



## 1<sup>ST</sup> KÜLTEPE INTERNATIONAL MEETING

1<sup>ST</sup> KÜLTEPE ULUSLARARASI KONGRESİ

Kultepe, September 19-23, 2013

## Abstracts





鳳 引 風 華 空 臨 自 此 自 此 無 終 實 可 引 矣

I.

I<sup>st</sup>

**Uluslararası  
Kültepe  
Toplantısı**

**Kültepe  
International  
Meeting**



Kültepe, 19-23 Eylül/September, 2013





## Gojko Barjamovic

### *Kültepe after Kanesh*

This paper traces the written and material evidence for the history of the site of Kayseri Kültepe following the Colony Period. It argues that the site – known later as Anisa and Knûš – on its strategic position and in a fertile agricultural hinterland, continued to play an important role into Byzantine times, and that the city of Kayseri only gradually overtook its role as central place in the region.

## Murat Çayır

### *Kültepe Tabletlerinde Geçen Yeni Bir Unvan, rabi tâbâtîm “Tuzcular Âmiri”*

Sadece insanlar için değil, doğadaki bütün canlılar için temel besin kaynaklarından birisi olan tuz, binlerce yıl önce de çeşitli alanlarda kullanılan temel maddelerden birisiydi. Tuz hakkındaki en eski bilgileri çivi yazılı tabletlerden öğreniyoruz.

Tuz, Kültepe tabletlerinde, kap, çuval gibi hacim ölçüleri ile ölçülen ve düşük fiyatta satılan bir madde olarak geçmektedir. Bu metinlerden, “tuzcu” olarak anılan bir meslek erbabının olduğunu biliyoruz. Ancak, bu kişilerin görevleri ve daha önemlisi tuz ocaklarının bulunduğu yerler hakkında herhangi bir bilgi bulunmamaktadır.

Konuşmamızda, 1997 Kültepe kazılarında keşfedilmiş Kt. 97/k 149 envanter numaralı belgede geçen, tuz ile ilgili işleri denetleyen yüksek dereceli bir memur olan, *rabi tâbâtîm* “tuzcular âmiri” unvanı üzerinde duracağız.

### *The New Title in Kültepe Texts, rabi tâbâtîm “The Chief of Salt Dealer”*

Being one of the basic nutrients not only for humans, but also all the living creatures of the nature, salt was one of the fundamental substances used in various fields thousands of years ago as well. We learn the oldest information about salt from the cuneiform tablets.

Salt is mentioned in the Kültepe tablets as an article measured in bowl, sack, etc. and sold at a lower price. Thanks to these texts, we know that there is a profession called “salt-dealer.” However, there is not any information with respect to duties of such people and more importantly, the locations of salt quarries and mines.

Our speech will deal with the title of a senior official, *rabi tâbâtîm* “the chief of salt-dealer”, who supervises the works and activities about salt, as mentioned in the document with inventory number Kt. 97/k 149, discovered in the Kültepe excavations in 1997.

## Jan Gerrit Dercksen

### *Texts Excavated in the House of Ali-ahum (Kt c/k first part)*

The remains of a house were excavated in quadrant N-O-P/20 during the excavations in the Karum in 1950. It contained, among many other objects, hundreds of clay tablets, fragments of envelopes, some bullae and one door sealing, which are numbered Kt c/k 1-869. It appears from these texts that the house was owned by an Assyrian merchant called Ali-ahum and his sons. In this presentation I shall provide an outline of the inhabitants of this house and their immediate neighbours and their occupations as far as the written texts allow us to reconstruct. Attention will also be paid to the main dossiers of texts, their chronology and what they contribute to the understanding of daily life in ancient Kanesh.



## Veysel Donbaz

### *The Remaining Unpublished Kültepe Tablets from the Hrozný Excavation in 1925*

The fact that I have been working on several groups of tablets at the Ankara Anatolian Civilization Museum – namely of I-B period tablets as my main interest, on Kt n/k, Kt v/k, Kt 88/k, Kt 98/k and Kt 00/k tablets – since the formation of the Kültepe Publishing Committee as a member of the publishing group, this time my interest is taken by the Cappadocian tablets excavated at an earlier date on the mount by Bedrich Hrozný in 1925. Those preserved in Istanbul were published in the following volumes: ICK 1, B. Hrozný, *Inscriptions cunéiformes de Kültepe*, vol. 1, Prague 1952; ICK 2, L. Matouš, *Inscriptions cunéiformes de Kültepe*, vol.2, Prague 1962; KTS 1, J. Lewy, *Die altassyrischen Texte von Kültepe*, Keilschrifttexte in den Antiken Museen zu Stambul, Konstantinopel 1926 and KTS 2, V. Donbaz, *Altassyrischetexte und Untersuchungen, Keilschrifttexte in den Antiken-Museen zu Stambul* 2, FAOS Beihefte 2, 1989. Two more volumes published by L. Matouš & M. Matoušová (KKS) and by K. Hecker, G. Kryszat & L. Matouš (Prag I) concern tablets housed in Prag.

