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# News from Çatalhöyük

## Introduction

Çatalhöyük (Anatolia/Turkey) is a classical site in archaeology, mentioned in archaeological text books as one of the most important Neolithic sites in Old World Archaeology (Scarre 2009, 222). It was excavated from 1961 to 1965 by James Mellaart and his team (Mellaart 1967). Finds also included textiles that were examined and published by Harold B. Burnham (1965). In 1993, the Çatalhöyük Research Project, directed by Ian Hodder, resumed excavation of the site (Hodder 2014 for latest published overview; for detailed information see [www.catalhoyuk.com](http://www.catalhoyuk.com)). In August 2017, Hodder's project ended. Textile remains were found occasionally, the first during the 2003 season, and then in 2008, 2012, 2013, 2015, 2016 and 2017. The textile team comprising the present authors arrived two weeks before the site's closure in order to investigate and record the textiles, cordage and basketry (Bender Jørgensen & Rast-Eicher 2017). Baskets (coiled) and mats from Çatalhöyük had previously been catalogued and discussed (Wendrich 2005; Wendrich & Ryan 2012). New finds have now been documented and are to be further discussed by Wendrich. Most of the baskets and mats were preserved through silicification. The remaining phytoliths in the plant epidermis identified the plants used as mostly sedges or reeds (Ryan 2015).

The authors also looked for spindle whorls and loom weights. It was not possible to see the textiles found by the Mellaart excavations in the archaeological museum in Ankara, but in November 2017, the authors had the opportunity to study an item from these early finds at the Textile Research Centre in Leiden (Netherlands). Apart from this, Burnham's publication is relied upon for reports of the first finds. The textile remains were examined on site with a stereo microscope and a digital microscope (Optilia). Samples for SEM analysis were taken and sent to Switzerland, and are now awaiting analysis. The results are to be published in a monograph in the Çatalhöyük Research Project series (in preparation).

## Dating

Mellaart and Burnham dated the textiles found in the 1960s to the beginning of the sixth millennium BC (Burnham 1965, 69; Mellaart 1967, 52). They derived from Mellaart's Levels VI A/B that were then C14 dated to between 6200 and 5800 BC (Mellaart 1964, 116). They have now been calibrated to between 6550 and 6350 cal BC (Cessford 2005, 76; Hodder 2014, 10). Except for two pieces that proved to be post-Neolithic and are not further discussed here, the new finds documented by the authors belong to deposits given a preliminary date of between c. 6700 and c. 6300 cal BC (Bayliss and Tung 2017). The two find groups are thus more or less contemporary, dating to the mid-seventh millennium.

## Textiles and fibres

Remains of textiles (woven as well as non-woven) were recovered from buildings B49, B52, B131 and possibly B77, cordage from B49, B52, B77 and B131. They are all from the north area of the site. They were found in connection with burials under the floors, and were preserved because the houses in question had burnt and the burials under the floors were therefore "baked". This means that plant fibres are partly charred; animal fibres and skin melt in such conditions. Small skin remains in some of the find boxes indicate that – along with textiles – skins were used to wrap or cover the dead. The skin remains have bubbles from the heat and are mostly melted. SEM-analysis of one sample may be able to identify the species of animal. Cordage and string is mostly silicified material, but some strings were burnt. One of these appears to be tree bast with visible rays seen under the stereo microscope.

The plant fibres of the textiles are either completely charred and black or/and very brittle and dark brown. In previous reports, fibres from the woven textile in a burial in B52 have been determined as flax (Fuller 2014, 122). For some textile samples from Çatalhöyük,



Fig. 1: Layered tabby-woven textile 30503 X9 from Çatalhöyük B52, burial 7 (Image: A. Rast-Eicher)

