## 10<sup>th</sup> International Congress on the Archaeology of the Ancient Near East Abstract Booklet

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Austrian Academy of Sciences Vienna, Austria, 25–29 April, 2016



# 10<sup>th</sup> ICAANE

Institute for Oriental and European Archaeology

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## 10<sup>th</sup> ICAANE

## 10<sup>th</sup> ICAANE 25–29 April 2016, Vienna, OREA Austrian Academy of Sciences



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#### Welcome Address

We warmly welcome you at the 10<sup>th</sup> ICAANE in Vienna! You are participating at the conference together with around other 800 scholars and presentations in 8 sections and 29 workshops. An additional exhibition with around 100 posters is offering additional scientific presentations.

General information is summarized in the 10ICAANE program, including special and social events, locations and timetables.

Up-to-date information during the conference will be announced via twitter, that you can either follow online (@orea\_news #10icaane) or via monitors in the coffee rooms.

We hope you enjoy this week full of Archaeology in the Ancient Near East and your stay in the Austrian Academy of Sciences in Vienna!

Prof. Dr. Barbara Horejs Director of the Institute for Oriental and European Archaeology Host of the 10<sup>th</sup> ICAANE



#### Guide to the Abstract Booklet

Abstracts of Lectures are listed in order of their presentation during the respective Section Programs and do not indicate any ranking.

Posters are grouped according to focused themes and do not indicate any ranking.

*Workshops* are organized solely by the initiative of the workshop organizers listed with the respective workshop programs.

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#### Forms of Mobility and Acculturation between Mesopotamia and Luristan in a Diachronic Perspective: Considerations of Glyptic Imagery

Silvana DI PAOLO, CNR-ISMA

At least from the beginning of the third millennium BC, Southern Mesopotamia (especially the Diyala region) and Luristan share, for geographical proximity and some kind of economic interaction, common aspects of material culture, like the adoption of specialized pottery and glyptics. On the one hand, the more urbanized Mesopotamian settlements show distinctive traits and strong cultural traditions.

Otherwise, Luristan is characterized by cemeterial areas and burial grounds: this fact highlights the presence of a different social organization devoted, probably, to nomadism with seasonal settling between the central highlands of Pusht-i Kuh and the Zagros foothills.

Here the adoption of Mesopotamian cylinder seals poses some questions about the use and meaning of these artefacts. Comparing the Mesopotamian and Iranian evidences, this paper consider the role the imagery might have within a different social framework.

#### The Phrygian Migration - implications, issues and alternative perspectives

Damjan KRSMANOVIC, University of Leicester

The socio-cultural landscape of central Anatolia in the Early-Middle Iron Age (ca. 1200–550 BCE) has been frequently interpreted as one shaped by migrating groups from south-eastern Europe in the Early Iron Age (12<sup>th</sup>–11<sup>th</sup> centuries BCE), known in scholarship as the Phrygians. The writings of the Greek historian Herodotos have been influential in generating research questions which have marshalled archaeological and linguistic evidence to support the notion of external groups migrating into Anatolia.

This has led to somewhat generalized, culture-historical interpretations of the development of Phrygian culture, and the characterization of Phrygia as a significant cultural and political entity in the Middle Iron Age (ca. 900–600 BCE). The question remains: was there a substantial Phrygian migration? What are the implications of this?

I propose to problematize existing views on the Phrygian migration, which often rest on the equation of archaeological material with a particular ethnicity and linguistic group. The paper will take into account the effect of time; scale; push-pull factors; and the degree of local (Anatolian) continuity from the Bronze Age to examine the extent to which migration contributed to the socio-cultural landscape of central Anatolia in the earlier Iron Age.

## A Multi-Isotopic Approach to the Reconstruction of Prehistoric Mobility and Burial Patterns in the Iranian plateau during Bronze Age

Farnaz KHATIBI JAFARI, The University of Tokyo

Developing empirical evidence for individual mobility and immigration in the archaeological record remains difficult. Due to the indirect nature of much available data, the variation in residential backgrounds of individuals in skeletal populations is seldom explicitly characterized and the insights gained from bio-archaeological analyses are limited. Strontium isotope analysis of bone and tooth enamel from prehistoric human skeletons is an important new technique used to address questions regarding migration. Strontium isotopes serve as geochemical signatures that can be used to source a prehistoric skeleton to a geologic area, depending on how mobile the individual was during life. Analysis of the bones of small animals provides a robust measure of local strontium isotope ratios and a reliable, if conservative means for determining confidence limits for distinguishing migrants. Data from Iranian plateau Bronze age archaeological burial sites are presented here in a discussion of variability in strontium isotope values from the well-preserved, well-contextualized skeletal population of Elamit Kingdome (2<sup>nd</sup> millennium B.C) in the southern Khuzestan Province of Iran. Examples are provided using modern and prehistoric materials. A range of small animal, local plant and water sample for comparative purposes was incorporated.

#### Permanent or Seasonal? Evidence of Settlements in Late Chalcolithic Western Anatolia

Christoph SCHWALL, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria / Barbara HOREJS, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria

Until today the Late Chalcolithic Period is one of the least investigated periods in Western Anatolia. Only a few sites dating mainly to the 2<sup>nd</sup> half of the 4<sup>th</sup> millennium BC are known in this region. The recent research focuses on the debate, whether settlements with differentiated societies and thus a more complex structure could be attested in some degree in Western Anatolia or not.

New evidence regarding this topic are provided by the excavations at Çukuriçi Höyük, a tell settlement close to the central Western Anatolian coastline. During the excavations two distinct settlements of the last centuries of the 4<sup>th</sup> millennium BC were recorded. These field investigations yielded different structures which can be certainly associated with a permanent settlement. Beside a monumental ditch several remains of dwellings, consisting of stone socles with a wattle-and-daub superstructure, were found at Çukuriçi Höyük. Moreover, installations like drying platforms and storage facilities unearthed within the settlement contradict the assumption of a seasonal settlement. Additionally, evidence of different specialized craft activities (i.e. metallurgy and textile production) indicates a kind of organization of the settlements inhabitants. Hints from other Late Chalcolithic sites in Western Anatolia draw the picture of roots for dynamic processes which lead to the development of the Early Bronze Age 1 settlements.

#### The archaeology of abandonment: a ground stone assemblage from Neolithic Bestansur, Iraqi Kurdistan

#### David MUDD, University of Reading, UK

What happens when people leave places? The archaeology of abandonment has been studied at different spatial and temporal scales: the region, the settlement, the structure and the individual activity space. There are natural processes of decay, and human actions such as disposal or cacheing of tools and other possessions, dismantling and recycling building materials, and changes to normal patterns of refuse disposal. Some things remain in, and other things disappear from, the locus of use. Stone tools preserve well, but what we see in the archaeological record is not necessarily a straightforward picture of past activity.

The presentation will use the perspective of abandonment to review the ground stone assemblage from Bestansur, a Pre-Pottery Neolithic settlement in Iraqi Kurdistan, excavated by the Central Zagros Archaeological Project 2012–2014. I will compare the assemblage with those of other sites in the region and examine the evidence for abandonment behaviour, using research on abandonment from the literature of ethnoarchaeology and historical archaeology. The presentation aims to explain the abandonment and post-abandonment phases of individual buildings and of the settlement as a whole, using as evidence the ground stone items recovered in excavation, and also the gaps of missing material: what we might have expected to find, but didn't.

#### **Exploring transregional interactions between Egypt and the Levant in the 6<sup>th</sup> millennium calBC** Katharina STREIT, Hebrew University of Jerusalem, Israel

The Pottery Neolithic of the northern Levant is dominated by the Dark Faced Burnished Ware from the 7<sup>th</sup> millennium cal BC onward. A similar ceramic style appears in the southern Levant in the early 6<sup>th</sup> millennium calBC in the so called Wadi Rabah culture, which maintained intense contact with the northern Levant, particularly the contemporary phase C in the Amuq Valley (Amuq C). In the mid-6<sup>th</sup> millennium calBC in the southern Levant phase C in the Amuq Valley (Amuq C).

lennium cal BC, a similar ceramic style appears in the Fayum A and the Merimde Beni Salame Neolithic of Lower Egypt. A comparative study of selected features of the Wadi Rabah, the Amuq C phase and the Neolithic of Lower Egypt, such as architecture, flint, pottery and burial practice was conducted against a radiocarbon based absolute chronology. The preliminary results indicate that the Wadi Rabah culture is a non-local phenomenon and its origin is to be searched in the northern Levant and Anatolia. Further, a close connection between the Wadi Rabah culture and the Neolithic of Lower Egypt can be discerned, indicating that the introduction of domesticates to Egypt was accompanied by notions of material culture characteristic to the Levant.

## Finding "East" on the "West" – alien elements and common repertoires in lithics of 7<sup>th</sup> millennium BC Çukuriçi Höyük in Aegean Turkey

Bogdana MILIĆ, Istanbul University, Department of Archaeology, Turkey / Barbara HOREJS, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria

The Neolithic site of Çukuriçi Höyük is dated from the first half of 7th millennium BC, known to be a turbulent period including connections between regions far from each other and attesting westward expansions of Neolithic way of life from the core zones. The relations with the Aegean Sea has been documented in procurement of exotic obsidian from the island of Melos, comprising around 85% of the lithic material at Çukuriçi Höyük. The abundance of obsidian blades, obtained by pressure flaking is main characteristic of chipped stone industry through Neolithic occupation of the settlement. Study on lithic technology on regional basis showed that the earliest documented pressure debitage in western Anatolia appeared in the first half of the 7th mill. BC at Çukuriçi Höyük, originated somewhere in the east, with two possible centers of origin suggested – southeastern Anatolia, and Levant or Eastern Mesopotamia (Milic-Horejs 2015, in preparation).

The appearance of pressure technique at Çukuriçi Höyük seems to be the result of migration of group of people from the east "knowing-how", rather than introduction of technology to the settlement through the connections with far away communities. Several elements within lithic assemblages at Çukuriçi referring to specific tool types, i.e. points and particular practices – storing a cache of long blades, known from PPN contexts of southeastern Anatolia, the Levant and Cyprus, are attested on the west for the first time and will be used as case study of this paper.

Keywords: lithic technology, obsidian, pressure technique, Neolithic, the Aegean, Anatolia, Near East

## Negative Correlation between Lithic Production Technology and Subsistence Strategy: New Insights from the Pre-Pottery Neolithic B Outpost of Wadi Abu Tulayha, Southern Jordan

Kazuyoshi NAGAYA / Sumio FUJII, Kanazawa University, Faculty of Letters, Institute of Human and Social Sciences

Wadi Abu Tulayha is a small-scale Neolithic settlement in the northwestern part of the al-Jafr Basin, southern Jordan. The site lasted for a few centuries spanning from the end of the Middle Pre-Pottery Neolithic B to the beginning of the Late PPNB, and was used as a hunting and agro-pastoral outpost derived probably from contemporary farming communities to the west. This paper focuses on the diachronic transition of the lithic production technology at the type-site of the Jafr PPNB and discusses its archaeological implications in light of subsequent pastoral nomadization. Of significance is the *negative correlation* between the lithic technology and the subsistence strategy at the outpost. The MPPNB population group made great use of less elaborated naviform cores, whereas the LPPNB inhabitants mass-produced standard naviform cores. Faunal and floral analysis suggests, however, that while the former hunted large animals and relied on plant resources to a lesser extent, the latter converged on small animals and, instead, put more emphasis on plant foods. What does this discrepancy mean? This paper attempts a socio-cultural interpretation of the unexpected phenomenon that proceeded at the latter stage of the occupational history of the remote outpost.

#### Bactria Margiana Archaeological Complex on the Iranian Plateau: a re-analysis

Narges BAYANI, Exhibitions Department, Institute for the Study of the Ancient World

There still remains much to be understood about the spread of BMAC to the Iranian Plateau and the interaction of this foreign culture with local communities. This paper discusses the evidence for contact with Central Asia along the Northeast- and Eastern Iran, showcasing the significance of Tepe Hissar sequence as an important framework for understanding of BMAC presence in Iran. The stratigraphic sequence of Treasure Hill -where BMAC objects were found-at Hissar, as reconstructed in this paper, allows for placing BMAC deposits into independently dated contexts. Besides Hissar, BMAC objects have been reported from numerous sites mostly along the eastern plateau. Shahdad, located on the western edge of the Lut desert, stands out among others in having produced a sizeable collection of objects with Central Asian characteristics. This paper will examine the evidence for contact with Central Asian at the two key sites of Tepe Hissar and Shahdad in four aspects: context, form, quantity and date; shedding light on the nuances and variations of Central Asian material on the Iranian Plateau in the 3<sup>rd</sup> millennium BC.

#### Comparison of the First and Second Intermediate Periods in Ancient Egypt

Elisa PRIGLINGER, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria

Both periods are times of great transformations and show similarities in their nature. The First Intermediate Period (ca. 2200–2040 BC) is characterized by difficulties of legitimacy of the royal family, which resulted in short reigns and political fragmentation. Features of the Second Intermediate Period (including the 13<sup>th</sup> Dynasty, ca. 1800–1540 BC) are also the emergence of various centers of power and the succession of kings with partly very short reigns, especially when compared with the previous 12<sup>th</sup> Dynasty.

The reasons for these similar developments are – as far as we can tell today – due to different factors. In my contribution I want to show what role migration has played for the transformation of these two periods. The individual phenomena that have accompanied both transformation processes should also be mentioned to approach a historical interpretation.

## A Demographic Analysis of Early Village Societies in the Pre-Pottery Neolithic Central and Southern Levant

Shannon BIRCH, Department of Archaeology, Anthropology and Forensic Science, Bournemouth University, UK

The Pre-Pottery Neolithic (PPN) communities of the central and southern Levant played an integral role in the Neolithic demographic transition (NDT) from nomadic, hunter-gatherer communities to sedentary, village-based, agro-pastoralist societies. However, very limited analysis of demographic parameters (i.e. population size, density and dynamics) has been conducted for this period and region, restricting our ability to reconstruct the trajectories of these early village societies.

In this investigation, a wide range of methodologies for deriving demographic data at both micro- and macro-levels have been explored and evaluated in order to improve our understanding of the development of village societies during the NDT.

Methodologies assessed for estimating population at the micro-level include the housing unit method; residential area and settlement population density coefficients; allometric and isometric growth formulae; and formulae relating to dwelling occupant numbers and the degree of interior residential storage provisions. Positive correlations exist between various demographic parameters, constants and variables, and settlements of different types and sizes. These correlations have enabled the creation of formulae that have been applied systematically to all known PPN villages in the central and southern Levant in an attempt to reconstruct population trends throughout this period.

## Lack of power and the fall of governments in Mesopotamia from the Sumerian to New Babel with respect to modern changes

Mojtaba KHARAZMI, University of Sistan and Baluchestan / Zeinab AFZALI, University of Tehran

Mesopotamia was one of the most important urbanisation regions in Bronze period and had regional and global effects such as revolution in writing system and reigns. This region from the very first, attempted to fight against the desert inhabitants who invaded the region from the northern and north western parts. The ancient myth of Abel and Cane can be interpreted as the fight between the desert inhabitants and or cattle keepers with farmers in occupying cities and dominating the ideology of the first victory of Cane. this was also true in reality, Amurra tribes invaded in two sessions from Syrian deserts and also the Akkadian from the north invaded the Sumerian and the Kassite and magnify this reality Empowerment of Islamic reign in the last years was one of the such invasions which started due To the weakness of central governments in Syria and Iraq, which was set from Syria and northern Iraq. In the present study, to show Mesopotamia potential and the reasons of these invasions in the post and also the role of economy and ideology in these governments and whether we can identify the last changes in the region according to changes of the ancient time or not?

## Excavations at Gird-i Shamlu: the archaeological material of the $2^{nd}$ and $3^{rd}$ Millennium BC in the Shahrizor Plain, Iraqi Kurdistan

Simone MÜHL, Ludwig-Maximilians University Munich / Alexander SOLLEE, Bern University

In 2015, excavations were initiated at the site of Gird-i Shamlu in the center of the Shahrizor Plain in Iraqi Kurdistan. Earlier investigations had shown that this site offers significant information on the archaeological material and history of the 2<sup>nd</sup> millennium BC. Especially due to the discovery of a new ceramic form, the so called Shamlu pottery, which is named after this site and represents an intrusive element amongst the region's material culture, which is mostly old Babylonian and Kassite. Changes of the settlement system as well as in ceramic production together with historical information might indicate movement of people between the Iranian Highland and the Mesopotamian lowland. The modalities of such changes are investigated in the framework of excavations at Shamlu and a survey of sites in the Shahrizor plain, which is the core distribution area of this specific kind of pottery. Apart from this, the first campaign at Gird-i Shamlu has also brought to light a significant amount of Early Bronze Age and Iron Age material, which is essential to gain a better understanding of the development of local pottery traditions through the ages.

#### From Bronze Age to Iron Age in the North-East of Iran: the case of Tureng Tepe

Régis VALLET, CNRS, Maison de l'Archéologie et de l'Ethnologie (MAE), Nanterre, France / Julie BESSE-NAY-PROLONGE, University of Paris 1

Tureng Tepe (Golestan province, Iran) was excavated from 1960 to 1979 by a French team directed by J. Deshayes (University of Paris 1).

The excavations have especially revealed an important Bronze Age urban center, dominated by a high mud brick terrace. After several centuries of abandonment, the site was reoccupied during the Iron Age, and a series of fortified buildings took place atop the ruins of the Bronze Age terrace. Although the Sassanid and Islamic remains have been described in a monograph published in 1987, all previous levels remain unpublished yet.

The publication program has been relaunched in 2013 and this paper aims to present preliminary results about the current stratigraphic and architectural studies conducted so far. By this way, we will examine how and why this large urban settlement collapsed at the end of Middle Bronze Age, and we will discuss the phenomenon of the emergence of a new type of settlement in Iron Age II.

The issue of interregional connections between Tureng Tepe and the neighbouring areas of Iran and Central Asia during Bronze Age and Iron Age, as well as the question of migrations at the end of the Bronze Age will also be considered.

Keywords: North-eastern Iran, architecture, stratigraphy, Bronze Age, Iron Age, excavations archives

#### Cultural transformation shaping the end of Late Bronze Age Coastal Canaan: The Late Bronze Age III José M. MARTÍN, The Leon Recanati Institute for Maritime Studies, University of Haifa

The material culture of sites along coastal Canaan, as Tell Abu Hawam, Tel Nami and Tel Akko, underwent detectable changes at the end of LB IIB. They appear at Ugarit and the Cypriot Southeastern coastal sites. The transformation, continuation, yet change, appear in certain forms of ceramics and their provenance within the island. The variations are traceable in inland sites, connected to the coast by terrestrial routes, as Tel Megiddo, Tel Beit She'an, and Tell es Sa'idiya, in Trans-Jordan. The end of this period can be assigned to the final destruction of Ugarit which coincides with that of Tel Nami, and is traditionally, ascribed to the beginning of the IA around 1180 BCE. However, evidence suggests that the material culture of the period continued in the inland sites until, at least, 1150 BCE, where it may have persisted through sea-land connections from other coastal sites such as Tyre and Sidon, for 30 years following destruction of Ugarit. As a result, the beginning of the IA should be postponed to 1150 BCE, when diminished imports in the area are clearly noted. It is proposed that the transitional period between 1225 and 1150 BCE should be defined as LB III.

#### State Formation and the Creation of Highland-Lowland Buffer Zones

Abbas ALIZADEH / Atefeh RAZMJOO / Hassan ALIZADEH, Oriental Institute University of Chicago

Beginning in the late 6<sup>th</sup> and early 5<sup>th</sup> millennium BC, archaeological evidence suggests a change of the millennia-old sphere of interaction between southern Mesopotamia and lowland Susiana. The Ubaid (Ubaid 3) culture penetrated into the north northwest, while the Susiana (Late Middle Susiana) culture advanced into the Zagros Mountains and highland Fars. As a results of the latter cultural expansion, large tracts of land in the Ram Hormuz and Mamasani plains that previously were almost completely unoccupied by permanent farming villages, were settled in the 5<sup>th</sup> and 4<sup>th</sup> millennia BC.

This pattern changed dramatically in the early 3<sup>rd</sup> millennium BC with the initial consolidation of political power in the region. Lowland Susiana became the theater of confrontation between the forces of the nascent Early Dynastic states and those in lowland Susiana and the highland valleys. Susiana, it seems, was finally subdued by the powerful Akkadian and Ur III dynasties, resulting, it seems, in the abandonment/desettlement of both the Ram Hormuz and Mamasani plains for about a 1000 years (2900–1900 BC), until the last ruler of the Ur III dynasty was defeated by the highland Shimashki forces. But it was not until the coming of the Sukkalmahs that both these marginal plains became resettled.

The third buffer zone, the Deh Luran plain, had a different evolution. While the plain was never completely abandoned, judging by the archaeological evidence, it was not part of the proto-Elamite sphere of interaction and does not seem to have returned to the Susiana-based states until the second millennium BC.

This paper explores the dynamics of this interaction and will attempt to shed some light on the mostpreposterous claims by what Seth Richardson has called "Presumptive States".

#### The EB-MB Transition in the Southern Levant: Contacts, Connectivity, and Transformations

Marta D'ANDREA, Sapienza Università di Roma

In the past, mass migrations have been regarded as the driving force of cultural transformation and socio-political changes in the Southern Levant between the Early and Middle Bronze Ages. Afterwards, endogenous developments have been largely favoured. However, as well known, there is evidence for the introduction of new elements, resulting from emulation and re-elaboration of foreign features. While clues for substantial migrations can be difficultly found in the archaeological evidence from the region dating from Early Bronze IV/early Middle Bronze I, there are elements in the material culture hinting to connectivity and contacts with the neighbouring areas and arguing for the circulation of new technologies and ideas, but also of people. The paper presents an overview of such evidence and, based on the distribution of specific elements of material culture between the late Early Bronze IV and the early Middle Bronze I, seeks to analyse the nature and mechanisms of these contacts and the reasons for increased groups mobility at that time. Finally, based on these insights and by looking at recent theoretical and methodological approaches, some considerations on transformations and developments in material culture and on the mechanisms of selection and integration of new components during this period are put forward.

#### **Evidence of Transformation: The Early Iron Age Aegeanizing Pottery Assemblage at Alalakh** Mariacarmela MONTESANTO, University of Liverpool

The transition from the Late Bronze to the Iron Age in the Eastern Mediterranean and the Near East is recognised as a period of major social and historical significance. Despite being at the centre of these changes, the Late Bronze–Iron Age transition at Alalakh (the 12<sup>th</sup> century B.C.) and in the Amuq Valley generally remains poorly understood in terms of chronology and local development.

This paper presents the canonical locally-made Late Helladic IIIC and Aegeanizing pottery found at Alalakh within the context of the full 12<sup>th</sup> century ceramic assemblage. The finding of this particular type of pottery could be used to argue that there may be people at Alalakh who come from the Aegean, but it also could be the result of local people imitating habits, cooking style and recipes of the Aegean alongside their native ways. The paper will focus on the changes that occurred in the local ceramic assemblage and specifically on how the assimilation of a foreign style ware affected the local tradition, contributing to create new habits and new identities in a period of struggling and transformations.

#### A Case Study of 'Kushan' people in Indian Context with special reference to Bengal

Munmun MONDAL, Department of Archaeology, University of Calcutta, West Bengal

The early centuries of Christian era witnessed the growth of Kushan empire in Indian subcontinent. India, is an independent country in South Asia.

The Yue-chi tribe, to which the Kushan belonged, the originally nomadic people of Central Asia, hailed beyond the Pamir and Oxus region. Political and climatic condition compelled them to move westward. Around the 1<sup>st</sup> century AD, a branch of this tribe known as Kushan, migrated to North India and extended their territory up to the Pataliputa of Bihar in India. Though Bengal was never formed a part of the imperial Kushan rule, nevertheless the Kushan influence had drastically changed the contemporary socio-economic lifestyle of the people of Bengal.

Their imperial reign ushered a new era by introducing many new elements in the daily life of the common people, which were hitherto unknown to them. The intrinsic social security, restored by the Kushan people and guaranteed by a political stability helped to usher an economic prosperity which in turn triggered a socio-cultural affluence in Bengal. An overall transformation in social life paves the way into contemporary society, which leads to urbanization and affluence in society reflected in every sphere. All the inherent features of urban life like trade, usury, public places, and entertainment houses, shops etc. introduced and improved the prevailing condition in the material life of the people, which was unknown and absent before. Bengal became an integral part of the socio-economic and cultural fabric of the Kushans and experienced a sophisticated urban life with rich social content mixed with economic prosperity never felt before. My paper intends to shed light on the migration of Kushan people in Indian subcontinent in general, and more precisely, in Bengal and its impact on the economic growth and social transformation and enhancement for the people of this land.

Transforming lifeways and place: Early built environments in the Neolithic of the Zagros (Iran, Iraq) Wendy MATTHEWS, Department of Archaeology, School of Archaeology, Geography and Environmental Science, University of Reading

The construction of built environments represented one of the most enduring transformations of human lifeways as well as surviving imprints of these. Built environments have transformed landscapes and human relations with each other and the world around them. The construction of architecture provided shelter as well as ways in which to actively structure and embody social relations and access to people and materials. This paper examines how early built environments were constructed and transformed lifeways during the transition from mobile hunting-gathering to more sedentary early agricultural settlement in the Central Zagros of Iran and Iraq from 10,000-6,000 cal BC.

New and existing evidence of transformations in early built environments are examined using architectural and anthropological method and theory as well as scientific analyses of architectural materials and micro-residues. This paper investigates spatial and temporal variation in architectural materials, form and syntax and includes new data from the Central Zagros Archaeological Project. It considers the nature and impact of transformations from circular to rectilinear architecture, agglutinative to more free-standing structures, as well as small to larger roomed buildings. One specific focus is on human use of fire to transform materials and spaces of being by their energy, heat, smoke and light.

#### This Must be the Place: An Archaeology of Homemaking in EBA III Numayra, Jordan

Meredith S. CHESSON, Department of Anthropology, University of Notre Dame

An archaeology of homemaking in the Early Bronze Age southern Levant integrates the microscale of everyday life with the macroscale of cultural regions, trade patterns, and social, economic, and political spheres in the region's earliest fortified settlements. Houses provide more than shelter from the elements; they are socially conditioned places that transcend space, time, and status: they are Homes. Homes are a dynamic type of material culture that people create for themselves in a series of decisions involving the availability and desirability of construction and decorative materials (Glassie 1975, 2001). Throughout time and across space, people have decided how, where, and what to use to build and equip their homes, and these intricate decisions were (and continue to be) influenced by economic, political, religious and social networks, beliefs, worldviews, and differential access to local and non-local resources. Approaching EB III Numayra (c. 2800–2500 BC cal) through the lens of homemaking integrates the more comfortable archaeological analyses of built environment, craft production, consumption, storage, activity areas, and landscapes, with an appreciation for the materiality of daily practices in these early fortified communities of the third millennium BCE.

#### What makes a city? The story of two sites: Tell el-Farkha in Egypt and Tel Erani in Israel

Joanna DĘBOWSKA-LUDWIN, Jagiellonian University in Krakow / Karolina ROSIŃSKA-BALIK, Jagiellonian University in Krakow

Constructing a perfect definition of a city is a very difficult task, especially challenging when it comes to ancient times. The period of the 4<sup>th</sup> millennium BC witnessed early urbanization process in civilizations of the Near East, but its pace was different in various parts of the vast area. Thus, the beginning of cities is still a subject of a vivid discussion. Our work in two distant, but – thanks to strongly certified cultural interconnections – related sites: Tell el-Farkha located in the Nile Delta and Tel Erani at the edge of the Negev, brings a handful of data which enable us to enter the dispute. A detailed study of both sites shows some elements such as: craft production, trade exchange, monumental architecture, cult places

or stratified society that have been usually associated with a city. But are all of them essential to a settlement to define it as an ancient city? What is the most basic factor which makes a society urbanized? With results of our excavations in hand we will try to find answer to this difficult question and begin to work over a new interpretation of the significant term: city.

#### Exploring the Ceramic Change at the Chalcolithic in the Southwest Iran

Takehiro MIKI, Department of Archaeology, The University of Tokyo

The cultural period of the Chalcolithic, especially the 5th millennium BC of Fars, southwest Iran, is named "Bakun". This period has been classified into the Early, Middle, and Late phases. Some researchers placed this period as the initial stage of socioeconomic complexity (Sumner 1994; Alizadeh 2006). While processes of the settlement pattern changes in the Bakun period have been well studied to clarify social development, those of ceramic changes have not been well researched, except for the decorated motifs and vessel forms (Voigt and Dyson 1992). This paper analyzes ceramic changes by using ceramic materials from four Bakun period sites which are now curated in the University Museum, the University of Tokyo and the Oriental Institute of the University of Chicago: Tall-i Jari A (Early Bakun), Tall-i Bakun B (Early Bakun), Tall-i Gap (Middle Bakun), and Tall-i Bakun A (Late Bakun). Especially this paper focuses on the ceramic assemblage, the amount of fine ceramics, and the ceramic production technology. As a result, this paper could find the peak of the fine ceramics production in Middle Bakun, while the craftsmanship toward craft specialization was gradually and locally improved over time.

#### Prehistoric Interaction – A Casestudy from Saudi Arabia: The Pottery Assemblage from Dosariyah Christine KAINERT, Freie Universität Berlin, Institut für Vorderasiatische Archäologie

The presence of pottery fragments related to Mesopotamia all along the southern shores of the Arabian Gulf is not new to Archaeology. But recent archaeological investigations at Dosariyah, Saudi Arabia, stimulate the academic debate again. The ceramic complex from this site represents the largest amount of sherds of the late 6<sup>th</sup> and early 5<sup>th</sup> millennium BCE that is known on the whole of the Arabian Peninsula and therefore makes this site a unique spot in the Gulf Area.

This paper will present the results of the pottery analysis, which provides a solid foundation for a detailed characterisation of the site where a presumably local produced 'Coarse Ware' has been used alongside an imported so-called 'Ubaid Ware'.

The focus will be on similarities and differences of both Wares and their changes through time. Furthermore, based on the evidence from Dosariyah new perspectives will be given concerning the type of interregional contact between southern Mesopotamia and the wide shores of the Arabian Gulf, that is represented in the newly excavated material from Dosariyah.

## Double-spiral-headed Pins across Central and Middle Asia: their Origin, Diffusion and Transformation in the Protohistory of the Eurasian Continent

Gian Luca BONORA, "L.N. Gumilev" Eurasian National University, Astana (Kazakhstan), Dept. of Archaeology and Ethnology

S. Piggott, in 1948, was the first who has devoted attention to the metal headpins with two symmetrical spirals at their top. Today, the widened horizons of the research are concretely represented by a great number of double-spiral pins discovered in numerous Aeneolithic and Bronze Age sites, among them the graveyard of Parkhay II, in the Sumbar valley of south-western Turkmenistan. This burial ground possibly represents a cradle of prefiguration, invention and distribution of these artefacts. Moreover, the recent discovery of some few bispiral pinheads also across the Eurasian steppe widens the complexity.

This paper is dedicated than to the study of the double-spiral pin-heads discovered so far across Middle and Central Asia, trying to hypothesise the area of primary origin and subsequent distribution of these

finds. Particular attention will be paid to the presence of these pins also in the steppe, to their chronology and their technical characteristics, which are apparently different than the specimens documented southerly. It seems that the acceptance and diffusion of these pins by the Eurasian steppes communities of cattle-breeding has been locally submitted to a process of transformation and individualisation, which on the contrary is not attested across the Indo-Iranian Borderland cultures.

#### Dalma ceramic tradition and sphere interactions

Roghayeh Rahimi SORKHANI, Archaeology Department, University of Tehran / Kamaleddin NIKNAMI, Archaeology Department, University of Tehran / Hekmatollah MOLLASALEHI, Archaeology Department, University of Tehran

The diagnostic Zagros highland MC I ceramic assemblage is called Dalma, after the type site of Dalma Tepe in the southern Lake Urmia basin of Azerbaijan. The remarkable thing about this period, however, is the widespread distribution of these ceramics. In addition to the main centers of Dalma in Azerbaijan and Zagros, Dalma potteries were found with other neighboring diagnostic ceramics in more marginal areas .on the basis of new surveys and excavations, Sialk III type of pottery was found in the Dalma Context in the east of central zagros in Zanjan province and in the west of central Plateau. In the Seimareh Dam Project Dalma pottery was found in Susiana ceramic tradition contexts and in the surveys of northeast plains of lake Urmia ,Dalma and chalcolithic Caucasus ceramic traditions were found together and in the west in the Islam Abad plain and Qasri Shirin and Sarfiruz Abad, Ubaid tradition and Dalma Impress pottery were found in chalcolithic contexts. In this paper, the areas of interaction with other contemporary diagnostic ceramics are identified and then checked the reasons.

Keywords: Dalma, Sphere interaction, Diagnostic ceramics, context

## A Pyrotechnological Study of the Ubaid and Late Chalcolithic Pottery –Estimated Firing Temperatures and Paint Pigments

Tatsundo KOIZUMI, The Institute for Cultural Studies of Ancient Iraq, Waseda University, Tokyo / Hitoshi OJIMA / Hirokazu YOSHIDA, The Industrial Technology Institute of Ibaraki Prefecture

This paper will contribute to a pyrotechnological study of pottery manufacturing through the urbanization in the Ubaid to Uruk periods of West Asia. Particularly we are to make a brief report on results from chemical analyses of the Ubaid and Late Chalcolithic pottery uncovered at Salat Tepe in the Upper Tigris, southeastern Turkey, where the speaker had continued to excavate since the 2010 season. We are going to discuss the results of the XRF, XRD and EPMA analyses of the sun-dried bricks as well as painted and plain sherds.

The tentative results show that estimated firing temperatures can be categorized into three groups. First, the Ubaid painted pottery may be fired at more than 900°C and less than 1000°C. Second, coarse plain pottery of the Late Chalcolithic period could be around ca. 450°C. Third, Halaf-Ubaid-Transitional painted pottery and Gray Burnished Ware in the earlier stage of the Late Chalcolithic period might be fired ca. 800 to 900°C in an intermediary temperature zone of these two groups. In addition, we will refer to a relationship between the temperatures of reduction firing for the Gray Burnished Ware and of the keyhole-shaped pottery kiln that is very popular during the 4<sup>th</sup> Millennium BC.

#### The Iron Age pottery of Tell el-Burak including the content analyses of a large assemblage of Phoenician amphorae

Aaron SCHMITT, Institut für Altertumswissenschaften, Arbeitsbereich Vorderasiatische Archäologie, Johannes Gutenberg-Universität Mainz

In my paper I will present the latest results of the study of the late Iron Age (Phoenician) pottery excavated at Tell el-Burak (Lebanon). As this pottery has never been systematically studied before and excavations in the Phoenician homeland are generally rare, the material has great potential to give new insights into the Phoenician economy and daily life.

After a general presentation of the local pottery assemblage I will also speak about the imported pottery at Tell el-Burak which can be assigned a Cypriot, East Greek, and later an Attic origin.

The focus of this presentation will be put on an intriguing discovery: During the last three campaigns (2013–2015), a complete house inventory was excavated at Tell el-Burak with a rich collection of restorable vessels dating to the second half of the 7<sup>th</sup> century. This ceramic material has been restored and studied by different specialists during the last year. Of particular interest is the study of the archaeobotanical material and the content analyses, carried out at the Universities of Durham, Mainz and Tübingen, that have given us the possibility to draw many new conclusions about Phoenician agricultural practices and their economy. These results enable us to view this part of the Phoenician homeland in a new perspective with respect to plantation management, processing, storing and trading of agricultural produce.

#### The Round and Flat Bottomed Aryballoi of Parion Southern Necropolis

Büşra Elif KASAPOĞLU, Atatürk University, Erzurum, Turkey / Hasan KASAPOĞLU, Atatürk University, Erzurum, Turkey

The Archaic Period data of Parion, which is located in the town of Biga, in the city of Çanakkale and is a Troas city, can only be obtained by the south necropolis of the city. Round aryballoi, which are found in Parion Southern Necropolis and form the focal point of the subject, are important findings with respect to Parion's problematic early period. Aryballoi known to have had a great part in preparing and burying the dead in Archaic Period most probably must also have had such an important place for the people of the Archaic Period that a lot of aryballoi has been found in many of the graves. The aryballoi, the earliest of which belong to 625 BC other than activities or procedures regarding the dead, are the findings that have the closest date to 709 BC, the mentioned foundation year of the city.

In this study, the burial customs of the Archaic Period and the place of the aryballoi in this customs will be mentioned. Some information about the form and adornment, or decoration, characteristics of the aryballoi will be given and thus, the connections of Parion with the region and the cities will be dwelt upon.