Besides a handful of stray articles by myself and others there has not been any other serious profound study over the Kültepe tablets housed in the cuneiform tablet archives of the Istanbul Museum of the Ancient Orient which came from the first official excavation of Kültepe Mount. The aim of the study is to finish the publication of the remaining Old Assyrian tablets which were somehow neglected (180) which offer us the early phase of the excavations with some important hints. They are well preserved too.

## Kutlu Emre

### *Tahsin Özgüç: The Nestor of Anatolian Archaeology*

Prof. Dr. *h.c. mult.* Tahsin Özgüç the excavator of Kültepe, ancient Kanesh, contributed much to Anatolian archaeology with his students, archaeological excavations and more than 100 scientific articles and books published.

T. Özgüç has produced sensational architectural artifacts and texts, enlightening the first historical period of Anatolia, the Assyrian merchant colonies, about 2000–1700 BC.

In addition to the annual Kültepe campaigns, he also led excavations such as at Altıntepe near Erzincan and at the Hittite site of Masat Höyük near Tokat and at Horoztepe, Kazankaya and Kululu.

His long career covered the entire post-war period up to his death in 2005 made him the doyen of Anatolian archaeology in Turkey.

## Levent Ercanlı & Ali Kalkanlı

### *Metal Working Technology in Kültepe in Assyrian Trade Colonies Period Based on Archaeometrical Studies*

Kültepe where it was the center of the trade organization in Anatolia realized between Assur and Anatolia during 1945-1730 B.C called Assyrian Trade Colonies Period was one of the most important metal working center of Anatolia at that period.

In this study, it is aimed to make a contribution to understand the metal working technology in Kültepe by examining the uncovered metal artifacts dated to that period.

For this purpose, the metal artifacts uncovered from Kültepe Ancient Site were examined by portable XRF (PXRF), energy dispersive X-ray unit of scanning electron microscope for elemental analysis and by X-ray diffraction for the analysis of minerals. Microstructure analysis were performed by both optical microscope and scanning electron microscope.



As a result of all those analyses, it was concluded that Kültepe ancient metalsmiths in Colonies Period had the knowledge to smelt the copper and to pour molten metal into a mold to produce an object of desired shape. Moreover, they also discovered that the addition of some elements to copper hardens the structure. In this frame the bronze to be obtained by deliberately adding of tin to copper was attained.

In addition, they were aware of shaping the casted object by hammering. In the meantime, they had the knowledge of heat treatment that allows them forging the object many times till giving the desired shape without causing the fracture in the structure.

## Hakan Erol

### *Aššur-bāni'nin oğlu Šu-İštar'ın arşivi (Kt 92/R 264-1008)*

Bu çalışmada, 1992 yılı Kültepe kazılarında keşfedilen Šu-İštar ailesine ait arşiv değerlendirilerek, bu aile bütün yönleriyle tanıtılmıştır. Arşivin kronolojisi çıkartılmış, ailenin üyeleri tespit edilmiş ve bunlar hakkında tabletlerden edinilen bilgiler sunulmuştur. Kurulan ticarî ilişkiler, gerçekleştirilen ortaklıklar ve ticareti yapılan mallar gibi, şirketin ticarî faaliyetlerinden bahsedilmiştir.

Belgelerde kayıtlı *İnum* isimlerine göre, Šu-İštar arşivi M.Ö. 1894 ile 1838 yılları arasında, 56 senelik bir süreyle kapsamaktadır. Tabletlerden edinilen bilgiler sayesinde, aile üyelerinin birçoğu tespit edilebilmektedir. Buna göre, Šu-İštar'ın en az üç erkek kardeşi, beş oğlu ve bir kızı vardır. Šu-İštar'ın karısı, Asur'da yaşayan Haditum'dur. Šu-İštar'la birlikte Kaniš'teki evde yaşayan Anadolu lu Azu'nun ise onun cariyesi olduğu anlaşılmaktadır.

Šu-İštar'ın firmasının, dönemin önemli ticarî aktörlerinden olduğu söylenebilir. Aile şirketi daha çok Asur'dan getirilen kelay ve kumaşların ticaretini yapmıştır. Belgelerden edinilen bilgilere göre Anadolu'ya en az 1 ton 690 kg. kelay ve en az 1695 parça kumaş getirilmiş; Asur'a en az 6 kg. altın ve 135 kg. gümüş götürülmüştür.

Šu-İštar öldükten sonra onun evini ve arşivini büyük oğlu Aššur-imittî devralmıştır. Aššur-imittî, babasından sonra, 20 yıldan fazla bu evde yaşamıştır. Ancak kendisinden az sayıda belge kalmıştır ve bunların birçoğu da babasından kalan borçlarla ilgili yazışmalardır.

### *The Archive of Šu-İštar Son of Aššur-bāni (Kt 92/R 264-1008)*

In this study, the family of Šu-İštar is being introduced with its all aspects by analyzing the archive of Šu-İštar found in the 1992 excavation season at Kültepe. The study contains a chronological analysis of the archive and the types of the texts. The members of Šu-İštar's family have been revealed and the information about these people is presented. The trading activities of the family company are mentioned also, including commercial relationships, established partnerships and traded commodities.

