

THE NEOLITHIC IN TURKEY

NEW EXCAVATIONS & NEW RESEARCH

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WESTERN TURKEY



ARCHAEOLOGY & ART PUBLICATIONS

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Çukuriçi Höyük

A Neolithic and Bronze Age Settlement in the Region of Ephesos

Barbara HOREJS

INTRODUCTION¹

Archaeological research on the central area of the West Anatolian coast has traditionally focused on the famed cities of Antiquity with their well-preserved Greek and Roman ruins. During the last decades large-scale projects have increasingly drawn the attention of pre-historic researchers to this area². On the other hand, while Central, South, and East Anatolia as well as the entire Aegean area and Southeast Europe have long belonged to the nucleus of prehistoric archaeology, West Anatolia has remained on the periphery (Hauptmann and Özdoğan 2007). For this reason, after more than 100 years of investigations solely at sites of the Ancient Greek and Roman epochs, the Byzantine period, and the Middle Ages in this area, the Austrian excavations at Ephesos decided to initiate a new research programme that is particularly concerned with prehistoric sites in the region of Ephesos. The first steps in this programme are interdisciplinary projects, which focus foremost on a tell site by the name of Çukuriçi Höyük. The tell of Çukuriçi Höyük was first investigated in 1995 in a brief rescue excavation in the form of two small test trenches and conducted by a team from the Ephesos Museum in Selçuk (Evren and İçten 1997). However, during the following years, a large part of the settlement hill, which today is encircled by bountiful fruit-tree plantations (Figs. 1-2), was gradually dug away, levelled, planted, and irrigated. These massively destructive methods ultimately had the result, amongst others, that Çukuriçi Höyük became the centre of multi-year long term research projects that are devoted especially to the prehistory of this region.

The initial trial excavation, funded by the Austrian Archaeological Institute, took place in 2006, which led to systematic excavations since 2007 as part of research projects funded by the Austrian Science Fund (FWF) and funded since 2011 by the European Research Council (ERC)³. Aside from the settlement history of Çukuriçi Höyük itself broader scientific questions are also included in the micro-region of the Küçük Menderes as well as in broader Western Anatolia: for example, changing environment, ecological resources, climate conditions, changing use of plants and animals, and differing social structures from the Neolithic to Bronze Ages (Horejs 2008, 2009, 2010a, 2010b, 2011; Bergner et al. 2009; Galik and Horejs 2011; Horejs et al. 2011).

- 1 For their invaluable discussions and suggestions here I wish to express my gratitude to M. Özdoğan, N. Karul, U. Schoop and J. Seeher. My sincere thanks are extended to all students and scientific coworkers who have taken part in the excavations since 2006.
- 2 For example, the large-scale project IRERP in the region of Izmir, which is focused on Liman Tepe, Panaz Tepe, and Baklatepe and directed by A. and H. Erkanal; Miletus (Niemeier 2007 with older literature); Metropolis - Bademgediği Tepe (Meriç 2007); Ulucak (Çilingiroğlu et al. 2004); the island of Tavşan Adası near Didyma (annual report of the German Archaeological Institute since 2006); to new survey results see Lichter 2005.
- 3 FWF projects no. P 19859-G02 and Y 528-G19; ERC Starting grant project no. 263339.

THE TELL AND ITS STRATIGRAPHY

Çukuriçi Höyük is located in a broad alluvial plain c. 1 km southeast of antique Ephesos in a favourable settlement location close to the mouth of the Küçük Menderes River (Horejs et al. 2011: 36, fig. 3). Ongoing paleogeographical studies by H. Brückner indicate the pre-historic coastline was much closer to the site than today. The results from excavations in deep soundings and more extensive trenches in combination with results of drillings as well as from geophysical surveys, show that Çukuriçi Höyük comprises at least six settlement phases which are preserved to a height of around 5 m above the ground level of the surrounding cultivated area (Fig. 2). A further 3,8 m of cultural layers can be expected at the foot of the tell dating back to the middle of the 7th millennium BC indicated by radiocarbon-dated drillings in that area and recently conducted excavations. The original size of the settlement hill can be presumed to be a minimum ca. 100 x 100 m in extent and probably around 8 m in depth. Two separate areas of the tell have been excavated so far (Fig. 2): the northern trenches are situated in the middle of the northern bulldozed boundary in a deep trench and in the adjacent area in the fields; the southern trenches are located at the present-day southern end of the tell in its probable original centre.

