=2) and an articulated radius and ulna, also of an aurochs (?). These finds were all entered into the faunal database.

Between 15<sup>th</sup> to 22<sup>th</sup> of July S. Kamjan, P. Erdil, C. Çakırlar, and I. Güngör went through the previously studied faunal remains stored in the depot and collected the *Bos* phalanges and metapodials from the main excavated areas, including the North and South areas in the East mound as well as the West mound. With the remote aid of D. Orton, who helped us locate the samples in the database and the depot, we established the potential and the feasibility of a pilot study on *Bos* palaeopathologies. A detailed study was conducted by S. Kamjan, assisted by the rest of the team between 19<sup>th</sup> and 25<sup>th</sup> of July. Required specimens were photographed by Mateusz Dembowski, the photographer of the team. Having collected the necessary data, the list of studied units was submitted to the archiving team and the all specimens were placed backed into their original storage units.

## **4. Archaeobotanical Studies**

*Burhan Ulaş, Marco Madella, Carlos Santiago-Marrero, Ece Dinçerler, Karolina Joka, Demhat Yaman*

### **4.1 Introduction**

Çatalhöyük's new archaeobotanical research began this year. This year's archaeobotanical research aimed to learn all the protocols used in the tradition of archaeobotanical research in Çatalhöyük for 25 years (from the collection of soil samples from the excavation area, to all the flotation process and to the transfer of data in the database). In this context, the works were performed as: installation of the flotation machine and the stereo microscope, starting the flotation process, entering data into the database, etc. All operations were performed on the basis of previous floating and data transfer protocols with the guidance of old team member Karolina Joka. Except these works, new actions have been initiated for the implementation in the archaeobotanical laboratory at Çatalhöyük of a reference collection with domestic / wild modern seeds and it was developed the starting of an ethnobotanical / ethnographic study in the Konya plain, in collaboration with University of Agriculture and Food of Konya.

As part of the new archaeobotanical studies, a meeting was held from 6 to 7 May 2019 with the support of the Eurasian Branch of the German Archaeological Institute in Berlin, with the participation of old and new team members at the TOPOI Building in Dahlem. During the meeting in question, some suggestions were developed on the archaeobotanical investigation of the New Period of Çatalhöyük. This report will also include discussions and new research topics targeted here.

### **4.2 Soil flotation processes**

This year the flotation process was started to obtain the remains of the plants from the soil samples taken from the excavation area. In the archaeobotanical studies carried out during the season, which consisted of four phases in total, such as water flotation, dry sieve, sorting and identification procedures, two team members (Ece Dinçerler and Demhat Yaman) were included in the first three phases. The members were students they were upraised about the method of archaeobotanical study.

In this context; 80 litres of sediments (Hellenistic period) belonging to the excavation season of Çatalhöyük 2018 were floated. During the excavation of Çatalhöyük in 2019, a total of 5113 litres of land were floated from 88 units of the post-Chalcolithic and Neolithic levels. Table 3 shows a list of samples taken based on the different areas excavated.



Figure 13: Çatalhöyük flotation machine.

