

## HABITAT & SETTLEMENT

Anatolia has one of the best-defined long-term records of settlement during the Holocene and its study is central to a range of questions from changing human relationships with the environment, to the formation of large-scale settlements and the evolution of urban-rural relationships. Developments in the Black Sea coastal region sometimes ran parallel to changes in Turkey, but followed a different course at other periods, creating interesting comparisons, parallels and alternatives. Of particular interest are people's attempts to live in as well as adapt to and change conditions set by the environment throughout time, and also the effect of human beings on their natural environment and landscape. Research focused on assessing long-term change from prehistory to the present day is supported within this Strategic Research Initiative.

### **Boncuklu: the spread of farming and the antecedents of Çatalhöyük**

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#### *Introduction*

The Boncuklu project offers the opportunity to understand what the uptake of farming meant for early Holocene foragers, in terms of their household organisation and social practices, landscape engagements, ritual and symbolism, as well to understand the spread of farming from the Fertile Crescent, to points to the west and ultimately into Europe. The ritual and symbolic practices at Boncuklu are especially intriguing, given that Boncuklu seems to be a direct predecessor of Çatalhöyük and is located only 9.5km to its north.

Work took place in Area P and Area M in 2016. In Area P we are investigating two buildings, with the intention of learning more about the domestic activities in these houses and the deployment of ritual and symbolism within the structures. In Area M we are investigating open areas between buildings as well as one building that does not appear to be a standard domestic house. In Area M we aim to dig a sounding to natural through what is likely the full sequence of the site.

#### *Household archaeology*

This year, we excavated three buildings that seem to be variants of typical Boncuklu residential structures: Building 20 and Building 21 in Area P and Building 24 in Area M. We also started to expose a new building in Area M – Building 26; this is probably a residential structure but we are not yet certain. All buildings showed evidence for ritual practice and symbolic elaboration.

By completing the excavation of Building 20 we have confirmed that some buildings were relatively short lived. This structure, although one of our largest buildings, had a modest number of floors compared to some of the others we have excavated. Nevertheless, there is evidence for symbolic elaboration of this building and ritual practices; what seem to be settings created in the earliest floor were painted red. We also excavated a grave cut through later floors of the building, which contained a crouched adult inhumation; so there was at least one burial in the building.

Building 21 provided further evidence of ritual practices within these buildings with a series of deliberate depositions in postholes and cache pits around the southwestern and southeastern edges of the building. An elongated cache pit ran along the southeastern wall edge. This contained a fragment of a figurine and a piece of obsidian with a bone point fragment placed at its base; these items were deposited before the plaster mix that sealed the feature was inserted. Interestingly, the figurine fragment was placed in a deeper niche in the cache pit and was surrounded by ashy material underlying the location where we previously found a



Cache pit with obsidian in Building 21

complete bear figurine in the final fill of a posthole; this suggests very specific repetitive practices. A cache pit against the northwestern wall contained several pieces of obsidian, deliberately arranged within the filling plaster (so they would not have been easily retrievable) alongside a decorated stone plaque. In addition, a very small grave of a perinatal child was inserted against the southwestern wall.

At Building 24 we are excavating the western edge of a probable residential structure in the western sounding in Area M. This building had a hearth, remodelled twice, with a line of stakeholes along its western edge, as seen in other buildings. Notable are the repeated deposits of eggshell to the west of the hearth and a small pit with masses of bird, fish and amphibian bone within its fills. Collectively there is much evidence of food processing on these ‘dirty’ floors northwest of the hearth, as in other kitchen areas of these typical domestic structures. Nevertheless, some of the earliest floors we reached in these ‘dirty’ areas show extensive areas of red paint. This was especially so in one feature which had a thick marl plaster plug; the first two to three floors overlying it were painted both orange and red. It is exceptional to find red-painted areas within the northwestern ‘dirty’ kitchen areas. Given the repetitive nature of red painting in this area, it suggests that the usual categorisations of space as appropriate for symbolic practices could be modified in a systematic way, in particular circumstances.

Underlying the sequence of midden and the buildings in the northern part of Area M that do not conform to the standard residential structures, we detected the substantial wall of another building (Building 26) with a plaster face. Set into the interior wall face was a niche containing a boar’s jaw. This represents a further variant of the animal-bone installations inserted into the structural fabric of Boncuklu buildings. It is also a clear antecedent of the practice of incorporating boars’ jaws into walls at Çatalhöyük: a further clear and very specific link in symbolic and ritual practices between the Boncuklu community and its successor.