The settlement phases that could be defined so far are designated as ÇuHö IX-VI and IV-III (Fig. 3): Phases ÇuHö IV and III are situated on the upper parts of the tell and contain domestic and workshop architecture dating to Early Bronze Age 1 (2900-2750 cal. BC) (Horejs, Mehofer and Pernicka 2011). Phases ÇuHö VII (Late Chalcolithic) and ÇuHö VI (Late Chalcolithic/EBA 1) have been defined only in small trenches in the northern area (trenches N1, N2, N4) as was phase ÇuHö VIII dating to the Early Chalcolithic period. Although these phases are excavated only in small areas, their architecture in context with their material assemblages and radiocarbon dates allow their designation in relative and absolute terms. Finally, phase ÇuHö IX has been excavated in the northern fields at the foot of the hill (trench N6) and is stratigraphically linked with trenches N1 and N2. The originally covering portion of the tell in that area, which offered direct access to Neolithic cultural layers in the fields, was probably cut away by bulldozers (Fig. 3). In summary, Çukuriçi Höyük contains settlement remains dating to the Late Neolithic, Early Chalcolithic, Late Chalcolithic, and Early Bronze Age 1. The following description focuses on the Early Chalcolithic and Late Neolithic remains at the site.

Early Chalcolithic (ÇuHö VIII)

Settlement phase ÇuHö VIII was excavated only in a deep sounding (northern trenches N1 and N2) and covers an area of 4 x 3,5 m. This level is composed of various architectural remains (Figs. 4-5). Walls of mud were erected on two almost parallel stone foundations, which were built with coarse unhewn stones. The fragmentary archaeological remains can be reconstructed as a small room or a house, but due to the limited excavated area its exact shape and size cannot yet be determined. Postholes, pits, and a coeval, thick stamped clay floor with more than one use-level demonstrate two living horizons. Comparable layers of stone rows covered by mud deposits could be detected along the attached profiles of the northern border of the tell located at the same level with the walls of phase ÇuHö VIII. Therefore, further simultaneous settlement remains in an eastward and westward direction can be assumed. The northern boundary of these remains is artificial and must have been

made by a bulldozer in recent times. A destruction level containing pottery, some small finds, lithics, and burnt material covers this phase and provides a clear *terminus ante quem* for this time of settlement (Fig. 5). The next overlying architectural level (ÇuHö VII) can be dated to the Late Chalcolithic period; hence a long hiatus – at least in this distinct area of the settlement – can be postulated (Fig. 5).

The settlement phase ÇuHö VIII contains a very homogenous spectrum of pottery (Fig. 6). The assemblage of around 1700 pieces with nearly 500 characteristic fragments consists mainly of fine and medium wares of unpainted and monochrome pottery⁴. Predominant are bright orange, red or reddish-brown slipped and burnished wares (Fig. 6B-D) followed by the second common group of grey to grey-brown unslipped fine wares with burnished surface (Fig. 6A). A small group of fine wares is characterized by beige or creamy slip without any further treatment. Coarse wares are not common; around one third of them are impressed-decorated. Open vessels with a smooth S-shaped profile or slightly curved wall and an out-curving or rounded rim predominate (Fig. 6A-C). Hole-mouth jars with a kind of conical neck and a simple rounded or inverted rim exist in the assemblage of phase ÇuHö VIII (Fig. 6D). All vessel types seem to have circular mouths. The handles in the form of tubular lugs are mostly vertical, short, and relatively wide, seldom long and narrow; the bases are mainly disc-shaped.

The characteristic elements of the ÇuHö VIII assemblage of monochrome red-slipped burnished pottery in combination with bowls with smooth S-profile, conical necked pots, disc bases, and tubular lugs can be detected at different sites in the Lakes Region, as in Bademağacı (EN II) (Duru 2005, 2007; Duru 2008: figs. 112-113, 117), Höyücek (mainly TD) (Duru and Umurtak 2005: pl. 99-100, 102; Duru 2008: figs. 118, 120), Kuruçay (mainly 11) (Duru 1994: 20 f.; Duru 2008: figs. 111, 124) and Hacılar I (Mellaart 1970). It should be pointed out that all these settlements are characterized by a versatile spectrum of shapes and decorations, which does not appear in ÇuHö VIII. Unsurprisingly, the best analogies for our assemblage can be found on the central Aegean coast and its hinterland⁵. The essential material features of ÇuHö VIII compare well with the assemblages of Ulucak V(-IV) (Çilingiroğlu et al. 2004: 38-41, figs. 21-25 Ulucak IVa-b; Çilingiroğlu and Çilingiroğlu 2007: fig. 6 Ulucak IV, figs. 24-25 Ulucak V; Çilingiroğlu 2011: 68, 72-74), Yeşilova III (Derin 2007: figs. 8-10 Yeşilova III.1-8; Derin 2011), Ege Gübre (Sağlamtimur 2007: figs. 6a, 7-9; Sağlamtimur 2011) and Dedecik-Heybelitepe A (Herling et al. 2008: 21 f., fig. 4). Further analogies can be found in Agio Gala Lower Cave, unfortunately without a clear stratigraphic context (Hood 1981).

Small finds include various kinds of tools (lithics), some bone artefacts, and ceramic discs with and without a central hole. The knapped stone assemblage is small, but clearly predominated by obsidian (Fig. 7), of which 10 analysed pieces originate from the Cycladic island of Melos (Bergner et al. 2009; Galik and Horejs 2011: 88-89). The majority of the lithics are obsidian sickle blades with relatively little production waste.