#### Preliminary Results of Technical Analyses of Ceramics from the Khabur Basin Survey Project

Yukiko TONOIKE, Department of Anthropology, Yale University

The semi-arid steppe of the Lower Khabur Basin of northeastern Syria is a climatically marginal zone for agriculture, yet there have been episodes of settlement over the past 9000 years. Archaeological surveys have recorded more than 300 sites whose age, type, and distribution on the landscape are reflections of changing socio-natural systems. The region is particularly suitable for detecting changes in both environmental and socio-political spheres because of its environmental marginality, yet centrality to the political needs of states and empires. In this paper, preliminary results of stylistic and technical materials analyses (mainly petrography) of ceramics from the Yale University Khabur Basin Survey Project and related excavations will be presented as the first step in understanding the changes in the settlement landscape and interaction patterns, as well as the nature of the sites and their distribution on the landscape.

#### Late Bronze Age Pottery from Mishrifeh/Qatna: Typological and Archaeometrical Approaches Shadi SHABO, Lumière Lyon2 University

The chronology of the Late Bronze Age (2<sup>nd</sup> half of the 2<sup>nd</sup> millennium BC), a key period characterized by a flourishing development of urban civilization, remains poorly known in Western Syria and on the Levantine coast. Recent excavations and archaeological surveys conducted on the site of Qatna, and its surroundings have revealed new challenging data inducing a review of the Late Bronze chronology. This

paper proposes preliminary results of our PhD research on new ceramic findings from Late Bronze Age excavation in different fields carried out by the Syrian team at Qatna from 2005 to 2009. An innovative approach is suggested to investigate dating questions by establishing a baseline reference of stratigraphic sequences through the examination of ceramic material from the major "Qatna" site. This latter examination based on traditional pottery studies is improved by archeometrical analyses of ceramic sherds from Qatna accompanied by a comparative study with other Late Bronze Age sites in the region of the Orontes Valley.

#### Bridging Craft Activities at Çukuriçi Höyük: The Ceramic Evidence

Lisa PELOSCHEK, Austrian Archaeological Institute

Excavations at Çukuriçi Höyük in Western Anatolia have yielded a rich repertoire of ceramic artefacts pointing to the simultaneous existence of various crafts on the settlement mound. Integrated archaeometric analyses of ceramic vessels from the Neolithic to Early Bronze Age 1 occupation horizons already indicated a certain degree of advancement in the use of clay pastes in a diachronic perspective. It is aimed to test to which degree the ceramic inventory of related crafts, covering spindle whorls, loom weights or crucibles resembles the compositional variation detected in the household wares. Or did the specialised function of this inventory demand specific material properties, thus deviating from utilitarian pottery? Chronologically the focus lies on the Early Bronze Age 1, but the proceeding periods will be considered as well.

Research questions that will be addressed with this approach relate to possible transformations that might have occurred in the course of chronologically relevant phenomena affecting the coastal area of Western Anatolia, including the intensification of cultural influences from and interaction with the broader Mediterranean. However, for explaining certain developments at Çukuriçi Höyük, the prehistoric settlement needs to be understood also in its regional context and under the consideration of its natural environment. Is a selective choice of fabrication techniques discernible for this specialised set of ceramics and is it possible to argue on the basis of ceramic compositional data for an interrelationship of different crafts on the site? And, does there exist ceramic evidence that might attest to cultural transfers at Çukuriçi Höyük in terms of the exchange of any kind of ceramic items?

#### Revising the Absolute Chronology of the 4th and 3rd Millennium BCE in the Southern Caucasus

Annapaola PASSERINI / Elena ROVA, Università Ca' Foscari Venezia / Elisabetta BOARETTO, Weizmann Institute of Science, Rehovot

The absolute chronology for the 4<sup>th</sup> and 3<sup>rd</sup> millennium BCE in the Southern Caucasus constitutes a controversial issue within current archaeological research, with special regards to the Kura-Araxes culture. Up-to-date, no secure regional chronological system based on reliable absolute dates could be achieved, due to the disagreements on relative chronology and the poor status of the radiocarbon record for the region. A first re-definition of the absolute chronology of the Southern Caucasus is proposed in the present study, through the application of modern methodological and theoretical tools. Firstly, radiocarbon dates were collected and characterized in relation to a chrono-cultural phase. Secondly, all radiocarbon dates were scrutinized and selected for Bayesian analysis according to archaeological and analytical reliability criteria. Thirdly, the remaining dates were compiled within Bayesian models representative of the archaeological scenario. Results of the modelling process led to the identification of distinct sub-regional dynamics, shedding light on a more complex diachronic and synchronic picture corroborated by the radiocarbon data. To conclude, based on the existing corpus of radiocarbon dates, the current results strongly suggest more tailored sub-regional approaches for a new understanding of the cultural dynamics between the 4<sup>th</sup> and 3<sup>rd</sup> millennium BCE on an absolute chronological scale.

## Is there a place for prehistoric Egypt in the Near Eastern archaeology? Some remarks on the early relations between Egypt and its neighbours

Agnieszka MĄCZYŃSKA, Poznań Archaeological Museum, Poland

Although Egypt is considered as one of the Near East countries, research on the development of the great ancient Egyptian civilization seems to concentrate on the Nile Delta and the Nile Valley, as well as on adjacent areas in today's Egypt and Sudan. Almost all research on the history of Ancient Egypt is apparently isolated, and relations with other countries are discussed only in connection with trade, wars, invasions, etc. Meanwhile, in the prehistoric times Egypt in general and its northern part in particular had strong cultural links with the Near East. The roots of the Egyptian civilisation were shaped in the period of early relations with the Levantine region. Introduction of domesticated plants and animals from the Near East was probably not the first "connection" between Egypt and the Near East. It also seems likely that the relations among Neolithic Lower Egyptian societies were more intensive than once assumed. Although the existence of the exchange between Egypt and Southern Levant in the 4<sup>th</sup> millennium BC and even the presence of Levantines in the Lower Egypt in the 4<sup>th</sup> millennium BC are generally acknowledged, the period between the 6<sup>th</sup> and the 4<sup>th</sup> millennium BC is still one of the least understood periods in the history of Egyptian civilization, thus translating into the poor state of research on the relations of Egypt with the neighbouring regions. The present situation is affected by the quantity and quality of available data, by paying little attention to the roots of the Ancient Egyptian, and finally by treating Egypt as a periphery in comprehensive discussions on the Near Eastern prehistory. This presentation will be an attempt at presenting prehistoric Egypt in the wider context of Near Eastern archaeology and the early relations within it.

#### The 'Riemchengebäude' excavated in Uruk-Warka

Helga VOGEL, FU-Berlin, Institut für Vorderasiatische Archäologie

The 'Riemchengebäude' is a particularly iconic building of the Uruk period. The subterranean monumental building, which was excavated first in 1938, and then again from 1955 to 1958, has an unusual ground plan. During the excavations significant archaeological remains were discovered in situ. Other artefacts were found in the filling, for example, the now famous fragments of a head that might have belonged to a statue representing the 'priest-king'-figure. Because the 'Riemchengebäude' was only published in three preliminary reports and in few summaries, one goal of my project will be a full publication of the building and its interpretation. The building's architecture and its findings are extremely difficult to understand and interpret. To this day, there is a poor understanding of the building's construction and its purpose and use(s); equally obscure are the processes that led to its destruction. So far, we only know that the 'Riemchengebäude' was built sometime in the late Uruk period. My presentation will begin with an overview of the current state of research, focusing on the major problems that have made simple interpretations, including those that include the building's role in higher-level models of the 'early state'. Following this, I will introduce my research project in greater detail, describing my objectives, approaches, and expected results.



#### EDER Birgitta – PRUZSINSZKY Regine (Eds.) Policies of Exchange. Political Systems and Modes of Interaction in the Aegean and the Near East in the 2nd Millennium B.C.E.

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#### HOREJS Barbara – MEHOFER Mathias (Eds.) Western Anatolia before Troy. Proto-Urbanisation in the 4th Millennium BC?

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The Late Bronze Age in the Eastern Mediterranean belongs to the most captivating chapters in the history of the Ancient World: Various cuneiform documents and archaeological sources illustrate the numerous contacts between different polities in the 2nd millennium BCF. Reciprocal gift exchange within the framework of diplomatic contacts and redistributive mobility of goods in asymmetric political relations shaped regional and supra-regional communication in different ways. Following the detailed discussions about modes of culture contacts and exchanges in previous research the contributions in the present volume address questions of the specific mechanisms and routes of exchange. How and by which means did material commodities and knowledge circulate among the Great Powers, lesser independent states and vassal kingdoms of the Aegean, Anatolia, Syria, the Levant, Mesopotamia and Egypt? Where did the different raw materials and finished products come from, and under which conditions and by whom were they negotiated? Is it possible to determine regions of production and direct and indirect channels of distribution? Which rules were applied in the supra-regional exchange? Which possibilities and which obligations did the vassal kingdoms of the Levant have towards the Great Powers of the Hittites, Assyrians and Egyptians? Which role did the Mycenaean palaces of the Aegean play within the "international" network of exchanges? Can we develop a model of political and economic interaction? During the symposium at Freiburg University archaeologists, philologists and historians discussed these issues on the basis of the current evaluation of the archaeological and written evidence within an interdisciplinary framework and developed perspectives on the specific forms of exchange (re)considering the interaction of political and economic forces.

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OREA 1 presents the scientific results of the international symposium Western Anatolia before Troy - Proto-Urbanisation in the 4th Millennium BC? The sparse archaeological data published for the 5th and 4th millennia BC and the archaeological picture of western Anatolia, fundamentally changed in the last decades, needed to bring together specialists of western Turkey and the neighbouring regions to discuss new data in the light of socio-cultural processes in the period before Troy. Furthermore, following the results of the ERC research group (ERC project Prehistoric Anatolia), it appeared high time to focus on this period as it had been frequently neglected in the recent dynamic prehistoric research in western Turkey. The intermediate millennia between the archaeological focus on the Neolithic (and early Chalcolithic) of the 7th and 6th millennia BC with ground-breaking results and publications on the one hand and traditional research on the Farly Bronze Age in the 3rd millenium BC with new input from important key sites on the other hand, remained more or less neglected. The symposium aimed to shed light on these developments and focus in particular on the formation of centres of regional and supra-regional importance that emerged in western Anatolia and the broader geographical context of the Balkans, the Marmara Sea, the Greek mainland and Crete.

All scholars interested in the broader Aegean in this period ... will have no choice but to consult this volume repeatedly.

> Bleda S. Düring Faculty of Archaeology, Leiden University, Netherlands European Journal of Archaeology 18(4), 2015: 730



## Gender expression in symbolism and human images in Northern Mesopotamia of Early Neolithic Epoch

Tatianna KORNIENKO, Voronezh State Pedagogical University

The report examines characteristic features of correlation between gender components in ideology and social life of the population of northern Mesopotamia during the transition from the Epipaleolithic to the Neolithic. Various types of source materials were used for the analysis, primarily different categories of symbolically decorated objects found in cult complexes, as well as paleoanthropological data.

Also in the presentation discusses the problems of studies of ideology, rite and symbolic systems as the mechanisms of formation and maintenance of communal identity in prehistoric societies. These problems are analyzed here with employment of the psychosocial and other approaches on the example of materials of the Pre-Pottery Neolithic of Northern Mesopotamia. The qualitative psychological transformation of man and socium during the period under consideration is traceable through different categories of evidence including the appearance of numerous symbolically marked objects. Following the example of studies of symbolical systems of Northern Mesopotamia, the possibilities of characterization of ideology and current concepts of social conscience established during the early Holocene are discussed. Psychosocial transformations are considered here as an important constituent of the process of Neolitization in the Near East.

## Neolithic, Gender Identity, and Reproduction: An Analysis of Evidence from Ali Kosh Tepe, Deh luran, Iran

Somayeh ASADI TASHVIGH, University of Mazandaran, Iran / Rahmat ABBASNEJAD, University of Mazandaran, Iran

Some archaeological evidences with sexual implication have been ignored and little analyzed for interpretation ambiguities. Regarding sexual organs depictions of ancient times for erotic purposes is a simplistic analysis. One can understand more clearly such issues if investigate and interpret such evidences in subsistence, social, and ideological frameworks.

In excavations at 1961–1963 seasons at Ali kosh Tepe, Deh Luran plain, southwest of Iran, at so called Buz Mordeh & Mohammad Ja'far phases (7500–5600 BC), objects as male sexual organ replicas were recovered that were just same as recovered ones from early villages of Mesopotamia and Iran. Although they have been recently assigned to magic, reproduction, fertility rites, and voluptuousness however, it seems the other explanation can be achieved by analyzing cultural and ideological evolution of Neolithic people. The present paper indicates human body representation implies sexual knowledge, feminine and masculine identity, and relevance with plant domestication and animal reproduction.

Keywords: Sexual archaeology, Reproduction, Domestication, Masculinity, Neolithic, Ali Kosh Tepe

## Strengthening family ties: An archaeological perspective on the cult of the ancestors in the ancient Near East

#### Nicola LANERI, University of Catania

In 1912, Emile Durkheim stated that 'there is an ancestor cult only if sacrifices are made on the tombs from time to time, if libations are poured there more or less frequently, or if regular feasts are celebrated in honour of the dead person' and, additionally, 'the real ancestors must become the object of a cult after they die' (i.e., they acquire a divine role within the world of the living). Following Durkheim's words, it is possible to state that the cult of the ancestors is a pivotal element in framing the religiosity of the society as well as in constructing social solidarity among the members of communities.

Since then, the interpretation of the cult of the ancestors in ancient and ethnographically known societies has been increasingly applied in order to search for the universality of ancestor worship in framing human religiosity. This is the case of the ancient Near East where, since prehistoric times, the cult of the ancestors has been used to reinforce forms of kinship relationships and create familial forms of religiosity. Thus, this paper will investigate this important topic using archaeological data related to evidences of ritual practices associated with the cult of the ancestors in different geographical and chronological ancient Near Eastern contexts.

#### No God, No King? Temples and Administration in Late Bronze Age Cyprus

Martin BARTELHEIM, Eberhard Karls Universität Tübingen / Uwe MÜLLER, Eberhard Karls Universität Tübingen / Bülent KIZILDUMAN, Eastern Mediterranean University, Gazi Mağusa, North Cyprus

In Late Bronze Age Cyprus urban centres, international contacts and mass production are evidence for a highly complex society. Even so, none of the many Late Bronze Age excavations on the island revealed anything that could be called a palace, while quite a number of buildings is labelled as temples, sanctuaries and/or administrative centres. However, their identification is mostly based on a few characteristics that vary from place to place without providing a clear picture. Moreover, the archaeological evidence in those sites gives evidence of a larger variety of activities, so that there are good reasons to assume that they rather were multifunctional. Clear and certain criteria to assign a site or a building to cult or religious function are missing and it remains a question whether a strict distinction would reflect reality in prehistory at all. This presentation provides a critical overview of the current evidence of Late Bronze Age sites on Cyprus where cultic and/or administrative activities have been identified in the past together with further thoughts on the character and the recognition of the interweaving of cultic and profane spheres within not fully literate societies like these.

#### Archaeology of religion: Tell Afis during the Iron Age

Giuseppe MINUNNO, University of Pisa

The excavations carried on the acropolis of Tell Afis (Syria) by the Italian Archaeological Mission directed by Stefania Mazzoni since 1986 have brought to light conspicuous material evidence which increases our knowledge of the religion of Iron Age Syria. These data are here exposed and investigated by means of an approach which takes into account archaeological data as well as methodological issues. It also tries to take advantage of the results of the researches of the historians of religions in order to improve the exploitation of the evidence provided by the archaeological field activity.

## The wife, the daughter and the prostitute? Rethinking the materiality of goddesses in the 3<sup>rd</sup> millennium B.C. in Mesopotamia

Mónica PALMERO FERNÁNDEZ, Department of Archaeology, University of Reading

What is a goddess? Is it (she?) a woman? Does it share the same attributes as women? Is the term "goddess" (and "god") even appropriate to designate a broad spectrum of divine entities in ancient Mesopotamia that are anchored in natural phenomena? Finally, how may we approach and interpret the material remains associated with them? This paper will attempt to elucidate some theoretical and methodological issues associated with the archaeology of religion that have risen in the course of my doctoral research.

Traditional historical approaches to the study of religion in ancient Mesopotamia have focused on reconstructing a genealogy of deities based on the works of a literate elite, with the aid of iconographic studies to reconstruct the visual character of the gods. However, the basic concept of what a "goddess" is has rarely been the subject of discussion, thus generally understood as the counterpart of the male term "god". As such, they are wives, daughters, mothers, spinsters even. But is such a circumscribed interpretation of the roles and representations of these divine entities warranted, in particular for the proto- and early literate periods? The traditional approaches emphasise the visual imagery of divinity from an anthropocentric perspective, and do not inform us about how the individuals negotiated their beliefs in a reality construed of material things and immaterial ideas.

In contrast, recent theoretical and methodological approaches in archaeology have pushed forward the notion of materiality, which addresses objects as they are implicated in the construction of social identities, as well as how object worlds shape human experience. This bottom-up approach focuses on understanding the social experience of religion and stems from the understanding that: 1) artefacts have agency; 2) they can fulfil multiple purposes; 3) sociocultural norms mediate sensual perception of reality, not universalist aesthetic values. Another, complementary approach, is offered by the feminist theory of intersectionality, which challenges the universality of the term "woman" and instead aims to unpack the complex relationships between categories such as gender, status and age, as well as highlight the performativity of gender. By combining these two approaches, it may be possible to reconstruct a more complex belief system that incorporates a scale of divinity, ranging from the main anthropomorphic deities and the range of natural phenomena they represent, to "holy" cultic objects or even humans.

#### Libation for the gods in the Early Bronze Age Mesopotamia

Dorota ŁAWECKA, Department of Near Eastern Archaeology Institute of Archaeology, University of Warsaw

In this paper all possible archaeological remains of libation places in temples (mainly vessels embedded in the floors close to the "altars" or podia inside the cellas, but also other features which may be regarded as remains of installations where the liquid offerings might have taken place) will be discussed. Most of the examples come from the sites in the Diyala region and Nippur, with few instances from Mari and northern Mesopotamia (e.g. Tell Taya, Tell Arbid). In the second part of the lecture the third millennium BC scenes of libation before the gods depicted in art (glyptics, stelas, votive plaques) will be presented and compared with the archeological evidence examined in the first part of the presentation.

#### Ruralism and Ritual in the EB IV of the southern Levant

Suzanne RICHARD, Gannon University, Pennsilvania

Although the EB IV of the southern Levant (ca. 2550–2000 BCE in the higher chronology) is still often referred to as a pastoral-nomadic period, the permanent agricultural sites, as they become better known, are providing an alternate image of a society with markers of more sociocultural complexity than generally recognized, including in the realm of religion and ritual. Past work in the field has illuminated ritual in both burial and landscape. Recent excavations of permanent rural sites have brought to light a new dataset of sedentary social practices related to cultic and/or ritualized material culture, a type site being Khirbat Iskandar, Jordan. Against the symbolic landscape of megalithic features and cemeteries surrounding the site, the paper will explore an unusual corpus of miniatures in association with evidences of cult, including an unusual stone platform with incised pillar and flat slab offering table as well as adjacent pillars. The paper will utilize archaeological materiality and agency as conceptual frameworks to analyze the patterning and context of these on-site evidences in order to shed light on ruralism and ritual in the EB IV of the southern Levant.

#### Two Late Bronze Age offering pits from Hala Sultan Tekke, Cyprus

Teresa BÜRGE, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria

Area A is close to the mosque of Hala Sultan Tekke at the eastern outskirts of the homonymous Late Bronze Age city, where rich tombs and a considerable number of "pits" were exposed. Most of the latter are backfilled wells dating to the 13<sup>th</sup> century BCE. Two deep pits (Pits B and P), which do not correspond to the others as regards contents, context and chronology, will be discussed in this paper. Both pits contained 15–20 complete ceramic vessels each and several other objects, e.g. textile production tools. Pit B can be dated to the 13<sup>th</sup> century according to the locally produced Base-ring II and White Slip II and the Mycenaean imported pottery. In contrast, Pit P contained mainly White Slip I, monochrome and bichrome decorated, and Base-ring I, which indicate a date in the 15<sup>th</sup> century. As both pits contained mainly complete vessels an interpretation as backfilled wells or garbage pits is highly unlikely. The absence of human skeletons excludes an interpretation as tombs. Therefore, it is suggested that these two pits were offering pits, which explains the deliberate deposition of the objects. This interpretation raises questions on the function, use and meaning of Area A throughout the 15<sup>th</sup> to 13<sup>th</sup> centuries BCE.

#### Wadi al-Hasab: A Spiritual and Ritual Megalithic Center in North Central Jordan

Khaled DOUGLAS, Sultan Qaboos University, Muscat, Oman

Wadi al-Hasab is one of the secondary wadi catchments of the upper Wadi al-Zarqa in North central Jordan. Archaeological investigations (2012) at the Wadi uncovered rich megalithic material, including: different types of Dolmens, stone alignments, Stones circles, standing stones and rectangular enclosures. All these features shows that the field was an important center for ritual practices during the Early Bronze Age. Two dolmens and one enclosure have been partially excavated.

The field of Wadi al-Hasab located ca. 3.5 km southeast of one of the largest EBI settlement in Jordan (Jabal Al-Mutawaq), that surrounded by several dolmens fields. Wadi al-Hasab represents the east borderline of existing Dolmens fields in North Central Jordan. It might played an important role connecting the group of population living in the arid and semi-arid regions in the east and those living in Mediterranean climate region in the west.

#### The Ritual Landscape of Murayghat

Susanne KERNER, Copenhagen University

Dolmen, standing stones, and stone circles exist in many parts of the world from Britain to Jordan, and usually are considered ritual structures. In Murayghat, central Jordan (close to Madaba) is a whole landscape of horse-shoe shaped and circular stone structures on a central knoll, surrounded by dolmen. The dolmen (originally over 150) are nearly all oriented towards the central knoll, so that the structures there are all visible from the dolmen. Two monumental standing stones are also part of the landscape. The project studies the elements and their relation to each other, and compares them to other dolmen fields in the surrounding. Dating points so far to the Late Chalcolithic/Early Bronze Age I and the Middle Bronze Age II.

The lecture will discuss the material evidence and question the connection between the settlements of the relevant periods and these landscapes of ritual structures. What role did they play in ritual and demarcation and how did they interact with the ritual structures in the contemporary towns.

#### Early Bronze Age Raised Terraces at Tell Ahmar (North Syria)

Cristina BACCARIN, Università degli Studi di Torino

High and low terraces represent a recurrent element in Mesopotamian architecture, from their introducing during the fourth millennium BC and later on. Raised terraces built of mud bricks, stone, pisé or packed soil serve as a foundation or podium for main buildings as temples, palaces or monumental tombs. At Tell Ahmar (Northern Syria) evidences of mud brick and pisé terraces were excavated in the south and south-eastern slope of the acropolis, and dated to the Early Bronze Age. One terrace forms the base for the hypogeum burial complex, and the two-room stone building to the west of this complex; another terrace was excavated against the western side of the temple. This presentation will focus on the analysis of characteristics and function of the Tell Ahmar terraces, and will offer a comparison with contemporaneous raised terraces.

#### A Variant of a Low-Key Shrine in Middle Bronze Age II

Lily GERSHUNY, Israel Antiquities Authority

The rather uniform shape of Middle Bronze Age II monumental and symmetrical temples seems to prevail throughout the Southern Levant, together with a few open cult places, as in Gezer and, to some extent, in Nahariyya.

The subject matter of this paper was discovered at Tel Bahan. In the first phase, it is a rectilinear structure entered from the alley close to its eastern wall and an exit is reconstructed on the same axis in the southern wall. It has a paved floor and a rounded depression is cut into the floor and bedrock in its northern half. The southern half has a packed soil-lime floor and some store jars and pithoi were alined along its eastern wall. The contents of the room indicate that it fulfilled a public capacity and was not a dwelling. The composition of the contents, including the unusual specimens allow us to presume that this room was a public Hall of Reverence, where residents and passers-by could come in, pray and perform cultic functions. In the second phase, the size of the room was restricted, encompassing the rectangular northwestern half. The southern half seems to have been an open courtyard. It probably continued to serve as a public Hall of Reverence, although the interior was limited to fewer people, maybe the ruling class, and the public convened in the open courtyard.

## Mesopotamian Incense Burners from Third and Second Millennium B.C. An Archaeological Approaches

Agnieszka PIEŃKOWSKA, Polish Centre of Mediterranean Archaeology of the University of Warsaw

Ancient Mesopotamian written sources show widespread uses for aromatics products and give evidence for their importance in Mesopotamian ritual ceremonies. It's not surprising that incense burners are very commonly mentioned in the text as well. It seems obvious that vessel like censer should occupy particular place in the temples but their presence and recognitions in material culture is proved by scatters remains only and they have never been studied as a whole. This paper will present different kind of vessels found in Mesopotamian region from third and second millennium B.C. identified as an incense burners.

#### Religious practices in the temple of Ashur

Helen GRIES, Ludwig-Maximilians-Universität München

The lecture deals with the ritual processes in the temple of Ashur in Ashur from an archaeological point of view. The cult of the Assyrian main sanctuary is wellknown from royal inscriptions and other written sources. But the material remains as well give a lot of information about religious practices in the temple, especially about offerings and sacred gifts dedicated to the gods.

In this case study I mainly examine the architectural remains of the Ashur temple and objects in their context, based on the discoveries by the expedition of the *Deutsche Orientgesellschaft* in Ashur between 1903 and 1914. Focusing on the function of the individual parts of the building and the finds, a reconstruction of some cultic processes in the Ashur temple will be attempted.

#### A newly uncovered additional monumental room in the concealed 1300 BC underground Temple of Sidon

Claude DOUMET-SERHAL, British Museum

A new deeply concealed room adjacent to the subterranean holy of holies unearthed 10 years ago was discovered in Sidon this winter. Sealed by the imposition of a Persian Period building constructed on top

of it, this new room is of the highest importance in terms of its monumentality and pottery material dating back to the Late Bronze Age. Large sized blocks of stones were used for its construction and its walls extended to a height of 4.50 m with its initial occupation-level floor at 7.5 0m below street level. The Sidonians worshipped their gods in this Late Bronze Age temple in deep and concealed rooms. The ethos of protection points to the confinement of this place of cult limiting it to only a few high status members of the community.

#### Images of Belief? Religion in Jerusalem of the Iron IIa

Ariel WINDERBAUM, Tel Aviv University

Jerusalem has been surveyed and excavated for over one hundred years, and yet very few remains from the Iron Age IIa period (10–9 cent. BCE) have been uncovered. This period, in which the first kings of Judah, maybe even the united monarchy, ruled, is important for many reasons, the most obvious of which is the fact that the Jerusalem of this period was the place and time where Judaism was forged into coherency.

In the last few years more Iron Age IIa layers were found in Jerusalem causing a shift in the perception of this city in that period. Unfortunately, very little has been found which can point to the religious customs of the inhabitants of Jerusalem.

The excavations in the City of David (seasons 2005–2008) and the Ophel site (seasons 2009, 2012–13), Directed by Dr. Eilat Mazar of the Hebrew University in Jerusalem, have uncovered not only several buildings of the Iron IIa period (some monumental and all firmly dated) but also many glyptical artifacts, amulets and figurines ascribed to this period. These finds are the first glimpse offered into the customs, rituals and religion of the inhabitants of Jerusalem in this critical period.

#### Archaeology of Ritual? A Reassessment of the Shrine at 'En Hazeva

Erin DARBY, University of Tennessee

In 1993 an impressive cache of cultic objects was recovered at the site of 'En Hazeva, in Israel's Negev desert. While the iconography of these objects has received significant attention, little energy has been devoted to the overall archaeological context of the objects or the putative shrine with which they may have been associated. Given the challenges identifying areas as "shrine" locations and the fact that shrine objects are frequently found outside of sacred architecture, a reappraisal of the complete archaeological picture is necessary before daring any further conjecture based upon the objects themselves. Moreover, in light of subsequent excavations and publications of shrine locations in Jordan and Israel, the time is ripe for a reevaluation of the archaeological context of the 'En Hazeva shrine deposit. To that end, the current paper will review all archaeological data relating to the context of the deposit and the adjacent architecture and will compare the results to known Iron II shrines from Israel and Jordan in the attempt to better understand the archaeological context of this important assemblage.

#### Tell Damiyah. An Iron Age sanctuary in the Jordan Valley

Lucas PETIT, National Museum of Antiquities, Leiden, The Netherlands / Zeidan KAFAFI, Yarmouk University, Jordan

Tell Damiyah is a small settlement mound located in the floodplains of the Jordan River. Survey and excavation work have revealed occupation remains, dating from the Late Bronze Age until the 5th century BC. The top of the mound was used afterwards as a cemetery, most likely during the Byzantine Period and again in Ottoman Times. Most scholars identify Tell Damiyah with Adama, a place mentioned in the Old Testament and in the topographic list of Pharaoh Shoshenq I. The importance of Tell Damiyah during the Iron Age was, however, not defined by its size, but more likely by its function. Recent excavations carried out by the Yarmouk University and the Dutch National Museum of Antiquities produced evidence for a sanctuary on the summit: pottery stands and numerous complete figurines.

#### The Ekur of Nippur in Late and Post-Assyrian Times

Bernhard SCHNEIDER, University of Innsbruck

As the recent developments prevent us to excavate in the heartland of Assyria and Babylonia, we have to dig in the archives instead to re-evaluate the archaeological evidence. Within this paper the author will connect unpublished documentation from the Pennsylvania expeditions of the 19<sup>th</sup> century with post-World War II excavations in Nippur. This approach brings new insights concerning the construction history during the 1<sup>st</sup> millennium BC. Taking into consideration unpublished stratified objects, a reconstruction is attempted to illustrate the Ekur temple during Late and Post-Assyrian times.

#### Topaz Gala depe - temple of fire from the Early Iron Age

Marcin WAGNER, Institute of Archaeology, University of Warsaw

Excavations at Topaz Gala Depe in the Serakhs oasis (southern Turkmenistan) were undertaken in 2009. This project received the financial support from the Ministry of Science and Higher Education (201–2013 – grant no. N N109 093439) as well as the National Science Centre (2014–2016 – grant no. UMO-2013/09/B/HS3/04315). Till now archaeologists have uncovered four chambers of the Zoroastrian fire temple. The largest, the main chamber with a round clay altar, is located in the western part of the build-ing. A storage jar filled with ashes, presumably collected from the altar, stood in SW corner of the main chamber. Two others, stood bottom up, were discovered in the eastern part of the mentioned chamber. The results of these excavations and analogies to the latest temples allow us to initially reconstruct the early Zoroastrian cult. The remains of the fire temple from Topaz Gala depe are one of the oldest known. The radiocarbon analyses of the ashes from the altar and the storage jar give a precise sequence of dates from the 10<sup>th</sup> to the middle of the 8<sup>th</sup> cent. BC.

#### Fire Cults and Zoroastrian Imagery in Ancient Chorasmia: Important new evidence in the Akchakhan-kala wall paintings

Alison BETTS, The University of Sidney

In the mid-first millennium BCE ancient Chorasmia formed part of the Achaemenid Empire. During this time some version of Mazdeism or Zoroastrianism was introduced to the region under Persian influence. Work by the Soviet era expeditions in Chorasmia showed that practices such as veneration of fire, exposure of the dead and subsequent ossuary burial indicate that the impact of these new beliefs was strongly entrenched. However, until recently solid evidence for the more formal manifestations of this cult practice were absent. Excavations at the massive fortified royal seat of Akchakhan-kala by a joint Australian-Uzbek team have uncovered extensive evidence for complex fire rituals and, most recently, a massive painted human figure with explicit Zoroastrian imagery contained within the ornamentation of his costume. The find pushes back the date of this remarkable imagery by some five hundred years and forces a reconsideration of key aspects of the history of the development of Zoroastrian practice within Central Asia.

#### Votive Ritual in Palmyra in the Light of the Epigraphical and Iconographical Sources

Aleksandra KUBIAK, University of Warsaw, Institute of Archaeology

Ex-votos are the most representative group of objects found within the religious context. They reflect a personal piety and are considered as a multicultural phenomenon. Their deposit in the sanctuaries was never accidental in this way that the dedication in thanksgiving, what is understood here by an ex-voto, belonged to an officially defined ritual. This paper will focus on a votive ritual practiced in Palmyra. The numerous epigraphical and iconographical sources, used for a base of the following study, illustrate the

comprised in the Late Babylonian "Counsels of Wisdom" advises like: a material offering including an object and incense burning, a prayer and benediction. It is a link to the older, than Hellenistic and Roman, traditions, which should be taken into account in the studies of the cultic practices of Palmyrenes. The paper aims on reconstructing the Palmyrene thanksgiving rituals including the old (Assyrian and Babylonian) and the new (Hellenistic and Roman) traditions.

#### Between Nubia and Egypt: the peculiar solutions of the Meroitic temples according to actual fieldworks

Marco BALDI, University of Pisa, ISMEO, Centro Studi Petrie

The Meroitic kingdom flourished in ancient Nubia from third century BC to fourth century AD. Local temples, hosting autochthonous and Egyptian deities, often associated to obtain mutual legitimation, harmonized foreign elements and indigenous heritage, according to the multicultural nature of coeval Nubia.

International archaeological missions actually working in Sudan have been shedding new light on the sacral architecture in the core of the kingdom. Excavation work in sites as Hamadab, el-Hassa, Wad ben Naga, Muweis and Awlib has been yielding heterogeneous structures that confirm the richness of the Meroitic architecture and the mixing of different traditions for satisfying the local cult needs. The typically Nubian one-roomed temples coexisted with multi-roomed buildings, of Egyptian origin, showing peculiar plan solutions, architectural choices strongly depending on local climate and available materials, and artistic expressions preserving the African identity.

The sacral architecture emblematically highlights that the inclusion of Egyptian elements in Nubia was not a simple introduction of foreign traditions passively received from culturally poor territories, but a profitable acquisition of manifold customs by a lively context that elaborated them within a syncretic frame, giving life to original solutions of a polymorphic society.

#### Ancient Egyptian funerary figurines - actors in the offering rite?

Sharyn VOLK, School of Historical and Philosophical Studies University of Melbourne Australia

A wax figurine protected by a model wooden coffin recovered from the tomb of Queen Neferu at Deir el-Bahri and held in the collection at the Museum of Fine Arts Boston has been proposed as either a forerunner to or an early representation of a funerary figurine (*shabti, shawabti, uschebti*). Within either of these frameworks the model coffin can be considered either the precursor to the funerary figurine box or its early equivalent. The miniature coffin housing Queen Neferu's figurine reflects Middle Kingdom traditions, and decoration includes inscriptions translated as offering formulas invoking Anubis and Osiris. Consideration of the decorative elements evidenced on a corpus of containers designed to protect funerary figurines reveals a disconnection between the meanings attributed to these elements and the current understanding of the intention and function of the figurine. Examining the nature of the representations on these containers contributes to a contextual understanding of what they were protecting. The wide range of decorative elements represented on funerary figurine containers supports a relationship between the figurines and the offering rite. This paper will explore the potential of the funerary figurine being an actor in that rite.

## Weeping figurines: function and symbolism of some rare mourning records found inside ancient Egyptian tombs

Alessandra COLAZILLI, La Sapienza, University of Rome

Mourning and weeping were an essential part of the ancient Egyptian ritual of rebirth, due to their mythical background. Rare terracotta figurines found inside tombs seem to confirm the will to keep up this practice, in addition to the well-known painted or relief evidence. Recovered exemplars date back to

at least the Middle Kingdom up to the Greco-Roman period. Two types can be observed: the "mourning pot" type, obtained from vases adding heads, breasts and arms moulded in typical mourning attitudes, and the "human-shaped" type moulded to suggest the same grief. Both types were buried next to the deceased to guarantee an everlasting mourning. The reason of pursuing a perpetual wail lies in textual sources evoking the god Osiris who gained rebirth thanks to his two wailing sisters. Hence the symbolism behind these little figurines justifies their presence inside tombs. As part of a PhD research on the expression of feelings in Egyptian literature, the purpose of the paper will be to investigate, with the support of archaeological and literary records, the role of these mourning figurines, their symbolism and their position inside tombs.