whether they are flax or well prepared tree bast fibres comparable to Neolithic textiles from Europe is still in question (Rast-Eicher & Dietrich 2015, e.g. cat. 1001, fig. 55: fine woven textile made of lime bast). It is hoped that SEM analyses will provide more conclusive results. A second question also applies to the fibres from B52: if it is flax, is it domesticated or wild? Çatalhöyük is situated in the Konya plain that was flooded from time to time providing ideal ground for wild flax, which could be harvested at the right moment. Fuller argues that domesticated flax had to be imported from another place, as there are almost no flax seeds found in Çatalhöyük. On the other hand, flax seeds have been found in PPN sites of the Levant and the eastern Fertile Crescent (Fuller 2014, 122). Linseeds found in the PPN site of Çayönü (Anatolia/Turkey) have been determined according to their small size as wild flax, maybe *linum bienne*. As wild flax has seeds under 3 mm in length, the exact determination is not possible. As at Çatalhöyük, very few flax seeds were found at Çayönü, except for one sample where flax seeds formed the majority (90 seeds). The earliest larger seeds pointing to cultivated flax have been found in Ramad (Syria) and are dated to between 7190 and 6700 cal BC (Van Zeist & Roller 2015, 81). The lack of flax seeds in the settlement of Çatalhöyük could be due to

the use of wild plants. No measurements of the few seeds from Catalhöyük have yet been published. There are many wild flax species in Turkey (Özcan & Zorlu 2009) and, in the Levant, experimental threads have been produced with wild flax (Abbo et al. 2014). It is important to collect wild flax grown on good ground with a wide stem because small plants will have little bast.

#### Yarns and techniques

The threads of the textiles found in Çatalhöyük are spliced (S-ply of two spliced single yarns). This fact could support the assumption of the use of wild flax. The fibres were thus neither retted, hackled, nor combed. Recent research has identified splicing of Neolithic threads in Europe (Leuzinger & Rast-Eicher 2011). Remains of epidermis on flax threads found in the Neolithic layers of Zürich-Opéra (Switzerland) prove the use of green flax, which means that fine flax bast has been taken from the stem to splice in a fresh state (Rast-Eicher 2016, fig. 350). This form of thread production is basically the same as with tree bast. The preservation of the threads in Çatalhöyük by heat is unfortunately far too bad to be able to see epidermis remains, but hopefully SEM analyses will show more details.



Fig. 2: Finishing border in weft-twining, textile 30503 s10 from Çatalhöyük B52, burial 7 (Images: A. Rast-Eicher)

The woven textiles from Çatalhöyük are all in tabby, in medium to fine quality. There is no evidence of their original size, which makes it difficult to discuss which weaving tool or loom may have been used. Burnham documented a warp-faced tabby with a simple selvedge, a rolled hem and a textile with a heading cord (Burnham 1965, plate XXXIII) This points to a larger textile. Others were narrow bands, 7 to 8 and 15 mm wide (Burnham 1965, 172). The textile found in building 52 was clearly folded in several layers (fig. 1) and was used as a layer between two bodies. In this case, narrow bands can be excluded. This object shows what is probably a finishing border with rows of weft-twining, a simple row and also a double row of weft-twining, creating a herringbone effect (fig. 2). The textile thus finished in fringes. These combinations of techniques in the finishing part of textiles have been found in the Levant in later contexts, such as the Chalcolithic textile C ('Sash') found in the Cave of the Warrior (Israel) (Schick 1998, colour plate fig. 3.9, and figs 3.48, 3.50). The textiles from the Cave of the Warrior are likely to have been woven on a ground loom, or perhaps a backstrap loom (Schick 1998, 20; Shamir 2015, 18). This may also be the case with the Çatalhöyük textiles.

### Textile tools

Currently, Çatalhöyük appears to be a standard reference for the earliest finds of spindle whorls and loom weights in Anatolia and the Near East (Barber 1991, 51, 59, 98-99, 127-130; Rahmstorf 2015, 6; Shamir 2015, 19). This is in contrast to the findings of the recent excavations at Çatalhöyük directed by Ian Hodder, and indeed of the excavations in the 1960s. In 1967, James Mellaart wrote that "out of over 200

rooms we have but [...] a single spindle-whorl and not a single loom-weight" (Mellaart 1967, 211). During the excavations from 1993 to 2017 neither loom weights nor spindle whorls were found in the Neolithic levels. They appeared only in later or disturbed contexts. This is known by some experts (Gleser 2016; Rooijackers 2012; Schoop 2014, with useful maps; Völling 2008, 194), but textile scholars in general do not appear to have realised it. It is time for an adjustment.

