

## References

Baysal, A. 1998. "Provisional report on geological surveys in relation to ground stone study - Çatalhöyük 1998". Çatalhöyük Archive Report 1998:

[http://catal.arch.cam.ac.uk/catal/Archive\\_rep98/baysalstone98.html](http://catal.arch.cam.ac.uk/catal/Archive_rep98/baysalstone98.html).

Baysal, A. 1999. "Ground stones". Çatalhöyük Archive Report 1999:

[http://catal.arch.cam.ac.uk/catal/Archive\\_rep99/baysal99.html](http://catal.arch.cam.ac.uk/catal/Archive_rep99/baysal99.html).

Baysal, A. 2000. "Ground stones". Çatalhöyük Archive Report 2000:

[http://catal.arch.cam.ac.uk/catal/Archive\\_rep00/baysal00.html](http://catal.arch.cam.ac.uk/catal/Archive_rep00/baysal00.html)

Baysal, A. & Wright, K. I. 2005. "Cooking, crafts and curation: the ground stone artefacts from Çatalhöyük, 1995-1999". In I. Hodder & Members of the Çatalhöyük Teams (Eds.), *Excavations at Çatalhöyük, Volume 5. Changing Materialities at Çatalhöyük: reports from the 1995-1999 seasons*: Cambridge and London: Monographs of the McDonald Institute for Archaeological Research, University of Cambridge; British Institute for Archaeology at Ankara: 307-324.

Bolat, Y., and Aksoylar, M.Y. 2003. "Egirdir Gölü kerevitleri (*Astacus leptodactylus* Esch., 1823)'nin uzunluk-ağırlık ile karapaks boyu-total boy ilişkileri ve kabuk degistirme periyodunun saptanması". *Egirdir Su Ürünleri Fakültesi Dergisi*. 2 (10), 26-31.

Erdemli, A.Ü., 1987. "A comparative research on the Freshwater Crayfish populations of Hotamış Lake and Mamasın Dam Lake", (in Turkish). *Doga TU Zooloji Dergisi* 11(1): 17-23.

Erdoğu, B., 2008. "West Mound: Trench 8", *Catalhoyuk 2008 Archive Report*: 105-109.

Harlıoğlu, M., M., 2000. "Comparison of the chelipeds of two crayfish species", *Astacus leptodactylus* Eschscholtz and *Pacifastacus leniusculus* (Dana). *Ege Üniversitesi Su Ürünleri Dergisi*, 17(1-2): 47-56.

Köksal, G., 1988. *Astacus leptodactylus* in Europa. In: *Freshwater Crayfish: biology, management and exploitation* (Holdich D.M. & Lowery R.S., eds), Chapman & Hall, London: 83-113.

Mellaart, J. 1965. "Çatal Hüyük West", *Anatolian Studies* 15: 135-56.

Wright, K., and Baysal, A. 2005. "Ground stone studies at Catalhoyuk, summer 2005".

*Catalhoyuk Archive Reports 2005* [http://www.catalhoyuk.com/archive\\_reports/2005/2005](http://www.catalhoyuk.com/archive_reports/2005/2005)

## Team Poznań 2009 Study Season Report - Lech Czerniak, Arkadiusz Marciniak

Team Leaders: \*Arkadiusz Marciniak, Lech Czerniak (1),

Team: Marek Baranski, \*Marta Bartkowiak, \*Agata Czeszewska, \*Patrycja Filipowicz, Haskell Greenfield, \*Arkadiusz Klimowicz, Kamilla Pawłowska, Tomasz Kozłowski, Shannon Stewart, Marcin Was.

\* University of Poznań, (1) University of Gdańsk,

## Abstract

Following eight years of excavation of upper levels at Çatalhöyük East in the years 2001-2008, the Team Poznań undertook its first study season. The team made of twelve archaeologists and other specialists as well as students of Institute of Prehistory, University of Poznań and Department of Archaeology, University of Gdańsk worked on a number of intertwined issues of the Byzantine, Roman and Hellenistic as well as Neolithic sequence from the TP Area. These comprised in particular analysis of Hellenistic ceramics (by Shannan Stewart), animal bone (by Kamilla Pawłowska and Haskell Greenfield), lithics (by Marcin Was), and human remains (Tomasz Kozłowski). More detailed information about these subjects are reported in other archive reports from the 2009 season. Special attention was

focused upon detailed analysis of the TP stratigraphy. A Harris matrix of the entire sequence was also produced (by Marek Barański with help and advice from Alex Bayliss). The team also agreed upon a format of both publications.

The team members who will participate in the publication of two volumes from the TP area undertook a study season this year at Çatalhöyük. Work commenced on June 24 and was completed on July 22. This first study season had a number of intertwined objectives. Its major aim was to study details of the TP stratigraphic sequence, in particular to re-define major episodes of occupation encountered in the area, both in the Neolithic and in later periods. A number of specialists present at the site undertook the analyses of the TP recorded materials that will be included in the final publication. These included the analyses of Hellenistic ceramics (by Shannan Stewart), animal bone (by Kamilla Pawłowska and Haskel Greenfield), lithics (by Marcin Waś), and human remains (Tomasz Kozłowski). It was decided to publish two volumes of monograph: the first including Hellenistic/ Roman/Byzantine materials and the second covering the Neolithic sequence.

As a result of eight excavation seasons in the trench 10 x 20 m, a large number of data have been discovered and recorded. These comprised 1 973 units, 345 features, and 17 buildings in addition to a vast quantity of a wide range of artefactual and ecofactual evidence. As a result of the detailed stratigraphic analysis, it proved possible to distinguish a number of additional spaces by collating individual units of similar stratigraphic position and similar depositional history. In total, 46 spaces were recorded in the TP Area. Detailed analysis of the TP sequence stratigraphy led to distinguishing a number of well defined depositional events, mainly spaces and buildings of precisely established stratigraphic position and each composed of a distinct number of units. Accordingly, a list of units was produced, which serves as a basis for analysis of a range of materials. It was then discussed in detail with specialists making sure that all artefacts and ecofacts from these units are properly studied. Such approach will secure a comparability of results from all levels of occupation and make sure that all available evidence recovered in them are properly used.