Boar’s jaw in the wall of Building 26

### *Non-standard buildings*

In the northern part of Area M we have been excavating structures with particularly silty, coarse plaster floors that must have been roofed, but seem to have had flimsier walls than other buildings and non-standard sets of fixtures within them. One such is Building 23, the excavation of which we finished this year. The excavation of earlier floors of this building showed a continued and unusual density of small pits, some of which seem to have been temporary fire pits. The building did have a substantial hearth; unlike the regular houses, however, this was not set in a distinctive dirty area. This hearth started life as a deep bowl and then seems to have been turned into a platform hearth.

Preceding Building 23 were further floors, which may be the remnants of other such buildings. These also showed a notable density of pits and floors with dense layers of phytoliths, showing they were covered with reeds. In one such area of flooring, four larger than usual pits were noted, one with animal scapula jammed down its edge and a boar’s tusk fragment at its base. These pits are unusual in being possible small storage pits. There were also shallow scoops that may have been settings for baskets or containers and, furthermore, areas of red paint on these floors. In a slightly later floor, a large bowl hearth and a deep pit with animal bones jammed down its edge were found. These features all suggest large wooden posts, frequent fire installations and small storage pits were regular features of these probably kitchen or work buildings. The question of whom such buildings served – several households or one specific house – is an interesting one.

### *Area M middens*

To the north and earlier than Building 24 we excavated a series of midden lenses – a general dump of organic material – in this open space. In the northeastern part of this area, we removed a series of very fine laminations of alternating light brown clay, dark grey ashy silt and thin white ash lenses, all apparently contained within a cut and representative of very repetitive activity. So far, we estimate over 300 laminations. In the north-central and western parts of the trench we excavated some deeper more massive layers of midden. Some of these had built up against edges lined with matting or layers of vegetation. In these midden layers was a sequence of repeatedly reconstructed hearths, attesting further to very repetitive use of space in open areas as well as within buildings.

Cut into these various middens was a pit with an artefact cache at its base. This pit seems to have been cut at about the same point in the stratigraphy as a number of burials in these external areas. The cache consists of a grooved stone (one of our largest ground-stone axes) covered with ochre, an elongated polisher/hammerstone and, most notably, a particularly long flint blade, by far the longest ever found at the site and of distinctive material and technology. This is



Area M artefact cache

clearly a specialist product and an import to the site. So this cache certainly included three exceptionally sized objects. They were all placed on a piece of bone. It is not impossible that this pit is one end of a burial or that it marks special depositions near and associated with burials; more investigation will be required to ascertain which is the case. This further indicates that these open areas in the centre of the site were settings for symbolic practice as well as more mundane activities and rubbish disposal.

#### *Experimental archaeology*

Gökhan Mustafaoğlu oversaw our experimental activities.

*A cracking time.* We have been challenged to understand the composition and nature of the plasters on the floors and walls of the Boncuklu houses. Previous experiments trying to replicate plasters with low quantities of temper (as appears to be the case with the prehistoric plasters) failed dramatically. The first floors we laid in the new experimental houses in 2014 cracked to a significant degree. Local mudbrick experts recommended the inclusion of high levels of straw temper, which duly ensured the floors held together. Since then we have puzzled over the nature of the materials used and their application.

Micromorphological study by Wendy Matthews and Aroa Garcia-Suarez has demonstrated some organic content in the floors, including rare dung and, especially, some burnt organics and some sand. As a result, we decided to experiment with a range of more appropriate materials, mixes and application conditions to see if we could produce floor plasters more akin to those used in the Neolithic for our next major refurbishment of the interiors of the buildings.

The local white marl was the major constituent of all the mixes. We added to this three different categories of material: quartz, burnt organic and unburnt organic temper. A control set of samples consisted of just marl and the lower alluvial

sediment. All the other experimental mixes included the quartz, and various mixes of the burnt organic and unburnt organic were incorporated with the marl, lower alluvium and quartz. Including the controls, this resulted in 16 permutations, many of which we felt were similar to the prehistoric plaster mixes. Unfortunately, all the experimental floor patches cracked, except the two samples which had very high elements of organic inclusions: one with very high proportions of wetland vegetation and one with high quantities of fresh animal dung. These thus bore similarities to the more recent ethnohistorical floors but not to the Neolithic floors.