### Introducing Parthian Figurine Stored at Leiden Antiquity Museum, Holland Sara ZOLFAGHARI

Last year when I visited Leiden Museum of Antiquity (Rijksmuseum van Oudheden) for the first time, Parthian figurines, in the Near East section and the part related to Iran, attracted my attention. In the present research, I will introduce 18 anthropomorphic Parthian figurines (five male, thirteen female) in six groups, including musicians, laying women, nude goddesses, mother and child, men bust and warriors with shields. They were mostly recovered from regions such as Iran (Susa), Seleucia, Assyria, and Turkey. The considerable quantity of female figurines has caused speculations and debates, the most prominent of which being the probability of their sacredness and their subsequent affiliation to Anahita, the goddess of the Waters and associated with fertility, healing and wisdom. The results of the previous examination of the similar works indicate that figurines were created in various styles and shapes, from abstract to realistic and plain while some of them have a mixed appearance. All the figurines are in upright position and only one of them has a leaning posture. Among the most interesting items are musicians with wind instruments. The comparison with the other similar works leads us to speculate that depicting female musicians were most probably taken into consideration only at Parthian and Sassanid eras. Nothing can be said, with certainty, about the function of these figurines. Are they made just to be dedicated to a temple as a vow or are they made as a decorative object by an artist or an artisan to nurture his or her own creativity and craftsmanship? These are the questions that deserve more investigation and speculation and haven't been answered yet.

Keywords: Parthian period, Leiden museum, Figurine, Clay musician

### Ritual Re-Burial or Practical Re-Deposition? The Secondary Treatment of the Dead in the Levant Jennie BRADBURY, University of Oxford / Sarah LANGE, University of Tübingen

The removal of human remains from their original burial location and their subsequent re-deposition, partly or entirely, is an often-observed practice in the Ancient Near East. A joint research project, being carried out by the authors, aims at exploring the multifaceted nature of secondary burial in the Levant, from the Neolithic until the Iron Age, and the different ways in which these practices could be carried out. This paper will present an overview of the theoretical approaches used by the project and give an insight into preliminary results. Rather than explaining or forcing the existing evidence to fit with the well-established models of Van Gennep and Hertz, we propose a different approach in order to take into account the variations that the archaeological record presents us with. By regarding all available archaeological data, exploring textual sources and taking into account the ethnographic material, we hope to be able to determine the difference between ritual re-burials and functional re-depositions – if such exist. What parameters have to be fulfilled in order to identify ritual activities related to the re-deposition of human remains and how, if at all, can we distinguish them from practical acts of making space in a tomb?

### A City Built on the Graves of the Ancestors: Funerary Customs and Urbanization Processes at Hamoukar, Syria

Kathryn M. GROSSMAN, Massachusetts Institute of Technology, Cambridge / Arwa KHAROBI, Université de Bordeaux 1, Bordeaux, France.

The 2006–2010 excavations in the lower town at Tell Hamoukar, Syria, uncovered three phases of Early Bronze Age occupation. These phases date to the EJZ II–IV periods (c. 2600–2300 BC), an era covering Hamoukar's urban expansion as well as its destruction and abandonment. Excavators recovered human remains from burials across the site, dating to all three phases of occupation. Our recent analysis of these graves shows both spatial and chronological patterns in the type and location of graves, as well as in the associated grave goods. In this paper we present the results of our analysis of the graves at Hamoukar and contextualize the burials, human skeletal remains, and grave goods within a series of broader developments at the site. This analysis allows us to trace the evolution of the disposal of human remains at Hamoukar, and it allows us to explore the links between shifting burial practices, a changing social fabric, and the urbanization of the site and region.

### The 'Oxen Project': Mesopotamian diet and status from the Royal Cemetery of Ur

Tina GREENFIELD, University of Manitoba/University of Cambridge, UK / Hazel READE / Augusta MCMA-HON / Tamsin O'CONNELL / Cameron PETRIE, University of Cambridge, UK

The Royal Cemetery of Ur ranks as one of the most famous and important archaeological finds ever made, certainly one of the richest discoveries made in Iraq. Ur was one of the largest and most important of early Mesopotamia's city-states during the Early Dynastic III Period, (c 2600–2400 BC). When Sir Leonard Woolley excavated at Ur in 1922–1934, he exposed more than two thousand burials (collectively known as the Royal Cemetery), spanning the mid- to late 3<sup>rd</sup> millennium BC. Several of the graves also included carts drawn by equids or oxen, which had probably been slaughtered *in situ*. In 2012, a new joint project between the British Museum and University of Pennsylvania Museum began to digitise and make available all of Woolley's field documentation. As part of this larger project, zooarchaeological and isotopic analyses were conducted on the oxen from the Royal Cemetery, held in the British Museum and the Natural History Museum, London. This paper will examine the results from both the faunal and isotopic results conducted on the oxen from the Royal Cemetery as well as comparative faunal material from the surrounding Private Graves in order to provide unique insights into the diets of Ur's elites and average citizens, animal exploitation, and local environmental conditions.

### Legitimacy through sacrifice: the case of Başur Höyük-Siirt (south-eastern Turkey)

Martina G. M. MASSIMINO, Durham University, Department of Archaeology, UK / Haluk SAĞLAMTIMUR, Department of Archaeology, Ege University, Turkey

The incredibly rich metal assemblages found in sixteen tombs at Başur Höyük-Siirt, in the Upper Tigris River Valley, shed new light on the perception and use of metal in Anatolia at the beginning of the Early Bronze Age.

The lavishness of the grave goods suggests that they belonged to an emerging local elite that took over and subsequently damaged the large architecture of the late Uruk phase with the construction of the graves. Their newly achieved power was partly legitimized through the deposition in mortuary ceremonies of copious amounts of metal in the form of symbolically charged objects.

This ostentatious disposal of metalwork characterized other contemporary contexts, as at the "royal" tomb of Arslantepe, and fits well with what Bachhuber (2011) has described as "sacrificial value" for the metal assemblages of the Royal Tombs of Alacahöyük. As identified by Wengrow (2011), this strategy of social achievement was based on a system in which metal was valued not as a commodity but as something to be hoarded and sacrificed in spectacular performance.

It is argued there that after the collapse of the Uruk system at the end of the fourth millennium BC, a strategy of elite agency consisting of the public display and sacrifice of large quantities of metal at burial events marks the transition to a different form of power.

### Weapons and rituals in Ancient Mesopotamia

Elisa GIROTTO, Cà Foscari, University of Venice

This paper focuses on rituals performed with or on weapons attested in textual and visual sources from Ancient Mesopotamia. The sources, here taken in consideration, are mostly linked to royal and divine contexts. They date back to different periods (from the 3<sup>rd</sup> to the 1<sup>st</sup> millennium BC) and belong to different genres (literary, religious, royal inscriptions; war monuments, reliefs, glyptic,). Within a general review of the topic, some case studies, e.g. oath, office bestowal, purification rituals, will be discussed.

### Ritual sd dšrwt in the Old Kingdom – New archaeological evidence from the Abusir South cemetery Katarína Arias KYTNAROVÁ, Czech Institute of Egyptology, Prague

In recent years, archaeological research in the cemetery of high officials in Abusir South has uncovered several examples of possible attestations of the ritual *sd dšrwt* in funerary contexts. These include cases of large amounts of very fine, red-slipped pottery from the fill of so-called false shafts, such as shaft L in the tomb of judge Inti or shaft 5 in anonymous tomb AS 32. In these shafts, red-slipped pottery was found together with remains of textiles, charcoal and other objects. However, the ritual could also be seen in other instances, such as intentionally broken pottery uncovered in the burial chamber of the presumed husband of princess Sheretnebty in tomb AS 68c, where a different approach to red ware (e.g. Nile silt vessels covered with a red slip) and white ware (either Marl A3 vessels or vessels made of Nile silt but covered with a white wash) was observed. Finally, there were large amounts of ceramic shards broken intentionally by means of stones and stone pounders in the primary floor layer of ritual structure AS 74, built immediately north of the tomb of Neferinpu. The aim of this paper is to identify these possible attestations, analyse their common features and finally, to study the meaning and wider use of this ritual.

# The Breaking of Ceramic, Symbol of the Final Separation at the end of the *Rites de Passage*: the Case of the Monumental Tomb of Tilbeshar (Turkey, Sajur valley, 2600–2300 av. J.-C.) Christine KEPINSKI, CNRS Nanterre Cedex

One can observe during the Early Bronze Age a large variety of burial practices. Among them monumental tombs inside the city accompanying and reinforcing emergence of private families hold a very particular place. The consecutive funeral meals and memorial celebrations are among the most common aggregation rites. Mourning can be expressed in certain ancient societies through the breaking of objects. The ceramics breaking observed in some cases of sealed tombs will be interpreted as the result of the last stage of *rites de passage* and the final separation of the death of the living.

### An unique evidence of construction rituals of Bactria-Margiana Archaeological complex in Turkmenistan (case of Gonur Depe)

Nadezhda A. DUBOVA / Robert M. SATAEV, Institute of Ethnology and Anthropology, RAS, Moscow, Russia / Sergei P. GRUSHIN, Altay State University, Barnaul, Russia / Alexei V. FRIBUS, Kemerovo State University. Kemerovo, Russia

During the 2015 spring excavation season at the famous Bronze Age site of Turkmenistan Gonur Depe (2300–1600 BC) a metal detector was used. The maximum depth of the cultural level that can be scanned via it reached only 20 cm. So only upper layers of dumps of excavated ground and walls excavated previously can be analyzed. The detector's indicator has shown a high level of metal presence in the unrestored wall of the ritual double hearth in the royal tomb 3235. The clearing of this place has revealed

a silver strainer (typical vessel for Soma-Haoma preparing, see: Sarianidi, 1996; 1998; 2010) plastered inside the unburnt brick of the oven's ceiling. Verification of other walls of the royal sepultures did not lead anywhere. Nothing like that either at Gonur Depe or at any other Margiana sites has been found so far. Possible interpretation of this finding as an evidence of construction or funeral rituals is discussing.

### Food and Feasting in Southwest Turkmenistan: Archaeobotanical Evidence from Monjukli Depe Masi KIMIAIE, The Ohio State University

This paper will evaluate the evidence for feasting practices and food gatherings during the Neolithic and Chalcolithic periods by examining archaeobotanical and archaeological data. Assuming that feasting represents an expression of the social structure and dynamics in which it operates and functions, I argue that feasts sponsored by Monjukli people served to maintain social solidarity and cohesion. The project examines ancient plant macroremains recovered from a variety of architectural and archaeological contexts of Neolithic-Chalcolithic site of Monjukli Depe in Southwestern Turkmenistan. The results of this paper can be compared to other Neolithic archaeological sites in the region to better address the social practices of ancient communities in Southwest Central Asia. From an archaeobotanical perspective, the plant remains will also provide important information on the agricultural component of subsistence at Monjukli Depe.

### Reconstruction and Perception of Ritual Behaviour in the Cypriot Early/Middle Bronze Age

Fabian HEIL, Ludwig-Maximilians-Universität München

Supposedly, some of the most influencing changes in Cyprus during the Bronze Ages were trigged by immigrating groups or at least their imitation through some local elites. This assumption rests upon the Cypriot material, showing influences from many cultural backgrounds. But such wide spread and successful adoptions can hardly be seen as a conscious decision by a few inhabitants of the island, but would need to be communicated and positively received.

To achieve this, platforms of internal communication are needed, suited for the confrontation of people and thoughts. We can find these in various forms of places of gathering, in which meaningful situations take place, sometimes addressed as 'rituals'. Being aware of the complexity of dependency-mechanisms as have been discussed thoroughly (e.g. by Foucault, Bourdieu, Ingold or Hodder) we realize that ritual behaviour is no distinguishable unit of its own but a variety of consented behaviour of meaningful actions with a high communicative quality. Following this approach, we may re-evaluate situations where the entanglement between the 'sacred' and 'profane' is eminent. Promising are common activities connected with intentional deposition but especially items of particular use, like in the wide array of socalled composite vessels often associated with burial grounds.

### Funerary landscapes in 2<sup>nd</sup> millennium BC Tayma, Northwest Arabia

Alina ZUR, German Archaeological Institute, Berlin / Emmanuele PETITI, Berlin / Arnulf HAUSLEITER, German Archaeological Institute

Little is known about the funerary landscapes of 2<sup>nd</sup> millennium BC Northwest Arabia. Recent salvage excavations at the cemetery of al-Nasim / Tayma, Saudi Arabia, carried out by the Saudi Commission for Tourism and the German Archaeological Institute, provide new archaeological, anthropological, and archaeometric data pertaining to burial practices and funerary rites. Yet unparalleled circular graves built of rubble stone, understood as part of the local cultural matrix, used for single burials and tentatively dated to the 1<sup>st</sup> half of the 2<sup>nd</sup> millennium BC, display grave goods of local (pottery) and long-distance origin (bronze weapons of Syro-Levantine types). This data set provokes questions regarding the so-cio-cultural contexts of these burials, especially since the set of weapons is similar to that of so-called Syro-Levantine 'warrior burials'. Although there is little doubt on the presence of 2<sup>nd</sup> millennium BC remains at Tayma, pointing to far reaching contacts of the oasis in a period predating the famous incense

road, the identity of the involved groups, their religious beliefs, funerary practices and rituals including the treatment of the deceased need to be addressed, especially since actual occupation remains from the centre of the site are absent for the period in question.

### **Ritualistic Cremation at Karkemish – Turkey**

Rula SHAFIQ, Anthropology Department, Yeditepe University, Turkey

Cremation is a ritualistic process that involves several stages. What is left in the archaeological record is the end result of a series of activities selected and deposited. At Karkemish, the outcome of two seasons of Turco-Italian excavations, in 2013 and 2014, in the northern necropolis of the city known as Yunus in literature have resulted in the total number of 22 cremated individuals buried in the cemetery during the Iron Age II and III. Of particular interest are three rare intact cremated urns, two of which are well preserved and undisturbed cremation burial urns, and one animal ritualistic urn. This paper will focus on the results of the skeletal analyses discussing the cremation process and differential ritualistic cremation behaviours. Ritualistic cremation in bone arrangements and selection of bones within the urns. All of which are being proposed here to represent differences in mortuary treatment reflecting social status. During the 2014 season it was possible to perform CT scan on one intact urn revealing the inner bone composition and selection at the time of its internment, before our excavation in the dig house laboratory.

### Empty Vessels or laden signifiers? Imported Greek pottery in Levantine social practice

May HAIDER, La Sapienza, University of Rome

We do not know a lot about the Phoenician culture in general, and we know even less about Phoenicians religious beliefs and cults. The aim of this paper is to try to shed a new light on the religious life of the inhabitants of the Levantine coast particularly by the use of Attic pottery in the Mazreah.

The Mazreah is a ritualistic mourning feast that in a way resembles the classical symposium but also in another way is quite different.

A key element to understanding some aspects of the religious Phoenician life during the Achaemenid-Persian period is through the analyzing of the role and reinterpretation of the imported pottery used in a new range of specific social situations in Phoenicia.

### Alabaster Alabastra from the Perspective of Burial Customs: A Case Study of Koru Tumulus in Dascyleum

### Özgün KASAR, Mugla Sıtkı Koçman University

It is known that the production of stone vessels started in Anatolia, Egypt and the Near East at least as early as the 5<sup>th</sup> millennium BC. It has been noted that with the development of tools used in sculpture, the production of stone vessels also developed. Alabaster is a material that is relatively softer and easier to manipulate compared with other substances. Alabastra made of alabaster first originated as sacrificial vessels offered to the gods and kings and were considered as valuable as cedar, gold and semi-precious stones. In the 7th and 6th centuries BC, however, it can be seen that alabaster alabastra changed form and spread out over the entire Mediterranean, following the routes of trade. After that period, besides being used in daily life, alabastra took their place in graves as burial gifts left to the departed. Alabaster albastra finds in graves up until now have emerged primarily in the regions of Lydia and Phyrgia but also in various ancient cities of Western Anatolia.

The ancient city Dascyleum has been located in Northwest of the Anatolia. It is additionally important today because of its multi-cultural (Phrygian, Lydian, Mysian, Greek and Persian) society and material culture. The Dascyleum Koru Tumulus is one of the gravesites in which many examples of alabaster alabastron have been uncovered. The tumulus is located approximately 2 km to the south of the ancient city and Lake Manyas; its burial chamber has been positioned to face the lake. Marble klinai were built in the main burial chamber, which was pilfered in late antiquity, with one of these leaning against the south wall and the other against the east wall. The alabastra in the remaining area have been scattered all around the grave and some have been pushed under the klinai by graverobbers. The most striking characteristics of these alabastra are the traces of purple paint on some of the samples and one particular alabastron that has been preserved along with the goods inside it. Clues and finds related to such burial sites were evaluated in this study and a summary presented of the contributions alabastra made to burial traditions in this city of antiquity.

### Funerary practices and biological identities in Berytus and Botrys during the Roman period (Lebanon, 1<sup>st</sup> century B.C.–4<sup>th</sup> century A.D.)

Nada ELIAS, Université de Bordeaux Anthropologie des Populations

During the first century B.C., with the rise of the Roman Empire, the Levant became the scene of cosmopolitanism where many heteroclite cultures would coexist. Even before that time, the Levant was already composed of extremely rich and diversified cultures due to several invasions, and the blending of populations and cultures dating back to the Neolithic. The new cosmopolitan society had Rome as its capital (*Caput Mundi*), and roads drawn up by the army linking the rest of the empire to its capital.

Recent rescue excavations (since 2005) in *Berytus* (Beirut) and *Botrys* (Batroun) have revealed a considerable amount of unpublished data on populations who lived in the region during the four centuries of the Roman Empire until the early centuries of Christianity. It is precisely the man and his relationship with death that we studied in this Ph.D. thesis. Following an archaeo-anthropological approach, we present an assessment of eight funerary sites from the cities of *Colonia Julia Augusta Felix Berytus* and *Botrys*. Significantly, *Botrys*, unlike *Berytus*, did not have the status of a Roman colony. Our purpose is to understand the population of the past through the study of the skeletons, rituals and funerary practices as well as the organization of sepulchral spaces. We present the biological identities, population characteristics and living conditions of the deceased through their biological distinctiveness. These biological components are correlated with the archaeological evidence in order to discern the social identity and religious beliefs of the deceased based on their funerary practices.

### Body and Movement in Ritual Representations of the Second-Millennium Ancient Near East and Egypt

Batyah SCHACHTER, The Hebrew University, Jerusalem

The ancient depictions representing rituals show a rich variety of body gestures. Examples, such as the iconography of banquet scenes in Egyptian private tomb paintings, presentation scenes – facing the king in glyptic art from the Ur III period, or kings receiving the divine legitimacy such as Zimli-lim facing Ishtar in Mari's wall painting, all present human figures in specific body gestures that are repetitive in their representation and point to the importance given to the movement performed.

Ritual is created through prescribed processes that are designed in order to achieve various purposes both for individuals and society. Even though the main role of ritual is to communicate with and influence the elements that are beyond human control, the ritual itself is created and performed by human beings. As mentioned in the field's research, ritual is not only an assortment of objects or words, rather, a major part in the ceremony is the actions of the performing individuals. This being the case, the human body, its senses, sensations and movements are vital to realizing the purpose and experience which the ritual aspires to bring about.

The talk will examine the role of the body and the movement as means to the creation, execution and realization of ritual in the Ancient Near East and Egypt, focusing on the 2<sup>nd</sup> millennium BCE.

### A 'Special Procession' in Minoan Crete as a Ritual of Rulership? A Comparative Look from Egypt

Fritz BLAKOLMER, Institut für Klassische Archäologie, University of Vienna / Irmgard HEIN, Institut für Ägyptologie, University of Vienna

Based on a distinct group of images on seal impressions, a 'Special procession' can be defined which constituted an outstanding ritual in Neopalatial Crete (1750–1490 BCE). This procession consists of male and female participants wearing distinct robes and varying types of headgear. Some of the participants transport ritual equipment such as a short cloak with long fringes or a staff with curved handle. Instead of representing a series of stereotyped figures, these scenes show a rather narrative character with figures in lively poses. Moreover, this procession-like ritual is atypical of an Aegean procession because of its performance in an interior room instead of reflecting an outdoor activity. In spite of the absence of inscriptions or further instructive evidence, we can conclude that all these features point to an exclusive ceremony at the highest palatial level of Minoan Crete.

Possibly, we can approach the function and symbolism of this Minoan 'Special procession' by looking for comparanda in Egypt, where the performance of power in ritual processions, or the illustrations of the royal jubilee, the 'Sed-Festival', show a long tradition. Some motives are considered and compared that might illustrate and inspire new interpretations of the Minoan ritual sequences.

### A Curse Tablet from Jerusalem's Tyropean Valley: Functions of Contract Cursing in Legal and Economic Networks

Jeff S. ANDERSON, Wayland Baptist University, Anchorage Campus

Max Weber said that the curse of the poor is the weapon of democracy. In 2011 a lead curse tablet inscribed in Greek was discovered in an immense peristyle building in Jerusalem from the late Roman period (Tchekhanovets, Y.; Ben Ami, D.; Daniel, R. W., "A Juridical Curse from a Roman Mansion in the City of David." ZPE 186 (2013), 227–236). A certain Kyrilla deployed the 24 line tablet against her adversary lennys (lannēs) which invokes Greek, Mesopotamian, and Gnostic gods of the underworld to strike seven vulnerabilities of her opposition. "I strike and strike down and nail down the tongue, the eyes, the wrath, the ire, the anger, the procrastination, the opposition of lennys..." This preemptory juridical malediction, inscribed by a professional, parallels imprecations from Kourion, Cyprus and was probably motivated by a legal or business dispute. The discovery of this text and others like it raises broader implications for how the diffusion of curses influenced legal and economic mechanisms in Mediterranean cultures. The force behind performative speech is that the proper person utters appropriate words in specific social contexts. Yet written curse texts like this one notoriously complicate matters, blurring formal and informal juridical procedures, private and public enacted rituals, observable and unobservable afflictions, magic and religious practices.

### A New Type of Ritual Bath in Judah?

David BEN-SHLOMO, Ariel University, Jerusalem

In a recent excavation at Tel Hebron (Rumeida) a portion of an urban and industrial quarter dated to the early Roman period was unearthed. The remains include at least two residential houses, and stepped and paved street, a pottery kiln, a series of plastered pools and a system of well-plastered water channels. Within this complex two large stepped pools were also unearthed. According to many parallels and the shape and construction technique these features are likely to be ritual baths (or 'miqwes'). The construction of the stairs in the installations (with a double partition wall), as well as the dimensions, highly resemble similar contemporary pools from Khirbet Qumran, and are not known elsewhere. Other finds link the two sites as well. The region is known to be populated by Edomites during the Hellenistic period, yet, during the Hashmonean and early Roman periods the area was probably controlled by Judah, and may have been more Jewish. The ritual and religious function and meaning of the installations and other

finds from the site will be examined in order to determine whether the remains represent an Edomite, Jewish, mixed or other population.

#### Magically Empowered: Islamic Mirrors

Anja R. DREISER, University of Bamberg Islamic Art and Archaeology

In research history, some of the medieval Islamic hand mirrors of cast metal alloys (c. 12<sup>th</sup>–14<sup>th</sup> century) were noticed as ritual objects in the sense that they were loaded with magical properties and used as such. This assumption was indicated by the engravings on their original reflective side with text, signs and symbols. In which way exactly these engravings or other qualities of the mirrors (e.g. materiality or embossed decoration) correspond attributes of ritualized objects according to anthropological or archaeological theories (like formalism, traditionalism, sacred symbolism) or in what type of ritual, such as rites of exchange and communion, these mirrors were involved, has not been considered or discussed in depth. My paper therefore aims at an evaluation of these important aspects illustrated with a sample of mirrors, including symbolic approaches developed by anthropologists like Tambiah. Being a material expression of a society shaped by religious precepts, it is further put up for discussion in which way these mirrors attest to the indistinct relationship between religiousness and non-religiousness. This is also expressed by the medieval historian b. Khaldūn, who states that "it should be known that no intelligent person doubts the existence of sorcery [...]. The Qur'ān refers to it.



### Did the 9.2 and 8.2 ka climate events impact Near Eastern Neolithic societies?

Pascal FLOHR / Dominik FLEITMANN / Roger MATTHEWS / Wendy MATTHEWS / Stuart BLACK, University of Reading, Department of Archaeology and Centre for Past Climate Change

Effects of climate on societies are a much discussed topic, which is very relevant for the semi-arid Near East. The potentially most pronounced cold-arid climatic episode of the Holocene occurred at around 8200 years ago ('8.2 ka event'). A similar event, albeit of a smaller magnitude, took place at around 9250 years ago. Due to the abrupt nature of these climatic changes (onset in less than a decade), a severe impact on societies is expected. The effects of especially the 8.2 ka event have been much discussed, and scenarios for the Near East vary from widespread site abandonment and migration to continuity of occupation. The aim of our study is to further this debate by a comprehensive re-assessment of chronologies, to assess the synchronicity of social and climatic changes. We re-assessed all available radiocarbon evidence for the relevant time period (7500-5500 cal BC), strictly quality-checking dates, and combining this with archaeological information. Our results show that no systematic, large-scale site abandonment or migration took place at the time of either the 9.2., or the 8.2 ka event, although change occurred at some sites. We conclude that early farming communities were resilient in the face of climate change.

# High resolution stratigraphic observations and site formation processes at the Aceramic site of Chogha Golan, Ilam Province, Iran

Nicholas J. CONARD / Mohsen ZEIDI, Department of Early Prehistory and Quaternary Ecology, University of Tübingen, & Senckenberg Center for Human Evolution and Paleoenvironment at Tübingen, Germany / Alesandra ZANONI / Christopher E. MILLER, Institute for Archaeological Sciences, University of Tübingen, Germany

Many excavations of tells in the Near East emphasize moving large volumes of deposits to expose architecture, features and recover large numbers of finds. At Chogha Golan we followed the opposite strategy and deliberately excavated low volumes of sediments, collected detailed information on the stratigraphy of the site, and on the small scale distribution of artifacts from an 8 meter thick sequence of anthropogenic deposits. This excavation strategy allowed us to float a very high portion of the excavated sediments and led to optimal recovery of all classes of materials. Additionally, we conducted detailed micromorphological examinations of floors and other features to gain a nuanced understanding of human activities and the processes that shaped the formation of the tell. In connection with our plans for future seasons of excavation at Chogha Golan, we reflect upon the costs and benefits of low volume, high resolution excavations and report here on our conclusions. We also consider whether or not this approach should be applied more broadly to excavations in the Near East and elsewhere.

# Landscape archaeology in the Jarash valley in northern Jordan: a preliminary analysis of human interaction in the prehistoric and historic periods

Don BOYER, The University of Western Australia

The Jarash valley in northern Jordan is well-known as the location of the Decapolis city of Gerasa that rose to prominence as a vibrant provincial centre in the Roman-Byzantine period on the back of trading networks with its neighbours. The first traces of history of human occupation in this valley, however, date to the Acheulian period of the Lower Paleolithic and the PPNB-Pottery Neolithic periods. There was more established occupation in the valley - with gaps - in the Chalcolithic to Iron Age periods, with apparently continuous occupation in the Hellenistic to Early Islamic periods. The paper discusses the possible reasons for this extended period of occupation in the context of what is known of the palaeoenvironment and the archaeological record and is based on surveys that form part of the Jarash Water Project.

### Landscape Pollution and Human Health in Antiquity: Rethinking The Cultural and Natural Dimensions of Environmental Degradation in the Faynan Valley, Southern Jordan

Kyle A. KNABB / Matthew D. HOWLAND / Mohammad NAJJAR / Tammy RITTENOUR / Yigal EREL / Thomas E. LEVY

The human impact on the environment is an issue that has affected societies in the Near East over the past 8,000 years, a time when some of the most significant political and economic developments in the history of human societies took place. Landscape degradation, especially heavy metal pollution, is a poignant example of the deleterious effects that humans can have on the environment. This paper presents the results of an ancient pollution study we carried out in the Faynan valley of southern Jordan – an area rich in copper ores – during the most intensive episodes of production: the Iron Age and Roman period (1000 BCE – 400 CE). These periods also mark the peak of settlement intensity and agricultural production in the valley. Due to the simultaneous production of agricultural goods and copper metals through much of the valley's history, environmental pollution and its consequences for human health have been considered as a factor in settlement abatement. However, based on recent results from excavation and survey, geochemical and phytolith analysis, OSL dating, and GIS modeling, this paper will reconsider the ways in which metal pollutants spread throughout the environment, and the impacts of copper metallurgy on the landscape. We argue that the occurrence of environmental pollution is highly variable, that human health was infrequently at risk, and that the limited spread of pollution resulted from a combination of natural and cultural post-abandonment processes.

### Environmental Change and Social Adaptation in the Orontes Valley (ca. 1200-800 BCE)

Martin WEBER, University of California, Berkeley

The beginning of the Iron Age in Northern Syria has mostly been conceptualized as a socio-political phenomenon, entailing political, economic, cultural, and even ethnic changes. A range of potential causes for these changes have been suggested, including famine, warfare, and environmental degradation. Recent paleoenvironmental data raise the possibility that climate change at the end of the Late Bronze Age had a more substantial impact on socio-political organization than hitherto acknowledged, although the nature of this impact has not yet been evaluated. This paper investigates the effects of shifting environmental conditions on social interactions during the Late Bronze to Iron Age transition in the central Orontes Valley around Hama, the capital of the Iron Age kingdom of Hamath. Being part of the author's dissertation research, this project utilizes geospatial analysis methods, such as least-cost path analysis, visibility analysis, and environmental modeling, to study the relationships between settlement patterns and environmental variables, in order to assess the effects of environmental stress on ancient societies.

### Macro-botanical analysis of Neolithic sites in the Middle Kura Valley

Chie AKASHI, JSPS Research Fellow / Ken'ichi TANNO, Yamaguchi University / Yoshihiro NISHIAKI, The University of Tokyo / Farhad GUILIEV, Institute of Archaeology and Ethnology

We present the results of macro-botanical analysis of the two Neolithic sites in the Middle Kura Valley, Western Azerbaijan. The Azerbaijan-Japanese joint archaeological mission has been excavating Goytepe since 2008 and revealed the layers of Shomu-Shulaveri culture (mid 6<sup>th</sup> millennium BC). The other site, Haci Elamxanli Tepe, produced the oldest dates (early 6<sup>th</sup> millennium BC) with domesticated plants in the southern Caucasus at present. There are similarities as well as differences between the plant assemblages of the two settlements, but the change in the choice of wheat is most interesting. Hulled types predominate in Haci Elamxanli while free-threshing types surpass in Goytepe. This quick shift of crop species may reflect the process of introduction/establishment of agriculture in the southern Caucasus.

### Human Adaptation in Climatically Marginal Environments of Late Chalcolithic to Early Bronze Age Syria and Jordan

Stefan L. SMITH, Council for British Research in the Levant (CBRL), Jordan

To enable socioeconomic development, processes of human adaptation to natural or anthropogenic changes in their surroundings require not only survival strategies, but also making full use of their environments. Both these factors are apparent in the settlement dynamics of semi-arid regions of Syria and Jordan, ca. 4400–2000 BC. Building upon the concept of these constituting a "zone of uncertainty" providing an economic niche for risky rain-fed agriculture but vast pastureland, this paper presents the preliminary results of a new project aimed at providing a holistic overview of the origins and transformations of nomadic and sedentary practices in the Syro-Mesopotamian and Levantine steppes during this period. Combining remote sensing and ground data from three case study regions – the Greater Western Jazira in northeastern Syria, the Shamiya in central Syria, and the Northern Badia in northeastern Jordan – it examines the "push" and "pull" factors that led to migration, sedentarisation, and nomadisation at various times during the Late Chalcolithic and Early Bronze Ages. Furthermore, the effects of such changeable environments on the societies of these regions' inhabitants are addressed by analysing variations in structural settlement forms over their course of occupation. Finally, potential adaptive methods of subsistence and development are examined, with an emphasis on whether universal or disparate strategies were employed across comparable climates over a wide geographical area.

### Facing Early Bronze Age climate change in South East Arabia: new data from the IMTO excavations at Salut-ST1, Central Oman

Michele DEGLI ESPOSTI, Dipartimento di Civiltà e Forme del Sapere, Università di Pisa / Mauro CREMA-SCHI, Dipartimento di Scienze della Terra "A. Desio", Università Statale di Milano

Early to Middle Bronze Age transition in South East Arabia (ca. 2000 BC) has been correlated to a number of causes, among which deteriorating climate and increasing aridity played a substantial part.

Works of the Italian Mission To Oman (IMTO) at the Early Bronze Age site of ST1, near Bisya in Central Oman, revealed a typical round stone tower site with a substantial surrounding ditch. Cut through a cemented caliche substratum, it was part of a complex water management system comprising auxiliary channels and wells, related to a water availability higher than to day. The safe stratigraphic sequence excavated inside the ditch, interpreted on the base of field evidence corroborated by micromorphology of the sedimentary fill, provides useful evidence to investigate paleoenvironmental evolution during the site's occupation, and beyond; at the same time, late wells excavated through the ditch's pavement bear witness to the final attempt of the resident population to cope with the lowering water table and maintain occupation sustainability at the site.

On the basis of the proposed chronology for the site, based on the material culture and radiocarbon dates, the results from the excavation and their interpretation can also be discussed against the broader picture of the intense aridity phase now well documented over different areas of the world, starting at around 4200 yr BP.

### The Central Timna Valley Project (CTV): How Environmental Abuse Stifled A Flourishing Copper Industry in the Iron Age Southern Levant

Erez BEN-YOSEF, Department of Archaeology and Ancient Near Eastern Cultures, Tel Aviv University

Tel Aviv University (TAU)'s Central Timna Valley (CTV) Project is a multi-year interdisciplinary research of ancient human exploitation of copper ore (http://archaeology.tau.ac.il/ben-yosef/CTV/). Building on previous work of Rothenberg, Hauptmann, Levy and others, the new research takes place at the Timna Valley, southern Israel, and includes field and laboratory work. The first phase of the project (2013–2015) has focused on copper mining and smelting sites from the turn of the 1<sup>st</sup> millennium BCE. This phase included excavations at several mining fields, surveys of slag mounds, and the first excavations at Site 34 ("Slaves' Hill") – one of the major smelting camps in the region. New high resolution radiocarbon

dates from the latter indicate a peak in copper production during the 10th century BCE, thus disproving previous interpretations of the site as a New Kingdom Egyptian (13th c. BCE) smelting camp. The new dates provide the background for contextualizing various other finds of the project, including the study of fuel sources by charcoal identification (conducted by M. Cavanaugh and D. Langgut of TAU). The charcoal study, together with other evidence from survey and excavations, indicates that over-exploitation of the local wood source was most probably responsible for the limited scale of production and dictated the history of copper mining in the arid region of Timna and the southern Aravah Valley. This case study demonstrates how society shaped its environment (vegetation and the physical landscape), and vice versa (environmental constraints dictating development of social complexity). The CTV Project is supported by the Marie Curie FP7-PEOPLE-2012-CIG grant #334274.

### The lithic economy reflected in chipped stone artifacts of the Aceramic Neolithic of Chogha Golan, Iran

Mohsen ZEIDI, Department of Early Prehistory and Quaternary Ecology, University of Tübingen / Nicholas J. CONARD, Department of Early Prehistory and Quaternary Ecology, University of Tübingen & Senckenberg Center for Human Evolution and Paleoenvironment at Tübingen, Germany

In 2009 and 2010, Tübingen-Iranian Stone Age Research Project excavated at Chogha Golan in Ilam Province of western Iran. These excavations revealed a series of occupations from an Aceramic Neolithic village with an economy based on hunting, collecting and cultivation, in the nearby hills and river valley. Our team documented a unique sequence of Aceramic Neolithic horizons covering a period of nearly two thousand years (11,700–9,600 cal. BP). Chogha Golan is an exclusively Aceramic Neolithic settlement located in the foothills of the Zagros Mountains in western Iran. This early Neolithic site is very rich in terms of organic and inorganic remains recovered during the excavation. Chipped stone artifacts are by far the most common cultural material found at the site. Using macroscopic approach, we have examined more than 38,000 artifacts of chert and other lithic raw materials. In this paper we examine the changing strategies of raw material procurement, lithic production, use and discard practiced by inhabitants of Chogha Golan.

### Biological investigation of clay tablets in the context of palaeo-environment

Akihiro TUJI, National Museum of Nature and Science / Ryo ANMA, Tsukuba University / Chikako E. WATANABE, Osaka Gakuin University

This study examines the source material of cuneiform tablets (clay tablets) from the biological point of view in order to assess its validity to trace environmental changes in ancient Mesopotamia. These tablets were used as documents to record various types of information by inscribing cuneiform signs on their surface. Many tablets bear exact dates when they were recorded. It is therefore possible to regard this source material as a 'soil sample' that has an extremely precise date. Our study presents various types of biological inclusions discovered in tablets, such as diatoms and other microfossils. Diatoms can function as proxy for tracing water quality in antiquity, and the combination of microfossils can also tell the origin of source material and its nature. Cuneiform tablets are, however, precious cultural heritage and this restricts types of scientific analyses that we can conducted on tablets. They are often fired for the purpose of conservation which results in the destruction of biological data originally contained. The paper summarises the outcome of our study so far and suggests a way to keep original source material intact for biological and other studies.