Already published results from zoological studies of phase ÇuHö VIII by A. Galik show a clear dominance of domesticates in the sample with molluscs and game in a noticeable

4 For more detail information see Galik and Horejs 2011: 87-88.

5 My sincere thanks to A. and Ç. Çilingiroğlu, Z. Derin and H. Sağlamtimur for intensive discussions and important advice.

representation⁶. The quantification of the three major domesticates in that phase reveals a rather balanced exploitation pattern, while the younger samples reflect a change in use of domesticates. Pigs decrease drastically and ovicaprines became more important. The game remains are represented in lower amounts, but red deer, fallow deer, and a higher quantity of wild boar and some specimens of aurochs appear. Hunting of small game can also be reflected by a few percentages. Most important were probably hare and fox. The bivalve fauna obviously indicate a completely different exploitation behavior in Chalcolithic and later periods, not only in the massive increase of shells in the later assemblage but also in the frequencies of exploited species. In phase ÇuHö VIII people collected mainly bivalves living in rocky habitats (Noah's ark shell: 58%, spondylus: 18%, edible cockles: 16%, oysters and blue mussel: 2,9%). The high abundance of fossorial bivalves in the Early Bronze Age might be a clue for the deforestation of this region, which probably induced a high input of sediment and created new sandy biotopes on the shoreline adjacent to Çukuriçi Höyük. The shift in faunal composition from arboreous taxa like pigs, red deer, and wild boar to taxa preferring more open land habitats like ovicaprines and fallow deer may also give a hint of a change of vegetation. Similar results are described from Ilıpınar, where deforestation took place from Neolithic to Chalcolithic times (Buitenhuis 2008: 206). According to the faunal exploitation pattern it seems plausible that inhabitants of all prehistoric periods at Çukuriçi Höyük had access to the sea, which further confirms the already mentioned paleogeographical results of H. Brückner.

Late Neolithic (ÇuHö IX)

New large-scale excavations have been recently conducted at the foot of the tell in the surrounding fields in 2011. Previous geological drills unveiled settlement material down to a depth of 3,8 m below today's surface; hence, undisturbed cultural layers stratigraphically older than settlement phase ÇuHö VIII could have been expected there. A total area of 340 m² was opened, of which 250 m² could be excavated intensively (trench N6: Fig. 8). The entire excavation area is cut by a massive water pipe from the 20th century, which was bedded in an east to west-running trench of 2 m diameter. Luckily the areas north and south of this trench were preserved undisturbed. Numerous features were uncovered in the new excavations, such as different living and activity areas consisting of houses, huts, and pits for storage and cooking (Fig. 8). Without going into detail, the architectural complexes 3, 4, 6 and 7 are stratigraphically linked together and situated underneath phase ÇuHö VIII and thus designated as settlement phase ÇuHö IX. Complex 5 represents the bottom of a ditch of a later period going down to the Neolithic layers.

The house complexes of phase ÇuHö IX (complexes 3, 6, and 7) are presumably rectangular and built with walls of stone-socles and stamped clay. Traces of living and working have been found inside the houses that are covered with stamped clay floors as well as outside. Remains of food production and consumptions are for example preserved from partially burnt plants and mainly domestic animals (pig, cattle, sheep, and goats) as well as fish and seafood.

Intensive use of the Aegean Sea by the inhabitants of phase ÇuHö IX is again indicated not only by fish remains, but also by a remarkable high percentage of imported obsidian in a

6 For more details and discussion of all results see Galik and Horejs 2011: 89-91.

huge sample of lithics. Various production wastes of different raw materials demonstrate their local manufacture in the excavated area. Aside from the local production of lithics, a variety of household crafts have been executed in the excavated area as demonstrated by e.g. bone tools (Fig. 9), grinding and pulping stones, polished axes, and pestles.

First examination of the excavated pottery assemblages by the author shows close connection to the assemblage of phase ÇuHö VIII on the one hand, with distinct differences on the other hand. The spectrum with a manageable amount of shapes is predominated by deep hole-mouth jars mainly without neck and designed with simple rounded or inverted rim (Fig. 10A, D-F). Open vessels with a smooth S-shaped profile or a conical neck exist, but in smaller amounts (Fig. 10B-C). In contrast to phase ÇuHö VIII, mouths and bases of jars are frequently oval-shaped. Handles are common as small and rounded horizontal perforated knobs; tubular lugs are rare. The assemblage is dominated by a variety of different fine and medium wares, including a huge amount of unslipped brown and grey-brown fabrics and beige or creamy slipped wares. Orange and red-slipped burnished wares already exist, but are not frequent. In summary, the pottery spectrum of phase ÇuHö IX already contains shapes and wares also detectable in phase ÇuHö VIII, but in distinctly different amounts. Oval-shaped jars are so far evident only in phase ÇuHö IX.