As seen from the recorded eponyms in the tablets, the archive of Šu-İštar covers a period of at least 56 years between 1894-1838 B.C. The information obtained from the archive enables us to identify most of the members of Šu-İštar's family. Thus, Šu-İštar had at least three brothers and five sons. Šu-İštar's wife was Haditum, who lived in Aššur with Šimat-İštar, their daughter. The Anatolian woman Azu, who lived with Šu-İštar in Kaniš was his second wife.

It can be assumed that Šu-İštar's firm was a prominent trading actor in its era. The family firm traded mostly tin and textiles in Anatolia brought from Aššur. According to supplied information from the archive, at least 1 ton 690 kg. tin and 1695 textiles were exported to Anatolia; on the other hand, at least 6 kg. gold and 135 kg. silver were brought back to Aššur.

After the death of Šu-İštar, Aššur-imittî, his oldest son, took over the house and its archive from the father. Aššur-imittî had lived in the house until the end of the Kaniš lower town level II, i.e. over 20 years. Nevertheless, very few texts remain from Aššur-imittî and most of them are related to his father's unpaid debts.



**Sabahattin Ezer & Güray Tüysüz**

*Pottery Production at Kültepe*

As is known to all, most important evidence for pottery production is kilns. Rotary stones and discarded ceramics can also be named as other evidences. However, ceramic kilns are among the rarest immobile architectural elements encountered in archaeological excavations.

One of the essential stages of ceramic production technology; the firing process is known to be exercised in two different methods since Neolithic Period. First method is the firing of ceramics in open space. While second one is the firing process exercised in kilns.

From prehistoric and proto-historic periods, there are limited amounts of kilns identified in Anatolia. Today, a kiln dated to 5<sup>th</sup> millennium BC in Tell Kurdu is the oldest known kiln in Anatolia. Best examples for Early Bronze Age kilns are known from Lidar Höyük. However, our knowledge of Middle Bronze Age kilns is very limited. Şaraga Höyük presents essential information for kilns and in particular, stages of ceramic production technology of the period.

In Kültepe which is largest settlement in Anatolia in Middle Bronze Age and possibly in Early Bronze Age as well, there have not been any kilns assessed up to present day. Even though a furnace found in layer Karum Ib has been thought to be used in ceramic production, there no clear evidences to support this suggestion.

Kültepe's extant, substructure, metal workshops, ceramics which are found abundantly and rich in repertoire, ovens and furnaces found in houses suggest a pottery production on the site.

Absence of an encounter with a kiln in the excavation area or lack of kiln in the settlement, concentration of ceramic production centers on specific areas and production of Kültepe pottery at a nearby site, impossibility for determining remains from open space firing areas are among reasons which prevent us to reach information related to Kültepe's ceramic production technology. Excavations of Kültepe constitute crucial importance for obtaining the aforementioned information.

**Timothy P. Harrison**

*"Northern Levantine Relations with Kanesh and Central Anatolia In the Bronze and Iron Ages"*

Historical and archaeological evidence suggest that relations between the mineral rich Central Anatolian highlands and the agricultural societies of lowland Northwest Syria played an important role in the cultural and economic growth of each region during the Bronze and Iron Ages (3500-500 BCE). The development of long-distance trade networks was especially crucial in helping to facilitate interaction and the exchange of goods, peoples and ideas. Situated at a strategic intersection between these two regions, the Amik Ovasi, or North Orontes Valley, provides a particularly valuable glimpse into the evolving nature of this interregional interaction.

This paper will review the results of previous and ongoing investigations at Tell Tayinat, the principal Bronze and Iron Age settlement on the Amik Ovasi. Tayinat appears to have been the capital of a succession of small regional kingdoms, beginning in the mid- to late-third millennium BCE, and continuing through to the end of the Iron Age, with an 800-year hiatus in the second millennium BCE when Tayinat's nearby sister settlement, Tell Atchana (ancient Alalakh), gained ascendancy as capital of the Kingdom of Mukish. The Tayinat excavations have provided a wealth of artifactual evidence reflecting its extensive interregional connections, including Central Anatolia. The paper will conclude with observations about the broader patterns and trends reflected by this interaction, and their historical and cultural implications.



## Thomas Klitgaard Hertel

### *On Demographic Studies of the Lower Town at Kültepe / Kanesh – Preliminary Observations*

What can we say about the size and composition of households in the lower town at Kanesh? And more generally, about the sociocultural configuration of the population, demographic trends and developments? Scholars have discussed various aspects of these questions in the past, and we are now in a position where we can track a number of individuals over time along with their families and companions; in some cases we can even identify their households on the ground. This talk will address some of the problems involved in making a more detailed sociocultural and demographic analysis of Kanesh starting with a brief presentation of a composite map of the lower town. The second part of the talk starts by asking the relatively simple question, “who lived on a relatively permanent basis in a given household and when?” By way of a few examples it is argued that both simple and complex demographic questions are difficult to answer at the moment, but that micro-level analysis of both the textual and archaeological record made in combination actually holds a potential for real progress in our understanding of the demographics of ancient Kanesh.