An important achievement of this year study season comprised a completion of a Harris Matrix (Barański 2009). Considering a large number of c. two thousand units, it provided the only possibility to carry out a detailed stratigraphic analysis of the TP stratigraphic sequence. After a thorough evaluation of available software, it was decided to use Stratify 1.5 package. The work was completed in a number of stages. Its first step comprised the digitisation of all drawings making possible comprehensive analysis of the available data, in particular the two- or three-dimensional visualizing the selected features or buildings. The next step comprised a complete and advanced vectorization of all drawings using Wiselimage Pro package. It is the process of a conversion of raster graphics into the vector form improving quality of all scanned documents. It made possible to assign the properties such as e.g. coordinates, type and thickness of line, colour, or allocation to the defined layer to each identifiable element. As a result of this complicated and time consuming work, we are now in a possession of extended relational database of vector drawings and a complete Harris matrix being a graphic representation of relations between individual units and features.

Stratigraphic analysis, as presented above, aims to produce a more refined chronology for the last phase of the East mound occupation as well as contribute to a better understanding of the post-Neolithic phase of the mound occupation. Consequently, it will make possible to reveal the pace and dynamism of multiscalar changes in the last three-four centuries of the East mound occupation as revealed during all eight excavation seasons in the TP Area.

These works form also an integral element of a new dating program at Çatalhöyük (see Bayliss, Farid 2008). It is undertaken using AMS radiocarbon dating and Bayesian statistical modelling making possible to integrate the excavated sequence of levels and archaeological phases with the radiocarbon dates. Following completion of the Harris matrix, a number of samples from carefully selected contexts have been taken for radiocarbon dating. They should be dated in the coming months which, in addition to already existing dates, implies that the chronology of the entire TP sequence will be available by the 2010 field season.

A major part of the 2009 study season related to non-Neolithic sequence comprised analysis of Hellenistic ceramics by Shannan Stewart. Altogether, 125 unit with Hellenistic pottery was

examined. The Hellenistic pottery at Çatalhöyük represents a full domestic assemblage, with all functional categories present. It would have facilitated such domestic activities as storage (jars), food preparation (utility basins), cooking (deep cookpots), dining (bowls and dishes), service (platters), and drinking (hemispherical bowls). Therefore, the pits that yielded this pottery most likely represent the trash from nearby Hellenistic-period houses. Its fine fabric is orange to light brown with very small light and dark inclusions and voids. It is thoroughly fired and it occurs in a wide range of table shapes. It is most likely that this fabric was produced locally or at least regionally.

Important work was also completed by Tomasz Kozłowski of the human remains team. They focused upon careful examination of human remains from the Late Neolithic Space 327. All data were recorded in the form of detailed database. In particular, the work comprised re-examination of the initial bone identification, bone taphonomy, palaeopathology and measurements. Age and sex of all individuals buried in Space 327 were also established. Human remains recovered in this space were largely disarticulated and originated from c. 10 individuals. They are represented by children and adults of both sexes. A minimum number of individuals was calculated based upon standard diagnostic cranial and post-cranial elements. Not a single complete skeleton was recovered. A vast majority of bones were disarticulated. Particular efforts were made to make individual fragments allocated to the preserved articulated fragments of skeletons. A number of pathologies was also recognized including incisor fracture as well as cribra orbitalia and porotic hyperostosis caused more probably by anaemia.

Kamilla Pawłowska of the faunal team continued her work on recording fauna from selected units from the TP Area. Considering a timetable of the two TP volume publication, work in the 2009 season focused mostly upon Hellenistic/Roman material. Fauna from two special Neolithic deposits in Spaces 346 and Sp.327 was also studied. The remaining target Neolithic units of animal bone will be recorded next year. In total 32 units and 6011 animal bones were recorded from the TP Area in 2009 (see Animal Bones Report 2009).

An integral element of faunal analysis in the 2009 season comprised works of Haskel Greenfield examining the animal bones with cut marks from the TP Area. Its major objective was to reconstruct the nature of butchering technology and process. Remains from the entire TP sequence were sampled to ensure the temporal dimension was adequately covered. The bones were then examined and analysed by eye and under a light optical microscope. Silicone molds were made of selected samples of bones with high quality slices or other evidence of cultural modification. The molds were transported back to the Anthropology Laboratory at University of Manitoba for later analysis in the SEM. A total of 234 bones were selected for analysis since they initially appeared to have cut marks on them. However, 38 bones have marks as a result of other agents (gnawing, scratching, etc.) or were too damaged to yield reliable results. As a result, the final sample was composed of 196 specimens. Preliminary analysis implies that the Neolithic animal remains were butchered with very fine obsidian stone tools. The width of tools is far smaller than in other sites, where obsidian is rare or absent.

Next year season will be focused upon completion of study of all categories of material from the units selected for analysis. Plans for 2010 also involves a series of discussions with lab specialists including fauna, lithics, ceramics, palaeobotany, human remains, heavy residue, etc. A two day long discussion session on the TP sequence with a range of specialists and excavators of other areas is also planned.

#### **References**

Barański, M. 2009. Stratygrafia wykopu TP na stanowisku Çatalhöyük (Turcja). MA manuscript (in Polish).

Bayliss, A. & S. Farid. 2008. Interpreting Chronology at Çatalhöyük. Çatalhöyük 2007 Archive Report: 390-92.