CHRONOLOGY AND DATING

Following the chronological studies of U.-D. Schoop (Schoop 2005), Çukuriçi Höyük's phase VIII can be placed in the Early Chalcolithic period with possible Late Neolithic features in relative chronological terms. The ceramic features considering fabric and shape and their analogies indicate a dating of ÇuHö VIII in the horizon of Ulucak IV(-V), Yeşilova III, Ege Gübre, Dedecik-Heybelitepe A, and also with the EN II assemblages in the Lakes Region. Phase ÇuHö IX represents approximately the same chronological horizon with some Neolithic elements not continuing later. In combination with its stratigraphic position underneath ÇuHö VIII a dating in the Late Neolithic period seems reasonable. The relative chronological position of ÇuHö VIII is confirmed by a set of radiocarbon dates of different kinds of material (short and long-lived samples). The analysis and modelling by B. Weninger led to a dating between 6100 and 6000 cal. BC⁷ and consequently let us expect an older dating for phase ÇuHö IX according to the radiocarbon-dated drill cores in trench N6. These absolute dates fit rather well in the chronology of the Lakes Region and the central Aegean coast (Clare et al. 2009: 14 fig. 4, 24 fig. 9, 31-34). Only a few Neolithic settlements in Western Anatolia date as early as the first half of the 7th millennium cal. BC⁸. The four sites of Ulucak, Ege Gübre, Yeşilova, and Dedecik-Heybelitepe represent the oldest Neolithic horizon presently known on the central Aegean coast, dating back to the first half (Ulucak VI) and second half of the 7th millennium BC (Çilingiroğlu and Çilingiroğlu 2007: 363 f.; Çilingiroğlu 2011: 68). Prospective planned excavations at Neolithic Çukuriçi Höyük offer further insight into the cultural developments of a site on the central Aegean coast. This special situation of neighboring Neolithic sites in a small coastal region offers the

7 Publication in preparation.

8 Radiocarbon dates for sites in the Lakes Region summarised by Duru 2008: 11-19; for Ulucak by Çilingiroğlu 2011: 68; also Yeşilova (Derin 2011: 96, footnote 4). For chronological discussion see e.g. Lichter 2005; Schoop 2005; Özdoğan 2006, 2007.

opportunity to analyze cultural features in comparison and detail, like different architectural designs, possible contemporary abandonment of settlements, and diverse access to raw materials and resources connected with environmental conditions.

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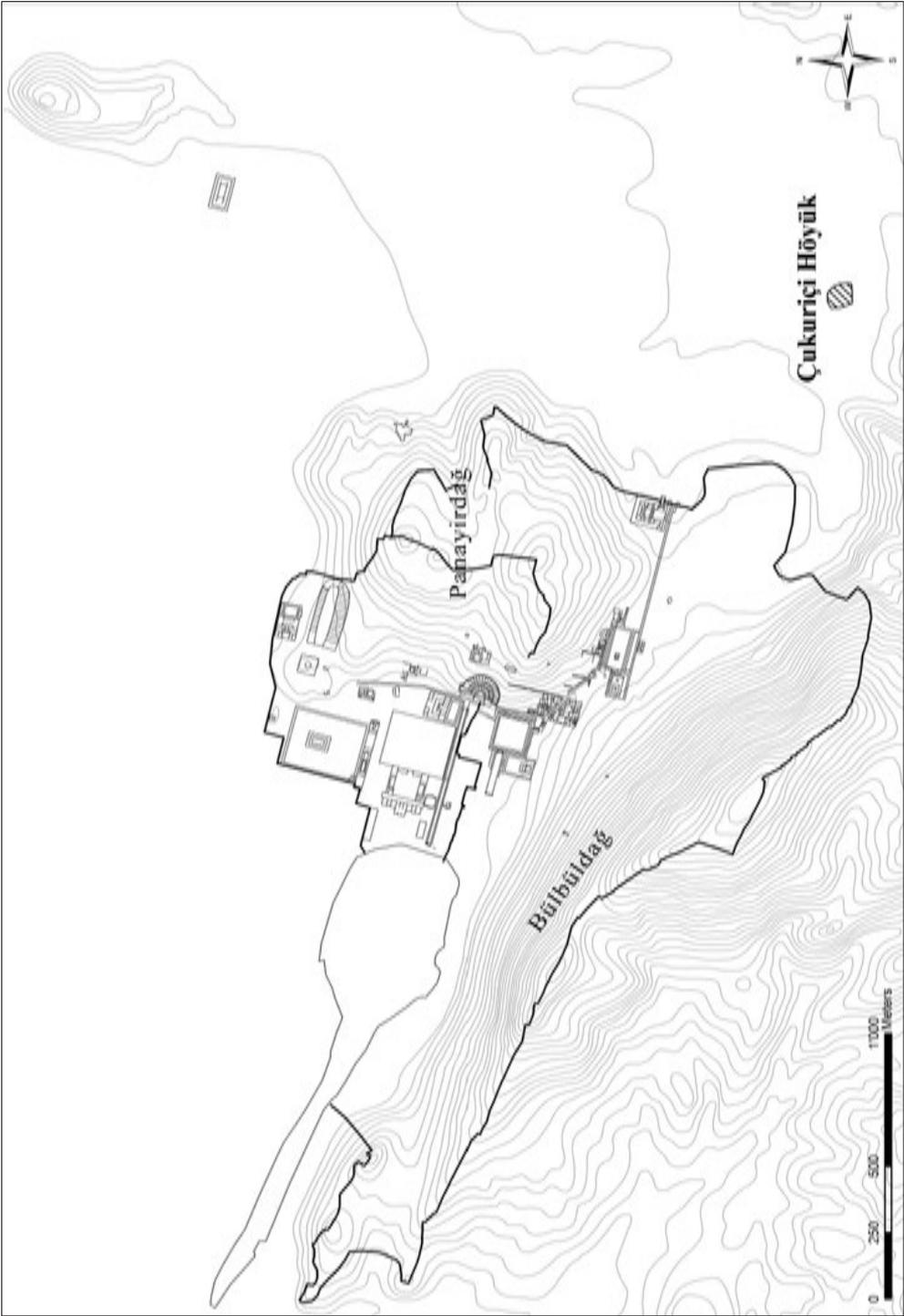