#### Investigating Natural and Cultural Resources Using Clay

Serena LOVE, University of Queensland / Lynn WELTON, University of Chicago / Steve BATIUK, University of Toronto

This paper investigates the natural resources and cultural materials from Tell Tayinat in the Amuq Plain of Southeast Anatolia. The research combines three clay-based data sets, including drill cores (Batiuk), mudbrick geoarchaeology (Love), and ceramic petrography (Welton). An exploration of differential uses

of clay at Tell Tayinat provides empirical data about organisation of labour, social technology and the use of clay in the Amuq Valley. Initial results suggest local mudbrick production with a surprising continuity of raw material exploitation through the Early Bronze IVb to the Iron III. It is possible that multiple work-shops were in operation simultaneously, as suggested by multiple, locally produced brick types in single structure. This paper presents the preliminary results of two seasons of investigation (2012, 2015) and demonstrates how the combination of these three clay-based data sets integrates material culture with the environment and can be used as a proxy for cultural and/or natural change.

### Small systems or large empires? Agency and structure in water systems in the Ancient Near East Maurits W. ERTSEN, Delft University of Technology, the Netherlands

Water is of fundamental importance to human societies. Many civilizations in world history used irrigation agriculture to feed their growing population, including Mesopotamia, Egypt, the Indus-valley, China, Mexico and Peru. The topic of water management has often appeared under rather over-arching models such as the "archaeology of power", or more specifically under Wittfogel's models of hydraulic civilizations. In contrast to Wittfogel who saw irrigation as contributory factor in the development of early states, there is a growing body of evidence suggesting that later larger ancient states encouraged the spread of irrigation systems by exerting power over vast areas and by creating the conditions for the free flow of information on technological developments across large areas of the globe. Focusing on water systems in the ancient Near East, the archaeological record suggests that besides the larger imperial systems mentioned above, systems existed with a demonstrably longer term than imperial systems, built up by local – but not isolated - communities. Tensions between local versus imperial, small versus big, and co-existence versus remodeling seem to be relevant to understand these systems. Three case studies – including tentative agent-based modeling – build the empirical material to study these issues: (1) the emerging irrigated landscape of Southern Mesopotamia, (2) the planned imperial landscape of the Neo-Assyrian Empire in northern Mesopotamia, and (3) the many water systems in the thousands year of history on the Zerqa Plain (in modern Jordan).

#### Water, Environment, and post-"collapse" life in the Late Neolithic of Jordan

Kathleen BENNALLACK, Department of Anthropology, University of California, San Diego / Mohammad NAJJAR, UCSD Levantine Lab / Ian JONES, University of California, San Diego / Thomas E. LEVY, University of California, San Diego

After the discovery that most Jordanian "megasites" were abandoned between the Late Pre-Pottery Neolithic and the Late (Pottery) Neolithic, where those people went, why, and how they survived afterward have been defining questions for researchers of the Late Neolithic. Recent research in Jordan has shown that in the 9<sup>th</sup> and 8<sup>th</sup> millennia (cal) BP numerous sites, some of them very densely settled, were founded in what are now arid and sparsely inhabited regions, raising the question of how the settlers survived and why they would choose such inhospitable locales. The environment may have changed drastically in the intervening millennia, however, and the quantity and density of recently-discovered Late Neolithic sites in the arid regions of Jordan indicate that the ancient environment was capable of supporting many more people practicing more diverse lifeways than it does now. This paper will present preliminary results from test excavations of several Late Neolithic sites in the Faynan region of southern Jordan, as well as an environmental and archaeological survey, as a test case for how these now-arid regions may have supported dense populations in antiquity.

### The Cherabad-project: the Archaeology and Archaeometry of an Ancient Iranian Salt-mine: Introduction and first results

Thomas STÖLLNER / Aydin ABAR / Nicole BOENKE, Institut für Archäologische Wissenschaften, Ruhr-Universität Bochum, Germany / Abolfazl AALI, Archaeological Museum of Zanjan, Zanjan, Iran / Frank RÜHLI / Centre for Evolutionary Medicine, Institute of Anatomy, University of Zurich, Switzerland

Iranian and European archaeologists and scientists are collaborating since 2010 to investigate one of the most exiting archaeological sites in Iran: The antique salt-mine of Douzlakh near Cherābād. There, 1993 and 2004 and 2006 several mummified bodies of salt-workers had been found which gave reason to study this unique site: after several years of joint work various results can be harvested from excavations and surveys, laboratory work and the investigation of the salt conserved mummies. These results impart a comprehensive knowledge of the life-world of those societies being once involved in the salt extraction business: Due to the salt-conservation there is a bundle of well-preserved artifacts and ecofacts that help to understand the various aspects of extraction and consumption of rock salt, the logistics of this enterprise and the question of the subsistence of the communities involved: according to the chronological studies we now are able to describe the integration of the major exploitation phases of Achaemenid and the Sasanian to Early Islamic to their surrounding landscape; a third extraction phase of the Qadschar-period(18<sup>th</sup> to 19<sup>th</sup> century) is less clear.

Most impressive is the information achieved from the mining casualties themselves: While the Sasanian mummy parts are spread within the mining debris it is difficult to understand the circumstances of their death. In the contrary we are able to understand better the catastrophe that caused the death of three Achaemenid miners; high precision AMS-dating could narrow down the event of an earthquake that led to a collapse of parts of the mine-ceiling. There are furthermore indications of isotopic and genetic foreignness for instance of a 16 year old boy that once might have come from the north to the site. If this had its causes in the high-quality of rock salt that once might have traded even to distant consumers is one of the extremely rewarding questions we are working on at the moment. All our evaluations thus allow unique insights to rural populations and their economic activities.

#### The Salt-Miners and their Subsistence: Recent Results from an Ancient Iranian Salt-Mine

Nicole BOENKE, Institut für Archäologische Wissenschaften, Ruhr-Universität Bochum, Germany / Marjan MASHKOUR, CNRS Paris / Mark POLLARD, Laboratory for Archaeology and the History of Art, University of Oxford / Gabriella RUSS-POPA, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria

The excellent preserved bodies from the Chehrābād salt mine in Northwestern Iran offer unique insight not only in the physical conditions of individuals from Achaemenid ( $6^{th}$ -  $4^{th}$  century BCE) and Sasanian ( $3^{rd}$  –  $7^{th}$  century CE) times, but also the analysis of the mummies and their associated finds provides a considerable amount of socio-economic information. Multidisciplinary studies on animal bones, palaeofaeces, plant remains and different kinds of find stuff – mainly organic – leads to an exceptional reconstruction of the practices and to the understanding of the miner's living conditions and subsistence.

Due to the remarkable preservation circumstances in a salt mine, where the destructive work of microorganisms is limited, thousands of organic objects are preserved. Beside a large collection of archaeobotanical material also archaeozoological remains and palaeofaeces are available. Besides pottery, a frequent and usually dominating find category on archaeological excavations, in Chehrābād lots of fabrics, wooden tools, horn objects, leather and fur were found. From descriptive approaches right up to analytical methods like Isotope analysis, several investigations have been carried out. Thereby it was our aim not only to collect and document the exceptional artifacts but also ordinary finds to obtain an integrated interpretation of the data.

### New analyses of early Egyptian and Nubian copper alloy artefacts in the collection of Ägyptisches Museum – Georg Steindorff – der Universität Leipzig

Martin ODLER, Czech Institute of Egyptology, Faculty of Arts, Charles University in Prague / Jiří KMOŠEK, University of Chemistry and Technology in Prague

Metal artefacts have not been used frequently in the study of Ancient Egyptian economy. It is important to study and analyze artefacts in the collections of world museums out of Egypt, foremost

the artefacts with known provenance. The collection of artefacts in Ägyptisches Museum – Georg-Steindorff – der Universität Leipzig contains provenanced artefacts from the Early Dynastic period, Old, Middle and New Kingdom from several important sites: Abydos, Abusir, Giza and Aniba. Most of them were acquired during the excavations of Georg Steindorff at Giza and Aniba. Material from Abusir and Dynasty 2 tomb of king Khasekhemwy at Abydos is datable to the Early Dynastic period. Tools and vessels from Giza are from the Old Kingdom. The cemeteries at Aniba brought to light artefacts from Middle and New Kingdom, including some of the finest New Kingdom vessels preserved. All artefacts have been radiographed, some have been scanned by computer tomography in IMKM Leipzig. Samples have been analyzed at the University of Chemistry and Technology in Prague and we will present the results of XRF, SEM/EDS, NAA and metallographic analyses. We will focus on the diachronic changes in the use of ore sources and use of varying alloys for the production of the artefacts and model artefacts.

### Between centre and periphery: early Egyptian and Nubian copper alloy artefacts in the collection of the Kunsthistorisches Museum Vienna (KHM)

Martin ODLER, Czech Institute of Egyptology, Faculty of Arts, Charles University in Prague / Katharina UHLIR, Kunsthistorisches Museum Wien, Conservation Science Department, / Martina GRIESSER, Kunsthistorisches Museum Wien, Conservation Science Department, / Regina HÖLZL, Kunsthistorisches Museum Wien, Egyptian and Near Eastern Collection / Irene ENGELHARDT, Kunsthistorisches Museum Wien, Egyptian and Near Eastern Collection

Metals have not been used frequently for the studies of Ancient Egyptian economy. Important sources are the artefacts in the collections of world-famous museums outside Egypt, foremost the artefacts with known provenance. The Egyptian and Near Eastern Collection at the KHM contains artefacts from several important sites of the 4th, 3rd and beginning of the 2nd Millennium BC in Egypt: Giza, Tura, Mostagedda and the Nubian sites Kubbaniya and Toshka. X-ray fluorescence analysis (XRF) will be performed on a selected sample of these artifacts in order to obtain their chemical composition. The analyses may confirm assumptions that several types of arsenical copper were used for the full-size functional tools and weapons (from A-group Kubbaniya, Old Kingdom Tura and Middle Kingdom Mostagedda and Toshka) and almost pure copper for model tools (Old Kingdom Giza). Also imported Near Eastern copper, in the form of ore and finished artefacts, is mentioned in Old and Middle Kingdom sources, yet there were no attempts in the past to discern supposed differences in the alloys. Additionally, the important question of the possibility of a varied use of alloys in the Memphite centre of the state and its periphery is tried to be answered using XRF.

### Cultural Development and Change in the Eastern Indo-Iranian Borderlands from the $4^{\rm th}$ through the late $3^{\rm rd}$ millennium BC

Ute FRANKE, Museum für Islamische Kunst - Staatliche Museen Berlin, Pergamonmuseum

The importance of Pakistani Baluchistan as a key region for assessing cultural development in the Borderlands and the Indus Valley has been established in the mid-20<sup>th</sup> century. However, the huge and difficult terrain as well as political constellations made work in the highlands always difficult and largely impossible between the 1960es and 1986. In 2007, field work was suspended again.

The work conducted during the last few decades nevertheless contributed substantial information on settlement patterns, environmental data, and cultural adaptation and transformation from the Chalcolithic through the era of the Indus Civilization. Previously considered a periphery, it has become a core area for understanding settlement processes and trans-regional interaction across natural barriers during the late 4<sup>th</sup> and the 3<sup>rd</sup> millennium BC.

The paper summarizes the results achieved, with a focus on the field work carried out by the Joint German-Pakistan Mission to Kalat between 1996 and 2007.

# Quantifying the Early State: The scale and extent of institutional households in the Middle Bronze Age Jazīrah and the Bilād al-Šām (ca. 2000–1600 BCE)

Rune RATTENBORG, Durham University, Department of Archaeology

Questions of economic development form a key strand of scholarly debate on the history of early complex societies. In the field of Ancient Near Eastern studies, economic organisation and associated social relationships are often addressed through qualitative discussions of social structure and societal types, with little attempt at staking out approximate quantitative frameworks. The present study combines data sets from archaeological survey and remote sensing with large-scale analysis of administrative cuneiform records, drawing on postgraduate research conducted under the auspices of the Fragile Crescent Project of Durham University's Departments of Archaeology and Geography.

By evaluating quantitative assessments of the agricultural capacity and performance of a number of settlements and associated institutional households scattered across the Middle Bronze Age Bilād al-Šām, the Jazīrah, and the Zagros piedmont, this paper offers new perspectives on ancient economies. Through the combined analyses of site catchment area and textually founded estimates of organisational scale and spatial configuration, it is argued that we can arrive at much more detailed and quantifiable empirical bases for understanding relations between larger economic organisations, rural communities, and the overall economic capacity of a site and its hinterland than has hitherto been the case.

### The Iron Age in southeastern Arabia (1350-300 BC)

Laurence VAN GOETHEM, Vrije Universiteit Brussel

The Iron Age in southeastern Arabia (1350–300 BC) has long time been considered a semi-nomadic society. Aside from some remnants of so called *Aflaj*-systems and the presence of a few columned halls, no other monumental architecture could be distinguished thus far. However recent research revealed that during the Iron Age, and more specifically during the Iron Age II phase, a massive settlement intensification takes place in the inland plains and in the Al Hajar region (Magee 2014). Furthermore, it seems that some Bronze Age coastal sites also remained occupied during this period, taking the signs of re-use into consideration (Potts 2012). A review of older excavation reports reveals extensive settlement activity in the mountain region as well. This paper aims at putting the pieces of this settlement-puzzle together in order to formulate a preliminary settlement typology of domestic and defensive architecture throughout southeastern Arabia. Can different types of settlements patterns be distinguished? Is a functional distinction within villages noticeable? Can an evolution in building practices be observed? Was there a type of general lay-out for domestic architecture? And which materials were used for building activities?

Key words: southeastern Arabia, Archaeology, Iron Age, architecture, aflaj

### Ecology and Economy of Neo-Assyrian Imperialism: A Case-Study of the Upper Tigris River Valley

Timothy MATNEY, University of Akron / Melissa ROSENZWEIG, Miami University / Tina GREENFIELD, University of Manitoba

Recent excavations and surface surveys at Neo-Assyrian (9<sup>th</sup>-7<sup>th</sup> century BC) settlements in the upper Tigris River valley of southeastern Turkey have provided a wealth of new data on the ecology and economy of the Assyrian imperial project. Particularly valuable are zooarchaeology and paleobotanical studies carried out at urban administrative centers, as well as those undertaken at smaller agricultural villages, over the past two decades. Less explored is the relationship between the Assyrian imperialists and the indigenous Middle Iron Age populations who lived in the highlands above the fertile floodplains of the Tigris River and its tributaries. This paper explores the question: to what degree were those inhabitants who settled in the Assyrian cities and villages engaged in active cooperation with indigenous farmers and pastoralists? Paleobotanical studies from the Neo-Assyrian administrative center of Ziyaret Tepe, for example, show a significant number of plant species found in the Middle Iron Age deposits derive from plants that grow in higher altitudes, not in the river floodplain. This suggests that while Assyrian exploitation of the river valley conforms in most ways to a standardized imperial economy, there is significant access to highland resources located away from the principal Assyrian administrative centers.

### Achaemenid resource management: fingerprinting bitumen from Tol-e Ajori and Sad-i Shahidabad Thomas VAN DE VELDE, Ghent University

Bitumen has been observed in many archaeological sites in Mesopotamia and the Eastern Mediterranean. This material was often overlooked by the early explorers of the region as it was regarded as an ordinary and everyday product. However, with the technological advancements of the last decade and the incorporation of the exact sciences in the archaeological research, bitumen shows its hidden potential. Several scientific techniques (GC-MS & EA-IRMS) make it possible to get into the core of archaeological bitumen samples and identify the seepage were the material was extracted. This knowledge tells us a lot concerning economies and the management- and export of raw materials.

As of yet, no such studies on bitumen material from Achaemenid contexts has been presented nor published. This presentation will therefore be the first one ever to handle this specific material for the Achaemenid period in Iran. Two bitumen datasets will be discussed: the places where they were excavated, their analysis, their relation to each other, and finally their origins. Samples from the first dataset were uncovered at Tol-e Ajori (*Iranian-Italian Joint Archaeological Mission at Persepolis*), whilst the other samples were excavated at Sad-i Shahidabad (*Joint Iranian – French Archaeological Mission*).



# The Tell Gomel Archaeological Survey. Surface research and off-site investigations in the heart of the Navkur Plain, Iraqi Kurdistan

Francesca SIMI, Foscari University, Venice

My paper will present the methodology, goals and preliminary results of the Tell Gomel Archaeological Survey which represents my Ph.D. research project.

The Tell Gomel Archaeological Survey has its origins in the wider 'Land of Nineveh Archaeological Project' which has been conducted since 2012 by the University of Udine in the northern Region of Iraqi Kurdistan.

The area examined by the project is the heart of the Navkur Plain, an alluvial plain that extends in the eastern hinterland of the Assyrian capital of Nineveh. The focus of settlement throughout the entire Navkur Plain was the site of Tell Gomel, where the preliminary survey documented the existence of a settlement sequence ranging from the Chalcolithic to the Ottoman period. Due to its large size and position in the centre of the plain, Gomel must have played an important role in this region, presumably as its political and economic centre. The area around Gomel is also of great interest because of its position in the heart of the Navkur Plain, a trade route hub from the Late Chalcolithic onwards, where the main focus of settlement in the entire region was concentrated. The project therefore aims to investigate the archaeological landscape of this crucial and still unknown area.

An Archaeological Reconnaissance in the Greater Zab Area of the Iraqi Kurdistan (UGZAR) – 2012–2015 Rafał KOLIŃSKI, Institute of Prehistory, Adam Mickiewicz University, Poznań, Poland

Three seasons of an archaeological reconnaissance in an area of 2 958 km<sup>2</sup> located on both banks of the Greater Zab between Eski Kelek and Bekhme were carried out in the framework of the "Settlement History of the Iraqi Kurdistan" project in years 2012–2014. The fieldwork revealed presence of 137 archaeological sites and 30 heritage monuments (structures) on an area of c. 1 500 km2, located mainly on the western bank of the river. The survey increased thus four-fold the number of archaeological sites known previously (mainly from the Atlas of the Archaeological Sites in Iraq, published in 1976).

The fieldwork revealed varying settlement landscapes throughout the studied area. The most intensive settlement was evidenced in the eastern part of alluvial Navkur Plain (Khazir-Gomel catchment area), where more than 40% of registered sites are located. The Greater Zab valley, the northern bank of Bastora Çay and mountain oases west of Akre township revealed moderate density of settlement, while badlands between Akre and the Greater Zab valley seems to be thinly colonized only since the Parthian-Sasanian period. No evidence of Paleolithic and PPN sites has been collected so far.

Three more field seasons are planned for 2015, 2016 and 2017.

### Chalcolithic settlements and ceramics in the Rania plain and beyond: some results of the Soulaimaniah Governorate Archaeological Survey (Ifpo-Erbil)

Johnny Samuele BALDI, Ifpo-Erbil

Since 2012, the Soulaimaniah Governorate Archaeological Survey (Ifpo-Erbil) intensively surveys a region around the Dukan Lake. Concerning the chalcolithic phase, some results are very significant as regards the distribution of the settlements and the evolution of diagnostic ceramic typologies. During Hassuna, Halaf and Ubaid periods, human occupations present an even distribution, with small sites homogeneous in sizes dispersed on wide territories or aligned along rivers and wadis. But starting from late Ubaid times and, above all, in LC1–LC3 phases, a clustered evolution seems to mark the growth of some major proto-urban settlements. These ones have probably to be considered as gravity centres of a progressive hierarchical organization of the historical landscape. Regionalized ceramic relationships oriented towards the Hamrin basin are evident since the end of the sixth millennium BC, while later, during the LC1-5 phases, increasingly close connections with the Mosul area appear in the whole area. Despite some analogies with the settlement pattern of other Northern-Mesopotamian regions, a question arises: can main local settlements really be considered as "provincial capitals"?

#### Revisiting Tell Begum. A prehistoric site in the Shahizor, Iraqi Kurdistan

Olivier P. NIEUWENHUJSE, Faculty of Archaeology, Leiden University, The Netherlands / Takahiro ODAKA, The University Museum, University of Tokyo, Japan / Akemi KANEDA, Faculty of Archaeology, Leiden University, The Netherlands / Simone MÜHL, Institute for Ancient Near Eastern Archaeology, Ludwig-Maximilians University Munich, Germany / Kamal RASHEED, Directorate of Antiquities of Sulaymaniyah, Sulaymaniyah, Iraq / Mark ALTAWEEL, Institute of Archaeology, University College London, Great Britain

In 2013 an international team explored the 5ha prehistoric site of Tell Begum in the Shahrizor Plain, an intermontane valley in Sulaymaniyah province, Iraqi Kurdistan, as part of the Shahrizor Survey Project. Iraqi archaeologists had sounded the mound in 1960, attesting to occupation in the Uruk and Halaf periods. In those days almost no prehistoric sites were known in the Shahrizor. The Shahrizor Survey project now has documented numerous Halaf and Late Chalcolithic sites, allowing discussions of prehistoric settlement and providing a regional framework to individual sites such as Tell Begum. Our explorations at Tell Begum exposed layers dated to the LC1-3 covering thick deposits of the Halaf-Ubaid Transitional stage, while geomorphological work gave insights in Holocene landscape formation. Briefly summarizing the results, we will use Tell Begum as a case study to situate the Shahrizor in the broader mosaic of later prehistoric cultures of the ancient Near East.

#### Settlement Patterns and Political Landscape in the Upper Tigris River Valley

Rodolofo BRANCATO, University of Catania

Due to the planned construction of the llisu dam, during the last three decades the upper Tigris river valley region has been thoroughly archaeologically investigated. A large amount of archaeological data is now available for this area once considered as *terra incognita*; however the different techniques used by the diverse teams involved in surveying the area have created an incoherent mass of data. Thus, the paper here presented wants to organize all the data available from both surveys and archaeological excavations (i.e., more than 500 hundred sites) in order to give a coherent perspective on the transformation of the settlement patterns and the political landscape of the region from the Pre-pottery Neolithic until the Ottoman period.

In so doing, I will also compare the data available from the surveys with those collected during the archaeological excavations to foresee the possible ambiguities of the earlier surveys and how the archaeological excavations have transformed this earlier picture. In fact, combining evidences from surveys and excavations has the great potential of highlighting changes in regional settlement patterns.

#### Across Space and Time: Results of the Wadi ath-Thamad Project Regional Survey

Jonathan FERGUSON, University of Toronto

The Wadi ath-Thamad Project is a collaborative archaeological program in central Jordan. Its primary focus has been the excavation of an Iron Age fortified town and a Nabataean residence at Khirbat al-Mudayna ath-Thamad, but the project's Regional Survey has explored and documented over 150 sites in the Wadi ath-Thamad and adjoining watersheds. The human presence in the wadi system is attested from Palaeolithic lithic scatters to modern Bedouin camps, with homesteads, fortifications, cemeteries, field terraces and other sites marking the intervening millennia. Using Geographic Information Systems software and other data sets, these sites can be situated in the broader landscape and interpreted in their ancient spatial context. For example, the topographic location of small Iron Age fortifications can be queried through the use of viewshed and intervisibility analyses to investigate their suitability as watchtowers. The hydrological and geological setting of Nabataean settlements, on the other hand, can be used to study their use of water and soil resources for dry versus irrigated farming. Finally, the densities and types of sites show how the human occupation of the Wadi ath-Thamad and the use of its resources have changed through the ages.

### A Newly Discovered EBIII Agricultural Plot South-West of Tel Yarmouth, Ramat Bet Shemesh, Israel Yitzhak PAZ, Israel Antiquities Authority

Tel Yarmouth is one of the largest urban centers that flourished during the third millennium BC in the land of Israel. Unfortunately, its hinterland and agricultural landscape was completely unknown, until now. In the current paper we want to report and discuss the recent break-through discovery of a unique open air site, located c. 150m. south-west of Tel Yarmouth, in which large scale investment was conducted during the 3<sup>rd</sup> millennium BC in order to create and employ an agricultural plot or a field in which crops like wheat and barley were cultivated. This was achieved by transporting more than 1000 tons of mound debris from inside the fortified city of Yarmouth to the open air site located in a large rock depression or cavity that was deliberately chosen due to its preferred natural settings. The mound soil was poured into this cavity, was fertilized and was prepared for cultivation. The excavations of the site (site 203a) and the various scientific analyses that were conducted to date clearly prove the existence and the employment of this field during the late EBIII, contemporaneous to the existence of the monumental palace B1 at Tel Yarmouth. Moreover, we suggest that the monumental investment in the establishment of palace B1 was accompanied by the monumental investment in the creation of the field, that was no doubt one of the economic sources for commodities that were consumed, stored and traded by the urban entity that governed Yarmouth during the 3<sup>rd</sup> millennium BC.

### The Land of Nineveh Archaeological Project: preliminary results from the analysis of the Second Millennium BC pottery

Costanza COPPINI, Institut für Vorderasiatische Archäologie, Freie Universität Berlin

The 'Land of Nineveh Archaeological Project' covers a vast survey area (3000 km<sup>2</sup>) in northern Iraqi Kurdistan, thus broadening and integrating data concerning settlement pattern and dynamics, and material culture that are known from adjacent regions, i.e. north-eastern Syria and south-eastern Turkey. During the 2<sup>nd</sup> Millennium BC the three areas were connected through the presence of political powers, which differently controlled the area. Concerning Middle Bronze Age, this is relatively well-known from Old-Babylonian written sources from urban centres situated in the region. Concerning Late Bronze Age, it is well-established that the three areas were part of the same political entity during the Middle-Assyrian period. Otherwise, the first part of the Late Bronze Age, during which the Mittanian Kingdom ruled on most part of the mentioned area, is a more problematic period.

In this frame, the ceramic material from the archaeological survey gives information and new hints concerning the 2<sup>nd</sup> Millennium BC occupation of the area. This paper focuses on the Middle and Late Bronze Age ceramic material, illustrating 1) the main diagnostic types in each period, and 2) their distribution in the settlements, with the final aim of pinpointing morphological characteristics of the Middle and Late Bronze Age ceramic assemblages from the region.

### The Eastern Habur Survey in Irak-Kurdistan: Settlement Regions at the Junction between Mesopotamia, Syria and Anatolia

Peter PFÄLZNER, IANES, University of Tübingen

The University of Tübingen has been carrying out an archaeological survey in the westernmost part of Iraq-Kurdistan, in the western and northern parts province of Dohuk. Field seasons took place in 2013 to 2015. The area today has a direct border with the neighbouring countries of Turkey and Syria. It can be expected that this situation at the junction of three important ancient cultural regions - Mesopotamia,

Syria and Anatolia – had an important impact on the development of culture and settlement in this area. This can be mainly demonstrated for the 3<sup>rd</sup> millennium BC, when the region was important for the extension of the Akkadian empire, and for the 1st millennium BC, when it was the borderland and buffer zone between the Assyrian Empire and Urartu. The main geographical features of the region are the valley of the Eastern Habur River one of the main tributaries of the Tigris, the Eastern Tigris plateau and the westernmost Zagros chains. Accordingly, five geographical zones have been subdivided within the survey region. Each zone is characterized by different ecological conditions, divergent accessibilities and communication lines, and different settlement patterns.

### The Iraqi foothill areas of Zagros during the Bronze Age

### Cécile VERDELLET, Ifpo-Erbil

The recent survey in the regions of Rania and Peshdar in the district of Suleymaniyeh (Kurdistan-Iraq) by the SGAS completes the knowledge about the foothill areas of the Zagros Mountains.

The first results give data about the organisation of such a region, which has the particularity to be located between the north Mesopotamia plains and the Zagros Mountains.

These foothill areas are mentioned in texts as one of the main problems of the political and military units of the Early and Middle Bronze Age. If texts affirm the existence of a special population and some usual difficulties to control these areas, it is still difficult to understand the cultural filiation or the specificities of such a population, which is located at the eastern border of the main political and cultural units of the Bronze Age.

The SGAS results allow catching a glimpse of the specificities of this region, of its population and of its Organisation during the Bronze Age. The study of the material allows understanding the cultural composition of the area while the identification of all settlements gives the possibility to visualize the spatial organisation.

## Archaeological Study of the Settlement in the District of Rania, Peshdar and the sub-district of Bngird during the Neo-Assyrian Period

Jean-Jacques HERR, Ecole Pratique des Hautes Etudes, Sorbonne

The historical geography of the Neo-Assyrian Empire in the Zagros region and its western foothills has been determined by scholars through the philological study of royal inscriptions of the Assyrian rulers and the state letters. Since 2012, new archaeological investigations in the Iraqi Kurdistan provided a significant amount of data for the western foothills of the Zagros, particularly in the district of Rania, Peshdar and the sub-district of Bngird. The preliminary results of the SGAS (Soulaimaniah Governorate Archaeological Survey) project allow an assessment of the material culture of this eastern region of the Assyrian Empire.

Our study is based mostly on the ceramic material sampled by the SGAS project. Various types of pottery and their morphological variants have been linked to the 8° and 7° c. B.C. repertoire in Assyrian heartland, therefore demonstrating the cultural orientation of the surveyed area towards the West for the first half of the first millennium B.C. However, ceramic types of the Iranian Zagros of this period occur also in the region and might provide arguments for the assumption that this surveyed area is a borderland.

### Landscape and Power at the Margins of the Hittite Empire

Müge DURUSU-TANRIÖVER, Joukowsky Institute for Archaeology and the Ancient World, Brown University

In this paper, I investigate the manifestations and mechanisms of the Hittite Empire in its western and southeastern borders and explore how the Hittite administration functioned in the landscapes at the

margins of the empire. A diachronic perspective on the Hittite Empire suggests that the pre-Hittite practices and power relationships inscribed on these landscapes conditioned the ways in which the Hittite Empire interacted with the margins of its state.

Using the urban landscape of Emar in northern Syria and the rural landscapes of Yalburt in inner western Anatolia as case studies, I argue that the intervention, and consequently the impact, of the Hittite Empire were shaped by enduring local practices embedded in the urban and rural landscapes of these regions in the pre-Hittite past. Emar's urban landscape shows a continuity of the kinship ties and local administration offices throughout the Bronze Age. Yalburt's rural landscape, on the other hand, shows serious interventions undertaken by Hittite kings in the form of water infrastructur e and landscape monuments. These landscape interventions, or their lack thereof, are venues to understand the nature and the mechanisms of Hittite power in the fringes of the state.

### Kongra Serchia Darbant: A mountainous pass goes between the Rania and Peshdar Plain (Iraqi Kurdistan, Soulaimaniah Governorate)

Jessica GIRAUD, Ifpo-Erbil

During the survey of the Soulaimaniah Governorate Archaeological Survey, two fortified settlements were found on the mountainous ridge that separates the plain of Rania and Peshdhar. These settlements protect and control the roads providing access through the both plains. The land use patterns around one of these passes, Kongra Serchia (Bngrd District) show a dense organization of large and small settlements dating periods of the Bronze Age to the Ottoman period.

Following a systematic surveys of the region by analysis of satellite imagery (Corona) and interviews, we have enough data to understand the spatial organization of this micro-region around the pass. We understand better how this mountainous pass organize a particular space allowing a more direct passage and more efficient control for the Zagros Mountains from the plain of Rania, avoiding the plain of Peshdar.

#### Long Wall of Asia: The Backbone of Asian Defensive Landscape

Meysam LABBAF-KHANIKI, Department of Archaeology, University of Tehran

Based on the archaeological evidences, the southern part of Asia including fertile regions of Anatolia, Mesopotamia, Iran, India, and China as the cradle of the great civilizations was the ideal destination for the northern emigrants since the 3rd millennium BC to the early 20<sup>th</sup> century AD. The emigrants were mostly the nomads of northern part of Asia covered with the vast rainless deserts and steppes. During the heavy famine as the result of dominant climatic condition of the region, the nomads had to invade the wealthy southern settlements and therefore the populations settled in villages or cities of southern Asia equipped their settlements with defensive installations such as ramparts, towers, ditches, etc. The defensive walls as the most important defensive structures kept separated the southern settlement from the northern invaders. The defensive walls were constructed whenever and wherever the differences between geographic advantages lead to the struggles between north and south of Asia. In other words the defensive walls have been constructed play the role of formidable barrier extended from the east to the west of Asia. The defensive walls including The Great Wall of China, some long walls in Tajikistan, the defensive walls of Khorasan, the wall of Gorgan, The Dagh-Bari at Derbend, and the Anastasian wall in combination with the natural features including Yellow Sea. Hindu Kush Mountains, Kopet Dagh ranges. Caspian Sea, Caucasus Mountains, Black Sea, and Mediterranean Sea organize a long defensive barrier introduced in the paper as the Long Wall of Asia. The Long Wall of Asia over 9000 kilometers in length represents the close interaction between history, geography and material culture forming the defensive landscape of southern Asia.

Keywords: Asia, Defensive Walls, Fortifications, Nomads, Defensive Landscape

# Cultural Landscape of South Caucasus in Context of Bronze Age Periodization: Rethinking the Chronology of Middle Bronze Age Cultures

Marina PUTURIDZE, Tbilisi State University

Currently adopted scheme of Middle Bronze Age periodization created for South Caucasian region since last two ten years required precise concretization.

Main reason of necessity to conduct such research, on the one hand, is the new discovered sites and, on the other hand, still doubtful from chronological point of view, although, earlier revealed complexes. Evaluation of the certain sites which are closely related with one of the famous Trialeti Culture but simultaneously reveals the clear innovative and distinctive from it features, enables to consider them as the different, latest stage of Middle Bronze Age. This sites mainly comes from the central (Shida Kartli) and as well from the most southern (Meskhet-Javakheti) areas of the modern territory of Georgia.

It seems that all of the considered cultures of this long lasted period, i.e. from the second half of III millennium until the mid II millennium BC, possible to define according the different phases of it. Archaeological complexes that comes from different regions of South Caucasus shed new light on the problem of precise definition of Middle Bronze Age stages.

### Between Continuity and Change: Settlement and Route Systems in South-central Anatolia between Bronze and Iron Age

Alvise MATESSI, Institute for the Study of the Ancient World, New York University

This paper will investigate how elements of continuity intertwine with profound changes in times of political crisis and (re)generation. Focus will be on South-Central Anatolia from the end of the Late Bronze Age (ca. 1200 BCE) through the Early and Middle Iron Age (12th-8th BCE). I will suggest that in South-Central Anatolia there were several different responses and reactions to the historical developments characterizing the long period addressed, such as the demise of the Hittite empire and the emergence of the Neo-Hittite polities. The conclusions will be based on the analysis of the settlement pattern in key areas of Cappadocia and of the Konya plain, augmented by the evidence of a recent archaeological discovery at the modern border between the provinces of Konya and Niğde.

### Exploring methods for site characterisation in ephemeral Neolithic and ethnographic sites in Jordan

Daniella VOS / Emma JENKINS / Helen SMITH, Faculty of Science and Technology, Bournemouth University / Andrew GARRARD, Institute of Archaeology, University College London / Carol PALMER, CBRL British Institute in Amman

In recent years, the use of a combination of scientific methods in order to better characterise archaeological sites has increased, enabling archaeologists to capture minuscule traces of various activities. These can help identify the role settlements played in the past in relation to their surrounding landscape, including both the natural environment and other human occupation. Finding new ways to explore the role of past occupied areas is especially important when studying prehistoric sites, seeing as the reconstruction of human life at these sites can not be aided by the use of written sources.

This paper will present the study of soil samples from the Neolithic sites of Wadi el-Jilat and the ethnographic sites of Wadi Faynan, which were analysed for their geochemical, phytolith and spherulite content. Expanding on these case studies it will discuss how the studied techniques could potentially aid site prospection, how they may add value to the reconstruction of ancient settlement patterns through time, and how changes in the interaction between sites and their dynamic environments can potentially be captured even in ephemeral prehistoric sites.

### Endangered Archaeology in the Middle East and North Africa (EAMENA)

Robert BEWLEY, School of Archaeology, Oxford University

The Endangered Archaeology project is assessing threats to archaeological sites using satellite imagery and aerial photographs. The paper will present the approach, initial results and future strategies for the

project. An open-access web-based information system is being designed to allow basic information about each site to be easily accessible for anyone interested in preserving archaeological sites in the region.

The archaeological heritage of the Middle East and North Africa is of huge global significance. It includes very large, and often unrecorded landscapes, with significant prehistoric and historic sites, dating from all periods, up to and including twentieth century sites. The paper will cover the research potential for the database created in this large region.