NO	FLOT Number	Area	UNIT Number	Sample Number	Volume	Machine	Total Bags	No. of Chifbons	Date Excavated	Excavator	Date Floated	Floater	Comments	Lr.	Dist	Hr.	dir.
1	20000	E	40026	S2	25	2	2	3	2.08.2018	ES	11.07.2019	M	layer, empty burial infill, post-chalcolithic	YES		YES	YES
2	20001	E	40027	S2	55	2	6	4	4.08.2018	ED	11.07.2019	M	layer, burial infill, post-chalcolithic	YES		YES	YES
3	20002	E	40028	S2	8	1	2	17.07.2019	GD	20.07.2019	M	layer, ovenpit fill, post-chalcolithic	YES		YES	YES	
4	20003	E	40044	S2	27	2	3	18.07.2019	EA	20.07.2019	M	layer, pit infill, post-chalcolithic	YES		YES	YES	
5	20004	E	40040	S2	30	2	4	17.07.2019	YS	20.07.2019	M	layer, pit fill, post-chalcolithic	YES		YES	YES	
6	20005	E	40042	S2	30	1	3	18.07.2019	EG	20.07.2019	M	layer, burial, post-chalcolithic	YES		YES	YES	
7	20006	E	40053	S2	30	2	6	18.07.2019	ES	20.07.2019	M	layer, pit fill, post-chalcolithic	YES		YES	YES	
8	20007	E	40039	S2	4	1	1	18.07.2019	BP	20.07.2019	M	layer, ovenpit fill, post-chalcolithic	YES		YES	YES	
9	20008	E	40057	S2	16	1	2	20.07.2019	EGA	21.07.2019	M	layer, base of the oven, post-chalcolithic	YES		YES	YES	
10	20009	E	40031	S2	35	2	5	17.07.2019	ES	21.07.2019	M	layer, midden, post-chalcolithic	YES		YES	YES	
11	20010	E	40050	S2	30	2	3	18.07.2019	EGA	21.07.2019	M	layer, oven fill, post-chalcolithic	YES		YES	YES	
12	20011	E	40041	S2	37	2	4	18.07.2019	YWS	21.07.2019	M	cut, pit cut, post-chalcolithic	YES		YES	YES	
13	20012	E	40046	S2	25	2	3	18.07.2019	JH	21.07.2019	M	layer, fill of large pit/truncation, neolithic	YES		YES	YES	
14	20013	E	40056	S2	33	2	4	20.07.2019	BP	21.07.2019	M	layer, room fill, neolithic	YES		YES	YES	
15	20014	E	40038	S2	30	2	3	17.07.2019	ES	21.07.2019	M	layer, pit fill, post-chalcolithic	YES		YES	YES	
16	20015	E	40032	S2	25	2	2	18.07.2019	JH	21.07.2019	M	pit infill/room fill, neolithic	YES		YES	YES	
17	20016	E	40051	S2	28	2	2	20.07.2019	EGA	21.07.2019	M	layer, superstructure of an oven, post-chalcolithic	YES		YES	YES	
18	20017	E	40033	S2	19	2	2	17.07.2019	SBD	21.07.2019	M	layer, pit infill, post-chalcolithic	YES		YES	YES	
19	20018	E	40054	S2	29	2	4	20.07.2019	EA	21.07.2029	M	layer, pit infill, post-chalcolithic	YES		YES	YES	
20	20019	E	20042	S2	63	5	5	21.07.2019	KH	22.07.2019	M	layer, burial, post-chalcolithic	YES		YES	YES	
21	20020	E	40060	S2	25	2	3	21.07.2019	ES	22.07.2019	M	layer, pit fill, post-chalcolithic	YES		YES	YES	
22	20021	E	40058	S2	25	2	4	21.07.2019	EGA	23.07.2019	M	layer, room fill, neolithic	YES		YES	YES	
23	20022	E	40062	S2	30	2	4	22.07.2019	GD	23.07.2019	M	layer, room fill, post-chalcolithic	YES		YES	YES	
24	20023	E	40063	S2	11	1	2	23.07.2019	EGA	24.07.2019	M	cluster, neolithic	YES		YES	YES	
25	20024	E	40073	S2	25	2	2	23.07.2019	GA	24.07.2019	M	layer, activity area/layer, chalcolithic	YES		YES	YES	
26	20025	E	40062	S3	015	1	1	23.07.2019	MD	24.07.2019	M	cluster, neolithic	YES		YES	YES	
27	20026	E	40065	S2	28	2	3	23.07.2019	YWS	24.07.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
28	20027	E	40065	S3	8	1	1	23.07.2019	KH	24.07.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
29	20028	E	40075	S2	28	2	3	24.07.2019	ES	25.07.2019	M	layer, accumulated midden deposit within b.175, neolithic	YES		YES	YES	
30	20029	E	40082	S2	28	2	2	24.07.2019	EGA	25.07.2019	M	layer, room fill, neolithic	YES		YES	YES	
31	20030	E	40085	S2	14	1	2	25.07.2019	EGA	25.07.2019	M	cluster, neolithic	YES		YES	YES	
32	20031	E	40076	S2	27	2	2	25.07.2019	ES	28.07.2019	M	layer, room fill of b.175, neolithic	YES		YES	YES	
33	20032	E	40071	S2	70	5	3	25.07.2019	KH	28.07.2019	M	layer, burial infill, post-chalcolithic	YES		YES	YES	
34	20033	E	40094	S2	25	1	2	27.07.2019	YWS	28.07.2019	M	layer, superstructure, post-chalcolithic	YES		YES	YES	
35	20034	E	40096	S2	27	2	2	26.07.2019	EGA	28.07.2019	M	layer, room fill, neolithic	YES		YES	YES	
36	20035	E	40092	S2	33	2	2	27.07.2019	ES	28.07.2019	M	layer, room fill, neolithic	YES		YES	YES	
37	20036	E	40099	S2	29	2	3	27.07.2019	ES	28.07.2019	M	layer, last layer of accumulated deposit of midden, neolithic	YES		YES	YES	
38	20037	E	40042	S2	60	5	3	17.07.2019	KH	28.07.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
39	20038	E	40067	S2	217	15	17	24.07.2019	KH	28.07.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
40	20039	E	40103	S2	18	1	1	28.07.2019	YWS	29.07.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
41	20040	E	40111	S2	30	2	2	28.07.2019	ES	29.07.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
42	20041	E	40088	S2	165	12	10	28.07.2019	EA	29.07.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
43	20042	E	40083	S2	162	12	10	28.07.2019	KH	29.07.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
44	20043	E	40112	S2	31	2	2	29.07.2019	YWS	30.07.2019	M	layer, fill/midden, neolithic	YES		YES	YES	
45	20044	E	40081	S2	300	20	20	24.07.2019	BP	30.07.2019	M	layer, burial fill, neolithic	YES		YES	YES	
46	20045	E	40122	S2	20	2	1	30.07.2019	EGA	31.07.2019	M	neolithic	YES		YES	YES	
47	20046	E	40097	S2	61	5	2	30.07.2019	BP	31.07.2019	M	layer, burial, neolithic	YES		YES	YES	
48	20047	E	40129	S2	1	1	1	31.07.2019	EGA	31.07.2019	M	layer, bricks, neolithic	YES		YES	YES	
49	20048	E	40126	S2	5	1	1	31.07.2019	EGA	31.07.2019	M	layer, bricks, neolithic	YES		YES	YES	
50	20049	E	40107	S2	337	27	19	28.07.2019	YWS	31.07.2019	M	layer, burial fill, neolithic	YES		YES	YES	
51	20050	E	40120	S2	25	2	1	31.07.2019	BP	1.08.2019	M	layer, 3rd layer of the top soil, neolithic	YES		YES	YES	
52	20051	E	40120	S2	27	2	1	30.07.2019	EGA	1.08.2019	M	layer, mud bricks, neolithic	YES		YES	YES	
53	20052	E	40127	S2	17	2	1	31.07.2019	EGA	1.08.2019	M	layer, bricks, neolithic	YES		YES	YES	
54	20053	E	40131	S2	23	1	1	31.07.2019	YWS	1.08.2019	M	layer, mortar in superstructure, neolithic	YES		YES	YES	
55	20054	E	40133	S2	8	1	1	1.08.2019	EGA	1.08.2019	M	layer, floor, neolithic	YES		YES	YES	
56	20055	E	40129	S2	29	2	1	31.07.2019	ES	3.08.2019	M	layer, room fill, neolithic	YES		YES	YES	
57	20056	E	40139	S2	25	2	1	1.08.2019	EGA	3.08.2019	M	layer, room fill, neolithic	YES		YES	YES	
58	20057	E	40135	S2	15	1	1	1.08.2019	YWS	3.08.2019	M	layer, mortar in superstructure, neolithic	YES		YES	YES	
59	20058	E	40136	S2	13	1	1	1.08.2019	EGA	3.08.2019	M	layer, make up layer, neolithic	YES		YES	YES	
60	20059	E	40137	S2	30	2	1	1.08.2019	ES	3.08.2019	M	layer, room fill, neolithic	YES		YES	YES	
61	20060	E	40117	S2	225	17	12	31.07.2019	SBD	3.08.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
62	20061	E	40078	S2	249	18	10	31.07.2019	KH	3.08.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
63	20062	E	40152	S3	3	1	1	3.08.2019	EGA	4.08.2019	M	layer, floor, neolithic	YES		YES	YES	
64	20063	E	40142	S2	10	1	1	3.08.2019	JH	4.08.2019	M	layer, post fill, neolithic	YES		YES	YES	
65	20064	E	40119	S2	23	2	2	3.08.2019	EGA	4.08.2019	M	layer, fill in the foundation cut, neolithic	YES		YES	YES	
66	20065	E	40144	S2	32	2	1	3.08.2019	JH	4.08.2019	M	layer, layer of fill, neolithic	YES		YES	YES	
67	20066	E	40159	S2	25	2	1	4.08.2019	EGA	4.08.2019	M	layer, neolithic	YES		YES	YES	
68	20067	E	40097	S2	137	2	1	27.07.2019	BP	5.08.2019	M	layer, burial, neolithic	YES		YES	YES	
69	20068	E	40160	S2	11	13	3	4.07.2019	EGA	5.08.2019	M	layer, mortar in between bricks of U40159, neolithic	YES		YES	YES	
70	20069	E	40137	S3	26	1	1	3.07.2019	ES	5.08.2019	M	layer, room fill, neolithic	YES		YES	YES	
71	20070	E	40163	S2	27	2	1	4.08.2019	EGA	5.08.2019	M	room fill, neolithic	YES		YES	YES	
72	20071	E	40164	S2	25	2	1	5.08.2019	ES	5.08.2019	M	layer, room fill, neolithic	YES		YES	YES	
73	20072	E	40157	S2	150	10	4	4.08.2019	YWS	5.08.2019	M	layer, gravel pit fill, neolithic	YES		YES	YES	
74	20073	E	40165	S2	26	2	1	5.08.2019	GB	5.08.2019	M	layer, pit fill, post-chalcolithic	YES		YES	YES	
75	20074	E	40093	S2	28	2	1	5.08.2019	MD	6.08.2019	M	layer, room fill, neolithic	YES		YES	YES	
76	20075	E	40168	S2	26	2	1	5.08.2019	JH	6.08.2019	M	layer, filling surface, neolithic	YES		YES	YES	
77	20076	E	40125	S2	32	2	1	5.08.2019	YWS	6.08.2019	M	layer, fill foundation cut, neolithic	YES		YES	YES	
78	20077	E	40140	S2	284	22	9	4.08.2019	SBD	6.08.2019	M	layer, burial/layer fill, post-chalcolithic	YES		YES	YES	
79	20078	E	40169	S1	10	1	1	5.08.2019	GB	6.08.2019	M	layer, oven base, post-chalcolithic	YES		YES	YES	
80	20079	E	40174	S2	3	1	1	6.08.2019	BP	6.08.2019	M	layer, infill of the posthole, neolithic	YES		YES	YES	
81	20080	E	40146	S2	358	28	11	5.08.2019	BP	6.08.2019	M	layer, infill of the burial, post-chalcolithic	YES		YES	YES	
82	20081	E	40093	S3	32	2	1	6.08.2019	ES	7.08.2019	M	layer, room fill, neolithic	YES		YES	YES	
83	20082	E	40171	S2	7	1	1	6.08.2019	GB	7.08.2019	M	neolithic	YES		YES	YES	
84	20083	E	40170	S2	25	2	1	6.08.2019	JH	7.08.2019	M	layer, midden, neolithic	YES		YES	YES	
85	20084	E	40143	S2	25	2	1	6.08.2019	BP	7.08.2019	M	layer, white surface-floor in NE corner, neolithic	YES		YES	YES	
86	20085	E	40153	S2	154	13	5	6.08.2019	KH	7.08.2019	M	layer, burial fill, post-chalcolithic	YES		YES	YES	
87	20086	E	40175	S2	25	2	2	7.08.2019	YWS	8.08.2019							

### **4.3 Dry sieve process**

After flotation process, the washed soil samples were dried and then sieved with the help of sieves of 30cm diameter: 4mm, 2mm, 1mm and 8 to 10cm diameter: 2mm, 1mm, 0.5mm sieves.

### **4.4 Separation process**

The purpose of the separation process was to determine and select the macrobotanical residues in the sediment samples subjected to flotation and dried processes. In this study, sediment samples were passed through sieves of different sizes and then separated. Some experienced women workers who had previously performed these procedures were included in this phase of the studies. Archaeological materials such as micro fauna and ceramic pieces have been classified and bagged. In this way, all organic and archaeological materials in soil samples were selected to be examined by experts.

### **4.5 Diagnostic procedures**

A limited number of archaeobotanical specimens were identified by Burhan Ulaş in the Çatalhöyük archaeobotanical laboratory. In total, 22 soil samples taken from the field and sent to flotation and dry sieving and the University of Malatya-İnönü macro botanical samples obtained after the extraction process to be examined by Burhan Us. Some of the identified samples were sent to the Adam Mickiewicz University in Poznan (Poland) for radio carbon dating.

### **4.6 Other Works**

#### **4.6.1 Creating a modern plant collection in the Archeobotanical Laboratory**

In this context, a modern seed collection was started in the Çatalhöyük archaeobotanical laboratory from modern seed samples collected by the old archaeobotanical team around Çatalhöyük and seeds obtained from the inhabitants of Küçükköy village. So far, a collection of over 60 different modern wild / domestic plant seeds (genus, species, subspecies, etc.) has been created. The extension of this collection will be very important for the archaeobotanical research. For this purpose, with the support of the archaeobotanical team member students, the collection will be expanded with seeds of wild plants growing around Çatalhöyük and seeds collected from the villagers.