Fig. 1 - The area of the antique city of Ephesos with the location of the Çukuriçi Höyük (map by Ch. Kurtze).

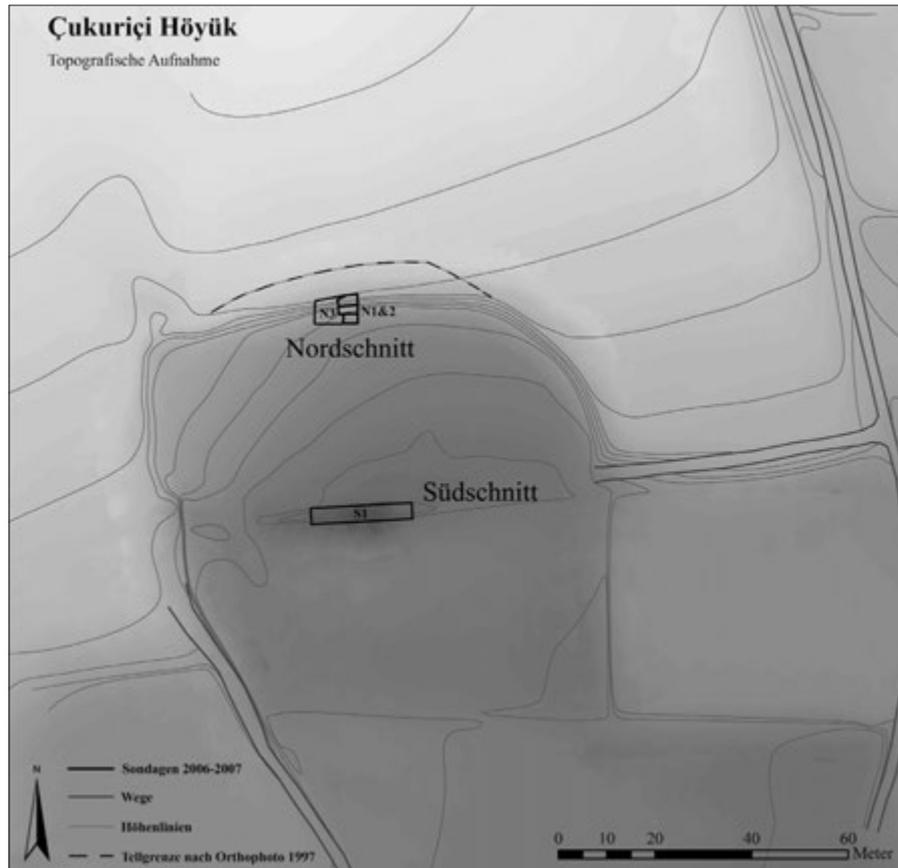


Fig. 2 - Topographic map of the tell with the areas excavated since 2006 (Ch. Kurtze/M. Börner).