Loom weights of baked clay and spindle whorls of unbaked clay were mentioned by Mellaart in his first report on the site (Mellaart 1962, 56). He interpreted these, together with weaving needles and white loincloths worn by men depicted in the wall-paintings as evidence for weaving. He did not specify in which levels the textile tools were found. As described above, he later revised this first impression. Burnham (1965, 173) wrote: "As Level VI is virtually aceramic, no loom weights have been found in any of the shrines and houses of this date. In the higher levels, where pottery occurs, recognisable loom weights have been recovered. The only objects that might be loom weights from Level VI are two carefully worked stones of unknown use which would have served the purpose admirably. [...] It is only with the more extensive excavations of this important mound that the characteristic two rows of weights lying where they fell *may* yet be found, and these will definitely establish the use of this ancient weaving tool" [italics added].

No loom weights are listed in the finds database for the 1993-2017 project. As the excavations have investigated burnt as well as unburnt layers, any unburnt loom weights would have been found in the burnt houses. This was further confirmed by the project's Finds Manager, Lisa Guerre. It may therefore be stated



Fig. 3: Loom weight and spindle whorl from the upper layers of the IST area of Çatalhöyük (Image: A. Rast-Eicher)

with confidence that no loom weights were found in Neolithic layers at Çatalhöyük. Burnham's assumption that loom weights would turn up has not been fulfilled. Burnham's paper appeared just after the publication of Marta Hoffmann's book *The Warp-weighted loom* (1964). He refers to it, and his discussion of the borders and edges of the Çatalhöyük textiles and how they may reflect the weaving technology of Neolithic Çatalhöyük is certainly influenced by Hoffmann's work.

The database lists 183 spindle whorls; these all derive from the uppermost layers of areas TP and TPC, in which many artefacts that are Hellenistic and Roman have been found.

Checking the report on the IST area at the bottom of the hill excavated by researchers from Istanbul ([www.catalhoyuk.com/archive\\_reports](http://www.catalhoyuk.com/archive_reports), see reports 2005-2008) revealed that a small number of spindle whorls and loom weights were found in upper or disturbed layers, but none in undisputed Neolithic contexts. These finds may serve as examples of the types and forms of textile tools from mixed and late layers that also appear in the top layers of the TP and TPC layers (fig. 3). The textile tools from the IST area are all made of unfired or lightly fired clay. They also appear to be doughnut shaped. They vary in size and weight; the larger and heavier ones (>100 g) are clearly loom weights; the smaller ones vary between 25 g and 40 g. Several of the smaller ones show wear marks that suggest they too were used as loom weights, but some are spindle whorls. As there is a relationship between weight of the spindle whorl and the thread produced, it may be assumed that any yarn made with these spindle whorls will have been thick (Andersson Strand 2015; Grömer 2010, 90-97).

In summary, there are no loom weights or spindle whorls in the Neolithic layers of Çatalhöyük, and the site cannot serve as evidence for the early use of the warp-weighted loom in Anatolia. However, a Neolithic site in Anatolia, Ulucak, in the Izmir region, may now take the place of Çatalhöyük as the earliest find site for loom weights. A group of 11 doughnut-shaped loom weights were found in levels Va (dated between 6200 and 6000 cal.BC) and IVb (5900 to 5800 cal.BC), while spindle whorls (and a preserved tabby-woven textile) were found in level Vb which dates between 6400 and 6300 cal.BC (Çilingiröglü 2009; Gleser 2016).

### Looms and loom weights

Loom weights are often automatically linked to a vertical loom (i.e. the warp-weighted loom) intended for *woven* textiles. This, as we have seen, has been the case with Çatalhöyük. However, Neolithic finds from Switzerland have shown that loom weights were used

to make large and flat objects in weft-twining technique on a vertical frame without heddles (Rast-Eicher 1994; Rast-Eicher & Dietrich 2015, 112ff.). Furthermore, the weft-twined fabrics of the Swiss lake dwellings (comprising more than 1,000 objects including cordage from the canton of Zürich alone) demonstrate that there is a clear link between the starting borders of the large weft-twined fabrics and the starting borders of the woven textiles on the warp-weighted loom. Last, but not least, a very fine and large item in weft-twining technique was found in 1999, together with loom-weights in Wetzikon-Robenhausen in the canton of Zürich, Switzerland (Rast-Eicher & Dietrich 2015, cat. 564, plate 53 & 54). It may be concluded that the presence of loom weights cannot be used as evidence for the warp-weighted loom, or for the making of woven textiles. This may well apply to Neolithic Anatolia as well as Neolithic Switzerland.

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