#### **4.6.2 New Research Perspectives and Projects Targeted in the New Çatalhöyük Archaeobotanical Research**

Within the scope of the new term studies, a meeting was held on May 6-7, 2019 with the support of the Eurasian Branch of the German Archaeological Institute in Berlin, with the participation of old and new team members at TOPOI Building Dahlem. Burhan Ulaş (İnönü U), Marco Madella (UPF),

Carlos Santiago-Marrero (UPF), Lara González Carretero (UCL) and Ece Dinçerler (Ege U) participated in the meeting. At the end of the meeting, it was agreed to apply the following research themes in the following period.

- Cuisine and practices of food preparation;
- Use and dynamics space related to plant resources;
- Studies on the taxonomic origin of *Triticum* new glume wheat;
- Investigation of early domestication processes in Çatalhöyük;
- Investigation of land use in the Konya plain;
- Investigation of plant resources and food production by ethnobotanical / ethnoarchaeological method;
- Comparison of Neolithic and Chalcolithic period agricultural economy.

Below are details of the themes of the new research in question.

Burhan Ulaş proposed to contribute to the Çatalhöyük new project by conducting research on the three basic subjects:

1) *Triticum* new glume wheat type: One of the problems related to the new wheat type is about taxonomic classification. For the NGWT spikelets obtained from the Çatalhöyük settlement, Ulaş suggest carrying out the morphobiometrical research similarly to what he previously conducted on the NGWT spike in the Yenikapı and Yumuktepe settlements (Ulaş & Fiorentino in press). If the conditions are suitable, Ulaş suggest conducting a similar morphobiometrical study on the identification of Çatalhöyük NGWT grains.

2) Comparison of barley cultivation between Chalcolithic West Mound and Neolithic East Mound: Ulaş suggests carrying out research on archaeobotanical materials from the Neolithic and Chalcolithic periods in Çatalhöyük. For this study, he proposes to verify if barley becomes the important species in the agricultural economy in the Chalcolithic period (Ulaş 2019). Ulaş also suggests approaching the identification of two-row versus six-row barley (which are difficult to differentiate) through morphobiometrical.

3) Study of traditional agriculture activities and plant genetic resources in the Konya Plain and surrounding areas

This line of research should help understating prehistoric use of plant resources in the Konya Plain via the exploration of traditional agricultural and foraging strategies:

a) Through the development of a seed reference collection of local wild and domestic seeds to be housed in Çatalhöyük.

b) Through the documentation of traditional agricultural activities.

c) Through a better understanding of traditional foraging practices for plant resources in the Konya Plain.



Marco Madella proposed to contribute to the Çatalhöyük new project by conducting research on Land use in the Konya Plain. Bio-data from previous and current project will be synthesized together with climatic and geographical/geomorphological data to produce an understanding of the land use in the surrounding of Çatalhöyük. This work will be in collaboration with A. Bogaard, G. Ayala and J. Wainwright.

Lara González Carretero proposes to further develop the research on archaeological cereal meals as well as general domestic plant use.

Carlos Santiago-Marrero proposes expanding the archaeobotany investigations on foodways and use of space in houses based on the evidence from plant micro-remains (phytoliths and starch grains). Also, exploring the use of wild and non-grain plant resources (tubers/bulbs, wild seeds, etc) via starch grain studies.

#### **4.6.3 Funding actions**

Apply to national agencies (Turkey, Spain, UK) for small/medium funding at least to cover the fieldwork as well as international bodies (e.g. National Geographic, Wenner-Gren, etc). Bring Çatalhöyük into major funding applications (e.g. ERC). For this purpose, a collaboration has already been started with the researchers of the University of Agriculture and Food in Konya.

#### **4.7 References**

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## 5. Chipped Stones

*Çiler Çilingirođlu and Günay Dinç*

### 5.1 Introducton

Since lithics lab leader Sean Doyle could not make it to Çatalhöyük this season, two team members documented the lithic inventory from 2019 excavations from the East Area. During the season, we received assistance from lithic experts Sean Doyle, Berkay Dinçer and Bogdana Milić, to whom we would like to offer our thanks. This report is meant to be a preliminary assessment about the general character of chipped stones excavated in the East Area. This study allowed us to gain a first glimpse of the raw material preference, blank types, lithic technology and typology from the East Area, which represents a previously unknown part of Late Neolithic (6200-5900 cal. BC) occupation on the East mound of Çatalhöyük.

We documented the following information from each unit for chipped stones:

1. Unit information (Area, Building, Space, Feature numbers)
2. Unit description
3. Raw material
4. Possible source of obsidian (Nenezi, Göllüdağ, Acıgöl/other/unknown)
5. Flint count
6. Obsidian count
7. Weight of flint
8. Weight of obsidian
9. Retrieval method (hand-picked or dry-sieved)
10. Number of X finds in a given unit
11. Number of points, blades, flakes, cores and chips/fragments
12. Crate numbers
13. Notes

The documentation also included detailed descriptions, technical drawings and digital photography of the X finds, *envanterlik* and *etütlük* (museum) finds. The hand illustrations are done by Nilüfer İdikut, Begün Karagöz and Günay Dinç whereas the photographs were taken by Mateusz Dembowiak, Ece Sezgin and Sinem Bejna Demir.

### 5.2 The Assemblage

2019 excavations concentrated in the East Area, which includes three 10X10 m. trenches that are located adjacent to each other. Chipped stones appeared in almost every unit excavated. In total,

123 units were subject to preliminary analysis. The analysed specimens originate from hand-picked and dry-sieved units. Heavy residues from these units have not been studied. These units include not only room infills from B. 175, B.176 and B.177 and Sp. 669 but also infills of Hellenistic burials in Sp. 670 that cut through Late Neolithic architecture (13 units), midden deposit of Sp. 683 and other features like pits and ovens. Expectedly, midden deposits (U.40107, U.40112, U.40075, U.40151, U.40170, U.40175) produced the largest amount of lithics (n=2519).

U.40013, the designated unit number for unstratified finds from the East Area, is not included in this report. These contain 2850 gr lithic material, which were collected from the dry-sieved soil deriving from the unstratified contexts excavated in 2018 and 2019.

UNIT	AREA	BUILDING	SPACE	FEATURE	CATEGORY
40038	EAST	0	677	10055	pit infill
40038	EAST	0	677	10055	pit infill
40065	EAST	0	670	10060	burial fill
40069	EAST	0	670	10061	superstructure of burial
40063	EAST	0	678	0	cluster
40056	EAST	0	669	0	cluster
40056	EAST	0	669	0	room fill
40062	EAST	175	675	0	room fill
40062	EAST	175	675	0	room fill
40062	EAST	175	675	0	room fill
40062	EAST	175	675	0	room fill
40032	EAST	0	0	0	pit infill
40032	EAST	0	0	0	pit infill
40033	EAST	0	670	10051	pit infill
40044	EAST	0	0	10017	pit infill
40038	EAST	0	677	10055	pit infill
40046	EAST	0	677	10063	fill of large pit/truncation
40046	EAST	0	677	10063	fill of large pit/truncation
40042	EAST	0	670	10028	burial fill
40031	EAST	0	669	0	Midden
40031	EAST	0	669	0	Midden
40053	EAST	0	677	10056	pit infill
40060	EAST	0	673	10053	pit infill
40040	EAST	0	677	10013	pit infill
40076	EAST	175	675	0	room fill of B.175
40076	EAST	175	675	0	room fill of B.175
40076	EAST	175	675	0	room fill of B.175
40137	EAST	175	682	0	room fill
40137	EAST	175	682	0	room fill
40137	EAST	175	682	0	room fill
40137	EAST	175	682	0	room fill
40091	EAST	0	670	10068	Skeleton
40073	EAST	175	675	0	layer (activity area?)

40073	EAST	175	675	0	layer (activity area?)
40073	EAST	175	675	0	layer (activity area?)
40073	EAST	175	675	0	layer (activity area?)
40168	EAST	0	676	0	layer (fill)
40168	EAST	0	676	0	layer (fill)
40140	EAST	0	670	10029	burial fill
40140	EAST	0	670	10029	burial fill
40146	EAST	0	670	10078	burial fill
40144	EAST	0	676	0	Layer
40128	EAST	0	676	0	cluster of bones
40128	EAST	0	676	0	cluster of bones
40099	EAST	0	0	0	Midden
40099	EAST	0	0	0	Midden
40099	EAST	0	0	0	Midden
40119	EAST	0	679	10093	fill of foundation cut
40119	EAST	0	679	10093	fill of foundation cut
40170	EAST	0	683	0	Midden
40071	EAST	0	670	10062	burial fill
40047	EAST	0	0	10018	pit infill
40081	EAST	0	670	10068	burial fill
40102	EAST	0	670	10014	burial fill
40165	EAST	0	676	10095	oven fill
40146	EAST	0	670	10078	burial fill
40127	EAST	0	679	10072	Bricks
40117	EAST	0	670	10015	burial fill
40148	EAST	0	670	10015	burial fill
40097	EAST	0	670	10069	burial fill
40129	EAST	175	681	0	room fill
40129	EAST	175	681	0	room fill
40163	EAST	176	674	0	room fill
40083	EAST	0	670	10020	burial fill
40042	EAST	0	670	10028	burial fill
40135	EAST	0	670	10015	mortar in superstructre
40086	EAST	176	674	0	room fill
40086	EAST	176	674	0	room fill
40112	EAST	0	669	0	fill/midden
40112	EAST	0	669	0	fill/midden
40112	EAST	0	669	0	fill/midden
40082	EAST	176	674	0	room fill
40082	EAST	176	674	0	room fill
40092	EAST	175	675	0	room fill
40092	EAST	175	675	0	room fill
40092	EAST	175	675	0	room fill
40054	EAST	0	670	10017	pit infill
40111	EAST	175	681	0	room fill
40111	EAST	175	681	0	room fill
40111	EAST	175	681	0	room fill
40133	EAST	177	679	10079	Floor
40067	EAST	0	670	10061	burial fill