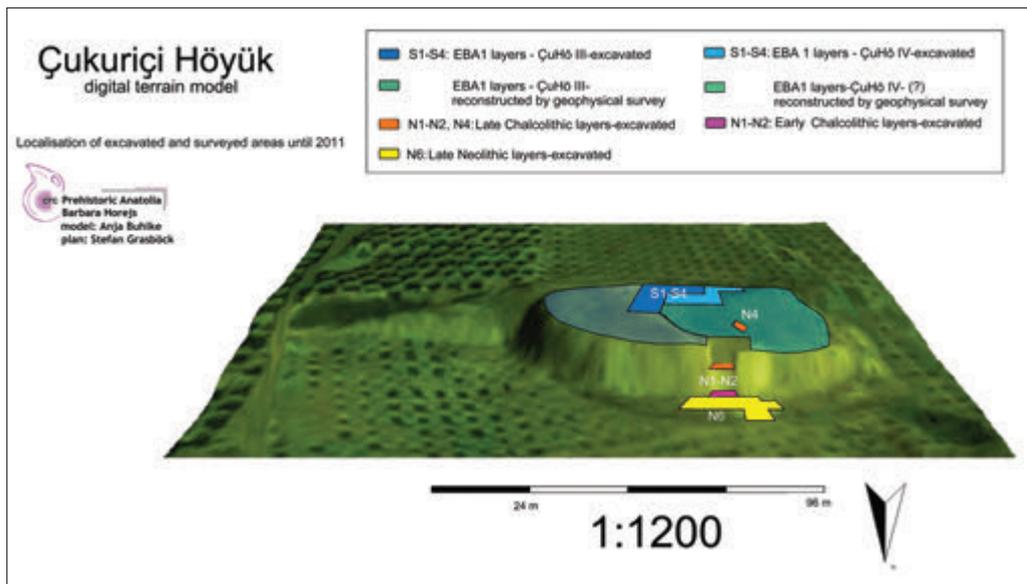


Fig. 3 - Digital model with excavated and surveyed areas (model A. Buhlke/St. Grasböck).

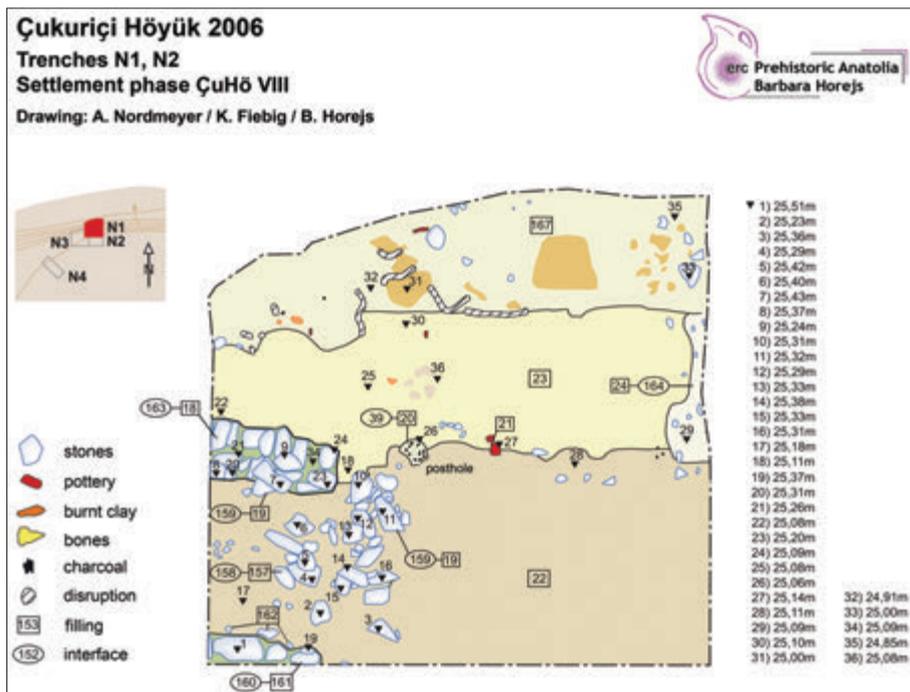


Fig. 4 - Digital plan of the archaeological remains of the settlement phase ÇuHö VIII (K. Fiebig/B. Horejs/M. Börner).