The biggest threats to these archaeological sites are agricultural activities, conflict zones, looting and the huge increase in urban expansion, as a result of the quickly rising populations.

Building on the work done by Aerial Photographic Archive for Archaeology in the Middle East (APAAME) and the Aerial Archaeology in Jordan project (see www.apaaame.org) the project has initially chosen a number of key areas in Saudi Arabia, Syria, Iraq, Jordan, Libya, Yemen and Egypt to begin its work.

Where significant sites are threatened by modern development (road building, town and village expansion, agriculture and looting) the team will work with the local authorities in managing the threats and risk to archaeological sites.

The project has been funded by the Arcadia Fund (www.arcdiafund.org.uk) based at Oxford University in collaboration with Leicester University, UK.

### Settlements patterns and its Landscape along al Madam Plain during the Iron Age (Sharjah, United Arab Emirates)

Carmen DEL CERRO, Universidad Autónoma de Madrid (Spain)

Al Madam plain contains one of largest concentrations of archaeological remains found in the Oman Peninsula. The region has been briefly studied for first time in 1973 by an Iraqi team. In 1990, a French Mission carried out an intensive survey, pointed out more than fifty archaeological remains in the plain as well as an enormous funerary area, the so-called Necropolis of *yebel* Buhais

From 1993 until nowadays the archaeological works never stopped: at foothill of *yebel* Emalah by University of Sydney, in whole al Madam Plain by Universidad Autónoma of Madrid and -in an intensive way*yebel* Buhais Area by the Department of Antiquities of Sharjah Emirate as well as Tubingen University at the Neolithic graveyard of Buhais 18.

The funerary remains in al Madam Plain are located at foothills of the mountains that mark off the region in the West from V to I millennium BC, while on Iron Age small graves can be found on the top of these mountains too. Neither villages nor settlements has been set before Iron Age in al Madam. But then the study possibilities of settlement patterns, (regarding -or not- with the funerary areas) and the research of an agrarian Landscape just documented increases hugely.

Our work in al Madam Area is focused now in this direction: the links between villages and palm groves, nomadic camps and cattle, traders and foreign sources, craftsmen and funerary items, all of them living and moving in al Madam Plain.

### **Evolution of the occupation and settlement patterns during the Pre-Pottery Neolithic in arid Syria** Marie-Laure CHAMBRADE, Université Lyon 2, France

Inland Syria is made up of a mosaic of lands with specific lithologic, edaphic and hydrologic characteristics which compensate climatic aridity or, on the contrary, increase the pressure on settlement and economic strategies, nowadays as in the past. A downscalling study – supra-regional, regional and micro-regional – of Pre-Pottery Neolithic sites (ca. 9 500-6 500 BC) and their environment has allowed to better understand settlement choices, subsistence patterns and resources exploitation. First of all, the review of surveys and excavations' programmes from the 1920's to 2011 has showed that, beyond oasis and river valleys, most usually studied, Neolithic communities had largely settled steppic areas with significant constraints linked to aridity. Their adaptability to a restrictive environment, the development of agro-pastoral activities and their gradual water controlling, probably allowed them to colonize the whole inland Syria during recent and final PPNB. Beyond the obvious criteria that have oriented settlement patterns, like access to a water resource, Neolithic communities seem to have carefully selected places with an environment composed of complementary land to conduct varied farming strategies. After an overview of the diachronic evolution of the occupation and settlement patterns in whole arid Syria, we will focus on the margins of the Fertile Crescent.

### A GIS Projection of the Syro-Mesopotamian Old Babylonian Landscape

### Kristina J. HESSE, Uppsala University

Hundreds of Akkadian clay tablets, derived from archaeological excavations at the palace of Mari by the Euphrates, clarify the strong integration between mobile tribes and city-states in Syria-Mesopotamia during the Old Babylonian period. This project aims to illuminate the social and economic dynamics between pastoral nomads and settled people in this period, with the focus on the former, based on the economics of food producing, exchange, trade mediating and other services such as caravan escort and mercenary. Not only are the connections between these groups of people essential, but also their ways of interacting with the surrounding environments.

The paper deals with the first step of methodological network studies in this project, which is to map known sites into GIS together with trade routes, landscape features, suggested tribal territories, natural resources, and some remains (e.g. systems of cairns, corrals, kites) registered in the Syria-Norwegian Palmyrena project. This landscape image will constitute the base for my further studies of networks and descriptive connections or relationships between people and tribes with places, trade routes, migration pattern etc. Network theories suits this kind of study due to the strong family and tribe identification of the pastoral nomads in the Mari documents.

### Confronting Scales of Settlement Hierarchy in State-Level Societies: Upper Mesopotamia and Central Anatolia in the Middle Bronze Age

### Alessio PALMISANO, UCL Institute of Archaeology

In this article, I will adopt a long-established technique known as rank-size analysis to detect particular settlement patterns in the Khabur Triangle and in central Anatolia during the Middle Bronze Age. Archaeologists must be particularly careful when applying rank-size analysis to a given study area as the results can change at a different spatial scale. With these premises in mind, in this work, I first show the results produced by performing rank-size analyses on the two whole study areas and assess comparatively any difference in the observed patterns between them. Second, I break down each study area into smaller window analyses in order to detect how settlement size distributions change at a more local scale. The results show that at a larger regional scale, both central Anatolia and the Khabur Triangle in the Middle Bronze Age are characterized by fragmented politically landscapes of competing independent polities loosely integrated. By contrast, at smaller local scales central Anatolia and the Khabur Triangle show different settlement hierarchy. In central Anatolia settlement systems appear more nucleated in large centres dominating their surrounding rural hinterlands and strong political and economic centralization is evident at Kültepe and Boğazköy. On the other hand, in the Khabur Triangle the patterns appear less clustered and there is a superimposition of large urban centres on well or more loosely integrated settlement systems of smaller sites (medium-small villages, farmsteads and camp-sites). These examples demonstrate the advantage to use rank size analysis at different spatial scales for having a more complete understanding of the dynamics behind the observed empirical data.

## Reconstructing Landscapes: Some Methodological Considerations about Combining Textual and Archaeological Evidence

Sara MANASTERSKA, University of Warsaw / Artur MAZUREK, University of Warsaw

The following paper was inspired by the approach of combining archaeological and textual evidence in order to gain a more full image of the past as proposed during the 61st Rencontre Assyriologique Internationale whose main topic was "Text and Image". Several examples from the Ancient Near East will be used to show how both types of data complement each other and how they can be fruitfully exploited to gain new insights about ancient landscapes. The paper will enumerate the advantages and disadvantages of such an interdisciplinary approach, as well as point out which kinds of situations are best suited to archeo-philological exploration and analysis, and which much less so.

### Cultural Landscape and Mining in the southern Caucasus Archaeological and archaeometallurgical investigations in Gegharkunik (eastern Armenia)

Rene KUNZE, Eberhard-Karls-Universität Tübingen / Danilo WOLF, Martin-Luther-Universität Halle-Wittenberg

The region around Sotk, southeast of Lake Sevan (Armenia), illustrates better than almost any other region in the Southern Caucasus the intense interplay between prehistoric settlement and gold mining. Until now, careful archaeological and archaeometallurgical studies were lacking, so this naturally bounded region was classed as a scholarly *terra incognita*. The Sotk goldmine is the largest gold reef in the Caucasus and the entire Near East, and its use in antiquity is attested. As well, its location at the Sotk Pass, as a direct route between the Southern and Eastern Caucasus, is of strategic importance for prehistory. Studies to date have aimed to establish the prehistoric settlement structure in this area, which is a clearly defined natural region on an important inter-regional transport and trade route, in association with a possible case of prehistoric gold extraction.

The goal of the presentation is to present the results of an intensive archaeological investigation of the settlement network in the area around the goldmine and the interdisciplinary links to the surrounding natural and settlement geography, as well as the results of the geological and geochemical studies.

### Ritual technologies in the desert margins? Landscapes of metal production and deposition in Iron Age south-eastern Arabia

Rashad BUKHASH, Dubai Municipality, UAE / Lloyd WEEKS, School of Humanities, University of New England, Australia / Kristina FRANKE, University of New England, Australia / Charlotte CABLE, University of New England, Australia / Hussein QANDIL / Hassan ZEIN / Mansour BORAIK / Shaikha OBAID ALAB-BAR, Archaeology Section, Dubai Municipality, UAE

Saruq al-Hadid, in Dubai, UAE, is one of south-eastern Arabia's most important and enigmatic archaeological sites. Since 2003, excavations at the site have revealed an assemblage of archaeological artefacts, mostly of Iron Age date, that is unprecedented in its scale and diversity. The thousands of bronze, iron, and gold artefacts from the site, accompanied by evidence for copper smelting and working, have dramatically challenged existing ideas about the nature and development of Iron Age communities in south-eastern Arabia. What is most intriguing about this material is its depositional context: artefacts are apparently randomly spread across a large area within the dune systems of the northern tip of the Rub al-Khali (or Empty Quarter) desert, in an area that currently lacks almost any identifiable settlement remains or resources that might be useful for primary metal production. And yet Sauq al-Hadid is not unique: a similar site has now been recorded in the desert fringes at As-Safah in Oman. This paper, building on the first results of a new multi-disciplinary research programme at Saruq al-Hadid, will address the interpretation of these perplexing desert metal production and deposition sites, consider the tensions between existing explanations that focus on primarily economic or ritual factors, and contextualise them within the wider settlement system of the south-east Arabian Iron Age that integrated coastal, piedmont, mountains and desert terrains.

Keywords: Iron Age; Arabia; desert; archaeometallurgy; ritual deposition; resources

### The first season of the archaeological survey south-of-Jiroft (Kerman, Iran) in 2015: settlement development, chlorite and diorite

Peter PFÄLZNER, IANES, University of Tübingen / Nader SOLIMANI, ICCHTO, Teheran, Iran

A joint Iranian-German archaeological project started with a first field season in the spring of 2015. It is a survey of the region south of Jiroft (SOJAS – South-of-Jiroft Archaeological Survey) in the southern part of Kerman Province in Iran. The basic research question of the project is to investigate the exchange of goods between South-Eastern Iran and Mesopotamia through the Persian Gulf during the 3<sup>rd</sup> millennium BC and the socio-cultural dynamics resulting from this within the region of South-Eastern Iran. For this purpose, the main connection lines between the Halil Rud Basin and the coast of the Persian Gulf are investigated, the corridors of Faryab, Kahnuj - Ziyaret Ali and Kahnuj - Manojan. The settlement developments in these sub-regions are in the special focus of the survey. In addition, the southern part of the Halil Rud Basin is surveyed as well, in order to compare the regional settlement pattern of the core area of the "Jiroft-Culture" during the Early Bronze Age. Furthermore, special attention is given to the distribution and accessibility of the natural sources of chlorite and diorite, materials which were highly appreciated during the 3rd millennium BC in Mesopotamia. Long-term settlement trends in the region south of Jiroft are observable from Neolithic/Chalcolithic periods until the Achaemenid and later periods.

## Third Millenium BC Cities in the arid zone of inner Syria: Settlement Landscape, Material Culture and Interregional Interactions

Corinne CASTEL, Université Lyon 2 / Georges MOUAMAR, Université Lyon 2

The recent discovery and excavations of the mid/late III<sup>rd</sup> millenium BC cities of Tell Al-Rawda and Tell Sh'airat (Syria), and the surveys conducted around have highlighted unexpectedly the arid zone of inner Syria, to the north of Palmyra (the *Shamiyah* region).

These two sites which are pre-planned geometric "new cities" are key-sites to understand the dynamic of the urbanization of Syria and certainly the birth of a precocious territorial state onto the desert margins of Syria in a context of territorial conquest.

The co-authors of the lecture will offer a synthesis concerning the spatial organization of this territorial State possibly connected to the "Very Long Wall". The comparison between the material culture of the two sites will be presented. It will help to recognize the interregional interactions of the *Shamiyeh* region in the context of the second part of the III<sup>rd</sup> mill. BC. before and after the destruction of Palace G of Ebla.

#### Settlements, Fortifications, and Regional Routes at the Eastern Fringes of Urartu

Emily HAMMER, The Oriental Institute, The University of Chicago

In the Iron Age, eastern Anatolia and South Caucasia hosted the world's earliest-known highland empire. The kingdom of Biainili (Urartu) incorporated areas of present-day eastern Turkey, northwestern Iran, Naxçıvan (Azerbaijan), and Armenia. The territory across which the Urartians expanded is topographically rugged, and no other highly centralized state was based in the region in antiquity. How did the Urartians manage to integrate the fragmented areas that constituted their provinces? This question has previously been addressed from textual and archaeological perspectives on Urartian administration. This paper looks at issues of geographical integration and territorial extent on the kingdom's northeastern fringes. Specifically, I draw upon GIS analysis of human movement and recent archaeological survey data from Azerbaijan and Armenia to examine paths and connections between two areas with particularly good textual and material evidence for Urartian control through fortress construction: the low-lying Araxes River Valley in the vicinity of Mount Ararat and the highland southern shores of Lake Sevan. Analysis of topographical data shows that there were at least two movement corridors between the Araxes and Sevan. One of these is marked by long-known inscriptions and large Urartian fortresses, and is thus assumed to have been the primary corridor for territorial expansion, communication, and administration. The other of these until recently remained archaeologically unexplored. New survey and excavation data suggests that this second route was fortified in the Iron Age by local people who were in contact with the Urartians, but probably not under their control. The existence of this second fortified path has several implications for our interpretation of Urartian territorial strategies and their integration of far flung-provinces into the empire.

### Comparative Analysis of Water and Land Transportation in Ur III Umma: Using Counterfactual Movement to Elucidate Settlement Patterns

#### Marshall SCHURTZ, University of Pennsylvania

During the Ur III period in Southern Mesopotamia, the extensive textual corpus frequently references massive boats moving large quantities of resources across the state, which helped enable the incorporation and organization of the many settlements of the kingdom into one coherent structure. By analyzing the impact that water-based transportation had on settlement locations during the Ur III period we can begin understanding the organizing forces behind settlement sizes and patterns. Boat transportation was responsible for considerable speed benefits, allowing for greater integration of farther sites. Removal of that variable suggests an initial core of settlement around the major centers.

Using Robert McAdams' mapping of the canals of Southern Iraq with updated remote sensing data, this paper calculates distances between Ur III sites in the province of Umma by waterways and the costs associated with that travel. That travel data is compared against land-based transportation methods, like donkeys, in a GIS in order to see the relative benefits of boat transit. Combining the distances, speeds and costs of the various transportation methods unites landscape data with traditional archaeology and textual studies. Defining the original settlement core reveals structures underlying the organization of the hinterlands and elucidates the importance of transportation.

### The Cultural Landscape of the Lower Zab

Cinzia PAPPI, Leopold Franzens Universität Innsbruck

The dynamics of the expansion of Assyria involved the creation of a network of infrastructures which enabled the movement not only of goods and people, but also of technologies and ideas. Excavations at Satu Qala (Iraqi Kurdistan), the Assyrian provincial capital of Idu has highlighted the role of its region within the network. This area, located on the valley of the Lower Zab, served as a multicultural borderland both between southern and northern Iraq and between the valley of the Tigris and western Iran from at least the second millennium BCE on. The material culture of Satu Qala combined with the data gained by remote sensing and spatial analysis, including the Cost Surface Analysis, provided some working models which can be applied for a better understanding of the regional infrastructural system. This paper will focus on the geographical and historical links between the transregional communication system and the regional infrastructural network of the region of Satu Qala discussing the still unsolved problem of the political and economic extension of Idu.

### Late Neolithic Pella and the Olive Tree: Exploring the Relationship

Anne DIGHTON, The University of Queensland, Brisbane, Australia

Pella, modern Tabaqat Fahl, located in the east Jordan Valley, has been occupied continuously for at least the last 8000 years. Radiocarbon dates suggest that there are two distinct phases of Ceramic

Neolithic at Pella, with almost 1000 years between them. Latest Neolithic Pella was re-settled around 5200 calBC. Archaeobotanical assemblages strongly suggest that these settlers were exploiting the olive trees present in the hilly slopes and upland landscape surrounding the site. Could these trees have provided the motivation for the re-settlement of Pella?

The first olive exploitation in the Eastern Mediterranean is generally associated with the Chalcolithic, although the evidence for large-scale olive exploitation at Kfar Samir in the Late Neolithic suggests this thinking may need to change. The presence of olive in a majority of the Late Neolithic contexts at Pella, while not on the same scale as at Kfar Samir, provides further evidence for early interaction with this iconic tree and the impact of this interaction on the near landscape. Employing recent seed, fruit and charcoal evidence from Pella, fully contextualised within the Late Neolithic Jordan Valley, this paper will begin the evaluation of the role of the olive tree in landscape and settlement changes during this transitional period of late prehistory.

# Strategies of production, strategies of interaction: the transformation of the settlement pattern in Bronze Age south-western Cyprus (2400–1100 B.C.).

Francesca CHELAZZI, University of Glasgow

The investigation of the Cypriote Bronze Age is traditionally focused on the production and trade of copper, which was undoubtedly one the natural resources and economic commodities driving the development of the local 'social complexity'. Nevertheless, the reconstruction of the evolving Cypriote settlement pattern in a GIS environment may provide an additional contribution, suggesting a more complex and diversified production scheme and socio-economic scenario. The south-west of the island, in particular, offers a consistent archaeological legacy to perform a much wider study on landscape strategies, the social organization of local communities and their dynamics of interaction and interdependence.

This paper aims to emphasise how the local settlement pattern has been transforming during the Bronze Age according to the increasing diversification and specialization of production activities (pottery, textiles, metallurgy, etc.), the intensification of agriculture and animal husbandry and the emergence of hierarchical and heterarchical social relationships. The transformation of the local landscape did not merely consist in a shift of the settlement pattern from the middle river valleys to the coastal lowlands; similarly the change in the social structure did not culminate with the passage from villages to urban centres. Therefore the reconstruction of production, exchange and mobility is at the centre of this analysis, as well as the interaction of local communities with natural resources and the environment.

## Beyond the Palace: Some perspective on agriculture and irrigation system in the Achaemenid Heartland

Seyed Abazar SHOBAIRI, University of Athens

The Achaemenid heartland (Parsa and Pasargadae Plains) is one of the most important areas in southwestern Iran. These wide districts are watery and have rich lands suitable for farming, even nowadays. Most likely, the forming of the Achaemenid capitals, Pasargadae and Persepolis in Fars by the Sivand and Kur rivers was neither arbitrary nor did it occur suddenly. Considerable remains of large earthen channel networks branch out from these rivers and are located close to the main Achaemenid sites. Also, existing *qanat* systems and remains of several dams in the Persepolis and Pasargadae plains represent a development and a progress in irrigation systems and agriculture in the Achaemenid period. It seems probable that one of the economic aims of the Achaemenids has been the development of agriculture as well as the increased production. Some of the Persepolis Fortification Tablets attest to the importance of rivers as well as crop farming in Achaemenid era.

This paper will present a new approach to the archaeological data and textual evidence (such as the Persepolis Fortification and Treasury tablets), about irrigation and cultivation in the region of Fars. The

broader scope of my research is to arrive at a much more substantial understanding of water supply and management practices in the Persian Achaemenid period.

Keywords: Achaemenids, Fars, Agriculture, Irrigation, economy

### Key Points in the Paleo-Anthropocene Period in the East Mediterranean: Past Human Activity as the Designer of the Present-Day Landscape

Oren ACKERMANN, Ashkelon Academic College, Israel / Suembikya FRUMIN / Aren M. MAEIR / Ehud WEISS / Helena M. ZHEVELEV, Bar-Ilan University / Liora Kolska HORWITZ, The Hebrew University, Jerusalem, Israel

The term Anthropocene was coined by Crutzen (2000), as a human-made geological period that began with the Industrial Revolution (18<sup>th</sup> century CE). Further studies showed that significant environmental changes resulting from anthropogenic activities occurred long before that – accordingly, the term "Pa-leo-Anthropocene" came into use. The lecture will present a few milestones of the Paleo-Anthropocene in the East Mediterranean demonstrating the ancient human impact on the current landscape. The following examples will be discussed:

**Physical structure:** Site density increased dramatically from prehistoric times through to the Byzantine period (5 sites/km<sup>2</sup>). Likewise, agricultural terraces cover more than 50% of the mountains slops.

Vegetation patterns and composition: Human alteration of surface impacted current vegetation pattern. Human land use changed the vegetation composition. For example, the beginning of agriculture coincided with the appearance of weeds. The region also underwent cultures transitions, which were followed by vegetation transition.

**Fauna extinction and invasion:** E.g.: The extinction of *Gazella subgutturosa*, which was a result of mass hunting; The Philistines, who appeared in the Levant ca. 1200, brought with them the European Boar, which then became the current dominant genotype in the area.

All of these, and others, are evidence of ancient human impact on the current landscape.

### A Guide to Urartian Rurality: social-driven representations of rural landscape patterns

Simone BONZANO, Freie Universität Berlin

At his peak during the 8th century BCE, the Eastern Anatolian kingdom of Urartu could have been described, in the eye of a hypothetical time-traveler, as a "dense – agglomerated state", which was based on a complex multi-layered landscape system set mostly against the region's traditional localism. This system's upper layers were centered on fortresses and their related settlements; the lowers on a composite rural patchwork of sparse settlements and transhumant semi-nomadism.

If the former shaped the well-known monumental Urartian landscape, the latter was, however, the most socially relevant for the establishment of Urartu's socio-political frame and, at the same time, also the most concealed for the lack of direct evidences, studies and historical documents.

This paper presents the first results of a multi-year-long research project that aims the definition of rurality in Transcaucasia; the focus is on the retrieval of rural patterns and activities from selected archaeological markers through anthropological and spatial analyses. That results in the outline of a crisscrossing network of low-density agglomeration and movement that entangle rural paths, production areas and concealed settlements patters, i.e. the most peculiar aspects of Urartian rurality.

### Boom and Bust in Ancient Eastern Arabia: Preliminary Results from the Wadi al Jizzi Region, Oman Bleda S. DÜRING, Faculty of Archaeology, Leiden University

Survey evidence from Eastern Arabia suggests a pattern of boom and bust in our archaeological datasets. Whereas some periods are well represented others are difficult to find or perhaps absent altogether.

Such patterns are often interpreted as representing the limited archaeological research undertaken, and in particular systematic survey work. However, landscape archaeology work undertaken by various teams in the Batinah (Oman) does suggest that the boom and bust pattern could in fact be real. Using data from the Wadi al Jizzi Archaeological Project, I will reflect on how we could understand this boom and bust pattern, and what factors (eg. technology, climate, trade) might have played a role.

#### Continuity and discontinuity of settlements in northern Inner-Oman

Conrad SCHMIDT, Tübingen University, Institute for Ancient Near Eastern Studies (IANES) / Stephanie DÖPPER, Leiden University, Faculty of Archaeology

Thus far, few attempts to understand settlement developments in the marginal landscape of northern Inner-Oman have been undertaken. This paper presents the site of Al-Khashbah, Sultanate of Oman, as a case study for investigating changes in settlement patterns from the 3<sup>rd</sup> millennium BC to the modern era. From 2015, a large-scale aerial photography survey, using a custom-made unmanned autonomous vehicle (UAV), an intensive field survey, and initial excavations have been carried out by the University of Tübingen, Germany. This project intents to map the topography of the area, the distribution of archaeological features, and investigate their chronological setting. Substantial Hafit (c.3100-2700 BC) and Umm an-Nar (c.2700-200 BC) settlements, both with copper workshops, and extensive Late Islamic occupation were detected. Given that the survey has proven for the first time intensive copper processing of the Hafit-period in Inner-Oman, this discovery confirms cuneiform texts from Uruk from the same period. The aim of the project is to understand the development of complex societies, their social organisation, and subsistence strategies in relation to their physical environment and available resources through time.

### The Forgotten Land – Inhabiting Northern Mesopotamia between the Seleucids and Muhammad Rocco PALERMO, Università degli Studi di Napoli Federico II

At the end of the Neo-Assyrian period the entire area of North Mesopotamia experienced a transitional phase that eventually culminated in the Alexander's campaigns and the formation of the Seleucid kingdom. The Parthian invasion from the East and the collapse of the Seleucid administration then started an intense period of occupation in the region, whose increasing trend only changed during the Sasanian phase for which a different model is recorded.

This talk aims to analyse the settlement patterns in the context of natural and social landscape, the exploitation of the available resources and the human impact between the late 4<sup>th</sup> century BC and the 7<sup>th</sup> century AD in the trans-Tigridian corridor. The investigation will use the evidence retrieved from two archaeological surveys still operating in the Kurdistan region of Iraq: the Land of Nineveh Archaeological Project (Udine University, Italy) in the North of and the Souleimanieh Governorate Archaeological Survey (IFPO, Erbil) in the South. Regional features and shared aspects will be compared on a wider scale in order to propose a holistic approach to the past landscape of these too often neglected periods of the Mesopotamian history.

### From early complex to 'urban' societies in marginal regions of Upper Mesopotamia. Settlement patterns and highland/lowland interaction in the offshoots of the Zagros mountains. (A case study from the Eastern Habur region, Iraqi Kurdistan)

Paola SCONZO, University of Tuebingen

The emergence of indigenous urban societies in the Late Chalcolithic period of Upper Mesopotamia and their later development during the third millennium BC has become a main avenue of scholarly debate in the last decades. Side by side with the results of intensive, though sporadic, investigations undertaken in the past, the achievements of a new era of archaeological survey and excavation have improved our knowledge of the socio-political system in the marginal areas of Mesopotamia (North Syria, SE Anatolia, northern Iraq): these have made it clear how such regions were able to produce through time advanced pre-urban

and then urban forms, which - despite alternate phases of contact and/or interaction - mostly remained significantly different in character and organization from the lowland societies of South Mesopotamia.

This paper attempts to contextualize the preliminary results of the University of Tuebingen survey and excavation project recently conducted in the uppermost region of Iraqi Kurdistan. Settlement patterns and land use, stratigraphic sequences and pottery assessment are considered here in order to shed light on the dynamics of the emergence of social complexity in the LC and the establishment of urban trajectories in the foothills and mountain valleys of the northern offshoots of the Zagros System.

### The urban landscape of Upper Nubia (Northern Sudan) in the Second Millennium BCE

Julia BUDKA, University of Munich & Austrian Academy of Sciences Vienna

The region of so-called Upper Nubia (Kush) in Northern Sudan is rich in archaeological remains and monuments datable to the Second Millennium BCE. These Upper Nubian monuments are mostly stone temples of the Egyptian New Kingdom like the impressive temple of Soleb. Originally, these temples were integrated into settlements and fortified towns which are at present not fully explored. Little is known about the domestic architecture, structure, social stratification and material culture of Pharaonic settlements in Nubia from this period.

Sai Island as one of the most important New Kingdom settlement sites in Upper Nubia is since 2012 the focus of the European Research Council project AcrossBorders. The site can be understood as the prime example for settlement policy of New Kingdom Egypt in Upper Nubia from the early 18<sup>th</sup> Dynasty onwards.

Based on the fresh data from AcrossBorders' ongoing excavations, this paper presents the current state of knowledge regarding the evolution of the Pharaonic town on Sai Island and its role in the urban landscape of New Kingdom Kush. The question whether Upper Nubian sites contribute to our understanding of Egyptian urbanism in general will be addressed as well.

### **Creating Imperial Capitals in Ancient Near East**

Aris POLITOPOULOS, Universiteit Leiden

This project investigates the creation of imperial capital cities in the Bronze and Iron Age Near East. Capital creation is the process of constructing monumental capital cities at a new location or through the transformation of a preexisting settlement. It is a practice connected to nation and empire building and appears to be part of the articulation and consolidation of new political and territorial aspirations. The phenomenon has occurred in both modern nation building, such as Ankara, Brasilia and Astana, as well as empires such as those of Rome and Constantinople. This research is concerned with the earlier instances of capital creation which occurred in the empires of the Late Bronze and Early Iron Age Near East and specifically deals with the Assyrian capitals.

This paper will focus on the analysis of the concept of capital creation through investigating: i) the reasons which led an empire to construct a new capital, ii) the construction process of the capital and iii) the function of the new capital. Kār-Tukultī-Ninurta and Nimrud will be used as case studies, comparing differences and similarities and underlining key features which allow for a coherent research on the phenomenon of capital creation through time.

### Wadi Hammeh and the North Jordan Valley in the EB III-IV

Melissa KENNEDY, The University of Sydney

The eastern extent of the north Jordan Valley has frequently been overlooked by scholars of the later EBA, due its apparent absence of large-scale urban settlements. However, a recent review of previously published materials, as well as the unpublished remains from The University of Sydney's 1983 survey of the Wadi Hammeh and the more recent excavations at Pella, suggests that our understanding of this horizon is in need of revision.

This presentation will explore the changing socio-economic and settlement landscape of the north Jordan Valley during the key transitional periods of the EB III and EB IV. It will chart the rise and decline or early urbanism and outline the shifting settlement and cultural dynamics between these two periods. On the basis of this it will be argued that although profound changes occurred between these two horizons, a more distinct break can be discerned earlier in the period, during the EB II; suggesting that the concept of EB II-III urbanization is itself in need of significant modification.

#### Settlement and urban development in the Bronze Age Southern Levant

#### Susan L. COHEN, Montana State University

Scholarship describes both the Early Bronze Age and the Middle Bronze Age in the southern Levant as "urban" eras, yet, beyond broad superficial similarities, the pattern of settlement and subsequent urban character of each period differs widely. Rather than assume that this precludes examining the two eras together, however, these differences instead raise questions about the variables and factors that influenced and affected settlement in the Bronze Age and the subsequent development of "urban" society in each era. Urban development affects all aspects of a society, and is revealed through the organization, size, and distribution of settlement throughout a region; consequently, the subsequent growth and sustainability of any urban society then hinges on the strength and stability of that settlement. Broad-scale and long-term examination of settlement patterns in the southern Levant reveals important differences between the Early and Middle Bronze Ages that have significant ramifications regarding the nature of urban society in each era. This paper will present data and analysis of settlement patterns in both the Early and Middle Bronze Age southern Levant and address how these patterns reflect the strength, organization, and stability of urban development in each era.

### The Urban Structure of Karkemish in the LBA and the Settlements of the Middle Euphrates Valley Sara PIZZIMENTI, La Sapienza, University of Rome / Giulia SCAZZOSI

The Turco-Italian Archaeological Expedition at Karkemish, under the direction of Prof. Nicolò Marchetti, has provided new evidence for the LBA period. An extensive Late Bronze I occupation has been brought to light in many excavation areas, such the Water Gate (area H), the South Gate (area D), the West Gate (area N) and areas A and G. This variety of contexts provides the basis for future studies dealing with functional interpretations of spaces and of material culture assemblages.

This paper will analyse the Late Bronze I and II archaeological data from Karkemish, with the aim of better understanding the role of the city during the age of the first empires and internationalism within the Middle Euphrates valley, where Late Bronze Age assemblages have been retrieved at several sites, among which foremost are Meskene/Emar, El-Qitar, Tell Hadidi and Tell Bazi.

### **Kingship and the Transformation of Urban Landscape at Ebla during the Second Millennium B.C.** Mohammed ALKHALID, University of Bern, Switzerland

As archaeologists or, more generally, as modern interpreters of the ancient remains, we seek to appropriately interpret signs and objects of past civilizations that we recover in the excavations. Our mind is undoubtedly influenced by modern theories and our own perspectives in looking at ancient remains: however, how did ancient people really look at their own civilization and past? How did the built landscape affect people when looking at it and living it? Can we infer there existed an attitude similar to our experience when we look at the Coliseum in Rome or at the Khalifa tower in Dubai? This paper will deal with the case of Ebla during its evolution in the second millennium B.C. as *Ville Royale*. Thanks to the impressive architectural remains and material culture discovered during the latest excavations and dated to Middle Bronze Age, it will be possible to reconstruct the urban landscape and planning/division of the town through a GIS. Furthermore, the mapping will allow us to suggest how the Citadel of Ebla and monumental area all around looked like and were perceived from the Lower Town (or even from outside the city) as well as how the different "districts" of the city were planned and inter-connected. In this respect, an analysis of the development and differentiation of the royal power through architecture will be also presented.

#### Modelling the urban system of the Roman Near East

#### Paul KLOEG, Leiden University

On the basis of several decades of publications since Jones' description of the eastern Roman cities (Jones 1971, 2nd ed.), it is now possible to give a significantly expanded view of what the Roman urban system looked like. Nonetheless, for a considerable portion of Roman cities the archaeological record remains limited. This paper will therefor discuss methods for modelling the urban system of the Roman Near East, testing correlations between urban size and data such as territory size or catchment areas, rural activity, connectivity, monumentality and urban function. The study takes a broad, generalising perspective, with a focus on higher order settlements. From the basis of better studied regions both in the northern and southern Levant, the feasibility of extrapolating towards more problematic localities will be explored.

The research for this paper is conducted in the framework of an ongoing PhD-study into the urban system of the Roman Near East. This study is part of the ERC-funded, empire-wide project 'An Empire of 2000 Cities', under the direction of Luuk de Ligt and John Bintliff.

#### Filling the Void: the Emerging Archaeological Record of southeastern Iraq

Matthew WHINCOP, University of Queensland Culture & Heritage Unit

Recent archaeological survey of a developing oilfield at Majnoon in southeastern Iraq has the potential to illuminate a poorly understood region. Majnoon is located within the southern Mesopotamian marshes near the confluence of the Tigris, Euphrates, and Karkeh Rivers. Despite the deep sedimentary deposits, archaeologists have identified an increasing number of archaeological sites rich in archaeological data. This paper will present the results of the first few field seasons at Majnoon and explore the difficulties in developing an archaeological predictive model in this highly dynamic environment. The paper will also explore several issues facing the survey team and presents specific methodologies that have been proposed to overcome problems such as remnants of war, unexploded ordinance, deep sedimentary deposits, a hostile environment, a general lack of contextual data, regenerating marshlands, and limited mobility.

#### Backgrounds of pastoralism in the domain of Halil-rood in the southeastern Iran

Mahyar KHADEMI BAMI, Department of Archaeology, Tarbiat Modares University, Tehran, Iran / Mosayeb AHMAD YUSEFI, Department of Archaeology, Tarbiat Modares University, Tehran, Iran

The backgrounds of pastoralism in the domain of Halil-rood was studied in the current research. Many explanations and models about the nomadic societies, their roots and formation and their interaction with the lowlands especially in the Zagros Mountains of Iran, has been provided in the recent years. The importance of pastoralism in the cultural evolution and in the origin of state organizations is clearly defined by such models. The domain of Halil-rood has already presented some flourish cultures during Bronze Age, Historical time and Islamic period. This region locates in the southeastern end of Zagros Mountains in the Kerman province of Iran and has many environmental potentials for the formation of pastor societies. By use of Historical texts, environmental evidences and archaeological data and through the Geographic Information System (GIS), this paper wants to generally introduce and highlight pastoralism in the domain of Halil-rood as an important factor for the cultural explanations and social interactions and make an essential consideration which already ignored in many archaeological interpretations.

Keywords: Pastoralism, Halil-rood Domain, Environmental Evidences, Historical Texts, Archaeological Data

### Continuity or Break in Architectural Practices in the Rural Settlements Along the Middle Euphrates Region: A historical Survey

Zeynep ERES, Istanbul Technical University, Faculty of Architecture

Even a brief survey of the rural architecture along the Euphrates basin is enough to reveal the presence of a rich and varied tradition. However, a detailed analytic assessment of the layout and organization

of the villages as well as the plan-types and structural details of buildings would indicate that most of these are derivate of limited basic types that are deeply rooted in the historic past of the region. Our fieldwork at the Birecik-Suruç-Halfeti Districts of the Urfa Province has revealed the presence of two distinct types of village layout, either being "dispersed" or "conglomerate". Likewise, living aside the details, the village houses revealed three basic plan-types, as "rectangular with central entrances", "iwan houses" and "cellular houses". The presence of only three basic models, considering the political, social and economic turmoil's that the region had gone through during the last few centuries, the collapse of the Ottoman Empire, the emergence of national states, radical changes in the ethnic, religious composition of the population is rather striking. In particular, in the course of the last two centuries numerous villages had been either abandoned or newly established. However still, the basic structural details, plan-types that are known from the archaeological records have sustained almost without any significant alterations. This paper will be a presentation of a comparative assessment of the present-day rural settlements with historic and archaeological records base on the work carried by our group in 410 villages in the region.