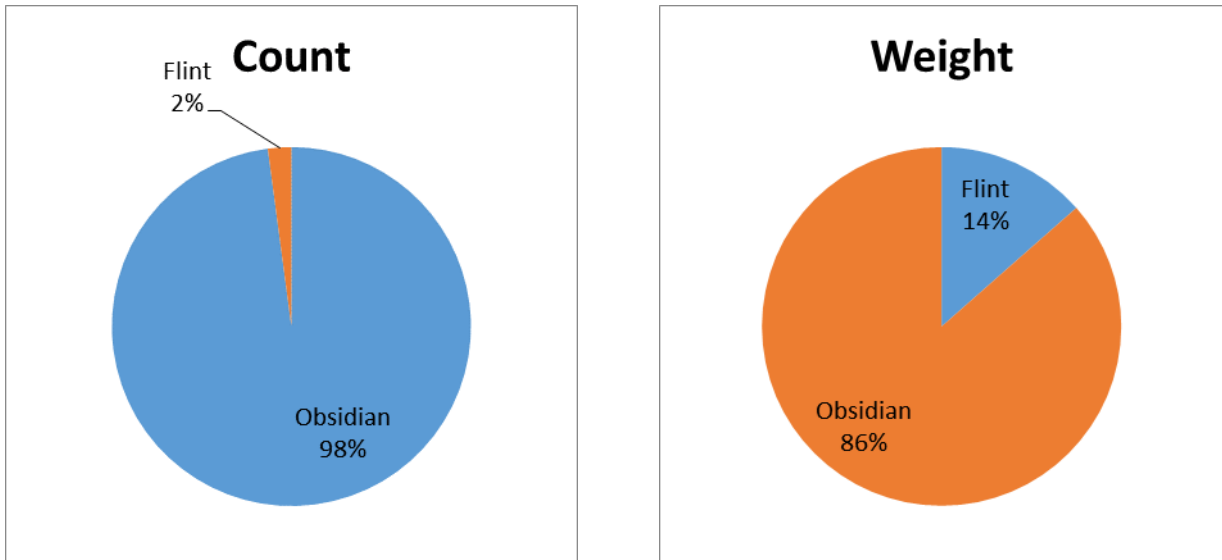
40139	EAST	176	674	0	room fill
40139	EAST	176	674	0	room fill
40131	EAST	0	670	10016	mortar in superstructure
40058	EAST	0	678	0	room fill
40058	EAST	0	678	0	room fill
40107	EAST	0	670	10016	burial fill
40107	EAST	0	670	10016	burial fill
40075	EAST	0	0	0	midden in B.175
40075	EAST	0	0	0	midden in B.175
40075	EAST	0	0	0	midden in B.175
40075	EAST	0	0	0	midden in B.175
40075	EAST	0	0	0	midden in B.175
40157	EAST	0	670	10092	burial fill
40151	EAST	0	683	0	Midden
40151	EAST	0	683	0	Midden
40151	EAST	0	683	0	Midden
40151	EAST	0	683	0	Midden
40151	EAST	0	683	0	Midden
40151	EAST	0	683	0	Midden
40175	EAST	0	683	0	Midden
40175	EAST	0	683	0	Midden
40175	EAST	0	683	0	Midden
40125	EAST	0	678	10076	fill of foundation cut
40153	EAST	0	670	10081	burial fill
40143	EAST	0	676	10096	white floor surface
40143	EAST	0	676	10096	white floor surface
40184	EAST	0	670	10102	burial fill
40181	EAST	0	670	10013	burial fill
40170	EAST	0	683	0	Midden
40170	EAST	0	683	0	Midden
40164	EAST	175	682	0	room fill
40164	EAST	175	682	0	room fill
40164	EAST	175	682	0	room fill
40082	EAST	176	674	0	room fill
40182	EAST	0	670	10101	burial fill
40180	EAST	0	676	10100	partition wall
40179	EAST	0	676	10099	Floor
40093	EAST	175	680	0	room fill
40093	EAST	175	680	0	room fill
40093	EAST	175	680	0	room fill

**Table 4:** Excavation units analyzed in chipped stone works.

In total, 100 pieces of flint and 4662 pieces of obsidian are included in the documentation from pits, burial infills, middens, room infills and clusters. B.175 and B.176 along with their designated rooms produced reliable source of information on the chipped stones of Late Neolithic assemblages from the East Area.

CH 2019 Chipped Stones	Flint	Obsidian
Count	100	4662
Weight (gr)	928	5945

**Table 5:** Numbers and weights of CH 2019 chipped stone according to their raw materials.



When we compare in terms of proportion, obsidian count constitutes 98% of all chipped stones from the East Area, in weight, however its proportion drops to 86%. The proportion of obsidian to other raw materials from the East Area is very similar to the proportions known from other LN deposits at Çatalhöyük (Carter, Conolly and Spacojević 2006).



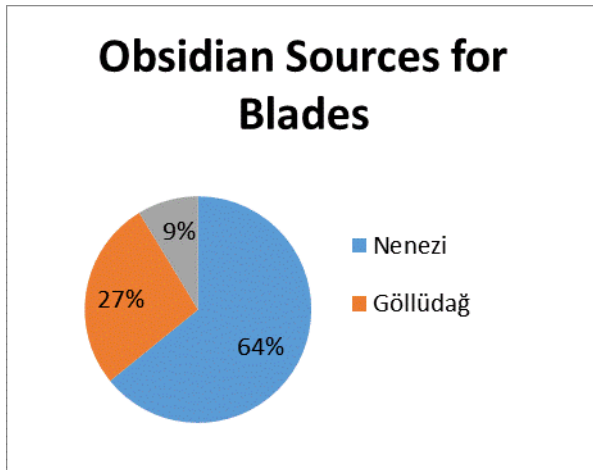
**Figure 14:** A retouched chert tool with denticulated edges. L: 12.7cm. Unit 40056.X12 (Image: Mateusz Dembowski).

Chipped stones produced of chert stand out in the assemblage. They have a very distinguished character and usually occur as large blades. The source of the chert in Çatalhöyük has been subject to previous studies. The results indicated that there are at least six sources of chert in the region around Konya which supplied the material. Absence of knapping products at Çatalhöyük however implies that these were brought to the site as ready-made tools (Carter and Milić 2013: 417). Our work on the East Area flake tools echoes similar observations. Cores or knapping material do not exist in the chert

assemblage. A characteristic we observed repeatedly was that chert tools are always bigger than their obsidian counterparts. Generally, long blades are produced from cortical pieces. Another observation is that these pieces are heavily retouched and/or denticulated on single or two sides that they were

used as large cutting tools.

A macroscopic examination on the obsidian from East Area indicates different sources. We tried to distinguish blades according to their sources to infer an idea of different proportions. We distinguished Göllüdağ, Nenezi and Acıgöl obsidians to the best of our ability. The analysis shows that of all obsidian blades, 2316 originated from Nenezi; 980 from Göllüdağ and 314 from Acıgöl or other unknown/indeterminate sources.



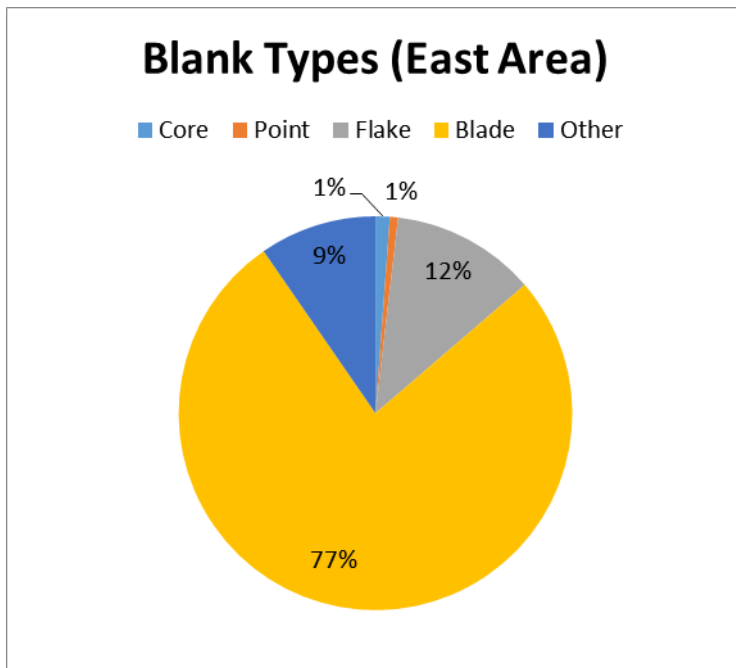
**Figure 15:** General look of the East Area lithic assemblage (Image: Çiler Çilingiroğlu).