## Ergun Kaptan

### *Anadolu’da Eski Dönemlere Ait Cevher Zenginleştirmede Kullanılan Taş Aletler*

Anadolu’da eski dönemleri içeren madencilik etkinliklerindeki materyeller arasında en önemlileri cevher zenginleştirmede kullanılan taş havanlardır. Bu materyaller, maden cevherinin belirli tane boyutlarına getirilmesini sağlar ve metalurjik prosese hazırlar. Çeşitli maden cevherleri için tipolojik görünimleri farklı olan taş havanlar kullanılır.

Bu materyaller iki ana bölüme ayrılır: 1. Taş havanlar (çeşitlidir) kendi aralarında sınıflandırılır. 2. El Taşları (çeşitlidir) bunlar da kendi aralarında sınıflandırılır. Sözü edilen örneklerle, eski maden sahalarında, eski dönemlere ait maden cürufu olan yerlerde ve bazı arkeolojik kazı merkezlerinde bile rastlanmaktadır.

### *Ancient Stone Materials Used For Ore Enrichment In Anatolia*

Stone mortars used for ore enrichment are among the most important materials used in the mining activities in ancient Anatolia. These materials scale mineral ore to a certain size and prepare it for metallurgical processes. Different sets of stone mortars with varying typological appearance are used for different mineral ores.

These materials can be classified in two categories: 1. Stone mortars (varied) have in terms of typology and have different sub-categories 2. Stone hand tools (varied) have in terms of typology and have different sub-categories. These samples can be found in the ancient mining sites, archaeological excavation sites as well as the areas where ancient mine cinders exist.

## Kaoru Kashima

### *The Environmental History at Kültepe for the Last 6,000 Years*

A multidisciplinary geologic research program corroborated with archaeological excavations made clear the history of the climatic changes in Central Turkey and Syria. The warming and very dry climate could be observed in the data from all our drillings in the early Holocene. The humid climate recovered at first in the northern part of Syria at 8500 years BP. In the drillings from Lake Khatouniyeh.



After 2000 years, the Holocene humidity started at the northern part of the central Turkey, at Lake Seyfe and Kültepe, Kayseri. However a dry climate continued in the southern part of the central Turkey such as Konya basin and the area of Lake Tuz. The above-noted recovery of humidity and its regional variability in the Holocene presumably was one of the major causes for the archaeological events, especially with regard to water availability.

Similar trend of water level changes were observed at ponds and marshes near archaeological sites in central Anatolia. In 2003, we made two drillings at the marshes surrounding Kültepe, which were former lakes. The samples reached the bottom of the marsh sediments. A lithologic (grain size) analysis and micro-paleontological analyses (diatom and pollen) made itThe peaty clay of the base of the lowest marsh deposit was dated about 4500 BC (calibrated). After that period, the initial lake was buried by fluvial sediments. The second lake was formed about 2000 BC (calibrated). This lake gradually dried up again. The most recent lake deposition was dated about 1000 AD (calibrated) (Kashima et al. 2005).

### **Serkan Kemeç, Şebnem Düzgün, Yenal Melezolu & Fikri Kulakoğlu**

#### *Temporal and Spatial Archiving Approaches with Precise GNSS for Archaeological Excavations*

Kültepe, formerly named as “Kanesh” is located about 20 km northeast of modern city of Kayseri. Kanesh was the most powerful kingdom and the centre of an international trading network four thousand years before present.

Continuous Operating Reference Stations (CORS) that acquire Global Positioning System (GPS) signals without any interruption. Additionally CORS have the task to store and in some circumstances process the data and then transmit this data with cared possible errors to rover receivers. The acronym of the Turkish Continuous Reference Stations network is CORS\_TR. In this study, CORS-TR compatible Global Navigation Satellite System (GNSS) is equipped to obtain point coordinates, with millimeter-level positional accuracy, is used for;

- Storing the findings in the computer environment,
- Ground control points for the areal and satellite based image registration,
- Generation of the Digital Elevation Models (DEM) to generate ortho-rectified terrestrial photographs.

All of the items indicated above can be employable for archiving the important historical materials and temporal development of the excavation. First stage studies, show that mentioned methods has given promising results for archiving excavation and archaeological finds.

### **Ryoichi Kontani**

#### *The Kayseri Region in the Late Third and Early Second Millennium BC*

The Archaeological Survey Project in Kayseri, KAYAP (Kayseri Arkeolojik Yüzey Araştırması Projesi) began in 2008 . KAYAP surveyed 106 archaeological sites in five campaigns since 2008 . The objectives of this research project are: 1) to enrich the archaeological understanding of Kayseri Province; 2) to discuss the historical development of settlements in Kayseri using the survey data by KAYAP, and; 3) to discuss the enormous development of Kültepe, ancient Kanesh, as a trading capital in Central Anatolia during Early to Middle Bronze Age considering the reconstruction of the ancient trading routes.