### Middle Bronze Age Domestic Architecture at Tell Mishrifeh-Qatna, Syria

Yasmin KANHOUSH, Lumière Lyon 2 University

This paper aims to present preliminary results related to my PhD research regarding the urban dwellings in Syria during the first half of the second millennium B.C. These buildings are to be considered as a social production as much as technical preference. In fact, the domestic houses is a specialized architectural work, nevertheless they reflect the living environment of men, their technical knowledge, their comfort requirements, their local ways of life, their ways of life and their relationship with death. The analyses focuses on our recent unpublished excavation of Mishrifeh/Qatna in the valley of the Middle Orontes with a comparison of contemporaneous archaeological buildings from Western Syria and the valley of the Middle Euphrates and beyond, in remote region. The domestic architecture of the Middle Bronze Age is still rarely known. Our study enables to establish dwellings characteristics of the Middle Bronze Age in its technical, typological and functional aspects, while seeking to highlight regional differences and a possible evolution of the built forms and its uses.

### Studying ephemeral prehistoric tell sites in Upper Mesopotamia: The example of Tell Arbid Abyad (Syria)

Inna MATEICIUCOVA, Department of Archaeology & Museology – Masaryk University Brno / Maximilian WILDING, Department of Archaeology & Museology – Masaryk University Brno

Tell archaeologists determined to excavate new prehistoric sites are likely to run into places which *lack an overlay of protective deposits of a younger age,* because it is they who are the clearest signals of a prehistoric settlement-use which a surveyor may observe.

It appears soon that the instantaneous accessibility of prehistoric tell layers comes with a cost: such sites have been disproportionally hit by consecutive disturbances, by erosion and – more recently – by large-scale interventions into the landscape. Excessively dissected features, a poor state of preservation and reduced architecture make these open-air sites 'trouble-makers' for the prehistorian.

Using an epithet that the late Tony Wilkinson (1990) has coined for surface-near, elusive walls such typical formations may be dubbed 'ghost tells'.

Four years of focused research at Tell Arbid Abyad (Late Neolithic) have shown that work at a 'ghost tell' is fruitful if (1) the digging/documentation techniques are kept highly adaptive, and (2) a tell paradigm different from the classical tell is followed throughout. Excavating Tell Arbid Abyad has also resulted in observations that back the idea that bipolar concepts of 'permanently settled high tells' and 'small seasonal sub-tells' will have to be amended, in order to accommodate some of the prehistoric tell sites of Upper Mesopotamia.

#### The Christian Landscape of Roman and Umayyad Philadelphia. Evidence and Inference David KENNEDY, University of Western Australia/ University of Oxford

Ancient documentary sources, inscriptions, mosaics, the reports of 19th and 20th century travellers and archaeological fieldwork have all contributed to creating a quite detailed picture of the extent and character of Christianity in the landscape of Roman Arabia. Numerous churches, chapels, monasteries and shrines; rich figured mosaics; the lists of bishops and other clerics; all point to a thriving religion. Much can be done with this material alone but this paper will put the hinterland of Philadelphia into the wider geographical context of the appearance, growth and development of the physical remains of the new religion in the region.

### "Over the River" – Sasanian Bridges on the Iranian Plateau between Architectural Issues and Landscape Archaeology

Giulio MARESCA, Università degli Studi di Napoli "L'Orientale" (UNO)

On account of the geo-morphological and environmental features of the Iranian Plateau, watercourses have always been a fundamental element of the Iranian landscape. Rivers and streams represented a precious resource to be exploited and managed, but in some cases they also represented a physical barrier to be overtaken for reasons of mobility.

Extensive programs of management of hydraulic issues during the Sasanian period resulted also in the construction of a great number of bridges (as well as dams, canals etc.).

This paper will analyse some themes related to bridges built during the Sasanian period on the Iranian Plateau, focusing on some case studies represented by bridges in Khuzestan and in Fars, as, for instance, the bridge on the Shapur River at Bishapur (Fars). Here, in 2012 and 2013, joint Iranian-Italian archaeological activities were carried out in the frame of the project "Bishapur and its Territory" thanks to an agreement between the Iranian Centre for Archaeological Research (ICAR), the Research Centre of the Iranian Cultural Heritage, Handicraft and Tourism Organization (RCICTTHO) and the University of Naples "L'Orientale" (UNO). Those activities aimed at investigating the relationships between the urban area and the surrounding landscape, characterised by peculiar environmental resources and limits.

#### The study of Historical Settlement of Nomadic Tribes (Case study, Iranian nomadic shelter)

Najmeh HASSAS, M.A Architecture Conservation, Yazd Azad University, Iran

In "movement life", dwelling of nomadic tribes is to follow of immigration and in the other side to live in accordance with natural systems, in their economic and social system. Establishment of settlements in this model of life has special characteristics. However, in this way of life, man has not attempted to harness the powers of nature and to take them in control, but use nature meet his needs to the best. The using of vernacular materials is particular characteristic of Iranian architecture and this is one from specifics in this nomad's settlement. They are made from natural materials consistent with prevailing environmental conditions. This life model is adapted to the unpredictable harsh environment of nomadic life. It is the symbol of sustainable design and efficient use local talents and also includes a fully purposeful strategy, based on knowledge and thought.

Nomadic settlements and materials used in their structures, have not been studied from a structural perspective. In this regard, this study investigates materials provided to the nomads by nature for constructing temporary shelters and evaluates their quality through quality control tests, which were executed first time. Quality control tests of woven textiles in this study have "physical – mechanical" type. The research showed the formation of indigenous knowledge on the structural function of this tent structure. However, the tribes and nomads who had not been treated from this perspective show the uniqueness and beauty of this lifestyle yet.

Keywords: settlement, shelter, nomadic life, tribe, vernacular material





#### Martin BARTELHEIM - Barbara HOREJS - Raiko KRAUSS (Hrsg.)

Von Baden bis Troia

#### Ressourcennutzung, Metallurgie und Wissenstransfer

Eine Jubiläumsschrift für Ernst Pernicka



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Martin Bartelheim, Stephan W. E. Blum, Hermann Born, Nikolaus Boroffka, Dan Ciobotaru, Horia Clugudean, Clemens Eibner, Gerhard Forstenpointner, Alfred Galik, Ivan Gatsov, Svend Hansen, Barbara Helwing, Thomas Hoppe, Barbara Horejs, Reinhard Jung, Daniela Kern, Tobias Kienlin, Raiko Krauß, Joachim Lutz, Joseph Maran, Mathias Mehofer, Petranka Nedelcheva, Bianka Nessel, Christine Neugebauer-Maresch, Marco Pacciarelli, Magda Pieniazek, Michael Prange, Eva Rosenstock, Silviane Scharl, Wolfram Schier, Clemens Schmid, Roland Schwab, Vladimir Slavchev, Gabriele Slepecki, Thomas Stöllner, Zofia Anna Stos-Gale, Matilda Takács, Gerald E. Weissengruber

This volume honours Ernst Pernicka for his contributions to the investigation of metals and their socio-cultural aspects. The 21 papers deal with resources in prehistoric societies from the perspective of archaeological and archaeometrical research with regard to both material and immaterial aspects. The focus is laid on Central Europe and the Mediterranean in the Copper and Bronze Ages. In detail, there are studies on Czech ore deposits, silver as a means of Copper Age representation, reasons for technological change in south-eastern European metal working, Caucasian gold in the 4<sup>th</sup>/3<sup>rd</sup> millennium, the cultural identification with settlements at Lerna and Tiryns as well as technological knowledge in Mediterranean fishery. Further aspects of socio-cultural implication are the introduction of metrical weight systems in the EBA, metallurgical processes on the Balkans and in Anatolia in the Copper Age, the EBA at Aegean and western Anatolian archaeological sites as well as the LBA and FIA in south-eastern Europe and the eastern Alps. A chapter on Troy contains recent research on this site and its role in the 3<sup>rd</sup>/2<sup>nd</sup> millennium.

Mit dieser Festschrift wird Ernst Pernicka für seine Beiträge zur Erforschung von Metallen und ihren soziokulturellen Aspekten geehrt. Die 21 Aufsätze befassen sich mit Ressourcen in prähistorischen Gesellschaften aus der Perspektive archäologischer und archäometrischer Forschungen im Hinblick auf materielle und immaterielle Aspekte. Der Fokus liegt zwischen Zentraleuropa und Mittelmeer in Kupferzeit und Bronzezeit. Im Einzelnen geht es um tschechische Erzlager, Silber als kupferzeitliches Repräsentationsmittel, Ursachen für technologische Veränderungen der Metallverarbeitung SO-Europas, kaukasisches Gold im 4./3. Jt., die kulturelle Identifikation mit Orten in Lerna und Tiryns sowie technologisches Wissen im Fischfang des Mittelmeerraumes. Weitere Aspekte soziokultureller Implikation sind die Einführung metrischer Gewichtssysteme in der FBZ, metallurgische Prozesse der Kupferzeit auf dem Balkan und in Anatolien, die FBZ ägäischer und westanatolischer Fundorte sowie die SBZ bis FEZ in SO-Europa und den Ostalpen. Ein Troia-Schwerpunkt bietet aktuelle Forschungen zu diesem Fundort und seiner Rolle im 3./2. Jt.

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# Beyond the Stone Tools: Economy and Society in the Pre-Pottery Neolithic of the Eastern Fertile Crescent (Iraq and Iran)

Roger John MATTHEWS, University of Reading

The Pre-Pottery Neolithic period (PPN, ca. 9600–7000 cal BC) in the eastern Fertile Crescent (Iraq and Iran) was a time of critical change from mobile hunting and foraging towards more sedentary animal husbandry and intensified plant use. What roles did chipped stone tool technologies play in this important episode of the human narrative? Recent excavations at Pre-Pottery Neolithic sites in Iraqi Kurdistan and western Iran have recovered detailed contextual evidence for use of chipped stone tools of chert and obsidian. By analyzing the archaeological contexts of stone tools and their associations with other artefacts and ecofacts we can interpret past human behaviours and activities in considerable detail. In this paper I will examine the chipped stone evidence from Bestansur and Shimshara in order to examine issues of access to raw materials, technology, food procurement, processing and consumption, craft specialization, differential use of space, and social status. I will stress the importance of detailed contextual analysis in arriving at valid interpretations of PPN economic and social behaviours.

# Dinner for one and dinner for all: The social dimensions of food in the Late Neolithic settlement of Shir, Syria

Laura DIETRICH, Deutsches Archäologisches Institut, Orient-Abteilung

The archaeology of food has become an important field of study in recent years. Food is not consumed without being socially and symbolically transformed and charged with multiple layers of meaning. Individual daily meals contrast and interact with collective commensal activities important for the formation and cohesion of societies.

The present paper will explore the social dimensions of food in the Late Neolithic Settlement of Shir, Syria, starting with its processing, over its storage, up to its consumption. The settlement was extensively excavated by the German Archaeological Institute and represents one of the few explored sites of this period in Northern Levant. It has a rich stratigraphic sequence which covers nearly 1000 years. "Individual" one-room houses coexist with "special" multiple room buildings, single pieces of grinding equipment with whole sets for "collective" food processing, isolated vessels with large storage rooms or buildings. The development of the architecture and the contexts and evolution of tools for food processing and storage suggest on one hand a transition from individual to commensal consumption and on the other hand a possible coexistence of separate symbolic behaviors related to food consumption and/ or separate human groups.

#### Re-evaluating the socio-economic role of small buildings at Neolithic Çatalhöyük, Turkey

Aroa GARCÍA-SUÁREZ, Soil Research Centre, University of Reading, UK

The Neolithic settlement of Çatalhöyük (7100–5900 cal BC) has long been recognised for its architecturally standardised mud-brick houses, the large majority of which display a high degree of conformity in the arrangement of their internal spaces. While the evidence from small-sized buildings, those under *ca*.  $9m^2$  in extension, is deemed important for our understanding of social systems at this site, these structures have been insufficiently studied in the past. Assumed to be economically dependent on larger houses, the possibility that these smaller buildings were individual households with greater autonomy has not yet been critically examined.

This paper tackles the cultural role of these small-sized structures through the high-resolution study of the occupation sequences of two of these buildings. This detailed microscopic investigation of activities, intensity of occupation and renewal, and both macro- and micro-remains of environmental resources present in these building sequences has shed light into the socio-economic status of these structures.

Results demonstrate the diversity and flexibility of domestic practices and concepts of space at the site, with some small buildings being used for industrial activities while others display a high degree of architectural elaboration and intensity of occupation. Consequently, this paper challenges the claimed persistent egalitarian ethos at Çatalhöyük and stresses the diversity in cultural and ecological household practices and networks during the Neolithic occupation of this site.

### Showing Your Age: Stable carbon and nitrogen isotope analysis and dietary reconstruction through the life course at Neolithic Çatalhöyük, Turkey

Jessica PEARSON, Department of Archaeology, Classics and Egyptology, University of Liverpool

Food has long served as a mechanism for identifying and reinforcing social structures, but while carbon and nitrogen isotope analysis has provided important identity-based evidence of past diets, the cyclical and stable/fluid nature of food consumption practices across the life course has been relatively neglected. In this paper, the large human assemblage at Çatalhöyük with all age groups present has enabled diet reconstruction of the rarely represented groups of older children and adolescents as well as for the young, middle and old adult age groups of both sexes. These data show how neonates reflect foods available to pregnant mothers, that infants were breastfed until around 18 months of age and weaned by three years of age, older children had a different diet compared to adolescents and young adults who, in turn, differed from middle and older adults. The absence of sex-related differences suggests changes in food consumed at Çatalhöyük accompanied the marking of transitions through the life course indicating that age and ageing was a principle concern.

### Between specialized productions and hierarchical social organizations: new data from Upper Mesopotamia and Northern Levant

Johnny Samuele BALDI, French Institute in Beirut (Ifpo)

This paper presents an anthropological reading of the assemblages of the north-Mesopotamian site of Tell Feres al Sharqi and the central-Levantine settlement of Tell Qarassa North between the middle of the 5<sup>th</sup> and the first half of the 4<sup>th</sup> millennium BC. The ceramic analysis in terms of *traditional chaînes opératoires* allows an interpretative bridge between particular ways of doing and specific social groups. The evidence stressed here is that the production move from household models to more specialized organizations. But the paths followed in post-Ubaid Upper Mesopotamia and in Late Chalcolithic-Early Bronze Age I Northern Levant deeply differ in the organizational patterns of the respective political economies. In order to schematically reconstruct the parallel pathways of the two macro-regions towards a progressive "complexity", the concept of "specialization" is used with a neutral meaning, as the undertaking by some specific social entities of a production previously carried out by all the groups of a community. In the same time, the appearance of the wheel-coiling technique and some new data from Lebanese collections suggest the existence of a bond between two different specializing economies, where part-time specialists (potters) have appeared for the first time as structural components of the production system.

### Emerging Social Complexity in a Late Prehistoric Community: The Renewed Project at Tel Tsaf, Israel

Florian KLIMSCHA, Eurasia Department of the German Archaeological Institute, Berlin, Germany / Danny ROSENBERG, Laboratory for Ground Stone Tools Research, University of Haifa, Israel

The time-span between the Pottery Neolithic period and the Late Chalcolithic period (ca. 5,200-4,500 Cal BC) of the southern Levant is only poorly understood and research, compared to earlier and later periods. Yet, a recent multidisciplinary study at the Middle Chalcolithic site of Tel Tsaf (Jordan Valley, Israel) suggests that new dimensions of social complexity appear in this area already at the end of the 6<sup>th</sup> Millennium BC.

Tel Tsaf offers a rich stratigraphic sequence, nearly undisturbed by later periods. The renewed project at the site tackles issues such as long-distance ties between Tsaf community and other remote areas, the implementation and transformation of technical and social innovations as well as the micro and macro

economy of the settlement and its relationship with the environmental. In our talk we will discuss the characteristics of early social complexity in this area it reflected in Tel Tsaf and we will focus on the complex social and environmental embedding of technical innovations in Tsaf.

# Preliminary Overview of the Unpublished Personal Ornaments Found in Funerary Contexts of the Chalcolithic Necropolis of Byblos

Artin GASSIA, Archéorient-Maison de l'Orient, University Lyon 2 & Institute of Archaeology, University College London

The social significance of beads and personal ornaments is related to two archaeological contexts, the most common being the funerary and manufacturing sites. In this presentation, we will be focusing on the analyses of the unpublished documentary sources of the Personal Ornaments, found within the very rich chalcolithic necropolis of Byblos. Byblos represents a key site for the study of the chalcolithic period in the central and northern Levant areas. Besides being the largest and most thoroughly excavated site (almost 70 %), the settlement includes a variety of constructions, such as dwellings, silos, paved roads as well as an exceptionally rich and varied corpus of burials and grave artefacts.

According to the available documentation found in the "Fonds Dunand Archives" (Maurice Dunand excavated the site, between 1925–1973) a total of 3652 funerary objects were collected. The grave artefacts were of diverse nature comprising ceramic, metal, stone, natural beads and personal ornaments.

The ornaments consist of amulets, necklaces, and bracelets and pendants, made of different materials, such as silver, limestone, cornelian, bone, ivory, eggshell, and obsidian.

This paper, in addition to analysing the archaeological context, and the technological and typological aspects of the objects, will discuss the social significance and value of these artifacts within the Chalcolithic communities of Byblos.

# Subsistence System in Semi-Arid Zone: Late EBA Self-Sustenance of the Copper Production Center in Faynan Region, Southern Jordan

Masatoshi YAMAFUJI, National Research Institute for Cultural Properties, Tokyo, Japan Center for International Cooperation in Conservation

This presentation aims to assess self-sustainability for the copper production center in Faynan region during Late EB III, from the perspective of cereal production in neighboring Shawbak region where a new archaeological survey took place.

Faynan region, especially Khirbet Hamra Ifdan, seemed to be prosperous during the period. The estimated population is calculated at 195 adults, each of who annually needed at least 200 kg wheat.

This amount of wheat would be partially provided by Shawbak region, where four sedentary hamlet sites of Late EB III were found with same pottery types as the west. The population is estimated at 24-30 people probably engaged in cultivation from the west. Based on this number, total amount of wheat produced in the region couldn't always exceed 39 t. It means the region could provide only insufficient amount of wheat for the whole Faynan residents.

There are two additional options: domestic animals and trade. The excavated animal bones indicate sheep/goat and cattle were raised for meat and milk. Furthermore, copper products/ingots were exported to the Negev. And some amount of food would have been exchanged for copper.

Therefore, it is assumed Faynan region was systematically sustained with local food production and interregional exchange.

#### Everyday life in Kaneš: houses and their furniture in the lower town

Silvana RUBANU, University of Florence

The archaeological site of Kültepe is well-known thanks to its extraordinary findings. The very extensive residential area has been brought to light in the kārum; materials coming from the houses of the inhabitants show an important commercial traffic which took place at the beginning of the second millennium BC, involving both central Anatolia and the city of Aššur. Pottery, tablets, and other small objects have often been found in situ and in good state of preservation. This provides a lot of information concerning the organization of spaces in the houses. The study of the pottery equipments in their spatial relations and the analysis of architecture allow us to investigate the way that the inner space were used. This contribution aims to present a reconstruction of some of the houses of merchants and to identify the different functional areas connected with the activities of everyday life. Aspects of lifestyle and social behaviour of the components living in the lower town of Kaneš will be examined.

### A Therapeutic Nutrition Method and The Transmitted Parasites via thereof: According To the Biological Remnants in Yasuj's Deh-Dumen Cemetery

Mohammad MASUMIAN, Department of Archeology, Faculty of Literature and Humanities, Tehran University, Tehran, Iran / Parisa NEKOUEI, Department of Archeology, Faculty of Literature and Humanities, Tehran University, Tehran, Iran / Gholamreza MOLAVI, Department of Medical Parasitology and Mycology, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran

Deh-Dumen Cemetery is located in Kohgiluyeh and Boyer-Ahmad Province at the environs of Khersan Dam. During the excavations conducted in 2013, 15 graves were discovered in this cemetery; of which 6 graves were selected fro palaeoparasitological studies. The soil samples of the pelvis area of the skeletons were taken and were put on experiments. According to the experiments, Dicrocoelium, Fasciola and Mites were identified. These parasites were the cause of parasitical diseases transmission from animals (like goats, sheep, etc.) to human being, and since these kinds of animals are frequently seen among the nomads, and considering the fact that the geographical and biological position of the area at the southern Zagros was suitable for nomadic lifestyle in the third millennium B.C., one can conclude that the aforementioned cemetery belongs to the nomadic tribes in third millennium B.C. . In this way, we can approximately identify a nutrition regime of these communities, and besides that, we can postulate that some evidence of a specific therapeutic method has been disclosed.

Keywords: Palaeoparasitology, Dicrocoelium, Fasciola, Mites, Nutrition Regime, Disease

#### **Elite Drinking Practices at early Middle Bronze Age Tel Ifshar in their broader Near Eastern Context** Ezra S. MARCUS, Recanati Institute for Maritime Studies, University of Haifa

Numerous studies underscore the role of communal drinking as a medium for the creation and maintenance of social bonds, economic relations and political status, but only recently has the evidence for the modes of social drinking in the southern Levant during the Middle Bronze Age been considered. In this region, one of the period's earliest manifestations of this phenomenon is the so-called Levantine Painted Ware, a class of liquid serving and drinking vessels. While this ware is widely distributed in tomb assemblages, a rare and particularly instructive occurrence of complete or restorable forms was excavated at Tel Ifshar in the Sharon coastal plain of Israel in the late 20th century CE. This group and other vessels associated with liquid contents were found *in situ* on the ground floor of an apparently multi-storied elite building. Analysis of the architectural remains and the spatial distribution of the finds suggest that the eastern wing of the building functioned as a cellar in which primarily liquids were stored were stored and where stages of the chaîne opératoire for preparing drinks were carried out prior to the final product being served on an upper floor of the building. This paper will present this evidence and consider the varieties of drinking modes as a proxy for social status, economic relations, comparing some of the related evidence from the broader Near East (Syria, Mesopotamia and Egypt). The relation of such activities will also be related to the origin of the culture that emerges at Tel Ifshar and the Levant at the dawn of the Middle Bronze Age and its manifestation among immigrant groups in the Nile Valley.

Giulia TUCCI, La Sapienza, University of Rome

The Late Bronze Age is characterized by remarkable internationalism and interconnections documenting a widespread movement of materials, goods and artisans, along with the diffusion of technological knowledge and skills throughout Eastern Mediterranean.

Luxury artefacts constitute a notable example of this cultural framework. Analyzing jewelry production, it may be possible to identify local and exotic products, hypothesizing roles and provenances of jewelers.

Nonetheless, the technological know-how shared in southern Levant throughout Early and Middle Bronze Ages determined a quite simple workmanship for jewelry pieces crafted in this region through elementary metal and in a limited variety of other materials. It was only from the very end of the Middle Bronze Age, and especially during the Late Bronze Age, that jewelry craftsmanship underwent a meaningful typological and technological advancement. As for the land of Canaan, subject to the cultural and political hegemony of Egypt, a noteworthy diffusion of imported materials and foreign technical procedures is apparent into local jewelry manufacturing, and typified by an extensive use of Egyptian shapes, motifs and techniques, alongside with imported raw-materials such as gold and semi-precious stones. On the other hand, few pieces seem to be basically crafted by a local manufacture in peculiar fashion.

The aim of this paper is to analyze the figure of jeweler's craftsmen (local *vs.* foreigners) in southern Levant during Late Bronze Age, through the study of technological know-how and ateliers, analyzing the historical background in which they acted.

#### Use-wear analysis of Bronze Age Lithics in Tell 'Arqa (Akkar Plain, North Lebanon)

Florine MARCHAND, Université Libre de Bruxelles, Belgium

Tell 'Arqa is located in Northern Lebanon, in the southern part of the Akkar Plain, and excavated since 1992 by Dr. J.-P. Thalmann. The site has a rich lithic industry with ca. 3000 flint artifacts. We observe in Tell 'Arqa collection that glossed blades, including imported blades and local blade productions, are the majority. Our first purpose was to define the presence of *tribulum*, sickle blades or both types. The analysis allow us to observe only sickle blades use-wears, no *tribulum* elements were recognized, but also the reuse of these for other tasks on the site as working on pottery, on mineral material, on bones, ... We know that usually sickles are hafted with bitumen but this type of glue doesn't exist naturally in Lebanon, organic residues and use-wears of hafting were recognized on the sickle blades. The function of tools in Bronze age are generally dedicated to agricultural work but our second goal is to define the non glossed tools function in Bronze age context to have a complete overview of the different tasks accomplished on the site. What is at stake is the role of flint, its status and function within a site of the Bronze Age.

# Die Landwirtschaft der arischen Völker aus der frühen Eisenzeit: Tiere, Pflanzen und Menschen im vorachämenidischen Mittelasien

José Luis Blesa CUENCA, Universidad Autónoma de Madrid

Die iranischen Völker, oder Arier wie sie sich selbst nannten, sind die unbestreitbaren Hauptfiguren des letzten Jahrtausends der altorientalischen Geschichte. Wie sie an der Geschichte Mittelasiens teilzunehmen anfingen und zu einem der hervorragendsten Königtümer der Spätantike gelangten, sind Vorgänge die noch heutzutage schwer zu folgen bleiben. Unser Vorhaben besteht darin, die Forschungen der sowjetischen Wissenschaftler zu integrieren und mit denen, der Archäologen verschiedener Länder in Zusammenarbeit mit der zentralasiatischen Republiken zusammen zu führen. Die hier präsentierten Ergebnisse wurden im Rahmen des Turkmenisch-Spanischen archäologischen Teams in Dahistan (Südwestliches Turkmenistan) vom Autor erarbeitet. Ich werde besonders die Landwirtschaftstätigkeiten dieser Völker beachten, durch die Archäologie genauso wie durch die schriftlichen Quellen bezeugt, und ich werde sie in Zusammenhang mit der Niederschrift der Geschichte des sogenannten Medischen Reiches setzen.

#### Households, Communities, and Dimensions of Social Identity at Tall al-'Umayri, Jordan

Monique D. VINCENT, Department of Near Eastern Languages and Civilizations, University of Chicago

This study uses artifactual evidence to extract social meaning from the remains of a small group of domestic structures from the Early Iron Age stratum at Tall al-'Umayri. Starting with an ecological-functional approach to the archaeological remains and their environmental context, the study then focuses on the households and community and uses an identity-practice approach to examine how a localized social identity is embodied in their everyday practices. This approach, combining archaeological, ethnographic, and contemporary textual evidence, illuminates the nature of social identity in the small rural villages that characterize this transitional time period at 'Umayri and in the southern Levant.

The households and their contents provide insight into the social and economic foundations of this settlement. The size and nature of the houses and the domestic productive and consumptive activities establish the households as independent entities in control of their own means of subsistence. However, at the community level, social and economic interactions brought the villagers together on a daily basis in practices that worked both to unite and to divide them. From herding strategies and architectural constructions to larger, ritual gatherings, their practices define them as a community within their wider regional context.

#### Counter-marking of archaic Ur seals again

Petr CHARVAT, University of West Bohemia at Plzeň

Counter-marking of ancient oriental seals constitutes a frequently observed but as yet unexplained phenomenon. The author of the present paper will attempt to elucidate this presumably administrative practice, using as material two groups of seal impressions from the Seal Impression Strata (SIS) of the early Sumerian city of Ur, dating to the beginning of the third pre-Christian millennium.

#### Economic centralization, social complexity and pottery production at 4<sup>th</sup> millennium BCE Arslantepe (Malatya): investigating the notions of craft standardization and specialization Maria Bianca D'ANNA / Pamela FRAGNOLI, Freie Universität Berlin

High degree of ceramic standardization is considered to be a crucial parameter to assess the nature and intensity of pottery production and define levels of economic integration and social complexity. In this paper we address this question at 4<sup>th</sup> millennium BCE Arslantepe (LC3-5, periods VII and VI A in the site sequence), when a process toward economic centralization shaped the social and political life of the communities living in the main site of the Malatya Plain in South-Eastern Anatolia. The stronger and more widespread élite control over primary goods is visible, for example, in the emergence of mass-produced bowls previously shaped by hand or on the slow wheel (period VII) and then thrown on the fast wheel (period VI A).

Our methodological approach integrates data on raw material procurement, paste preparation, forming techniques, firing conditions and shape variability. The main steps of the pottery *chaîne opératoire* are investigated in different contexts of vessels production and consumption. The increased social complexity and the introduction of technological innovation (potter's wheel) did not automatically imply a higher formal and compositional homogeneity in the whole pottery production.

#### Fortress communities of the 3rd millennium BCE: the example of Tell Chuera, NE Syria

Tobias HELMS, University of Bonn

Communality of defense was a crucial aspect of Upper Mesopotamia's early urbanism. As a response to changes in warfare techniques during the Early Bronze Age (EBA) and against the backdrop of endemic conflicts among competing city states and emergent regional powers, settlements turned into fortress communities. In the course of the 3<sup>rd</sup> millennium urban fortifications – including those of smaller sites

– became not only increasingly massive, but also more complex in terms of archaeologically attested combinations of defensive elements. Drawing on the example of the double-walled site of Tell Chuera (NE Syria), where the fortifications have been extensively excavated since the 1990s, the paper will elaborate on social and economic aspects of fortifying and defending an EBA city state. Based on a revised reconstruction of the city wall's complex building history and archaeological evidence for the organization of the building process it will be discussed in particular how bottom-up processes, i.e. the decisions of urban commoners and individual work crews helped shaping and maintaining an extended urban defense system. Further, it will be demonstrated how Chuera's fortifications affected the site's socio-spatial makeup and which functions can be ascribed to the city walls beyond their most obvious and important one as a means of creating defensible space.

*Keywords:* Communality of defense, Early Bronze Age, fortification, Tell Chuera, sequential analyses of construction processes, work organization, ancient warfare

### Introduction of copper tools and its impact on economies and societies of Eastern Mediterranean Marcin CZARNOWICZ, Department of Archaeology, Jagiellonian University, Krakow

Introduction of the new raw material for tools was a llong and gradual 'revolution' for the societies. New materials means new sources, more work power to acquire the raw material and to process it later. It also needs a new trade net to sell the products. Such mechanism could be observed in Eastern Mediterranean region during Chalcolithic and Early Bronze Age periods. During that time two different centers- Southern Levant and Egypt introduced the new raw material. Both of them need to develop the infrastructure for the copper and both regions did it in different way.

During my presentation I would like to compare the development of societies from Southern Levant with societies from the Egypt during the time of its copper 'revolution' focusing on the impact on economy of the regions. Important part of my lecture will be devoted to the development of trade in the Eastern Mediterranean showing the copper as the raw material which bonded together Southern Levant and Egypt at the end of EBA leading to the emerge of Egyptian trading posts in Southern Levant.

# Linking the river and the desert: the EB I Pottery assemblage of the Wadi Zarqa Valley as economic and social connection between communities

Eloisa CASADEI, Dipartimento di Scienze dell'Antichità, La Sapienza, University of Rome

During the Early Bronze Age, the Wadi Zarqa valley represented an important intermediate zone, linking the Jordan Valley with the Eastern Desert. Even though the material culture collected during the numerous surveys in the region reflects a more regionalized system at the beginning of the Early Bronze Age I, several elements in the pottery repertoire testify a net of interconnections in the area between Jawa and Tell Umm Hammad, whose elements were able to spread in some way to north and south. Fortunately, nowadays the area starts to be largely investigated thorough new archaeological excavations and surveys. The aim of the research points to a re-analysis of the ceramic assemblage to highlight the economic exchanges and the social interconnections between the settlements in the valley. Thanks to the long lasting activity of excavation at the central site of Jebel al-Mutawwaq, new data are now available showing a particular nature of crossroad of the Zarqa Valley.

#### Grain storage and gastro-politics in Mesopotamia (3000-2000 BC)

Tate PAULETTE, Joukowsky Institute for Archaeology and the Ancient World, Brown University

The palace and temple institutions that rose to prominence in Mesopotamia during the third millennium BC were built on the production, stockpiling, and distribution of grain, and they invested an enormous amount of energy in managing and monitoring the grain supply. In this paper, I argue that these efforts to control the agricultural economy would also have required a shift in the moral economy – that is, a

shift in the way that people understood and experienced three interwoven themes: inequality, access to food, and the distribution of risk. As more and more people were drawn into the institutional orbit, many came to depend directly on the disbursement of food from institutional storage facilities. But how many people? What percentage of the population found itself (willingly or unwillingly) within the "magic circle" (Oppenheim 1977: 89) of the institutional storage system? The archaeological evidence for grain storage facilities – extra-household facilities, in particular – offers one means of addressing this deceptively simple question. Using a series of site-based, quantitative case studies drawn from Northern and Southern Mesopotamia, I argue that we may need to reconsider both the structure and the magnitude of the institutional storage economy.

### The seal-impressed jars from Khirbet ez-Zeraqon (northern Jordan) in the light of the Early Bronze Age urbanization of the southern Levant

#### Valentina TUMOLO, Eberhard-Karls-Universität Tübingen

The practice of applying seal impressions on jars before firing is notably documented in the southern Levant by the corpus of evidence uncovered at Khirbet ez-Zeraqon (northern Jordan) by the Jordanian-German excavations (1984-94). 166 sealed items, mostly consisting of sherds deriving from *pithoi* related to the specialized pottery production called 'North Canaanite Metallic Ware', come from the three main stages of occupation of the site (early, middle and late horizon) in the upper and the lower city, dated from the Early Bronze II to the Early Bronze III period. Since this is the largest assemblage of this kind ever found in the southern Levant, it represents a noteworthy case study in the debate concerning the function of this alternative use of seals, consisting of creating impressions permanently bonded to the jars and, therefore, reasonably conveying information about the contents.

This paper presents the corpus of impressions from Khirbet ez-Zeraqon, offering new data in the aim of better defining the functional aspects of the sealed-impressed jars and the role played by this phenomenon within the integrated economic system which characterized the Early Bronze Age urbanization in the region.

### Spatial variation in faunal distributions between households and insights into early urban society: The Early Bronze III at Tell es-Safi/Gath, Israel

Haskel J. GREENFIELD, Near Eastern and Biblical Archaeology Laboratory, St. Paul's College, University of Manitoba / Tina L. GREENFIELD, University of Cambridge, Archaeology Department, and University of Manitoba / Annie BROWN, University of Manitoba / Itzhaq SHAI, Ariel University / Aren MAEIR, Bar-Ilan University

Most studies of the faunal remains from archaeological excavations tend to lump the data into a single large amorphous category. Yet, the recent shift in emphasis to analysis of household debris allows for inter-household comparisons. In this paper, we will present the results of our analysis of the faunal remains from the Early Bronze Age III domestic neighborhood (Area E) from Tell es-Safi/Gath, Israel. Even though there are four closely linked house complexes within the excavation area, there is significant variation between each of them in terms of their faunal remains that yield insight into food production, consumption, and disposal activities in an early urban context.

#### Domestic Economy under Empire: Household Archaeology at Busayra

Stephanie H. BROWN, University of California, Berkeley

The proposed paper will explore the ways in which small-scale, local economies can affect the largescale political policies of "states" or empires. The paper will investigate the nature of Neo- Assyrian and Neo-Babylonian provincial policy toward the Iron Age (1200–323 BCE) polity of Edom in southwest Jordan, and seeks to understand the ways in which the inhabitants of Edom may have affected imperial policy through their daily religious, social, and economic activities, as well as through their attachment (or detachment) to both local and imperial hegemonic powers. The daily activities of Edom's inhabitants will be explored using theories and methods derived from household archaeology such as paleoethnobotanical, ceramic, and faunal analysis. Special attention will be given to the organization of activities within domestic space and to the importance of foodways as an essential cultural element often associated with the household. The paper will use the archaeological evidence recovered from the renewed excavation of houses at Edom's capital city, Busayra, by the Busayra Cultural Heritage Project (BCHP) to trace the ways in which social, religious, and economic processes changed over time and while under the influence of different imperial powers.

### Peaks and Valleys – Material Exchanges and Cultural Connectivity in Mesopotamia's Highland Borderlands

#### Claudia GLATZ, University of Glasgow

Interaction between the highlands and lowlands of the ancient Near East is empirically well attested in text, iconography and archaeological data. Narratives of the state, both ancient and modern, centre-stage the importance of highland products for lowland political economies and juxtapose the adversarial encounters between lowland and mountain people which their procurement often involved. In this paper, I want to move beyond lowland state ideology and begin to examine the social relationships that such rhetoric of alterity expresses. Using examples of material ebbs and flows between the two regions from later prehistory to the second millennium BC, I will examine the social and cultural contexts of different forms and degrees of highland-lowland connectivity and their effects on both local communities and broader socio-historical processes such as urbanisation and imperialism.