Previous work on chipped stones from Çatalhöyük showed that between South G-South N layers, East Göllüdağ is the most preferred source of obsidian; whereas with the South O until the end of the sequence, Nenezi obsidian makes up the majority of the obsidian (Carter and Milić 2013: Fig. 21.2). The first results from East Area excavations, which revealed Late Neolithic buildings and associated middens and features confirm that a similar trend is observable also in this new excavation area. It turns out that around 64% of all obsidian blades from East Area originated from Nenezi sources whereas Göllüdağ made up 27% of the assemblage. We also identified Acıgöl obsidian, albeit in very small numbers.



**Figure 16:** A blade core from U.40075 (Image: Bejna Demir – Ece Sezgin).

The majority of the chipped stones are constituted of blades. These correspond well to the Late Neolithic chipped stones known from other areas, where a highly skilled production of pressure blades were identified increasingly from layer South P (Mellaart Level VI) onwards (Carter, Conolly and Spacojević 2006; Carter and Milić 2013: 21.13). East Area assemblage also contained points (n=32), flakes (n=567), cores (n=56) and chips/fragments (n=460). A more detailed analysis in the upcoming seasons should demonstrate whether production took place on site in the East Area.



#### Points

The 2019 East Area excavations discovered many points and point fragments (n=36). These show different typological characteristics. The most common types are leaf shaped and tanged points with short-thick and long-thin variants. Both unifacial and bifacial retouched specimens show extraordinary quality. Different colors of chert were also used to produce both unifacially and bifacially retouched, very high quality projectiles



**Figure 17:** Left: Unifacially retouched tanged point. L: 5cm,W:2cm T:8mm U.40081.x1. Middle: Bifacially retouched point. L:5.7cmW:1.5cmT:7mm. U.40112.x8. Right: Bifacially retouched chert point. L:6.5cmW:1.2cmT:7mm. U.40073.x1 (Images: Mateusz Dembowski).

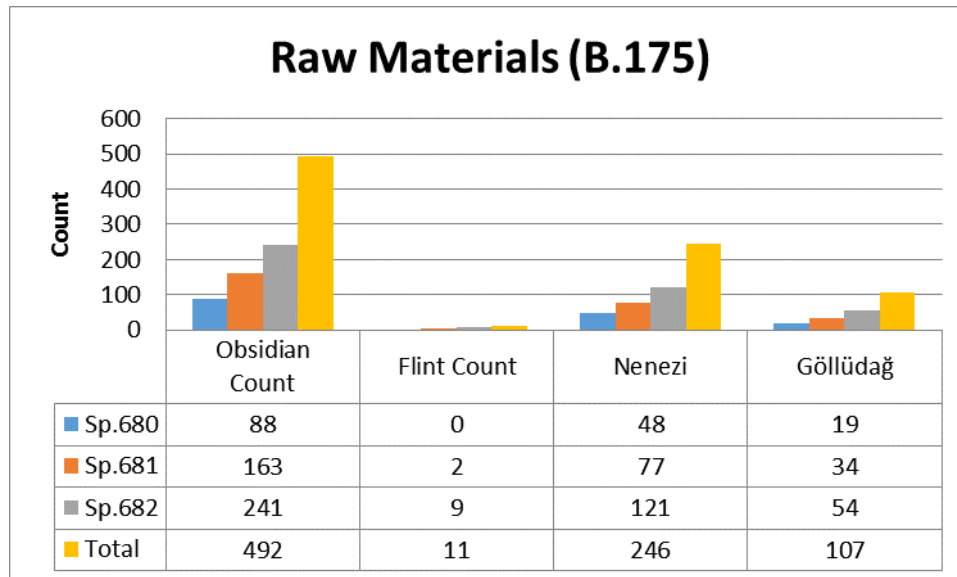
#### **5.2.1 Building 175**

Building 175 is a mudbrick building with three rooms that are connected to each other via crawl holes. The building measures ca. 20m<sup>2</sup> and is excavated fully in 2019 season. Three distinct spaces in

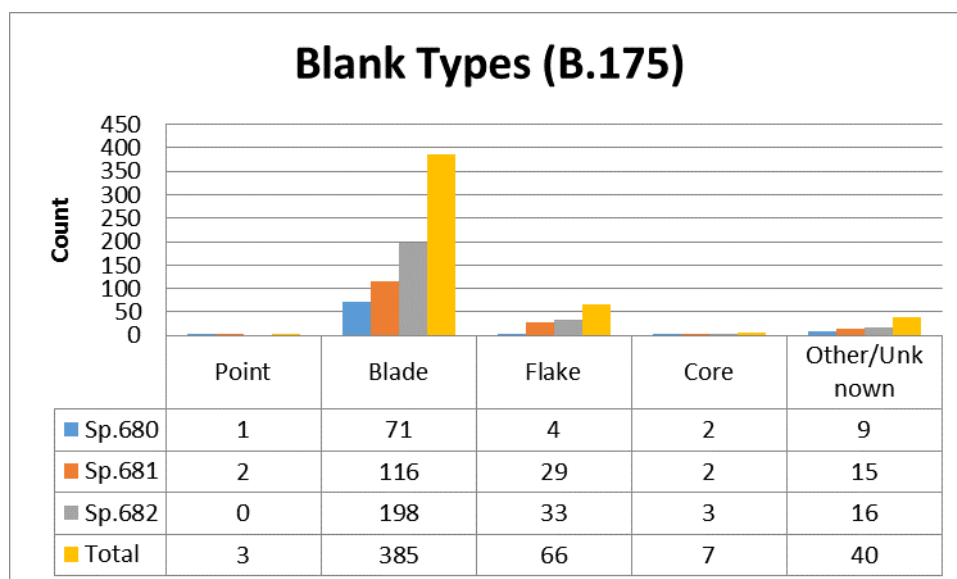


the building are as follows: Sp.680: North room; Sp.681: West room; Sp.682: East room. Infills of all three of these spaces produced chipped stones.

Room infill of Sp. 680 (U.40093) included only obsidian chipped stones (n=88). The majority of these belong to blades (n=71), but there are also few number of flakes, chips and cores. U.40093 also contained one bifacially retouched point produced from Göllüdağ obsidian.



Sp. 681 (U.40111, U.40129) represents the western room of B.175, which has been excavated down to the floor level. This room infill produced 163 obsidian and two flint specimens. Apart from two fragments of points and two possible cores, the assemblage is heavily dominated by blades (n=116). One of the two chert specimens belongs to a flake of reddish color. In terms of obsidian sources, Nenezi has the majority with 77 specimens while Göllüdağ is represented with 34 pieces.



Sp. 682 is the East room of B.175 which has also been excavated to its floor level. The size of this room is slightly bigger than Sp.681 and it produced the largest amount of lithics from B.175. The room infill is collected in two units (U.40137, U.40164) which contained in total 250 chipped stones. Of these, only nine are chert and the rest is obsidian. Nenezi again has the majority with 121 pieces followed by Göllüdağ with 54 specimens. The room infill contained many blades (n=198) and to a lesser amount flakes, cores and fragments. The assemblage from Sp. 682 contains no points.

### **5.2.2 Building 176**

B.176 is located in the south of the third square of the East Area. This building has white colored brick walls and was cut by a large pit of post-Neolithic age. Therefore, well stratified deposits from the building produced very little chipped stones. U.40139 represents the room infill of Sp. 674. In total, five pieces of Nenezi obsidian blades are collected from this unit. Floor and platform from the same building did not include any lithic material.

### **5.2.3 Building 177**

B.177 is a very small area in the southeastern edge of the Square 3 in East Area. It is in fact a very small section of a thin floor structure (U.40133). The rest of the building remains outside of the excavated area.

This unit contained only one point and one blade, both made from obsidian.

## **5.3 Conclusions**

There are some preliminary observations to be drawn from this analysis:

1. East Area lithics show very similar trends in terms of raw material selection to other LN occupations on the East Mound with 98% of obsidian vs. 2% of chert.
2. The majority of obsidian of East Area originates from the Nenezi Dağ (64%), which is a typical trend of the LN occupation on the East Mound.
3. East Area lithic assemblage is very much dominated by pressure blades (77%), which is a well-known technological feature of LN levels at Çatalhöyük.
4. The types of obsidian and chert points discovered at the East Area correspond to the forms previously known from the site. They also show similarities to the wider region in terms of typology.
5. There is little to none chert knapping material in the East Area lithics, which may indicate that the tools were not produced on-site.
6. Further analysis of HR should shed light on the production on site.