Initially, we thought that, the distribution of sites simply reflected the ancient trade routes. In one of the Kültepe texts a letter to ancient Mama, which is thought to be located in Maraş, suggested active trading with northern Mesopotamia via a route running through the eastern part of Kayseri . Therefore, we expected that we would find numerous archaeological sites along the Kayseri-Malatya road line. However, the archaeological sites in this region were sparse, and the size was also small, which did not allow us to identify a developed trade route. Yet, to the southwest of Kültepe and on the Develi Plain surrounding Sultan Sazlığı we confirmed that large cities were present at Eğriköy and İktepe during the Assyrian Colony Period. Using these data it is suggested that the trade route running around the southwest of Erciyes Mt. through Develi Plain and across Taurus Mountains towards the Mediterranean Sea was important for Kültepe

### **Guido Kryszat**

#### *The Old Assyrian Script: Origins, Traditions and Developments*

On first sight Old Assyrian writing seems to be quite consistent in its appearance, with only minor variants in its uses. But it is not a pure artificial product, invented to give the travelling merchants a means to communicate in a way as simple as possible to be used by as many people involved in the trade as possible. But a closer look on the material reveals that the truth is not as simple.

The paper intends to give an overview of possible origins, different traditions and developments of the Old Assyrian script from the earliest Royal inscriptions until the end of the Old Assyrian documentation in Anatolia.

### **Fikri Kulakoğlu**

#### *Current Researches at Kültepe-Kanesh*

The first scientific excavations at Kültepe were started by Prof. Dr. Tahsin Özgüç by the name of Turkish Historical Association in 1948. First term excavations supervised by Prof. Dr. Tahsin Özgüç lasted till to his death in 2005.

Kültepe excavations not only enlightened the protohistory and history of Anatolia but also presented very important discoveries and results about the history of Mesopotamia and Syria. The Kültepe-Kanesh settlement is far better known for its second millennium BC karum and trading center, but the EBA III occupational level on the mound (Levels 13-11) suggest that Kültepe was, at this time, already an important center on the plateau. New term excavations which started in 2006 at Kültepe especially concentrated on these protohistoric levels.

Recent finds in this new term works at Kültepe establish that the southerners organised systematic trade with Central Anatolia and Northern Cappadocia as well as Western Anatolia. New discoveries at Kültepe illustrate the complex involvement of Kanesh in these remote ventures. It seems clear that the choice of Kültepe as the center of the Assyrian Trading Colony Period in the II<sup>nd</sup> Millennium was predetermined by earlier interaction.

### **Mogens Trolle Larsen**

#### *The Relative Chronology of the Old Assyrian Period and its Consequences*

After it has been discovered that the heavy trade represented by the texts at Kültepe lasted for only ca. 30 years, it has become clear that a number of features have to be reconsidered. We have to establish explanations for both the sudden rise in the documentation and the dramatic fall in the number of texts.



The speculations about the volume of the trade, based on somewhat shaky statistical observations, must take into account that most of the activity took place within such a short span of time. The social, economic and procedural structures that characterise the thirty-year period obviously represent a set of innovations which only lasted for one generation, and this may explain the existence of the vast archive of texts from that period. The brevity of the heyday of the trade also has serious repercussions for the attempts to combine textual and archaeological data, because they operate on different chronological scales.

**Joseph W. Lehner**

*Cooperation and Scalar Organization of Metal Trade during the 2<sup>nd</sup> Millennium BC*

The relationship of specialists, the craft economy, and urban states in the Near East has long been a topic of anthropological and archaeological interest. The craft economy in particular is often cited as a fundamental aspect of increasing social complexity and it has been closely linked with the development of regional centers. More recently, theory in the evolution of cooperation predicts that complexity can evolve under a host of interesting social strategies, including trade and warfare. In this paper, I will test if trade can give rise to the social complexity. Specifically, I examine the role of metallurgy and metal trade evident at Kültepe and other important sites to examine whether trade is an appropriate explanatory strategy in the development of economic complexity.

**Cécile Michel**

*Women in the 1993 Kültepe Archives*

In 1993, the Kültepe archaeological team excavated two neighbouring houses, badly damaged, in the squares LVII/127 and LVIII/127-128, containing 926 tablets, envelopes and fragments, as well as 37 bullae. These archives belonged to an Assyrian merchant's family represented by Alāhum, son of Iddin-Sin, and his son Aššur-taklāku. The activities of the main male members of the family are very well documented; it is less true for the female family members. However, it is possible to get a good picture of the daily life of several women, those who had close family ties to Alāhum and his son Aššur-taklāku. The activities of the women mentioned in the 1993 archives reflect the general image of Old Assyrian women given by the Kültepe written sources.

When reconstructing Assyrian family trees, we have often the impressions that, besides the merchant's wife and their consecrated daughter, there are no girls. The study of coherent archaeological archives makes it clear that they existed, but they are only very occasionally mentioned.

**Ryutaro Naruhashi & Kaoru Kashima**

*Holocene Paleoenvironmental Changes Inferred from Sediment Cores of Wetland near Kültepe Site, Kayseri Basin, Central Anatolia*

Hand coring attempted to reconstruct paleoenvironment changes around the Kültepe site. According to the archaeological research on Kültepe, the site was suddenly abandoned around 1700 BC, and clarifying about the cause is required. We drilled at 8 locations, and measured <sup>14</sup>C ages about 5 horizons in No.7 core. Moreover, sediment samples which continued from upper Pleistocene to modern were obtained in No.2, No.6, and No.7 cores.