### Beyond iconography: Containers and contents sealed by the *cretulae* from the area R/III of Tell el-Dab'a

#### Chiara REALI

Fragmentary nature is the notorious main feature of finds like *cretulae*. To accomplish their purpose and proceed in the administrative practice, these objects needed to be broken in order to be removed from the containers they sealed, reaching usually the next administrative steps – filing and/or dumping – in even more fragmentary conditions. The study of the less eloquent aspect of this fragmentary material, or rather the study of the reverse bearing the impression of the sealed object, has slowly become essential, showing the enlarged interpretative potential of sealings than the one offered before by the sole study of iconography.

Identification of sealed containers does however not automatically mean identification of contents/ sealed goods. Therefore, to what extent might the identification of sealed containers, their nature, and the way they have been closed/sealed help tracing their content? The aspect of the containers, their size and weight, the materials used for their closure might give significant hints about their, unfortunately, lost content. Supplementary *accidental* information inferable from the material, parallels offered by survived sealed containers and the resources of the natural environment in which the *cretulae* were found might possibly help suggesting more specific destinations of the containers in use and their potential contents.

# The political influence of Mesopotamian states in the Upper and Middle course of the Diyala River during the mid $2^{nd}$ millennium BC.

Valentina OSELINI, La Sapienza, University of Rome

The recent archaeological investigations in the Plain of Shaharizor (north-eastern Iraq) revealed that during the 2<sup>nd</sup> millennium BC the settlement activities were intense. Historical data allow us to link events to this region: during the Middle Bronze Age the Upper Diyala seems an independent entity from southern Mesopotamian states, while according to historical documents from Bakr Awa, this area was part of the Kassite government. The material culture from the early 2<sup>nd</sup> millennium BC and from the Late Bronze Age can be considered as a mixture of local and Mesopotamian features, while during the late Middle Bronze Age, the almost exclusively presence of the local "Shamlu ware" reflects its cultural independence. Considering the presence of the Mesopotamian and Kassite governments over the Hamrin Valley, confirmed by textual and archaeological data, the aim of this paper is to analyze the distribution of sites along the Middle and Upper Diyala River and to verify if the hegemony of Mesopotamian states determined the political organization of peripheral areas, in particular over the mid 2<sup>nd</sup> millennium BC.

### After the collapse: economic and social change in Southern Palestine at the dawn of the Late Bronze Age (1540–1200 B.C.)

Angela MASSAFRA, University of Glasgow

Social conflict and political overturns can constitute a major cause of economic change. This is witnessed in the Southern Levant at the aftermath of the Middle Bronze Age 'collapse', when the political friction with Egypt led Palestine to a gradual transformation of its economic and social structures.

Trade networks and goods production and consumption were greatly affected by the new political situation. Both factors determined the distinctive Late Bronze Age archaeological record, in which pottery retains an indicative value: the amount of imported pottery from different areas of the Eastern Mediterranean reaches a peak in virtually every Palestinian site, while the production of local pottery undergoes significant changes.

The present paper will undertake a contextual analysis of Late Bronze Age pottery assemblages, focusing on selected sites of the southern part of Palestine, a strategically located region in close proximity to the Egyptian Delta.

This study will suggest models and operational hypotheses to explain the economic mechanisms causing the reshaping of the Southern Palestinian society in the Late Bronze Age.

#### Colonizing the Rural Economy: The Egyptian New Kingdom in the Hinterland of Gaza

Gunnar LEHMANN, Dept. of Bible, Archaeology and Ancient Near Eastern Studies, Ben-Gurion University

The paper presents the results of excavations and surveys along the Nahal Besor conducted between 1998 and 2011 at Tell el-Far'ah South and Qubur el-Walaydah, Israel. The archaeological fieldwork sheds new light on the Egyptian administration at the border between the Sinai and the Southern Levant. The evidence suggests an Egyptian domination of the settlement and trends of monopolization of the agriculture in the study region. Administrative centers and rural estates were established in the late 13th and the early 12th century BCE in the current Gaza-Strip and along the Nahal Besor. At least some of these imperial investments may have been connected to the Amun-Temple at Gaza.

### Northern Levantine architecture and urban planning during the Late Bronze-Iron Age transition: a socio-economic perspective

Barbara CHITI, CNRS, Université Paris 1

In many regions of the Eastern Mediterranean, the transition between Late Bronze and Iron Age is a period marked by major political, economic and socio-cultural changes. As regards the Northern Levant, this period is characterized by the destruction - or abandonment - of most urban centers, the fall of Late Bronze polities, together with their palace-based economic system, as well as the abrupt disruption of the international long-distance commerce. Following these events, the whole region experienced political instability and socio-economic disintegration; however, it is during these "crisis years" that the basis of the rise of new geopolitical formations in the Iron Age was laid.

This paper aims to approach this transformation both from an architectural and from an urban point of view. On one hand, this work will deal with building materials, construction techniques, and the spatial

and functional organization of the Late Bronze II and Early Iron age architectures. On the other hand, it will analyze settlements layouts and, in those sites showing occupational continuity, its evolution over time. Results will then be discussed to investigate the impact these changes had on the economic and socio-cultural development of northern Levantine societies.

#### Tangled Webs: Textiles, Wealth and Prestige in Iron Age Anatolia

Kathryn R. MORGAN, University of Pennsylvania, Art and Archaeology of the Mediterranean World

Since intensive excavation began in 1950, few sites in ancient Anatolia have yielded more spectacular discoveries than the Phrygian capital of Gordion. Yet despite intensive archaeological investigation of the citadel mound and its surroundings, our understanding of the Phrygian state beyond Gordion's walls – its origins, development, organization, and extent – remains obscure.

This paper proposes one model for interpreting the political and economic structure of the so-called Phrygian state, through the lens of an undisputedly significant aspect of the Gordion economy: textile production. It is well understood that textiles in the ancient Near East functioned as a source of economic wealth and political capital, as well as a medium of social exchange. The overwhelming prevalence of textile motifs in material culture associated with Phrygia, as well as the archaeological evidence for large-scale textile production in the city center, support the notion that the Phrygian state was structured along a wealth finance model that relied heavily on the controlled production of prestige textiles. In this paper, potential evidence for the organization of textile production activities on a regional scale in Iron Age Central Anatolia will be presented, alongside examples both earlier and later in the economic history of the Ancient Near East.

### A Comparative Study of the Burial Images of Palmyra and Fayum

Sara ZOLFAGHARI

This study aims at investigating the burial decorative reliefs of Palmyra and the burial paintings of Fayum in the first century AD. Furthermore, it attempts to study the relationship and interactions between Parthian and Roman- Egyptian cultures during this period. According to the distinctive cultural material of this period, it seems that apart from the mummification techniques and the functional similarities between them, there are some stylistic variations among these cultures that in the east, it emerged as miniature or Persian paintings and in the west and its Christian art, as portraits. The comparison of the cultural material of these two cultures portraits their effects on each other as well as their varieties. Analyzing these grave relics reveals the social class of the deceased one. In other words, it can be conjectured that rich people have more expensive graves with more elaborate and subtler decorative high reliefs whereas poor people are buried in cheap graves with simple and ordinary paintings.

*Keywords:* Burial, Palmyra, Fayum, the first century AD, decorative high relief, realistic painting, Parthian and Roman- Egyptian cultural interaction

#### Administration, Land Tenure, and Ethnicity in the Achaemenid Empire

Lucas STEPHENS, University of Pennsylvania, Art and Archaeology of the Mediterranean World Department

In archaeology, there is a growing realization that the link between material culture and ethnic identity is not clear or direct. Increasingly, scholars have placed less emphasis on the recognition of ethnicity than upon the analysis of its context. Importance has shifted to investigating the processes inherent in ethnic boundary maintenance and the forces that structure identity formation. This paper uses land tenure under the Achaemenid empire as a case study to explore the relationship between an empire and its subjects, and how administrative principles structured by concepts of ethnic distinction might have affected identity development. Rulers of the Achaemenid empire left monuments and inscriptions which attest to an imperial ideology founded on ethnic classification. At least one facet of Achaemenid administration reflected

this ideology: a system of land tenure preserved in the 5<sup>th</sup> century BC Murašů archive from Nippur, which reveals royal and corporate ownership of land and accords with other accounts of landholding throughout the empire. Through analogy with processes leading to the emergence of national identities in 20<sup>th</sup> century Soviet Central Asia, the author argues that imperial involvement in land tenure created powerful political and economic incentives that adjusted ethnic identities throughout the period of Achaemenid rule.

#### 'Royal tableware' along the Persian Road

#### Iona Kat McRAE, University of Sydney

In addition to a moderate corpus of utilitarian pottery, a small collection of finely polished stone vessels (seven) were recovered from the ICAR-University of Sydney excavations (2007 – 2009) at the Achaemenid/Post-Achaemenid settlement of Qaleh Kali in Fars province, Iran. Taken with the demonstrably élite architecture of the Qaleh Kali stone portico, as well as a number of associated finds (notably a portion of powdered Egyptian blue, and fragments of an Achaemenid glass beaker and 'tulip bowl') these vessels lend support to the identification of the site as a royal way-station, storehouse, or pavilion situated along the royal road.

This paper will consider what the Qaleh Kali assemblage (and their 'Post-Achaemenid' depositional context) may reveal about the movement of such objects along the royal road, and their possible function in the Post-Achaemenid era. Published parallel material from within the Persian heartland (the large corpus of "royal tableware" from the Persepolis Treasury, as well as small numbers from the excavations at Pasargadae, Susa and Tang-e Bulaghi Site 73), and throughout the Empire (notably the excavated sites of Qasr-i Abu Nasr and Tepe Yahya in Iran; as well from Tsaghkahovit, Armenia and Ikiztepe, in western Turkey), will be used to complement this analysis.

#### Elaiussa Sebaste as a Port City in East Mediterranean Region and its Trade Relations with Africa H. Asena KIZILARSLANOĞLU, Ahi Evran University, Department of Archaeology, Kırsehir / Turkey

The ancient city of Elaiussa Sebaste (Mersin-Ayaş) was an active part of Mediterranean trade from the 1<sup>st</sup> century BC to the 7<sup>th</sup> century AD, with its position on the eastern coast of Mediterranean, on an important coastal trade route, with rich natural and agricultural resources. After the Roman Empire decided to organise the Eastern Mediterranean as a vineyard, commercial life expanded and the relations increased between Cilicia, Italy, Spain and Africa. The traces of these relations are attested in the ancient city of Elaiussa Sebaste with ceramics and amphorae produced in the West. While the number of amphorae and Red Slip Ware imported from Africa is few between the 1<sup>st</sup> century and the early 4<sup>th</sup> century AD, it increases in the mid 4th century and the early 5th century AD in the city. The density of African ceramics declined considerably from the mid 5th century AD on due to the Cyprus and Phocaean Red Slip Ware productions. The common amphorae specified in the city are Spatheia, Tripolitan I, II, III, Africa I, II and Keay LXII forms, and Red Slip Ware A, C, D as quality serving pots. The trade relations between Cilicia and Africa are documented with DSA sigillatas identified in Africa as well.

Findings point out a trade from Cilicia to Africa and Africa to Cilicia until the early 7<sup>th</sup> century AD. By studying the African ceramic ware, we acquired tangible data documenting the trade relations between Africa and the ancient city of Elaiussa Sebaste as well as the region of Cilicia, which is significant for regional archeology.

Keywords: Elaiussa Sebaste, Cilicia, Late Roman Period, Trade, Amphorae, Red Slip Ware, Africa

### Communism: from objective practical communism in prehistoric communities to its abstract notion in Sassanian era

Sorour KHORASHADI, Department of Archaeology, Tarbiat Modares University / Hamed VAHDATINASAB, Department of Archaeology, Tarbiat Modares University

Mazdakism and its relation to Sassanian court are among the ambiguous, paradoxical, and confusing issues in Sassanid era researches. According to the mainstream of ongoing investigations, Mazdakism

was a tool in Ghobad's hands by means of which he could restrict and minimize the power of Noblemen, Great Feudals, and Mobads. Contemporary researchers regarded Mazdakism and Ghobad's reign as a form of communism and communist period respectively. If so, they imply, we have no choice but to admit that Ghobad himself was a Mazdakian communist. In this scenario a critical question arises and finds its best manifestation in Arthur Christensen's avowal when he says: "one asks himself how it is possible for the king of Persia to be a communist?"

In this paper we try to answer to this question. Our results reveal that Ghobad's deeds were not in accordance with Mazdakian communism which basically emphasizes on the importance of common ownership. He was, rather, at best a pioneer in sexual communism. On the other hand, our efforts also contradict the ideas of the majority of contemporary authors in this literature from another point of view. Contrary to the presumption of such writers who deem Ghobad's reign as a sort of communist era, we would show that the real source of objective practical communism should not be merely traced back to Ghobad's reign; but we shall track it down in simple prehistoric communities as well as contemporary primitive societies. In these two kinds of societies, common ownership was a matter of necessity; not an abstract ideal. In this paper we thus attempt to evaluate the evolutionary process of the notion of communism from a necessary practical requirement in the primary classless communities to its abstract ideal in Sassanian "non-classless" community.

Keywords: prehistoric, Mazdakism, objective practical communism, abstract communism.

#### Cultural landscape and trade routes of the Northern Negev during Early Bronze Age

Marcin CZARNOWICZ, Department of Archaeology, Jagiellonian University, Krakow / Agnieszka OCHAŁ-CZARNOWICZ, Department of Archaeology, Jagiellonian University, Krakow / Yuval YEKUTIELI, Ben Gurion University of the Negev

During Early Bronze Age I Northern Negev was a flourishing region of the Levant. Placed between Coastal Palin and the Shephelah was a natural bridge connecting lowland with the eastern regions. Prosperity was obtained thanks to the involvement in the long distance trade. Its inhabitants were able to produce quantities of food surpluses probably also craft specialization was on a high level. The most important settlement of the area was Tel Erani. The site becomes a political and economic center of the Northern Negev and probably an 'Egyptian' trade post.

Thanks to the archeological project of Jagiellonian University in Krakow and Ben Gurion University of the Negev conducted at Tel Erani since 2013 we are now able to recreate trade routes pattern and discus the impact of the 'Egyptian' traders present at Tel Erani on the local cultural landscape. It is now clear that well know but never well published site of Tel Erani was an important trading- post in the southern Levant, with permanent 'Egyptian' presence at the site. During the presentation we would like to discuss the problems of the impact of the relations with Egypt on cultural landscape of Northern Negev.

### A cache of Hammam Cylinder Seal Impressions as a Guide to Middle Bronze Age International Contacts Diederik MEIJER, University of Leiden

This paper deals with a cache of seventeen sealed bullae. These were found together, having been broken and stored in antiquity, no doubt as items in a process of strict control within the tiered local administrative system. Being a regional center and not a major international hub, Hammam nevertheless had many external contacts. The motifs and styles attest to these intensive contacts between Hammam al-Turkman and, e.g., Mesopotamia. The nature of these contacts, as well as trade relations as an archaeological subject, will be discussed and illustrated.

### Shell Ornaments from the Bishri Cairn Fields: New Insights into the Middle Bronze Age Trade Network in Central Syria

Takuro ADACHI / Sumio FUJII, Kanazawa University

Our previous investigations in the northwestern flank of Mt. Bishri, central Syria, located a few dozen cairn fields that were established by pastoral nomads in the first half of the Middle Bronze Age. Though in a small number, the composite site produced various artifacts including potteries, flint artifacts, bronze products, stone beads, and shell products. This paper focuses on the shell ornaments. Of significance is the difference in contents depending on burial fields. Some burial fields centered on *Cypranea* and *Nassarius* beads, and others contained *Conus* products as major components. Given that the composite site represents a tribe of MBA pastoral nomads, and that individual cairn fields or field groups represent a subordinate group include in the tribe, it would follow that the remarkable difference noted above mirrors the difference in trade network or migration route among the population groups. This paper discusses the potential archaeological implications of the shell ornaments from the Bishri MBA cairn fields, focusing on the social background lying behind them.

### Economic Networks at the Crossroads: Exchange Relationships in the Middle Bronze Age Beqa'a Valley

#### Antonietta CATANZARITI, Dept. of Near Eastern Studies, University of California, Berkeley

Studies on the economy of early human societies in the ancient Near East that have focused on the understanding of economic systems have often based their theories on the rich archaeological and textual data available from major economic centers. This is particularly true of studies that treat ancient economic exchange systems that developed at major crossroads. Secondary trade routes that expanded in non-centralized regions, located in geographically challenging areas, have mostly been ignored. In this paper, I will discuss economic exchange systems that formed around non-centralized economic hubs. The Middle Bronze Age settlement of Kamid el-Loz, located in the Beqa'a Valley of Lebanon, will be used as an example of a commercially active post that prospered in a marginalized area. This settlement was able to establish interactions with the main communities that flourished along the Levantine coast and contributed to the development of inner land routes that traveled south and east of the Beqa'a Valley. For this study, the geographic setting and the material culture of the site of Kamid el-Loz was analyzed and will be presented here, together with some reflections on the role that the Beqa'a Valley and Kamid el-Loz had in the dissemination of goods and ideas.

#### What were the Sidonians doing in northern Mesopotamia during the Middle Assyrian period? Amelie BEYHUM, American University of Beirut

Textual evidence, in both private and official archives, indicates a presence of Sidonians in several sites in northern Syria (e.g., Tell Chuera, Tell Sabi Abyad, etc.) as well as as far east as Assur during the Middle Assyrian period. Several of these references are to trade; trade in items ranging from textiles, metal, stone to aromatic plants. Yet other texts refer to Sidonians in their capacity as legal witnesses or as diplomats. This Sidonian presence in the Middle Assyrian archives needs to be considered alongside the information from the archives at Ugarit. It is also necessary to ascertain the route(s) the Sidonians were travelling to arrive at these inland sites. Additionally, an explanation for this Sidonian presence in the Middle Assyrian realm must be determined. This is particularly of interest, as to date, there is no evidence for other 'Phoenicians' - whether Tyrians, Beirutians, Byblians or Arvadians - in the Middle Assyrian period, although the Sidonians appear alongside the inhabitants of Amurru and Canaan.

This textual evidence appears to indicate that the Sidonians had a special relationship with the Middle Assyrians, while maintaining good ties with Egypt. However, it must be considered if any of this is reflected in the archaeological evidence unearthed in Sidon.

#### Alternative worlds: mariner networks in ports across the LBA Aegean

Linda HULIN, Oxford Centre for Maritime Archaeology, University of Oxford / Senta GERMAN, Ashmolean Museum of Art and Archaeology

The Late Bronze Age was an international age, and ample textual, iconographic and material data attests to the large-scale movement of goods around the eastern Mediterranean. Numerous port sites have been investigated, with the focus upon entrepôts as points of movement of goods and people into the

wider, terrestrial landscape. The Alternative Worlds project, however, adopts a mariner's perspective, and views coastal sites as points of stability within a mobile maritime landscape.

Historical and sociological studies of early modern to present-day ports document the existence of sailors' quarters, often restricted to the fore and near shore. In these areas, establishments emerge where sailors can rest and socialise. We argue that sailors' quarters can be identified the archaeological record by the relative diversity of ceramics in otherwise non-elite areas and in the presence of small portable items that constitute sailor's trade.

While such evidence has been identified at particular sites (e.g., the unusual number of Mycenaean psi-figurines at Minet el-Beida, the presence of six Cypriot base-ring teapots at Zawiyet Umm el-Rakham, the Egyptian garrison in the western desert of Egypt, or the small number of Egyptian vessels at the Cretan port of Kommos, each one different from the other), we attempt will be made to examine a maritime social world in its totality, comparing these quarters with the sites as a whole and seeking to measure the commonalities and differences between a number of ports along the Eastern Mediterranean gyre.

### Ivories and related objects from the Levant: Tokens of Luxury from Transitional Late Bronze/Early Iron Age

Peter M. FISCHER, University of Gothenburg, OREA / Teresa BÜRGE, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria / Mohammad AL-SHALABI, Jordan Department of Antiquities, Irbid

The recent discovery of the s.c. "Ivory Tomb" at Tell Irbid in the centre of the modern town of Irbid on the northern Transjordanian plateau extends the geographical distribution limits of carved ivory and other related objects of high artistic value far beyond the River Jordan. The aim of the present paper is to present an overview of mainly carved ivory objects from various sites in the Levant dating from the end of the Late Bronze Age to the Early Iron Age, viz. from the end of the 13<sup>th</sup> century and well into the 12<sup>th</sup> century BCE. This period, which was on the verge of the so called "crisis years", was an epoch of widespread prosperity – at least as the living conditions of the elites are concerned. Their wealth was based on far-reaching intercultural contacts and intense exchange of goods and knowledge. In this presentation, intercultural contacts, trading routes and the artists behind these outstanding objects will be discussed.

#### Physicians on the Move: The Role of Medicine in the LBA International Relations Sara CARAMELLO

The Late Bronze Age represents a crucial point in the development of international trade and diplomatic relations as we know it today. Many tablets from the royal archives reveal us not only a precise landscape of the LBA international diplomacy, but they also provide us with an overview of the demand for raw materials and luxury goods. Consequently, the interest of scholars is often focused on these diplomatic and economic aspects, leaving out other sociological considerations. However, analyzing these *corpora*, it is also possible to isolate the 'material' or 'economic' role played by different kinds of specialists with a number of anthropological implications.

The present work is focused on Egyptian and Near Eastern physicians that could be sent to a faraway royal court, where a foreign king required their help, becoming an exchange good and increasing the power and the reputation of the king (and of the reign) who had sent them, as a kind of luxury good. As they were expected to return home sooner or later, these specialists can be considered as the objects of a 'temporary gift exchange', whereas the consequent skill exchange represented an intangible but more enduring gift, just like raw materials or luxury goods.

#### **Pastoral nomads of the southern Levant and their role in metallurgy during Bronze and Iron Age** Eva Katarina GLAZER, Department of History, Centre for Croatian Studies University of Zagreb

The production and trade in copper and bronze was one of the major features of the complex societies in the Near East during the third to first millennium BC. The connections between metallurgical technology

and trade have long been recognized as the very important factors of development of Bronze Age societies. Texts dating to third and second millennium BC testify that Bronze Age societies developed sophisticated trade networks. Extensively excavated sites in southern Levant contribute to our understanding of metallurgical processes. If we compare the Egyptian documents and biblical textual evidence with recent results of archaeological and environmental research we find that pastoral nomadic populations played an important role in the production and trade of copper and bronze. This paper will provide an insight in the society of pastoral nomads of the southern Levant and the role they played in metallurgy during Bronze and Iron Age.

#### Pottery Production in Iron Age Jerusalem: A Diachronic Study

David BEN-SHLOMO, Ariel University, Israel

Jerusalem was an important political center during the Iron Age and a capital of a political entity at least during the 8<sup>th</sup> and 7<sup>th</sup> centuries BCE. This study aim to investigate the economy of the kingdom of Judah though the composition analysis (by petrography and INAA) of the common pottery vessels used. The Iron Age pottery from the large-scale excavations at Jerusalem, mainly from the City of David and the Jewish Quarter, was studied in several published reports and is commonly acknowledged as an important example of the Judean or hill country material culture. Typologically imported pottery seems to be very rare in Jerusalem, and the vast majority of the pottery found in Jerusalem is assumed to be locally-produced, mostly from the 'Motza formation' clay sources; an outcome of the current study will a better definition of the clay sources used in Iron Age Jerusalem. The results may indicate whether and how trade and redistribution of goods is reflected in the pottery from the different Iron Age phases. In particular storage jars are studied in order to examine evidence if intra- and inter regional trade in commodities, or the lack of it. The Iron Age IIA period will be compared with the Iron Age IIB-C periods.

#### Banbhore: current researches on a major trade centre on the Indus' delta

Agnese FUSARO, La Sapienza, University of Rome / Anna Candida FELICI, La Sapienza, University of Rome / Niccolò MANASSERO, Università degli Studi di Torino / Mario PIACENTINI, La Sapienza, University of Rome / Valeria Fiorani PIACENTINI, Università Cattolica del Sacro Cuore, Milan / Alessandro TILIA, Treerre SAS, Rome

The Joint Pak-Italian-French Historical-Archaeological Mission at Banbhore, Sindh, was born from the collaboration between the French Archaeological Mission to Sindh and the Italian Historical and Archaeological Mission in Makran. One of the aims of the Project is to verify the historical identity of the site and identify it with Debol/Daybul, the ancient harbour-town located on the Indus' delta, that was one of the main hubs for land and maritime trade in the Indian Ocean.

Banbhore has a long period of occupation, from the first centuries A.D. up to the beginning of the 13<sup>th</sup> century. It is a fortified citadel, surrounded by "industrial" and residential areas North and East.

The excavations of the Pak-Italian team, begun in 2012, focused on the central area of the citadel, bringing to light a dense grid of buildings of the Islamic period, and giving some insights into the Sasanian phases.

The findings testify the role of Banbhore both as a production centre and trade harbour. Metals, carved bones and ivories reveal intense artisanal activities carried out in the Western half of the citadel; concerning pottery, it is mostly locally produced, though a good amount of imports from Iraq, Iran, India and China is also witnessed.

#### Early Historic Trade between Bengal & South-East Asia: Exchanges of Goods and Ideas

Munmun MONDAL, Department of Archaeology, University of Calcutta, West Bengal

The early centuries of Christian era witnessed the growth of Kushan empire in Indian subcontinent. India, is an independent country in South Asia. The Kushans, who were basically the nomadic people of Central

Asia, hailed beyond the Pamir and Oxus region and extended their territory upto the Pataliputa of Bihar in India. Though Bengal was never formed a part of the imperial Kushan rule, but nevertheless the Kushan influence had drastically changed the contemporary socio-economic lifestyle of the people of Bengal. Basically during the 1<sup>st</sup> to 4<sup>th</sup> century AD, the international trade contributed a lot in the building of a flourishing economy and socio-cultural upliftment in this land. The kushanas were very efficient traders and they were attracted with the physiographic character of North India or more precisely Bengal.

The socio-cultural assimilation that took place through the process of overseas international trade during the early historical period has immense impact on the economic as well as social and cultural life of Bengal. In other words we can say, that the wealth generated through trade and commerce was mainly utilized for the economic and material prosperity of the communities which in turn affected the pattern of development of different early urban centres in Bengal. It ushered a new era by introducing many new elements in the daily life of the common people which was hitherto unknown to them. The intrinsic social security, restored by the kushana people and guaranteed by a political stability helped to usher in an economic prosperity which in turn set a socio-cultural affluency in Bengal. Bengal became a integral part of the socio-economic and cultural fabric of the Kushanas and experienced a sophisticated urban life with rich social content mixed with economic prosperity that was never felt before.

In this processes, Chandraketugarh & Tamralipta – the two most flourishing centre and prosperous international port city of ancient Bengal played the most crucial & significant role. Archaeological investigation revealed a large number of objects of Indian origin (Glover,1990) from different parts of South-East Asia including Thailand, Burma, Malayasia, Indonesia, Java etc & that laid emphasis on the maritime trade network of Bengal coast with South-East Asian countries. The discovery of mixed Kharosthi-Brahmi inscription from the sites of lower Bengal and its subsequent recovery from Souh East Asian sites are indicative & strengthen such trade relation in the early part of the Christian era.

My paper intends to throw light on the trade and cultural relation between Bengal and South East Asia and its impact on the economic growth and social upliftment of Bengal that came by the way of this trade relation in the early centuries of Christian era.

### Deliberately inefficient: technological practice of flint heat treatment at Neolithic Hasankeyf Höyük Osamu MAEDA, University of Tsukuba, Japan

Improvement of economical efficiency was not always a primary concern of Neolithic people in conduct of ancient technology. The practice of heat treatment of flint raw material at a PPNA site of Hasankeyf Höyük in southeastern Turkey was one such example. In this paper I will discusses technological inefficiency observed in the conduct of flint heat treatment in a process of lithic production at this site by studying archaeological artefacts recovered from the recent excavations in comparison with the results of experimental study carried out by myself using an electrical furnace and bonfire. The study shows that while heat treatment does not necessarily require high technological skill Neolithic people still often failed to achieve the best result and did not try to improve its efficiency. It is suggested that for Neolithic people technological failure was not something need to be overcome but something positively accepted as a part of routine practice of lithic production.

# Glasses from Hellenistic Jebel Khalid on the Euprates, Syria, 3<sup>rd</sup>–1<sup>st</sup> century BCE: an Indicator of Greek Influence in the East?

Wendy J. READE, Department of Archaeology, University of Sydney / Karen PRIVAT / Helen RUTLIDGE, University of New South Wales, Mark Wainwright Analytical Centre, Sydney, Australia

Jebel Khalid, on the west bank of the Euphrates River in northern Syria, is a purely Hellenistic city founded as a military colony by Alexander the Great's general, Seleucis. The walled city was built early in the 3<sup>rd</sup> century BCE and abandoned c. 70 BCE. An Australian team has worked on the site from 1984 until the current war in Syria. The presence of a considerable quantity of glass from this unique single-period site, gives us the rare opportunity to investigate well-dated Hellenistic glasses in the ancient Near East. For over a thousand years glass had been produced and distributed from Near Eastern centres. The new influence of Greek glass production on the Hellenistic Near East is little studied, but appears to have played a significant and innovative role in glass production at a time when the traditional focus of glass-making in the Eastern Mediterranean was changing.

Our program of compositional analyses, focused on monochrome vessels from the large administrative palace on the Acropolis, aimed to address these little investigated issues. We have sought to understand the developments and changes in glass-making, and the sources and distribution of glass wares in the Hellenistic empire through physical and chemical investigation.

Keywords: Glass, Hellenistic, Jebel Khalid, Syria, Greece, chemical composition

# Pots and chemistry – The contribution of geochemical analyses on pre- Islamic ceramics from the Zagros highlands (Iran) to the understanding of their social and economic identity Possum PINCÉ, Ghent University

A large number of painted pre-Islamic ceramics from the Zagros highlands (Iran) were collected on surveys and excavations conducted by the late Prof. Vanden Berghe (Ghent University, Belgium) during the 1950s. The ceramics date from the Neolithic to the Iron Age and belong to different sites and stylistic groups. An archaeometric research is undertaken on a selection of these ceramics. The first applied analytical technique is portable X-ray Fluorescence spectroscopy (pXRF) to study the fabric of the ceramics and the pigments used for decoration. The aim is to provide a new source of data, from which information about the raw materials, economic relations between the sites and exchange systems can be extracted. The second technique is thin section petrography. This geochemical method is performed to determine the process of manufacture and to detect technological differences and innovations between ceramic types. Furthermore, it is used to identify the origin of the primary materials by determining the rocks and minerals present in the thin sections. The combination of these techniques contributes to our knowledge of the social and economic identity of the ceramics and changes in this identity. In this paper, the results of these analyses will be presented.

#### Achaemenid resource management: fingerprinting bitumen from Tol-e Ajori and Sad-i Shahidabad Thomas VAN DE VELDE, Ghent University

Bitumen has been observed in many archaeological sites in Mesopotamia and the Eastern Mediterranean. This material was often overlooked by the early explorers of the region as it was regarded as an ordinary and everyday product. However, with the technological advancements of the last decade and the incorporation of the exact sciences in the archaeological research, bitumen shows its hidden potential. Several scientific techniques (GC-MS & EA-IRMS) make it possible to get into the core of archaeological bitumen samples and identify the seepage were the material was extracted. This knowledge tells us a lot concerning economies and the management- and export of raw materials.

As of yet, no such studies on bitumen material from Achaemenid contexts has been presented nor published. This presentation will therefore be the first one ever to handle this specific material for the Achaemenid period in Iran. Two bitumen datasets will be discussed: the places where they were excavated, their analysis, their relation to each other, and finally their origins. Samples from the first dataset were uncovered at Tol-e Ajori (*Iranian-Italian Joint Archaeological Mission at Persepolis*), whilst the other samples were excavated at Sad-i Shahidabad (*Joint Iranian – French Archaeological Mission*).

Investigation of Type of Corrosion of Copper-based Artifacts from Tape Sofalin archaeological site

Freshteh HAKIMI, Faculty of Conservation, Art University of Isfahan, Iran / Hamidreza BAKHSHANDE-FARD, Faculty of Conservation, Art University of Isfahan, Iran

In this paper, investigation of a historical arsenical Copper alloys of artifacts and ancient earring (small sample) dated to Proto-Elamite and were found during excavations at Tape Sofalin in the northern central Iranian plateau are presented.

The technology of bronze artifacts found at the Tape Sofalin is thoroughly investigated. In addition identification and investigation of deterioration and corrosion of these objects and classifying facing deterioration was carried out so that the prevention and control of corrosion is given to prevent further damage to the objects.

For this purpose the artifacts were studied by optical microscopy (OM). X-ray radiography was also used to obtain information about manufacturing technique and condition of the artifact. Scanning electron microscopy combined with energy dispersive X-ray spectroscopy (SEM-EDS) was used to identify elemental composition of the alloy. The results of metallographic studies showed These artifacts didn't have metal core. Results of SEM-EDS analysis showed that the structure of plate tack place of phenomenon of inverse segregation. Also the results of SEM-EDS analysis showed that the container two artifacts were made of arsenical copper with high arsenic content and earring made of arsenical bronze with high percentage of arsenic and tin.

SEM images showed main corrosion at all artifacts areoxide corrosion in the presence of chloride ions and a cup of study in addition to oxide corrosion, stress corrosion is main factor to its damage. Intergranular corrosion was also observed in SEM images for earring. Furthermore, SEM-EDS analyses of the corrosion layers in earring showed tin-enriched corrosion layers due to depletion of copper. On the other hand, corrosion in the artifact was occurred due to a decuprification process.

Keywords: Copper Artifacts, Arsenical Copper Corrosion, Tape Sofalin

### Testimonia of the Central South Caucasian culture dating Late Bronze and Early Iron Ages in European museums (1300-700 BC)

Nourida ATESHI, Department of History and Archaeology, Khazar University, Baku; Institute for Caucasus Research, Berlin

This paper is casting new light on some aspects still unknown to the international science community concerning the Central South Caucasian culture which covered a vast area of the Central and Southern Caucasus in the Late Bronze and Early Iron Age. Having a critical look at the research which had already been done in the past, in a general examination taking a pragmatic approach we discovered some problems in the archaeologic evaluation of the finds belonging to that culture.

Although this culture was one of the outstanding cultures of the Caucasus, it still requires a complete, systematic research and examination, because the scientific investigation of the finds and the conclusions to be drawn remain incomplete to date. It should be opened to the international scientific community attracting German, French, Russian and Caucasian scientists to fill the gap existing till today in the archeologic research of the Caucasus, starting from the Bronze Age.



### Sangtarashan, an Iron Age site with more than thousand metallic objects buried in a big round building, Luristan, Iran

Mehrdad MALEKZADEH, ICAAR, Tehran, Iran / Ata HASANPUR, ICHTO, Luristan, Iran / Zahra HASHEMI, Sorbonne University, Paris

Sangtarashan is an archaeological site located on the southern part of Luristan province, in western Iran. During the restoration of water canalization, workers pickaxe brought to light a dozen of metallic objects known as « Luristan bronzes » gathered and buried underground. The number of objects scattered on the topsoil let the archaeologists to think that the site might have been a cemetery, which are often found in Luristan. However, a subsequent series of excavations didn't show any traces of tombs. The excavation led to the discovery of several other sets of metallic objects. Archaeological expeditions have started on 2005 directed by M. Malekzadeh and his assistant A. Hasanpour. As of now, six seasons of investigation from 2005 till 2011, brought to light hundreds of metallic objects including simple to elaborated ones of different natures as weapons, vessels, jewellery, figurines, cylindrical seal, etc. associated to a big round architecture structure. Theses objects, which are more or less associated to Iron Age are brought and buried in this building for an unknown reason. Can we talk about a sanctuary? Is it a metal reserve? Are these some treasury?

Keywords: Iran, Luristan, Bronze, Iron, Iron Age, Weapons, Vessels, Jewelry, and Figurines

#### Archaeological studies on southern Zayandeh Rood basin, Chahar Mahal and Bakhtiari Province

Ali Asghar NOROUZI, University of Hamedan / Mohsen HEYDARI, University of Sistan and Baluchestan / Mehdi MORTAZAVI, University of Sistan and Baluchestan / Rouhollah SHIRAZI, University of Sistan and Baluchestan

Chahar Mahal and Bakhtiari province has always been very important to human beings due to the existence of permanent water sources, small in between mountainous plains, deep valleys and nomadic routes. The fact that it is situated in a mountainous region (highland) increases its importance. One of the main districts of this province is Laran which is in fact a long in between mountainous valley with several other smaller valleys. This area is a part of drainage basin of Zayandehrood and Karoon River. This region is one of the rare areas in Iran that archaeological activities have not been conducted. Laran district, situated to the south of Zayandeh Rood's drainage basin and to the west of Shahre Kord province was surveyed systematically under the supervision of A. Norouzi in 2010. Overall, 210 sites belonging to the late Neolithic period to modern era were identified and registered. The remains are included sites, hills, caves, valleys, cemeteries, bridges, mosques and shrines. Most of the settlement sites of this region, from which poor finds were found, have low heights. According to their location, typology and also studies conducted on modern nomads, it seems that these areas mostly belong to nomads. This paper presents the primary results of this survey.