#### 5.4 Bibliography

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## **6. Pottery Studies**

*Canan Karataş Yüksel*

### **6.1 Introduction**

The first aim of the clay laboratory 2019 studies was to get familiar with the laboratory operation, workflow and database, and the second aim was to do the first documentation on Çatalhöyük Late Neolithic Period and late pottery. This report includes preliminary information and statistical data on pottery recovered during the East Area 2019 excavations. I would like to thank Çiler Çilingirođlu and Karolina Joka for their support during our work. I would also like to thank Duygu Tarkan, whom we contacted for information on the laboratory functioning. A large number of students participated in the clay and pottery laboratory studies throughout the season. Emir Yađan and İrem Karaaslan from Ege University, Merve Kızılcay from Uludađ University, Pınar Ceylan and Merve Ömür from Konya Selçuk University took part in the documentation and technical drawing. I sincerely thank you for their contributions.

### **6.2 Methods**

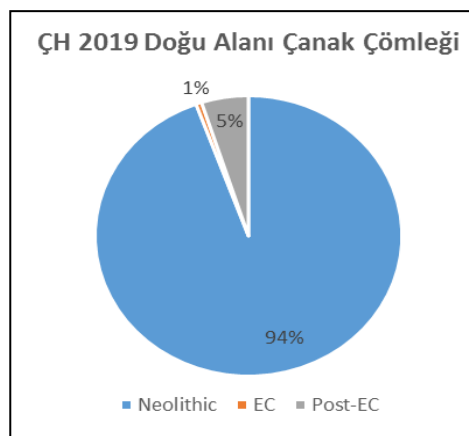
The 2019 season pottery documentation started with a detailed review of different methodological methods and classifications of J. Mellaart, J. Last, S. Özdöl, N. Yalman, and D. Tarkan, who has worked on Çatalhöyük pottery previously. Çatalhöyük 2019 pottery was first classified according to their units, names and descriptions, and then their periods and conservation status. I used the data of the ware groups and form classifications made in the 2018 season and the pottery published from previous years. As Çatalhöyük Neolithic and Early Chalcolithic sherds show very typical and repetitive technological and typological features, their classifications were made without any problem. The potsherds, which are not handmade and have qualified production, were dated roughly according to the archaeological context they came from. Based on the macroscopic observations of the Neolithic pottery, ware group classifications were made. Neolithic pottery is divided into groups as “Dark Mineral Ware”, “Cream Mineral Ware / Light Mineral Ware”, “Orange / Red Paste Ware” and others. In addition, the temper, wall thicknesses and surface treatment that can be distinguished by macroscopic observations were noted. The statistical data contain the amount of Neolithic, Early Chalcolithic and post-Chalcolithic pottery as well as the number of pottery according to different ware groups. Technical drawings of pottery that stand out for typological considerations were also created. The studied units are placed into the depots after they were assigned crate numbers.

Technical drawings by hand were made by İrem Karaaslan, Emir Yađan, Merve Kızılcay, Pınar Ceylan and Merve Ömür. Drawings of study collection and Envanterlik pottery were made by Nilüfer İdikut

and Begün Karagöz. The drawings were filed after being scanned for digital drawing. Study collection and inventory photos were taken by Mateusz Dembowiak, Ece Sezgin and Sinem Bejna Demir.

### 6.3 The Pottery Assemblage

The 2019 excavations in the East Area on East Mound were made in three trenches 10X10 m in dimensions adjacent to each other. In the East Area excavations, a total of 13,874 pottery sherds were collected from 80 excavation units (see Table 6). The post-Chalcolithic pottery belongs possibly to Bronze and Iron Ages and the Hellenistic, Roman and Byzantine Periods. Excavation units in the Eastern Area include Late Period graves and the filling that cut the Neolithic layers of the graves as mentioned, the large midden area (Sp. 683), buildings (B.175, B.176, B.177), pits, and kilns. The list of 80 excavation units, including pottery, in the 2019 East Area excavations are as follows:



AREA	UNIT	BUILDING	SPACE	FEATURE	CATEGORY
East	40031	0	669	0	Midden
East	40032	0	0	0	pit infill
East	40033	0	670	10051	pit infill
East	40038	0	677	10055	pit infill
East	40040	0	677	10013	pit infill
East	40042	0	670	10028	burial fill
East	40044	0	0	10017	pit infill
East	40046	0	677	10063	fill of large pit/truncation
East	40047	0	0	10018	pit infill
East	40049	0	677	10053	supersutstructure of oven
East	40051	0	677	10053	supersutstructure of oven
East	40053	0	677	10056	pit infill
East	40054	0	670	10017	pit infill
East	40056	0	669	0	room fill
East	40058	0	678	0	room fill
East	40060	0	673	10053	pit infill
East	40062	175	675	0	room fill
East	40063	0	678	0	Cluster
East	40065	0	670	10060	burial fill
East	40067	0	670	10061	burial fill
East	40069	0	670	10061	superstructure of burial
East	40073	175	675	0	layer (activity area?)
East	40075	0	0	0	midden in B.175
East	40076	175	675	0	room fill of B.175
East	40078	0	670	10014	burial fill
East	40081	0	670	10068	burial fill
East	40082	176	674	0	room fill
East	40083	0	670	10020	burial fill
East	40085	0	674	0	cluster
East	40086	176	674	0	room fill
East	40088	0	670	10061	skeleton
East	40089	0	670	10050	burial fill
East	40091	0	670	10068	skeleton
East	40092	175	681	0	room fill
East	40093	175	680	0	room fill
East	40094	0	0	10021	superstructure
East	40097	0	670	10069	infill of cut

East	40099	0	0	0	midden
East	40102	0	670	10014	lower superstructure in burial
East	40107	0	670	10016	burial fill
East	40111	175	681	0	room fill
East	40112	0	669	0	fill/midden
East	40115	0	670	10015	superstructure of burial
East	40117	0	670	10015	burial fill
East	40119	0	679	10093	fill of foundation cut
East	40120	177	679	10040	fill in between walls
East	40125	0	678	10076	fill of foundation cut
East	40127	0	679	10072	bricks
East	40128	0	676	0	cluster of bones
East	40129	175	681	0	room fill
East	40131	0	670	10016	mortar in superstructure
East	40133	177	679	10079	floor
East	40135	0	670	10015	mortar in superstructure
East	40136	0	674	10079	preparation layer for a some kind of floor
East	40137	175	682	0	room fill
East	40139	176	674	0	room fill
East	40140	0	670	10029	burial fill
East	40143	0	676	10096	white floor surface
East	40144	0	676	0	layer
East	40146	0	670	10078	burial fill
East	40147	0	670	10078	burial cut
East	40148	0	670	10015	burial fill
East	40151	0	683	0	midden
East	40153	0	670	10081	burial fill
East	40154	0	670	10081	superstructure of grave
East	40157	0	670	10092	burial fill
East	40159	0	679	10041	mudbricks of wall
East	40160	0	679	10041	mortar in between the layers of mudbricks
East	40163	176	674	0	room fill
East	40164	175	682	0	room fill
East	40167	0	670	10029	skeleton
East	40168	0	676	0	layer (fill)
East	40169	0	676	10095	oven base
East	40170	0	683	0	midden
East	40175	0	683	0	midden
East	40177	0	670	10098	burial fill
East	40179	0	676	10099	floor
East	40180	0	676	10100	partition wall
East	40182	0	670	10101	burial fill
East	40184	0	670	10102	burial fill

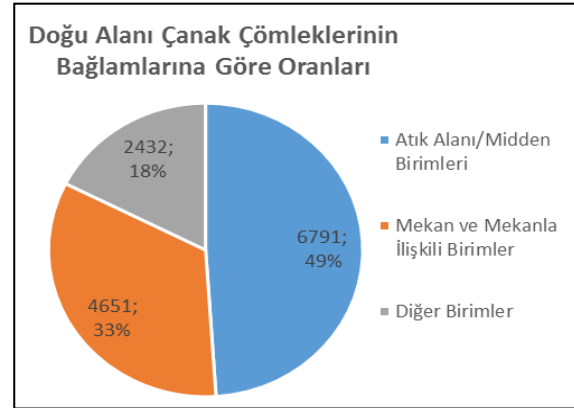
**Table 6:** Excavation units containing pottery in the East Area 2019.

The number of pottery collected from mixed deposits which are designated as “U.400113” throughout the season amounts to 4783 pieces. We classified this unstratified pottery only according to their periods and did not include these in this report.

<b>Unstratified Unit 40013 Pottery</b>		
<b>Neolithic</b>	<b>Early Chalcolithic</b>	<b>Post-Early Chalcolithic</b>
3782 parça	32 parça	969 parça

**Table 7:** U.40013 pottery.

Most of the Neolithic pottery recovered during the Çatalhöyük 2019 East Area excavations were recovered from Late Neolithic midden areas (U.40031, U.40075, U.40099, U. 40112, U.40151, U.40170, U.40175), buildings (B.175, B.176, B.177) and units associated with Late Neolithic buildings. 11441 of these pottery (n=13106, see Table 8) are divided into ware groups according to their non-plastic inclusions and surface colors. The ware groups are as follows:



Dark Mineral Ware: n=5251, Cream Mineral Ware: n=4481, Red Ware: n=4481. Almost all of the sherds coming from the midden area are dated to the Neolithic Period (n=6554). 84% of this pottery are bodysherds and the remaining 16% are diagnostic sherds. The most dominant forms are simple rimmed jars and bowls. These are accompanied by forms with straight side, holemouth jars, bowls with outturning rims, short-necked and "S" profiled bowls are also seen. Apart from these, a few carinated bowls with everted rims are observed. The holemouth and globular jars, as potential cooking pots, constitute the most dominant jar form. In addition, vertically perforated and non-perforated hook handles and crescent-shaped lugs, which are common features of Late Neolithic pottery forms, were also recovered. The morphological features in question are closely similar to the examples from the Late Neolithic layers of Çatalhöyük, which stand out in previous studies (Czerniak-Pyzel 2017; Özdöl vd. 2015; Özdöl 2014; Yalman vd. 2013; Yalman 2009, 2010; Last vd. 2005). However, the midden area assemblage also includes an ashtray-shaped bowl/plate, a miniature pot piece, and a relief and incised decorated piece.