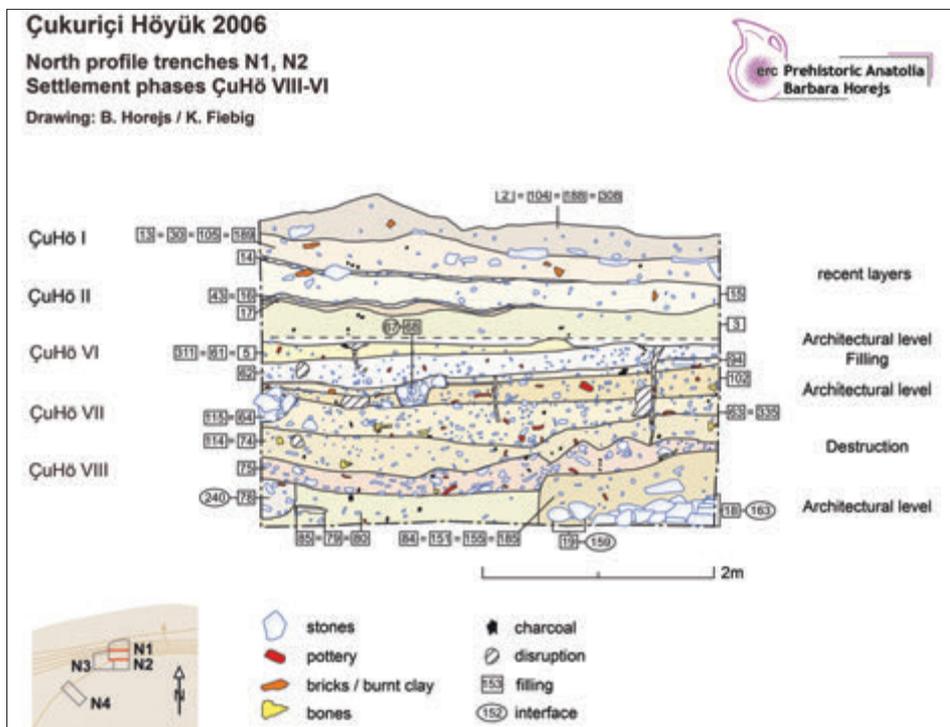


Fig. 5 - Digital profile of trenches N1 and N2 with phases ÇuHö VIII-VI (B. Horejs, K. Fiebig, M. Börner).

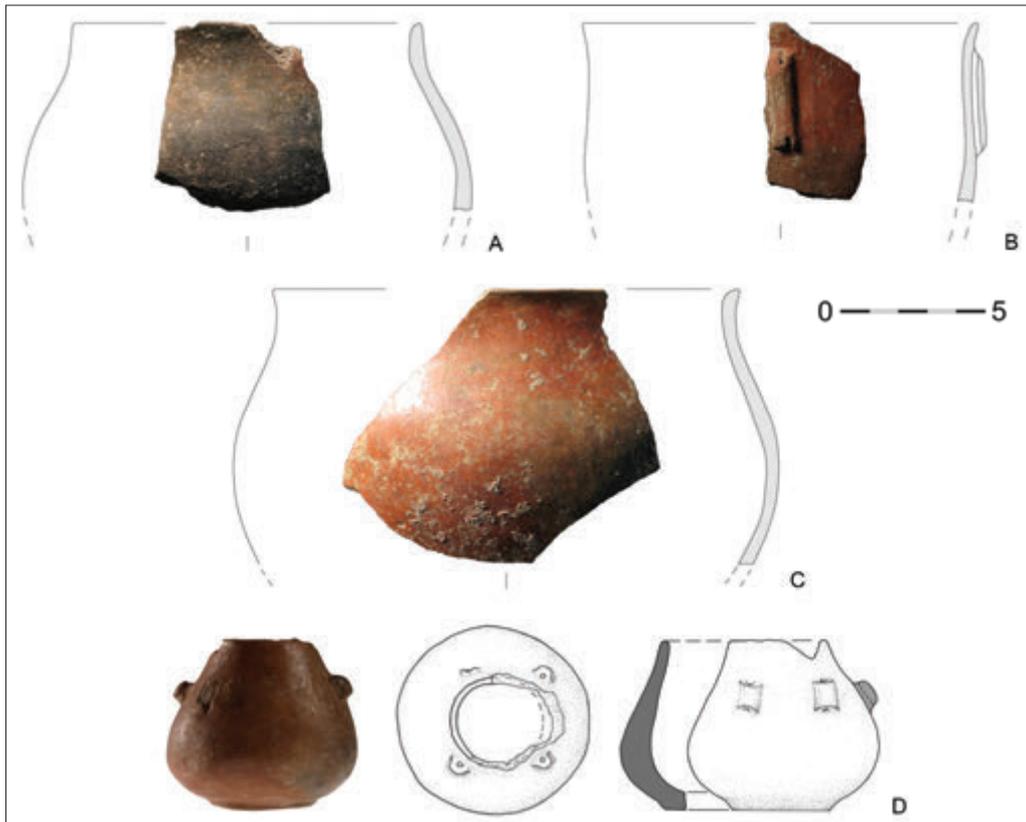


Fig. 6 - A-C: Pottery with typical S-shaped profiles of phase ÇuHö VIII; D: Almost wholly preserved jar coming directly from the stamped clay floor of phase ÇuHö VIII (drawing by B. Horejs/S. Mattova/J. Traumüller).



Fig. 7 - Different retouched and unretouched obsidian blades of phase ÇuHö VIII (photo by Ch. Schwall).