Experimental floor plasters

The issue of the plaster recipe thus remains a conundrum and we suspect that the judicious choice of marl and other clay mixes, with the right shrinkage characteristics, would produce the desired result, but we are unsure of relevant sources in the landscape. We look forward to tracking down these materials in future years and producing just the right plaster mix.

*Grave slumping.* Observing the outcomes of last year's experimental work was instructive. At the beginning of the season we were surprised to note that the graves we placed in the experimental houses showed no sign of slumping, in contrast to the Neolithic examples which always show this phenomenon. We speculated that this might be due to insufficient use of the overlying floor area. As a result, we increased the traffic and weight applied at regular intervals during the season. This eventually had the desired effect in house 2, where significant slumping was observed. Other factors involved may have been the backfilling of the Neolithic graves with a more mixed midden deposit than the alluvium excavated from and used to backfill the experimental examples. This does suggest though that the prehistoric examples probably took some time to slump and then only after significant traffic on the overlying floor.

*Clay objects.* The manufacture of the enigmatic, small, geometric-shaped clay objects found in their thousands at Boncuklu has been investigated through experimentation this season. Under the supervision of Lucy Bennison-Chapman, who studies the clay objects, a team of budding clay-object makers produced 63 imitations of the Neolithic artefacts, reflecting the three most common shapes found on site: cone, disc and sphere. The objects were made very quickly; the time-consuming element is the clay preparation. They were then subject to a series of differing hardening processes: sun drying, drying inside a cool building, drying at the edge of an open fire, inside the hot ashes of a fire and inside a building at the edge of a hearth. For each hardening location and process, the distance of the objects from the heat source and/or the duration of exposure varied. The sun-dried objects (the set exposed for the greatest time duration) were most successful, retaining their shape and developing an extremely smooth finish. Those plunged directly into hot ashes exploded, but those put into cooler embers (< 250°C) held their shape, changed colour and obtained an almost polished finish. These, in appearance, are most similar to the Neolithic objects.

*The great Neolithic bake-off.* Gökhan Mustafaoğlu and Mustafa Guven, our guard, indulged their pyromania and desire for red meat with a series of cooking experiments. Having rampaged through the local countryside culling meat and fuel, we were all set for some incendiary experiments. Luckily, no buildings or individuals were hurt in the course of these experiments, although the willow fire did seem to come close. Meat was cooked using a series of fuels and types of hearth/fire installation. The method least likely to meet food hygiene standards was cooking using volcanic rocks placed in hot embers. The rocks were placed in the hearth after the fire had died down, which meant that, although the embers were still incredibly hot (550°C), the hot rocks never reached above 50°C and both the meat and bread placed on them remained uncooked. In contrast, the meat placed on rocks in the flames cooked completely and, whilst it was rather chewy, was completely edible. Another method used was wrapping a large cut of meat in reeds and placing it on top of the embers. This sat on the heat for about four hours but emerged disappointingly uncooked. It was later buried in the embers and left overnight, which resulted in a cooked but unpalatable product.

Another issue we are interested in understanding better is how the Neolithic inhabitants may have preserved the copious quantities of meat yielded by hunting aurochs and boar. Because of their large size, these animals would have provided more meat than was likely to be consumed immediately, suggesting the possibility of meat preserving practices. There are few clues to this, so we decided to investigate the options using the sorts of facilities we have found at the site. To test the possibility of smoking as a



Experimental bread making and marrow cooking

preservation practice, several strips of meat were hung on a screen around an experimental hearth. This failed to smoke and dry the meat satisfactorily, suggesting the possibility of treatment prior to smoking, for example salting or sun drying. Alternatively, it may suggest the meat was hung more directly in the smoke, for example around the smoke hole or suspended over the hearth in the Neolithic houses.

Even though wheat was grown at Boncuklu, it is not clear if it was used to make bread. Given the absence of extant ovens on site, if the occupants did make bread there is a major question of how it would have been cooked. The most ineffectual method tested was baking bread on a floor immediately in front of a hearth. Baking the dough on rocks placed in the embers hardened the outside of the bread but failed to cook the centre, because the rocks clearly weren't hot enough. The best method for cooking the dough was to place it directly on the embers, which produced a fairly well-baked bread, although it was unappetizingly covered in ash and other debris.

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