On the outer surface of one of the relief-decorated examples recovered from U.40075, a depiction of a hand showing the lower part of the arm is seen (**Figure 18**).

The unit in question belongs to the deposit of the midden area which cuts the south wall of Building 175. Most of the pottery found in this unit has typical Neolithic features (Neo. n=964, EC n= 9, Post-EC n= 5).



**Figure 18:** U. 40075. Relief-decorated pottery (Image: Mateusz Dembowski).

In another example of relief decoration from the same unit, there is a stylized horned animal motif applied to the exterior surface just below the rim, in the form of a high relief. This relief that looks like a bull head is pierced horizontally on both sides and probably had function of lug (**Figure 19**).

Additionally, in U.400175 which included a small number of late pottery, there is one *Unguentarium* preserved as a whole. This find presumably dates to the end of the 3rd century and the first half of 2nd century BC. (Figure 20). The fragments with the mentioned late features point to the existence of various activities from the Hellenistic, Roman and Byzantine Periods in the area after the Neolithic Period. Especially the graves that destroyed the Neolithic buildings prove that the eastern slope of the mound was used as a cemetery in the late periods.



Figure 19: U. 40075. Relief-decorated (bull head) examples.  
(Images: Mateusz Dembowiak).



Figure 20: U.40075. *Unguentarium*.

The pottery recovered from the midden area are generally similar to the Late Neolithic pottery assemblages from the North and South areas. The dominant group in pottery from these units is Dark Mineral Ware. Few examples in this group contain both mineral and organic admixtures (mostly organic temper in clay). The pieces usually have medium thickness walls. Thin walled vessels are mostly associated with red slipped and light colored wares and “S” profiles and simple rims.

A total of 24 decorated pieces were recovered from the units associated with the midden area. These pieces are identical to the painted and incised decorated samples known from the Early Chalcolithic layers from the West mound of Çatalhöyük. Ten of the decorated pieces are decorated with simple linear pattern, cream-on-red painted, and 14 of them have incised lines and dots.

Other units with the highest pottery rate are those associated with buildings. Pottery from these units date to Neolithic (n=4434), Early Chalcolithic (n=33) and post-Early Chalcolithic (n=184).

Three buildings belonging to the Late Neolithic Period were excavated in the East Area during 2019 season (B.175, B.176 and B.177). B.175, which is located in the third square, measure ca. 20 square meters and it is excavated up to the floor level. Three different spaces were identified inside the building (Sp.680, Sp.681, Sp.682). U.40062 (Sp. 675), representing the top layer of B.175, contains the highest number of Neolithic and Early Chalcolithic sherds (Neo. n=1562, EC n=24). Neolithic



pottery has the characteristics of the Late Neolithic pottery community in midden areas, both in terms of form and ware group. This pottery shows the identical characters of Dark Mineral Ware, Cream Mineral Ware and Orange/Red Paste Ware, which have been defined for East Area Neolithic pottery in previous year. Dark Mineral Ware contains dark volcanic mineral temper (non-local raw materials), it is compact and well fired. This group consists mostly of holemouth jar which thought to be used for cooking. Cream Mineral Ware / Light Color Ware consists of light cream and gray colored local raw materials, with a relatively loose and light paste texture. Bowls and small jars for serving are mostly seen in this ware group. As established previously, Dark and Cream Minerals Ware are the most dominant groups in Eastern Mound pottery (Yalman 2009, 2010, Czerniak-Pyzel 2017).

There are both painted and line and dot decorated samples in the pottery collection, which we classified as Early Chalcolithic. Possibly belonging to a miniature container, there is a hole in the bottom of this container. For this reason, its function is not fully understood. This piece with white filled line, dot decoration and black burnished surface displays the typical Early Chalcolithic pottery tradition (**Figure 21**). The presence of Early Chalcolithic pottery in this area indicates the shortly occupied or used of the East Area, possibly in the early 6th millennium BC.



**Figure 21:** U.40062. Miniature container with white filled line and dot decoration (Images: Mateusz Dembowskiak).

Other units belonging to the deposit of the building 175 are U.40073 and U.40076. In the 40073 unit (Sp. 675), which contains many small pebbles in the southern corner of the building and is thought to be an activity area, is lack of Chalcolithic and later pottery. However, only 2 pieces (with 1 painted, 1 line and dot decoration) Early Chalcolithic pottery were recovered from the room fill (U.40076). This unit includes only small quantities of pottery (Neo. n=75, EC n=2).

The potsherd piece with dark red color, thick slip and well burnishing carries a bull head embellishment made in relief technique. (**Figure 22**). The analogues of this



**Figure 22:** U.40062. Pottery with relief in shape of bull's head (Image: Mateusz Dembowskiak).

piece are known from the Late Neolithic settlements of Tepecik-Çiftlik and Köşk Höyük in the Cappadocia Region. This indicates the cultural and economic ties of Çatalhöyük with Cappadocia continued in the Late Neolithic period.

Unit 40093 belongs to the filling of the northern space of Building 175 (Sp.680). Since most of this space is outside the trench edge, the results obtained are limited.

There are ruins that may belong to an oven in the east and west corner of the room. In this area, a total of 393 Late Neolithic potsherds were found, mostly composed of dark-surface colors, 56 of them are red colored with mineral temper. In addition, this unit contains two Early Chalcolithic pieces with incised line decoration.

There are a total of 466 Neolithic, one paint decorated Early Chalcolithic sherds in U.40092, U.40111, U.40129, which belong to Space 681 (in B.175). In the U.40111, a nearly whole vessel with a mild "S" curved profile and a crescent-shaped handle attachment that was later broken under the rim was unearthed. The deep bowl, which has a brown burnished surface, has traces of soot on the base and body parts near the base. The vessel was not found *in situ*; however, it can be suggested that it is used as a cooking vessel especially due to the traces of soot on the base and part of the body.

The mouth diameter of the bowl is 30 cm, the base diameter is 7 cm, and its approximate height is 24 cm (**Figure 23**). Vessels of similar size were previously found from the TPC area. It is thought that the vessels in question, some of which were found *in situ*, may have the function of a storage vessel, cooking vessel or were used during the events such as 'feastings' (Özdöl Kutlu 2017: 250-251).



**Figure 23:** U.40011. Almost complete deep bowl (Image: Ece Sezgin-Bejna Demir).

U.40137, which is the fill of the Eastern room (Sp.682) of Building 175, 632 Neolithic, 2 Early Chalcolithic, and 6 Post-Chalcolithic pieces are recovered. Only 28 pieces of Neolithic pottery were found in U.40164, which contains many animal bones in the northern part of Sp.682.

The most striking feature of Building 176 units, located to the south of Trench 3 in the East Area and destroyed by a very large pit, is that no Early Chalcolithic pottery existed from this area (Sp.674). Only 11 Late Neolithic sherds from U.40082, which is the latest fill among the walls of space (F.10038, F.10039, F.10043), and 80 Late Neolithic sherds were found from the fill just below (U.40086).

However, there is no pottery dating to the Post-Chalcolithic period in both units. The incised decoration consisting of five rows of parallel lines applied just below the mouth on the outer surface of one of U.40086's diagnostic sherd is remarkable. This decoration type is produced since the middle layers of Çatalhöyük (Yalman et al. 2013: 150). Almost identical samples were found especially in the TPC area TP M-N layers (Level IV-II) (Özdöl Kutlu, Tarkan 2016: 197).

The U.40139 and U.40163 (Sp.674) units, which are the room fill of not fully defined southern part of B.176, contain 53 Late Neolithic and 14 Post-Chalcolithic sherds.

The density of pottery from two units (U.40120 and U. 40133) belonging to B.177, which is located in the southeast corner of the 3rd trench, is very low compared to the other units. U.40120 from B.177 contained only four Late Neolithic and three Chalcolithic pottery between its walls. The other unit of the same space (U.40133) includes the excavated small part of the floor of the building. U.40133 contains very small size one Late Neolithic fragment and a single Early Chalcolithic fragment.