This study mainly examined the natural environment changes around the archaeological site in Holocene by measuring grain size, magnetic susceptibility, and soil colors as proxy. As a result, in No.2 core (500 m from tepe) , No.6 core (1 km from tepe), and No.7 core the sedimentary facies which show flood plains, such as the back marsh and the abandoned channel, and shallow lake deposits had accumulated through the Holocene. On the other hand, in No.7 core (300 m from tepe), it added to that similar successions among those 3 cores, the cultural layer which contains potteries in the depth of 3.15 - 3.70 m were detected. Above the cultural layer, the calendar year of 3500 BC was obtained, and 2400 BC was measured immediately below the cultural layer. Since the samples of <sup>14</sup>C dating used bulk, systematically older age may have been measured.

## **Güzel Öztürk**

### *Kültepe Early Bronze Age Idols*

Beside the excavation finds uncovered at Kültepe Early Bronze Age levels, several idols with Kültepe origin from museums and private collections which were mostly produced of alabaster but also from stone and clay, represent one of the most important cultural assets in order to define and analyze the religious beliefs and traditions of the people lived at Kültepe and environs.

Typological examination and analogies based on artifacts from different sites show that the majority of the idols represent specific types unique to Kültepe. As shown by the alabaster statuettes found together with the idols and by the lead figurines and their moulds from later periods, Kültepe is an important religious center where these types of artifacts were produced.

The unique character of Kültepe idols is strongly represented by the group of artifacts, which are labeled as "Kültepe Type Idols" or "Cappadocian Idols". Also produced as multi-headed examples, these items represent the high artistic level of this period at Kültepe in terms of both description and decoration motifs and techniques. Especially the idols with plastically rendered heads represent unique examples of highly developed stage of native Anatolian art, which is also known from several other sites in Central Anatolia during the same period.

## **Alessio Palmisano**

### *Understanding Settlement Structures and Pathways of Communication in Central Anatolia during the Old Assyrian Colony Period.*

This paper seeks to apply archaeological sites and historical data in a spatial interaction model in order to predict the emergence of minor and major settlements in Central Anatolia during the Old Assyrian colony period (ca. 1970-1718 BC). I propose applying a novel method to predict, firstly, which sites would have been occupied in the Middle Bronze Age and, secondly, which sites and areas would have become prominent in this period using an entropy-maximising spatial interaction model ("retail model") that will use known archaeological sites, including those identified by satellite imagery, as point data and historical information for calibration purposes. The case study's modelling results can be checked against empirical results of archaeological survey undertaken in Anatolia in the past years. The model addresses to which extent geography, transportation, external contacts, and factors make locations attractive for trade and settlement and why some archaeological sites become relatively major settlements in the periods discussed. This includes how political and geographic constraints affect regional settlement transformations, while also accounting for uncertainty in the archaeological data.



The results not only demonstrate how major settlements emerge, but such emergence develops at the expense of other sites and because of political circumstances or external factors affecting a region. At a more general level, the results demonstrate a quantitative model that is useful in explaining emergent urban settlement patterns across landscapes at different scales.

This paper will also reconsider ancient routes in central Anatolia and Upper Mesopotamia by analysing Old Assyrian texts and modelling possible paths or corridors of movement in order to detect which factors (e.g. environmental or socio-political) affected the pathways of communication, and to explore their relationship to wider political geography. Thus, in this paper I will examine how GIS applications can help archaeologists to generate more realistic past movement models where the travel cost is not determined by only considering quantifiable factors (such as slope, elevation, land cover, etc.), but also by costs reflecting cultural influences (e.g. taboos zone, attraction to or repulsion from burial mounds, space perception, etc.).

I will show technical methods by which I will provide computational models that integrated with material and textual evidences might be useful to reproduce patterns of movement throughout central Anatolia, model the Assyrian merchants caravans' journey from Asshur to Kanesh, and reconstruct the structure of the trade.

#### **Xiaowen Shi**

##### *Anatolian Village Life as Seen through the Old Assyrian Texts*

Our evidence indicates that during the Assyrian Colony Period Anatolia was divided into several kingdoms or principalities, which consisted of one or several city-states surrounded by a large number of agricultural villages. Only little is known about the Anatolian village life and the indigenous villagers. In this presentation I will offer a portrayal of Anatolian village life based on information in the Old Assyrian text corpus. I will focus on two villages nearby Kanesh, Tumliya and Talwahšūšara. The villagers of Tumliya, were involved in business dealings with the Assyrians, while villagers of Talwahšūšara were attested to have had frequent contacts with local businessmen. My reconstruction will focus on economic activities in these villages and I will suggest that based on the available evidence we can reconstruct two types of villages in Anatolia during this period: 1) communal villages, in which land owned by free farmers who were working either independently or in cooperation; 2) crown villages, in which most land owned by social elites who might get land from the king.