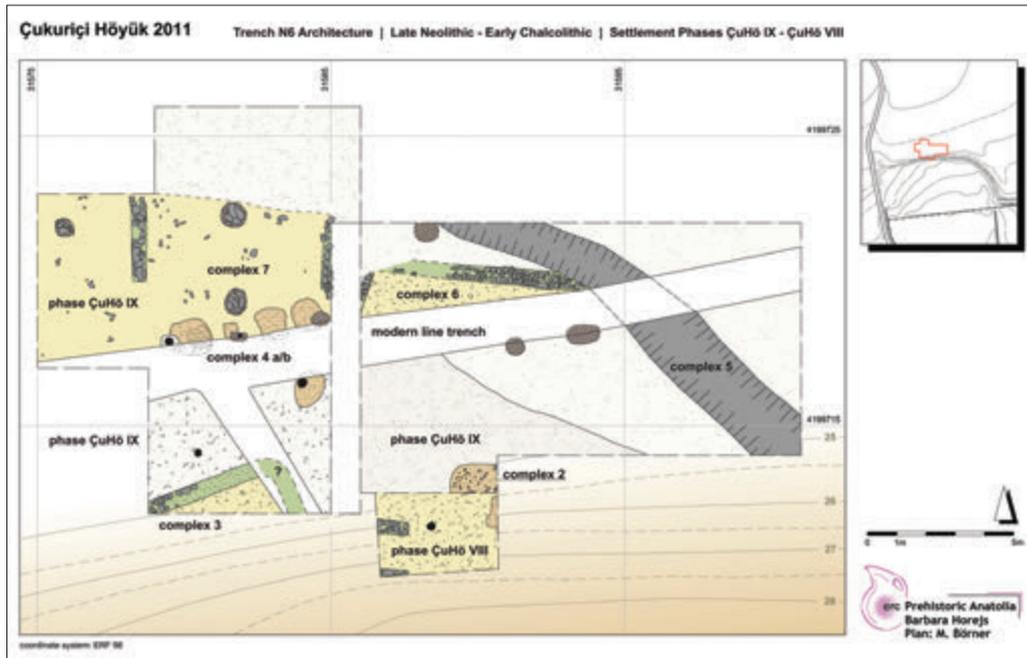


Fig. 8 - Digital plan of archaeological remains in trench N6 (M. Börner).



Fig. 9 - Bone artefacts of phase ÇuHö IX (photo: N. Gail).

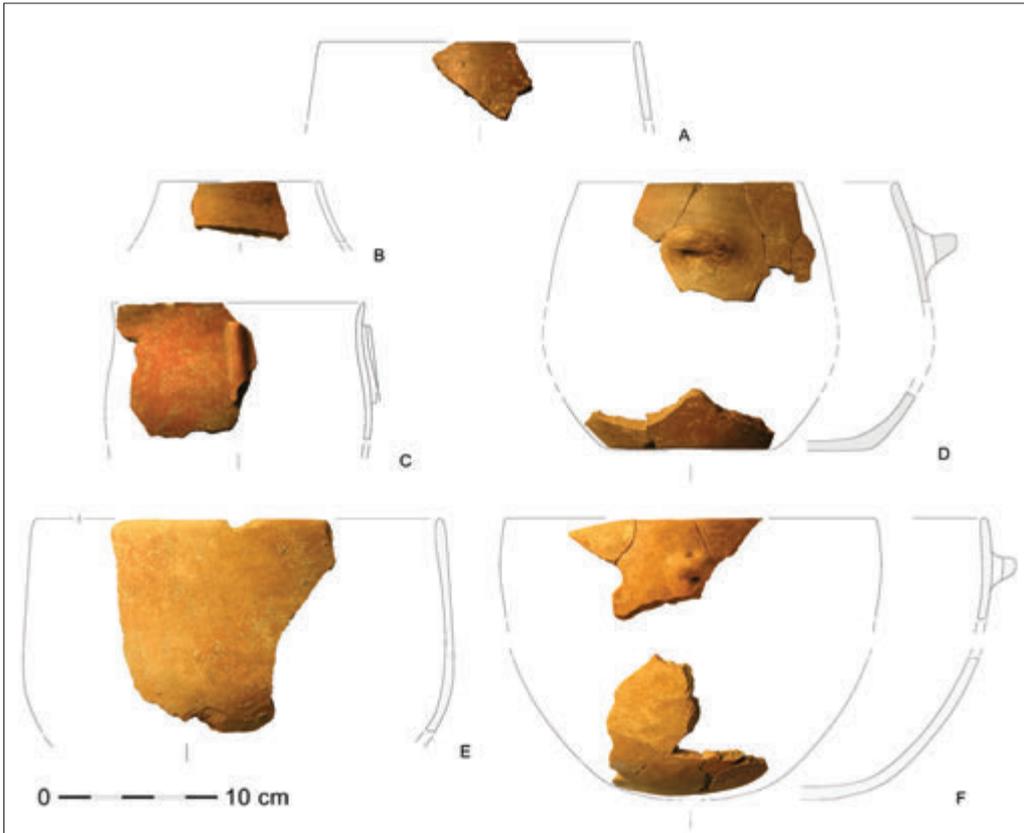


Fig. 10 - Spectrum of shapes in the Neolithic assemblage of phase ÇuHö IX (Th. Urban, J. Traumüller).