Unit	Category	Neolithic Body Sherds	Neolithic Diagnostic Sherds	Early Chalcolithic Sherds	Post Early Chalcolithic Sherds	Total
40031	Midden	149	17	-	11	177
40032	pit infill	195	22	-	8	225
40033	pit infill	5	-	-	2	7
40038	pit infill	136	34	5	16	191
40040	pit infill	2	1	-	2	5
40042	burial fill	92	10	-	59	161
40044	pit infill	18	1	-	31	50
40046	fill of large pit/truncation	318	36	1	30	385
40047	pit infill	39	14	-	8	61
40049	supersutstructure of oven	49	2	-	1	52
40051	supersutstructure of oven	-	1	-	-	1
40053	pit infill	10	2	1	4	17
40054	pit infill	105	10	-	19	134
40056	room fill	853	130	1	127	1111
40058	room fill	17	1	-	-	18
40060	pit infill	2	-	-	-	2
40062	room fill	1281	281	24	22	1608
40063	Cluster	3	-	-	2	5
40065	burial fill	5	-	-	-	5
40067	burial fill	15	4	-	4	23
40069	superstructure of burial	4	-	2	-	6
40073	layer (activity area?)	97	12	-	-	109
40075	midden in B.175	814	150	9	5	978
40076	room fill of B.175	59	16	2	-	77
40078	burial fill	11	-	-	6	17
40081	burial fill	41	5	2	8	56
40082	room fill	11	-	-	-	11
40083	burial fill	9	2	-	-	11
40085	Cluster	7	1	-	-	8
40086	room fill	64	16	-	-	80
40088	Skeleton	9	2	-	-	11
40089	burial fill	22	5	1	2	30
40091	Skeleton	2	-	-	-	2

40092	room fill	92	8	-	-	100
40093	room fill	329	64	2	5	400
40094	Superstructure	1	-	-	-	1
40097	infill of cut	11	4	-	12	27
40099	Midden	109	10	-	-	119
40102	lower superstructure in burial	8	1	-	2	11
40107	burial fill	16	3	-	3	22
40111	room fill	227	46	1	4	278
40112	fill/midden	501	88	2	15	606
40115	superstructure of burial	1	-	-	-	1
40117	burial fill	13	1	-	-	14
40119	fill of foundation cut	19	4	-	-	23
40120	fill in between walls	4	-	-	3	7
40125	fill of foundation cut	4	1	-	-	5
40127	Bricks	2	-	-	-	2
40128	cluster of bones	85	18	-	1	104
40129	room fill	83	10	-	3	96
40131	morter in superstructure	17	1	-	-	18
40133	Floor	1	-	1	-	2
40135	morter in superstructure	13	3	-	6	22
40136	preparation layer for a some kind of floor	3	-	-	-	3
40137	room fill	547	85	2	6	640
40139	room fill	24	7	-	12	43
40140	burial fill	17	3	-	1	21
40143	white floor surface	27	2	-	-	29
40144	Layer	15	-	-	-	15
40146	burial fill	210	10	2	48	270
40147	burial cut	1	-	-	-	1
40148	burial fill	17	7	-	2	26
40151	midden	2784	553	11	99	3447
40153	burial fill	22	2	-	15	39
40154	superstructure of grave	3	2	-	1	6
40157	burial fill	8	2	-	-	10
40159	mudbricks of wall	4	-	-	1	5
40160	mortar in between the layers of mudbricks	1	-	-	-	1
40163	room fill	15	7	-	2	24
40164	room fill	20	8	-	-	28
40167	Skeleton	-	1	-	-	1
40168	layer (fill)	85	7	-	2	94
40169	oven base	115	12	-	4	131
40170	Midden	119	16	-	-	135
40175	midden	1044	200	2	83	1329
40177	burial fill	3	1	-	-	4
40179	Floor	11	4	-	-	15
40180	partition wall	3	2	-	-	5
40182	burial fill	10	3	-	-	13
40184	burial fill	25	3	-	-	28
		<b>11131</b>	<b>1975</b>	<b>71</b>	<b>697</b>	<b>13874</b>

**Table 8:** East Area pottery of 2019.

#### 6.4 Final Remarks

Detailed description of East Area pottery is not included in this preliminary report. In the East Area, where we have started to gain new information about the Neolithic architecture, the spatial distribution of pottery and their usage, production techniques and functions will be evaluated in the upcoming seasons.

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## 7. Finds Laboratory Studies

*Karolina Joka*

The systematic and structured collections management system is crucial for a large and interdisciplinary excavation project such as the new Çatalhöyük project. Therefore, initiating and maintaining system of recording, securing and disposing artefacts is the main responsibility of the finds lab.



**Figure 24:** Karolina Joka, the finds lab leader was responsible from registering finds and samples in 2019 season.

The finds lab functions as a crucial point in the processing of all material recovered during excavations. The finds are stored, registered and when necessary distributed to other lab specialists for further study. Moreover, finds lab staff is responsible from monitoring the storage conditions, managing digital inventory, exporting samples and *Envanterlik* material chosen for the Archaeological Museum in Konya.

According to the policy of excavations managing, project director Çiler Çilingiroğlu have decided to keep same manner of registering and maintaining artefacts, as in previous seasons. In 2019 season finds lab starts support ongoing excavations of the East Area. Nuriye Gökçe, a graduate student of Ege University Archaeology Department in Izmir, took the position of finds lab assistant, helping out with initial processing and monitoring of the excavated material. Due to large amount of material, it is not possible to compute entire volume of excavated material, although it can be noted that a total

of 123 X – finds were logged, with 53 selected as *Etütlük* – a special collection to be kept and studied on-site – and 97 as *Envanterlik*.



**Figure 15:** Nuriye Gökçe was responsible from sorting and registering finds that arrived to the lab from the field. She also co-managed the *Etütlük* and *Envanterlik* finds.

Except for this, the finds leader introduced a new category of find – “H” find – to describe interesting, special finds collected from the previous season spoil heap which was subject to dry screening this season.

Due to the early closing of the finds lab in 2019, some of the artefacts remain backlogged and will be brought to completion during the 2020 season.

In 2019 season, a number of outside specialists came for working on stored material from previous seasons. Smooth process of such work proves the effectiveness of the system used both on previous, and this season. Finds staff, together with other lab specialists, continues to work on improving finds management system, to provide the best possible opportunities for future and current research.

At last, I would like to thank Lisa Guerre for her support, and valuable tips in the matter of running finds lab.

## **8. Conservation Studies**

*Ashley Lingle and Jerrod Seifert*

2019 was a dense season for the conservation team at Çatalhöyük. Work mainly focused on architectural stabilization in the North and South Areas. The areas under the permanent shelters were cleaned of excess soil and debris. Tiny Tag environmental data was collected for the 2018 to 2019 off season. No new research was undertaken during the season given the limited time on site.

Wall stabilization was achieved through application of undercutting support at the base of walls, and fissure treatment. Where walls are vulnerable to collapse due to disaggregation at the base of the wall, undercutting supports are implemented. First the area to be treated is lined with geo-textile, this is to create a barrier between the original wall and the new material that is breathable between the two interfaces. The geo-textile barrier helps to control the moisture ingress and mitigates the issue of soluble salts. Rammed earth is built up in the void under the wall mixed with chaff and perlite, creating a sacrificial surface for further erosion. The use of soil from the site allows the intervention to blend in with the surrounding architecture, however, using rammed earth instead of mudbricks is a visually different surface to further differentiate the original walls from the conservation interventions. During the 2019 season walls in the North Area chiefly in Buildings: 5, 52, 55, 64, 82, and 119.

Fissures in walls and sheering plaster were treated across the site with the use of polymers (Paraloid B44) and fillers (Perlite with soil). Paraloid B44 (methyl methacrylate and ethyl acrylate copolymer) is a thermoplastic acrylic resin selected for its high glass transition temperature of 60°C (well above the thermal activity occurring on site). A 10% solution weight by volume in 50:50 acetone: ethanol provides adequate cohesion and rigidity, without causing issues with color change. The use of spoil directly associated with treated walls allows for ideal color matches and eliminates the problem of fills being visible from outside of buildings. During the 2019 season features in both the North and South Areas were treated, specifically in Buildings: 113, 119, 132, and 139 (in the North); 4, 17, 89, 97, and 130 (in the South).





**Figure 26-27:** Conservation of mudbrick features in the North (above) and South (below) shelters.



**Figure 28:** At the end of the season, the East Area was covered with geotextiles and the architectural features were covered with sand bags.

During the 2019 season ten small finds were processed through the conservation lab. The material types included: pottery, copper alloy, faunal remains and worked bone. Notably, there was a small clay anthropomorphic figurine (40128.X2) (**Figure 29**) with no head. Objects received remedial treatment including mechanical cleaning, along with consolidation and reattachment where necessary.



**Figure 29:** Anthropomorphic clay figurine after treatment.



**Figure 30:** Ege University team preparing materials for on-site conservation work.



**Figure 31:** Wall repair in Building 132, central crack filled with perlite, 10% Paraloid B-44 w/v in 50:50 acetone ethanol mixed with sieved soil.



**Figure 32:** Wall repair on Building 64, undercutting support along the base of the wall. The area is first lined with geotextile, then layers of sieved earth mixed with perlite and chaff are applied to mitigate further erosion.

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