#### **Edward Stratford**

##### *Literacy among Old Assyrian Merchants: A Case Study*

It is clear that there is a range of literacy competencies represented in the Old Assyrian tablets. When Pūšu-kēn received a letter from his son saying in effect, 'I want to learn the scribal arts,' it was clear the boy had much yet to learn. The variation present has been one proxy used as evidence that there was a broad base of literacy among Old Assyrian merchants. Still, it is worth continuing to query just how broadly these skills were both learned and employed on the ground. The review of the letters of several individual stemming from the Pūšu-kēn archive, including Pūšu-kēn himself, permits the opportunity to review this question in the form of a case study. The ductus and language of the letters will be reviewed, and it will be shown that some individuals clearly did not write all their own letters, leading to the question whether or not those individuals wrote any letters. Though a thorny question, some proposals on how to recognize a particular individual's ductus and/or language will be presented, followed by a consideration of what further pursuit of this issue should offer.



## Hiroshi Sudo

### *Canaanian Blades in Central Anatolia: Examinations of the Materials from Kültepe/Kaniş*

Japanese mission conducted the archaeological survey within Kayseri Prefecture to enrich the archaeological understandings around Kültepe. We study archaeological materials collected from surveyed sites at the camp of Kültepe excavation team, then we have opportunities to look at the materials excavated from Kültepe of every seasons. The author found a flint piece of large and regular blade among the potsherds from Kültepe excavations in 2010. The piece is certainly considered to be a Canaanian blade from its large size, thin and well-regulated shape. Canaanian blades are usually found in Late Chalcolithic period and Early Bronze Age from Southern Levant, SE Anatolia, Northern Syria, and Northern Iraq. Some workshops for the blade are known and blades were exported from those workshops to the surrounding settlements. Although Central Anatolia is out of the region where Canaanian blades are mainly distributed, more than twenty pieces were excavated from EBA layers at Kültepe so far. I couldn't find other certain example of Canaanian blades in Central Anatolia. It means that the examples from Kültepe extend the distribution area of Canaanian blades wider than we understood. Examining the meaning of the Canaanian blades from Kültepe might contribute to the understanding of the relationship between Northern Mesopotamia, Levant and Central Anatolia since Late Chalcolithic period.

## Oya Topçuoğlu

### *A Look behind the Scenes: Seal Carvers of Ancient Kanesh as Artists and Artisans*

Despite the thousands of seals and impressions excavated in the Near East, we know very little about the craftsmen who made them. Because they never signed their work and were almost never depicted, the study of craftsmen in the ancient Near East is relegated to a minor place and their role within the society is largely ignored. Both textual and archaeological evidence concerning craftsmen and their work have their limitations. Texts mentioning them are mostly economic in nature, and archaeology only recovers the objects they produced and the places where they were made. Therefore, it is essential to combine a variety of sources, both textual and archaeological, in order to reconstruct the role of craftsmen in the ancient Near East.

This paper attempts to examine the position of the seal carver in Old Assyrian society, through a study of textual, archaeological and glyptic evidence from Kültepe/Kanesh. Information on craftsmen in general and seal carvers in particular from contemporary sites in Anatolia and Mesopotamia is also used to fill the gaps in our understanding of these highly skilled and valued members of Kaneshite society.

## Mehmet Uğuryol & Draşan Uğuryol

### *Recent Practices for the Conservation of Adobe Ruins of Kültepe*

Ongoing excavations through decades in Kültepe have revealed many adobe ruins that have subsequently been exposed to weathering because they were unprotected. As Kültepe is one of the largest settlements in Anatolia consisting of mound and the lower city, these water sensitive ruins are spread out over a vast area and it is unlikely to cover all of them by protective constructions against rain. Therefore, it is very important to develop both active and preventive conservation methods for Kültepe's unsheltered adobe ruins that are under threat of erosion.



In this paper, initially, basic preservation problems and deterioration mechanisms of the adobe ruins of Kültepe are described, and then attempts to solve these problems and decrease the rate of erosion are discussed including simple preventive measures to direct and drain water away from the walls, trial and error based processes such as the use of geotextiles for decreasing the direct impact of rainwater on mudbricks, consolidation of mudbricks using chemicals and mud mortar as filling, and consolidation of stone foundations using lime mortar. Moreover, brief information is given about the experimental studies in progress that are being carried out both in situ and in laboratory to investigate the effectiveness of certain conservation chemicals on adobe walls. Finally, future plans and recommendations are discussed considering the preliminary outcomes of these conservation studies and practices conducted in the past two years.

### **Handan Üstündağ**

#### *Human Skeletal Remains from Kültepe/Kanesh: Current Research and Future Directions*

The research on human skeletal remains from Kültepe/Kanesh is based on two skeletal assemblages from the Old Assyrian and Hellenistic-Roman period. The Old Assyrian assemblage includes 45 individuals unearthed from the *Kārum* area between 2005 and 2008. The Hellenistic-Roman assemblage consists of 176 individuals that were excavated from a cemetery located in the upper level of *Kārum* between 2007 and 2008.

The osteological research, conducted by the author, has focused on health and nutrition during the Old Assyrian and Hellenistic/Roman periods at Kültepe. These studies are supported by two new projects: "mother and childhood health", in cooperation with Dr. Mary Lewis and "carbon and nitrogen isotope analysis of diet", in cooperation with Dr. Gundula Müldner, both at University of Reading (UK). This paper will present the preliminary results from these studies and discuss future research questions.

### **Klaas R. Veenhof**

#### *Elamma, Son of Iddin-Suen, an Old Assyrian Trader of the 'Classical' Type*

This contribution gives a picture of the person, family and business of Elamma, active as a trader in Kanesh for more than thirty years (at least since eponymy year 66), where he lived with his wife Lamassatum and his sons (in a heavily destroyed house in grid LVI/VII=127-128).

I will describe his archive, which continued for some time after his death (and also documents some activities of his sons and wife), his capital as heir of his father together with his brother Ali-ahum, and as holder of a joint-stock capital (*narūqqum*), his trading operations, his commercial partners, his role in the *kārum*, and how he and after his death also his wife and son were involved in various affairs relating to his family, some of which produced rather unique documents.

### **Nurdan Yavuz**

#### *Pollen Records as Palaeovegetational and Palaeoclimatic Indicators Around the City of Kanesh*

The palynological analysis of core samples collected from approximately two kilometers away from Kültepe has been carried out with the aim of reconstructing the palaeovegetation. Samples of this study are taken from swampy areas, especially away from the ancient settlement in order to avoid the effect of human on the development of vegetation. Sampling was done collectively by Turkish and Japanese researchers working on palynology and diatoms respectively.



The core samples were then divided into two and shared by researchers. The dating of samples by  $^{14}\text{C}$  technique, which is the responsibility of Japanese team, has not been completed yet. The pollen spectra indicate a flora dominated by *Pinus* at lower parts and Asteraceae at upper parts of the studied section. The rest of trees, herbs and shrubs are represented by minor amounts of *Cedrus*, *Juglans*, *Chenopodiaceae*-*Amaranthaceae*, *Caryophyllaceae*, *Poaceae* and the freshwater algae *Pseudoschizaea* and *Zygnemataceae*. The identified flora reflects a *Pinus* forest and widespread open areas in which Asteraceae constituted a rich cover. This flora also may reflect a warm temperate climate.

## Evren Yazgan

### *Cassiterite (Tin) Mineralization Related with Erciyes Volcanic Activities and the Mode of Formation of the Magnetite-Cassiterite-Yazganite-Tridymite Paragenesis*

The Central Anatolia Volcanic Province, with a 300 km of length, which extends as a belt in NE-SW direction, covers a large area between the Ecemiş Fault Corridor on the east, the Tuz Gölü fault on the west, and Kızılırmak fault on the north. On the northeast part of the Central Anatolia Volcanic Province, the Erciyes Volcanic Rocks of Pliocene-Pleistocene-Holocene ages, which were developed in a pull-apart basin formed in response to the intra-plate extensional tectonics, along the left-lateral Ecemiş transcurrent fault zone consist of lava flows of basalt, basaltic andesite, trachyandesite, dacite, trachyte, and rhyolite with ignimbrites and pyroclastics.

**Magnetite + cassiterite + yazganite ± tridymite** paragenesis are first determined within the Erciyes Volcanics. These minerals are in the form of fracture wall coatings in the Upper Pliocene Koçdağ volcanics. The mineralized fractures were developed in the west and southeast of Kiranardı district, with N15W and N40E strikes. Besides this Kiranardı mineral paragenesis, a magnetite-hematite-cassiterite mineral association was also recognized aligned parallel to the pyroclastics' bedding planes, in the Lower Pleistocene pyroclastics, along the Gümüşdere river in the southeast of Alıdağ, about 5 km to the south of Zincidere district. Antique mining adits of several ten meters of length have been discovered particularly within these pyroclastics. That the Kiranardı mineralization in the Erciyes volcanic complex occurs as coatings in near-surface fracture walls reflects the importance of gaseous emanations at pneumatolytic stage. The **magnetite + cassiterite + yazganite ± tridymite** mineral association of this mineralization reflects high temperature conditions. According to the fluid inclusions studies, the mineral paragenesis observed in tin deposits give a common formation temperature of approximately between 460-580° C.

The pressure was equal to the atmospheric external pressure or very close to the near-surface open spaces. Iron and tin elements, forming high temperature minerals such as magnetite and cassiterite were transported by gaseous emanations such as chlorine, fluorine, bromine and iodine derived from solidifying parent magma especially during the pneumatolytic stages. In conclusion, the minerals observed in the Kiranardı area developed in an environment where fumerolic gases were abundant and easy to escape through near-surface fractures where the external pressure was relatively low. The Kiranardı tin mineralization, thus constitutes an excellent example of the high-temperature mineralization of the near surface volcanic environment with a relatively high thermal gradient where the higher oxygen fugacity has dominated. During the microscopic and XRD studies of the Kiranardı mineralization, a new mineral YAZGANITE,  $\text{NaFe}_2^{+3}(\text{Mg, Mn})(\text{AsO}_4)_3 \cdot \text{H}_2\text{O}$ , which has been officially confirmed by IMA (International Mineralogical Association) has been discovered and recorded to the mineralogical catalogue (ASTM).

Discovery of the arsenic-bearing yazganite with the tin mineral has a great importance for the Anatolian archaico-metallurgy. Because first bronze alloys (amalgam) produced at the beginning of the ancient Bronze Age indicate that arsenic element was used together with tin.