Keywords: Zayandeh Rood basin, Chahar Mahal and Bakhtiari, Laran, Archaeological studies

### Kura-Araxes Culture and Northwestern Iran after Yanik: New Perspectives from Kul Tepe Excavations Akbar ABEDI, Islamic Art University of Tabriz

After three decades of stagnation in the northwestern Iran's archaeological activities, valuable works have been carried out concerning to prehistoric archeology of the region during recent years. In northwestern Iran almost all excavated sites are situated around the Lake Urmia and information about the other parts of the region is lacking and different parts of the region and its prehistory have received unequal attention. While a considerable part of western and southern parts of the Lake Urmia basin has been explored relatively comprehensively, eastern and northern parts remains largely an archaeological *terra incognita*. Most studies regarding to Kura-Araxes culture of northwestern Iran is mainly related to scant famous typical sites including: Yanik Tepe, Geoy Tepe, Hasanlu, Haftavan Tepe and Tepe Gijlar. In

this paper I will try to introduce 195 Kura-Araxes sites and its distributions in different parts of NW Iran that yielded from old and new surveys. After a brief introduction of Kura-Araxes settlements in NW Iran, the paper addresses some recent excavations that took place concerning to Kura-Araxes culture. According to importance of Kura-Araxes materials of Kul Tepe (Jolfa) I will try to expose briefly the main stratigraphic, architectural and material data from this site. My discussion focuses mainly on two seasons of important well excavated site – Kul Tepe at the confluence of the southern Caucasus, northwestern Iran and eastern Anatolia. This site span a chronological range encompassing the Dalma, Pisdeli (LC1=Post-Ubaid), LC2–3 (Chaff-Faced Ware Culture), Kura-Araxes I, Kura-Araxes II and III, Middle and Late Bronze Age, Iron III, Urartian and Achaemenid periods – roughly from 5000–ca. 400 BC. New data yielding from excavations eventually lead us to new chronological table for northwestern Iran and southern Caucasus and to new approach to archaeology of the region during Kura-Araxes period.

Keywords: Kura-Araxes Culture, Northwestern Iran, Surveys, Excavations, Kul Tepe

#### Dava Göz New Neolithic and Chalcolithic Site in NW Iran

Azam KARIMIFAR, Islamic Azad University of Mianeh / Akbar ABEDI, Tabriz Islamic Art University / Maryam ABEDI, University of Tabriz / Hossein ABEDI, Aras Free Zone Organization, Jolfa, Tabriz

The Neolithic and Chalcolithic period is one of the important but very enigmatic periods in North-Western Iran. There are substantial questions concerning exact time span, the nature of this culture, regional and inter-regional interactions and expansion of widespread Hajji Firuz or Hassuna-Sammara related, Dalma and Dalma related and Post Ubaid sites. After three decades of stagnation in northwestern Iran's archaeological activities, valuable works have been carried out concerning the prehistoric archeology of the region during recent years. In northwestern Iran almost all excavated sites are situated around Lake Urmia and information about other parts of the region is lacking. While a considerable part of the western and southern areas of the Lake Urmia basin has been explored relatively comprehensively, the eastern and northern parts remain largely an archaeological terra incognita. Most studies regarding Neolithic and Chalcolithic period of northwestern Iran are related to famous type sites including: Hasanlu, Hajji Firuz, Dalma and Pisdeli. In this paper we will introduce new site in different part of NW Iran that have been found as a result of recent excavation. Because of the importance of Neolithic and Chalcolithic materials from Dava Göz (Khov) we will briefly describe the main stratigraphic, architectural and artifactual data from this site which produced materials from Late Neolithic, Transitional Chalcolithic, Dalma and Late Chalcolithic 1 and 2 phases that help to complete the chronology of northwestern Iran and the Southern Caucasus. Old and new data yielding from excavations and surveys eventually lead us to new chronological table for six and fifth millennium B.C. in NW Iran. The implications of the findings will discuss along with limitations and future research directions.

Keywords: North-Western Iran, Neolithic, Dava Göz, Chronological Table

#### Systematic archaeological surface survey of Tall Shangooli (Siah Khan) Lapui of Shiraz

Fazlalah HABIBI, Independent Researcher / Reza NAFARI

Lapui Period" is a term derived from the name of small town of "Lapui" located in the south of Kur River Basin, north of Shiraz. There is a widespread distribution of sites with diagnostic Lapui Red Ware, dated to c. 3400–3900 BC, in the Kur River Basin. Tall Shangooli (Siah Khan) is the main and the most intact site of the Lapui period. The site, c. 1 ha in area, located near Lapui town, was surveyed by the authors through a systematic archeological surface survey in winter 2013. The main objectives of this survey were to get information about different periods of the site, studying the typology and classifying the pottery of Lapui period, and also proposing a multi-faceted program in order to protect, delimitate, and excavate the site. The systematic sampling was practiced in this study. Before sampling, 156 squares, each 10×10 m in area, were put on topographic map of the site. The collected assemblage, 5786 in number, includes pottery shreds, stone artifacts (lithics and stone vessels), kiln wasters, and baked clay pieces.

Keywords: Systematic survey, Prehistory, Fars, Lapui Period, Tall shangooli

#### Report on the Three Season of Archaeological Excavations in Tape Rivi

M. Javad JAFARI, ICHTO North Khorasan, Iran

Tappe Rivi is located in northeastern side of the small intermountain plain of Samangan and 10 km away of the Atrak valley, in the northeastern of Iran. Rivi is consisted of three mounds that are called "A", "B", and "C". They are arranged along N-S direction in ca. 300 to 600 distances from each other (Around 110 ha extension of the site). During the three seasons of excavations from 2012 until 2014 we open tree stratigraphy trenches on Rivi A, B and C, also we drew topographical map of all the site and conducted systematical surveys in 50 × 50 m squares and selected five random squares to study all the materials on the surface. In the excavations five architectural phases and various contexts were identified. The result of surveys and excavations was that we could distinguish the cultural materials from Iron Age to Islamic periods. Our studies reveals in northeastern part of Iranian Plateau represents some interactions between Balkh-Marv, Gorgan Plain, and Central Plateau of Iran. The ceramics from Rivi are comparable with Turang Tape and Narges Tape in Gorgan Plain. According to results from Rivi complex, and survey data, we could the demonstrate internal chronology the eastern Atrak River (Ghuchan, Farouj, Shirvan), and western Atrak (Maneh, Samlangan, and Maraveh Tape) basins, The region is a buffer zone and had played an important role in cultural relationships between central Asia and Iranian plateau during the Iron Age and later periods.

Keywords: North Khorasan, Tape rivi, samangan plain, stratigraphy excavation, archaeology excavations

# Excavation at Qareh Teppe of Segzabad, Focusing on the Iron III and Achaemenid? Layers (First Seasons)

Mostafa DEHPAHLAVAN, Department of Archaeology, University of Tehran

Qareh Teppe of Segzabad is one of the most important sites in the Qazvin plain. Many excavations were been performed at Qareh Teppe and other sites in the Qazvin plain so far, but cultural characters of Iron III Age and Achaemenid period were not been paid attention. Note, we have not knew cultural practices of these period in the Qazvin plain.

In 2014, author excavated at Qareh Teppe along with my students and with aim of research on the Iron III and Achaemenid (upper) layers. We selected place of trenches 1, 2 and 3 around site because the illegal excavations had terribly destructed upper layers of Qareh Teppe surface. Although, trench 4 and operation 1 selected on the site surface and same aims.

The parts of mud-brick and pise structures and many local and typical trans-local potsherds and etc were been found that belonged to Iron III Age and probably Achaemenid period. In addition, we faced with special alluvial layers in trench 3 that are very important in order to reconstruct natural conditions contemporary or after abandonment site.

Keywords: Qazvin plain, Iron III, Achaemenid, Qareh Teppe, Segzabad

#### Excavation in Gheshlagh Tepe, in Kurdistan province, Iran

Abbas MOTARJEM, Bu Ali Sina University, Hamadan, Iran

Sited in the Talvar valley of the Bijar County, Tepe Qeshlagh is an archaeological site with a sequence spanning the Chalcolithic through the Bronze Age. Two seasons of salvage excavations have so far covered the site as it will be submerged as part of the intended lake of the Talvar Dam. Results from the excavations evince long-lasting Chalcolithic (Dalma) settlements at the site. Dalma represents a major culture of the early-mid-Chalcolithic period, and its presence has thus far been documented over large parts of northwest and west Iran The preliminary results from the excavations at the site reveal strong parallels with the Hajji Firuz-Dalma cultures of the Lake Urmia Basin alongside inspirations from the Hassuna culture of northern Mesopotamia in the form of a pottery of Dalma type. The excavated material indicates extra-regional connections.Tepe Qeshlagh is one of the major and rare sites with deposits of the Chalcolithic period within the prospective reservoir of the Talvar Dam. Excavations at the site have the potential to shed indispensable light on the prehistoric cultures of the region. The absolute lack of earlier excavations with particular emphasis on the Chalcolithic period in the region further highlights the significance of the recent digging works at Tepe Qeshlagh. The main objective of these excavations is to establish the cultural sequence of the site. Other aims include dating the most important settlement attested at the site, and pinpointing the subsistence system of the Chalcolithic community that occupied it. Thanks to its geographical location, the region serves as a line of communication and a bridge linking the central Iranian plateau with northwest and west Iran. In addition, results from the excavations suggest that a settlement that had continued uninterruptedly since the early Chalcolithic period was abruptly abandonment sometime at the end of the late phase of the same period, which corresponds with Godin Period VI. In the wake of this clear hiatus that coincided with the replacement in the region of the Yanik culture, a transient settlement again formed on the southern slope of the mound in the mid- or late Bronze period and later occupations at the site would continue into the Iron III. Therefore, settlements at Tepe Qeshlagh span several periods. Though there is as yet no conclusive evidence to account for this fluctuating settlement history, it may partially be attributed to the environmental pollution prompted by local tin, copper and plaster (tophus) mines, the strains caused by famine, and the less-fertile nature of regional soil. It has 3 phase of Architecture in Early chalcolithic that we will have explain in article.

#### Aruchlo - Ein spätneolithischer Fundort in Georgien

Katrin BASTERT-LAMPRICHS, German Archaeological Institute, Eurasia Dep., Berlin

Der in das 6. Jht. v. Chr. datierende Fundort Aruchlo befindet sich ca. 50km südwestlich von Tbilisi in Georgien. Die Ausgrabungen in Aruchlo werden seit dem Jahr 2005 vom Deutschen Archäologischen Institut in Kooperation mit dem Archäologischen Zentrum des Georgischen Nationalmuseums durchgeführt.

Entlang des Kura bzw. des Chrami-Flusses repräsentiert im Süden Georgiens und im Westen Azerbajžans eine Gruppe von Siedlungshügeln die früheste bäuerliche Lebens- und Wirtschaftsweise im 6. Jahrtausend v. Chr. Aruchlo ist der bislang nördlichste Siedlungshügel innerhalb der Šulaveris-Šomutepe-Kultur.

Es wurde eine Vielzahl charakteristischer neolithischer Rundbauten, die aus plankonvexen ungebrannten gelben und braunen Lehmziegeln bestehen, erfasst. In den letzten Kampagnen konnten bis heute insgesamt neun Spitzgräben dokumentiert werden. Sie wurden zwar von Siedlungsschichten überlagert, schnitten aber zugleich in bereits existierende Siedlungsschichten ein. Die Gräben sind also zu einem bestimmten Zeitpunkt der schon bestehenden Siedlung eingetieft und dann wieder verfüllt worden. Die Verfüllung erfolgt sehr schnell, denn es fehlen die typischen Einschwemmschichten, die nach schweren Regengüssen entstehen. Desweiteren wurden eine Vielzahl an neolithischer teilweise mit reliefierten Schmuck versehene Keramik gefunden, ein Vielzahl an Obsidian- und Steingeräten sowie Knochengeräte und wenige Figurinen gefunden.

#### New data on the Central Monument of Akchakhan-kala in Ancient Chorasmia

Michele MINARDI, University of Bordeaux, KAE

This paper will present the preliminary results of the last two campaigns (2014–2015) of archaeological excavations at the Central Monument of Akchakhan-kala by the Karakalpak-Australian Expedition to Ancient Chorasmia (KAE). Akchakhan-kala (III century BC–II century AD), a fortified stronghold that lies in the modern territory of Karakalpakstan (Uzbekistan), was a royal seat of the ancient Central Asian polity of Chorasmia. From this site, perhaps one of the most interesting complexes related to this Eastern-Iranian region, a new perspective on Zoroastrianism is emerging. Examined in the historical context of I century BC–II century AD Chorasmia, Akchakhan-kala has proven to be a site incredibly rich in archaeological data that are enlarging our historical knowledge on this ancient polity and more in general on the Central Asian region during Antiquity.

The Central Monument is an outstanding and unique complex constituted by a mud-brick terrace accessible by a monumental ramp built on a platform at the centre of the lower enclosure of the site. This monument, architectonically singular but with antecedents in the Achaemenid stepped altars - as for example those from Pasargadae – has to be linked to cult practices related to kingship and Zoroastrianism.

### 2013–2015 Activities of the Georgian-Italian Shida Kartli Archaeological Project at Aradetis Orgora (Georgia)

Elena ROVA, Università Ca' Foscari Venezia, Italy / Iulon GAGOSHIDZE, Georgian National Museum, Tbilisi, Georgia

The paper will present the results of three seasons of excavations at Aradetis Orgora in the Kura River valley by the Georgian-Italian Shida Kartli Archaeological Expedition of Ca' Foscari University of Venice in collaboration with the Georgian National Museum of Tbilisi. The site consists of three different mounds and an adjacent cemetery; it was occupied from the late prehistory to the Early Medieval period. Work by the joint expedition hitherto concentrated on the Main Mound (Dedoplis Gora), where excavations were carried out in three different areas (Fields A, B, and C). Field C is devoted to the continuing investigation of the imposing palatial building of the Late Hellenistic/Early Imperial period (kingdom of Caucasian Iberia), which occupies the present top of the mound, while Fields A and B, located on the mound's opposite slopes, have the aim to clarify the site's pre-classical sequence of occupation, which amounts to more than 10 meters. The finds of the new excavations and the preliminary results of a multidisciplinary sampling program for reconstructing the site's ancient environment will be summarily presented as far as they contribute to the reconstruction of the history of the site and confirm its continuing importance as a regional centre.

# There be dragons. The discovery of a Chalcolithic and Bronze Age site with monumental stone stelae in the mountains of Armenia

Alessandra GILIBERT, Freie Universität Berlin, Institut für Altorientalistik

This paper discusses monumental stone steles found at high-altitude locations in the mountains of the South Caucasus. In Armenia, these steles are commonly called *vishaps*, or "dragons". Vishaps are sculpted megaliths, either worked in the shape of a fish or decorated with the image of a ram's fleece; sometimes, both iconographies appear on one and the same stele. In 2012, an Armenian-German team led by Arsen Bobokhyan, Pavol Hnila and myself begun a large-scale survey, mapping the vishaps' distribution patterns and proceeding to excavate at Karmir Sar, a hitherto unknown site at 2,850 m.a.s.l. on Mt. Aragats, with at least ten vishaps in situ. Excavations revealed a long history of secondary manipulations, including the ritual burial of a vishap in a mid-2nd Millennium *chromlech*. In summer 2015, an exploratory trench uncovered a vishap in close association with a Chalcolithic pottery and lithic assemblage. Although our analyses are still in progress and a number of differing interpretations are possible, a working hypothesis is that this may be the vishap's original context. In this framework, the vishaps may be seen as extraordinary materializations of ritual practices and social interests of a network of communities practicing early pastoral transhumance in a period of increasing economic specialization.

#### British Museum/Penn Museum's Ur Project

Birger EKORNÅSVÅG HELGESTAD, Ur Project, Department of the Middle East, The British Museum

In July 2016 the current stage of the Ur project will be complete. The project is an ambitious collaboration between the British Museum, Penn Museum, and hopefully also the Iraq Museum to create a comprehensive online resource of all relevant information from Woolley's excavations of Ur. Since July 2013 teams from Penn Museum and the British Museum have been digitising both objects and archives. The latter are housed in the British Museum and include tens of thousands of pages of field notes as well as almost 1,600 glass-negative photographs. The objects – also numbering in the tens of thousands - are all being photographed, measured, and described. Data from all three museums, as well as from the archives, are brought together and interrelated in a contemporary and complex database. Several international collaborators are also involved, and produce essential information, including translations of cuneiform texts. These collaborations reflect the open nature of the project. The web-site will be open to all, and the data free to download. The code is also open, and can be downloaded and used by others. This paper will showcase the web-site's many features, including the unique integration of current museum records and archival data.

#### The 2015 field season at site MPS18, Mil Plain (SW Azerbaijan)

Andrea RICCI, German Archaeological Institute, Eurasia Dep., Berlin / Maria Bianca D'ANNA, German Archaeological Institute, Eurasia Dep., Berlin / Denis GUILBEAU, Université Paris-Ouest Nanterre La Défense / Barbara HELWING, Université Lumière Lyon 2 / Tevekkül ALIYEV, Azerbaijan National Academy of Sciences, Institute of Archaeology and Ethnography, Baku

Since 2009, a joint interdisciplinary Azerbaijani-German project has been investigating early sedentism in the semiarid marginal landscape of the Mil Plain in SW Azerbaijan. Here, the landscape studies have revealed a dense, but mobile late Neolithic occupation. Excavations at seven mid-6th mill. BCE sites documented both large scale constructions, such as the 24m in diameter mud brick platform at Kamiltepe or the complex ditch system at site MPS4, as well as more domestic structures at site MPS5 and MPS103. In this paper, we present the result of the excavation conducted in summer 2015 on site MPS18. This multi-mounded site is located on a natural river terrace along the Kara Su River and is the largest pre-historic occupation recorded so far in the Mil Steppe with materials spread over an area of more than 8ha. Challenging the concept of mobility and marginality implicitly attached to the steppe environmental conditions, our research also aims at investigating late Neolithic mobility and everyday life.

#### Archäologische Ausgrabungen in Izat Kuli und Geoktchik Depe (Dehistan, Turkmenistan): Städte, Landwirtschaft und große monumentale Terrassen in der Eisenzeit (2014–2016 Ausgrabungen) Joaquin CÓRDOBA, Universidad Autónoma de Madrid, Spanien / Mukhammed MAMEDOW, Nationalmonumente Protection Department, Turkmenistan

In den letzten Kampagnen der archäologischen Ausgrabungen in Dehistan (Turkmenistan) hat die spanisch-turkmenische Mission bedeutende Erkenntnisse über Dehistan in der antiken Zeit zu drei Hauptthemen gewonnen: die Struktur und die Art der großen städtischen oder proto-urbane Zentren, archäologische Nachweise in diesem Zeitraum praktizierter Landwirtschaft. Drittens wurde eine in Art und Aussehen bisher noch nicht vergleichbare, monumentale Terrasse dokumentiert. In dieser weiten Ebene von etwa 160 x 60 km entwickelte sich eine Original-Kultur durch fast tausend Jahre hindurch, die der Hauptteil eines der Staaten Zentralasiens vor der Expansion von Darius und Cyrus war. Das antike Dehistan entspricht einer historischen und kulturellen Phase von besonderem Interesse, sowohl in Bezug auf Zentralasien als auch auf den Iran.

### Culture contact and early urban development in Upper Mesopotamia. New evidence from the Zagros foothills, northeastern Iraq.

Carlo COLANTONI, University of Leicester, England / Mette Marie HALD, National Museum of Denmark / Tim Boaz Bruun SKULDBØ, University of Copenhagen, Denmark

Archaeological research in Upper Mesopotamia has demonstrated that the development of early urban polities in the first half of the Late Chalcolithic (LC) period was an uneven process with a variety of trajectories. Despite the diversities, evidence for cultural connections is strong during this period. This suggests that a complex and cross-regional network of interaction and exchange was at play in the north. In the second half of the LC period, Upper Mesopotamia witnessed an intense influx of people and culture with origins in Lower Mesopotamia. The intensity, character and impact of the Uruk culture on the neighboring regions and cultures were, however, complex and heterogeneous.

This paper discusses the current evidence for the impact of the Uruk culture in the Zagros foothills - a less well investigated region of Upper Mesopotamia. As a case study, we present recent results from investigations by the University of Copenhagen on the Rania Plain. Fascinating remains from the LC2-4 period have been uncovered, encapsulating the developments preceding the "Uruk Expansion" as well as the first cultural contact with Uruk Mesopotamia. This evidence will act as a focal point in a discussion of interaction and early urban development in Upper Mesopotamia.

#### New Excavations at Ur, Iraq

Elizabeth C. STONE, Stony Brook University, New York / Paul ZIMANSKY, Stony Brook University, New York

This paper reports on new excavations to be carried out at Ur between October and December 2015 by Stony Brook University. The focus of this project will be domestic housing located on the south mound. Three activities are planned: A magnetometry survey, excavations beneath Area AH where soundings carried out in June 2015 indicate the presence of Ur III domestic architecture, and new area for excavation of Isin-Larsa to early Old Babylonian housing based on the results of the magnetometry. Preliminary results of the analyses of faunal, floral, microarchaeological and micromorphological data will also be presented.

#### Tell Khaiber: A newly excavated Sealand Administrative Centre in Southern Babylonia

Stuart CAMPBELL, The University of Manchester / Jane MOON, The University of Manchester / Robert KILLICK, The University of Manchester

The Ur Region Archaeology Project has been investigating the site of Tell Khaiber, near Ur, since 2013. Although the settlement is relatively small, its most notable feature is a substantial public building. Newly-discovered texts and pottery analysis now date the highest surviving levels to around 1500 BC, the time of the poorly understood Sealand dynasty, which gained control of southern Iraq following the collapse of the First Dynasty of Babylon. This paper outlines our interpretation of the building in the context of its wider landscape. The combination of systematic retrieval of artefactual and environmental data from well-stratified contexts within an extensive building plan, together with the documentary evidence recovered so far, provides new insights into the administration of the Ur region at this time.

#### The Assyrian Destruction and the Greek Presence in Que

Remzi YAĞCI, Dokuz Eylül University, İzmir

H.Goldman in her work Excavations at Gözlü Kule, Tarsus III describes the period following the Middle Iron Age (850–700 B.C) as the "Assyrian Period" (700–600 BC) that was characterized by the capture, destruction and reconstruction of Tarsus by Sennacherib. Tablets written in Assyrian (636 B.C), palace cups, glazed wares, fine-walled wares, red-banded alabastra may also be cited as evidence of the Assyrian presence. Forms that demonstrate the characteristics of the Middle Iron Age period as well as the growing number of Greek pottery (Ioanian cups, East Greek Geometric and Orientalizing wares, waveline wares and a limited number of Corinthian ware) represent the local and imported pottery repertoire highlighting the Greek presence in the region. In this paper, the similarities and differences between the "Destruction Fill" level and successive Assyrian period at Tarsus and neighboring settlements (for instance Soli) will be re-investigated be re-discussed. In the archaeology of Cilicia, this level identified as the "Assyrian Destruction" level at Tarsus provides materials from a period when the relations between the East and the West were intensive. Recent excavations, widening ceramic repertoires and newly unearthed inscriptions strengthen our will to revisit this period. Such an investigation will be useful to re-contextualize the Greek and Neo-Assyrian presence or rivalry in the North Syria and Cilicia under the light shed by recent finds and publications.

### The Turkish-Swiss Excavations at Sirkeli Höyük (Eastern Cilicia, Turkey): Results of Current Fieldwork Conducted in 2014–2015

Alexander AHRENS, Orient Department, Damascus Branch / Mirko NOVÁK / Deniz YAŞIN-MEIER / Sabina KULEMANN-OSSEN / Alexander SOLLEE

Since 2011 the excavations at Sirkeli Höyük, which are supported by the Swiss National Fund (SNF), are conducted as a joint research project by the Departments of Near Eastern Archaeology of Bern and Çanakkale Onsekiz Mart Universities. Located at the bank of the Ceyhan River, Sirkeli Höyük controls one of the main routes coming from Mesopotamia and the Mediterranean to Anatolia. The site provides an unbroken sequence throughout these periods. The main mound covers an area of approximately 300×400 m and rises to a height of ca. 30 m above the level of the surrounding plain. Due to its strategic location overlooking a road that crosses the Misis mountains, Sirkeli Höyük always played an important role within Plain Cilicia. Excavations by J. Garstang (1936–1937), B. Hrouda (1992–1996) and H. Ehringhaus (1997) have shown that the site was occupied from the fourth to late first millennium BCE. Since 2006, a new Swiss-Turkish team is investigating Sirkeli Höyük again. Apart from a more precise pottery sequence, the new project has discovered an extensive lower town that was surrounded by a double city wall. The paper will summarize the results that have been gathered since 2006, with particular focus on the campaigns 2014–2015, and aims to show how they may contribute to the understanding of the cultural developments in this region.

#### Çine-Tepecik and Its Cultural Impact in the second millennium BC of Western Anatolia

Sevinç GÜNEL, Hacettepe University, Department of Archaeology, Ankara

The Maeander River basin is crossed by natural communication routes between the Aegean Coast and Central Anatolia. In the region of the lower Maeander, Tepecik, a mound settlement, lies on the Cine Plain to the east of the Cine Cayl. Tepecik was settled continuously from the Final Neolithic/ Chalcolithic period to the Late Bronze Age. The settlements in Cine-Tepecik have so far revealed data which shed new light on the cultural development of the region during the second millennium BC. In the stratified development of the mound, settlement Levels II 1–2 date to the Middle Bronze Age and Late Bronze Age. In the Middle Bronze Age settlement, the pottery tradition and the terracotta model and figurine as a cultic object play an important role in the chronology of the Middle Bronze Age and in cultural relations. The settlement remains of the Middle Bronze Age show the impacts of a thick ash layer from the Thera/Santorini eruption. The pottery and marble vessels in this level are reminiscent of the Minoan tradition. On the other hand, the Late Bronze Age settlement on the mound has revealed strong fortifications with towers, as well as buildings erected for the purpose of storage. The seal impressions from the 'Pithos Building' are of great importance to understanding the cultural history of this area. They present philological and iconographical evidence of significance to the historical geography of Western Anatolia as understood from Hittite texts. The seal impressions date to the period of the Hittite Empire. Seal impressions with hieroglyphic-Luwian inscriptions attest that the local administration of the settlement at Çine-Tepecik stood in direct connection with the Hittite Kingdom. In addition, the Mycenaean vessels prove that the settlement of the Late Bronze Age was heavily influenced by the Mycenaean culture. The examples with figurative designs, the 'pictorial style' typical for the early and middle phases of the LH III C in the Aegean, are of interest. Cine-Tepecik in the southern part of Western Anatolia constitutes a centre, positioned between the Aegean and central Anatolian regions.

### A Multi-Cultural Society under the Shadow of the Persian Satrap: New Discoveries of the Turkish Excavations at Daskyleion

Kaan İREN, Muğla Sıtkı Koçman University

Daskyleion was a settlement serving as the capital of a Persian satrapy which controlled the Hellespontine Phrygia, Bithynia, Paphlagonia and probably also Phrygia and Cappadocia in ancient Anatolia. The settlement was additionally important due to its multi-cultural society containing Phrygian, Lydian, Persian and Greek ethnicities, and materials. However surely the peak period of the city is the Persian Period.

The Phrygian character of the city turned culturally to the Lydian according to the tradition in the mid-seventh century. After the Persian occupation in 547 BC, the city was chosen by the Persians as one of a regional Achaemenid capitals of the empire. The ancient resources are supported by the archaeological finds, which were unearthed during last 28 years of excavations in the area. Recent excavations shed light to the pre-Persian and Persian Periods of this important historical settlement. The purpose of this paper is to declare to the world of archaeology the discovery of a newly uncovered Early Bronze Age findings, unearthed early circuit walls and monumental buildings which were probably funeral from the Persian period. On the other hand, many new data and finds deserving attention could be obtained through the new excavations in the recent years in the turnuli of the royal necropoles of the city, Dasky-leion.

#### The archaeological discovery of the Kaška

Dirk Paul Mielke, Institut für Altorientalistik, Freie Universität Berlin

In the world of Late Bronze Age Anatolia the Kaška people are known above all as constant threat at the northern edge of the Hittite Empire. Splitted in different groups and living in the mountainous landscape of the Western and Central Black Sea Area the picture of the Kaška is dominated by military conflicts with the Hittites. The knowledge about the Kaška exclusively derived from the historical record. Until now it has not been able to identify the Kaška archaeologically. Main reason is the lack of greater archaeological excavations with Late Bronze Age layers in the region.

Thus, the new excavations at Oymaağaç Höyük (Vezirköprü/Samsun) which started in 2007 were attached with great expectations for the identification of the so far not tangible material culture of the Kaška. Beside the henceforth doubtless identification of the site with the Hittite city of Nerik these hopes now seem to be fulfilled. The identification is based on a wheel-made and mostly painted pottery which were detected in the Late Bronze Age layers besides to the well known Hittite vessel spectrum. In the talk the first overview on the archaeological discovery of the Kaška will be presented.

#### The 2013–2015 excavation campaigns at Uşaklı Höyük (Central Anatolian Plateau)

Stefania MAZZONI, University of Florence / Anacleto D'AGOSTINO, University of Florence / Valentina ORSI, University of Florence

This paper will provide a summary of principal results achieved during the first three seasons of excavations at Uşaklı Höyük, a multi-period site located along the southern bank of the Egri Öz Dere not far from the city of Yozgat, in the Central Anatolian Plateau. The results of a five years survey (2008–2012) gave evidence of a long occupation of the site, starting from the end of the Early Bronze Age to the Medieval period. Within this range, a significant occupation dates to the 2<sup>nd</sup> and 1<sup>st</sup> millennium. Excavations carried out between 2013 and 2015 have exposed evidence dating to the Late Bronze and Iron Ages both on the high mound and large extended terrace. The impressive architecture in granitic boulders exposed in Area A and the fragments of cuneiform tablets found on the slopes of the mound suggest the importance of the settlement at the end of 2<sup>nd</sup> millennium BC, at the time of the Hittite rule over the region. The Iron Age period is also characterised by a large building activity centred on the höyük. Here,

in the Area C a complex retaining structure constituted by a large stone glacis, walls and earthen fillings has been exposed.

#### Bronze and Iron Age Discoveries: The 2015 Field Season at Pella in Jordan

Stephen J. BOURKE, University of Sydney

The 2015 field season at Pella in Jordan explored a sequence of EBA I–II fortification walls and associated gateways on the eastern side of Tell Husn, a three-phase Middle Bronze Age palatial residence on the south side of the main mound, and an Iron Age II civic building in the central tell region.

On Husn, work concentrated on exposing two main phases of EB I 'pre-fortification' occupation, the first (EB IA/B in date) destroyed in a significant conflagration, and the second dismantled preparatory to the construction of the fortifications. On the southeast corner of Husn, a third paved gateway was found to underlie the EB II platforms, flanked by a hollow square tower.

On the southern slopes of Khirbet Fahl, excavations in the area of the palatial residence uncovered two additional MBA phases, dating across the 17<sup>th</sup> and 18<sup>th</sup> centuries BCE. Each employed mudbrick extensively for the construction of lined water installations, pillar-supports and large areas of floor paving. Earliest structures were found to have been cut into MB I midden deposits. A number of seals and seal-impressions (bespeaking administrative functions) were recovered along with extensive ceramic and ecofactual datasets.

Excavations north of the MBA palace revealed another seven rooms of the Iron Age II monumental civic structure, now more than 30 x 30m in extent. Rooms contained food preparation and serving materials (red slipped and painted ceramics, several different grindstone forms, numbers of loom weights, and several beautiful glass, hard stone and ivory jewellery items, all sealed by a mid-9<sup>th</sup> Century BCE conflagration which destroyed the site.

The presentation will discuss major architectural and object assemblages, and place each in local and regional contexts.

# The first season of joint German-Kurdish archaeological excavations in the Bassetki-Cluster (Dohuk, Irak-Kurdistan)

Peter PFÄLZNER, University of Tübingen / Hassan Ahmad QASIM, Directorate of Antiquities, Iraq, Kurdistan

The site of Bassetki is one of the most important sites in the region of Dohuk (Autonomous Region of Kurdistan in Iraq), known for the discovery of an Akkadian bronze basis with an inscription of Naram-Sin in the 1970ies. The site consists of a 'tell' with a long sequence of occupation from the Late Chalcolithic to the Hellenistic periods. An extended lower town was only settled during the Early and Middle Bronze Age. The site size of 50 ha makes Bassetki a major urban centre of the mid-third to the mid-second millennium BC in this region. Excavations started in 2015 in the frame of a joint Kurdish-German archaeological expedition with a step trench excavated on the slope of the mound of Bassetki. At a distance of only five kms two more sites were investigated as part of the same project: the sites of Muqable 1 and III, being part of the larger settlement region of Bassetki. While site Muqable I has a major occupation in the Late Chalcolithic period, the neighbouring site of Muqable III dates primarily to the 3rd and 2nd millennia B.C. Step trenches at both sites yield a stratigraphic sequence, which help to build up a regional chronology for the Dohuk region.

#### Recent Excavations at Zincirli Höyük, Ancient Sam'al, in Turkey

Virginia R. HERRMANN, University of Tübingen / David SCHLOEN, University of Chicago

More than a century after the late-nineteenth century excavations at Zincirli Höyük by Luschan and Koldewey, archaeological investigation was resumed at the site in 2006 by the University of Chicago, joined in 2014 by the University of Tübingen. Zincirli, ancient Sam'al, was the capital of a small Iron Age kingdom ruled by an Aramaean dynasty, one of a number of new urban foundations in southeastern Anatolia and north Syria during this period of renewed territorial centralization following the collapse of the Hittite Empire. This paper will present the preliminary results of the most recent excavations at Zincirli on the south and east citadel, by the south city gate, and in the southwest lower town. A particular focus of

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this recent work has been the investigation and comparison of the stratigraphic sequences of the citadel and the north and south lower town, to gain a better understanding of the pace and process of the city's refoundation, expansion, and settlement. The refinement of this chronology will help illuminate the role of renewed urbanization in the political development of this small Iron Age state.

# Culture change at Karkemish: the Neo Hittite town and the Neo Assyrian takeover (2014 and 2015 seasons)

#### Nicolò MARCHETTI, University of Bologna

The fourth and fifth campaigns of renewed archaeological excavation and conservation at Karkemish (modern Karkamış Höyük, Gaziantep) took place in 2014 and 2015 under the joint auspices of the Universities of Bologna, Gaziantep and Istanbul. Researches on the fortification system, the external necropolises of the site, the main cultic district and, especially, the large palatial compound in the Inner Town gave evidence on how the shift from Iron II to III took place, highlighting a fundamental theme which could not be elaborated by the British Museum expedition. If, on the one hand, there is a marked cultural continuity in burial practices and the urban structure of the site (the Outer Town is an Assyrian addiction, in fact), on the other quite dramatic changes occur for the higher tier of settlement public use. The palace built by the ruler Katuwa atound 900 BC underwent radical renovations after Sargon II conquered the town in 717 BC and estabilished there his own palace, destroying or obliterating earlier orthostats showing rows of gazelle-bearers and fantastic winged animals (we found them lying face down, in pieces or covered by benches), as well as writing his deeds, in an unparalleled way, on three clay cylinders. The modes of Assyrian administrative control (tokens and sealings) at the end of the 7th century BC have been shown by the finds from a well 14-m-deep within the palace area, in which several valuables were thrown in when the town fell in 605 BC to the Babylonians.

### A Pioneer Site in Urartian Archaeology: Rusahinili Eiduru-kai. A Summary of Twenty-Five Year Excavations at Ayanis Castle in Van, Türkiye

Mehmet IŞIKLI, Atatürk University, Erzurum

Ayanis Urartian Castle is located 35 km north of the city of Van, and the castle is on the eastern shore, 300 metres inland from Lake Van. A modern village, Ayanis/Ağartı which is named after the castle, is very close to it. Ayanis Castle, which is one of the best-preserved of Urartian Castles, and the twenty five years of excavations at that castle. Rusa II, who was the last great king of this kingdom, and who was the son of Arghishti (II), built Ayanis castle, and altogether he was responsible for building five other significant castles on Urartian homeland. There is no doubt about the founder of the castle as we have inscribed evidence such as building inscriptions, several seals, bullae and various inscribed bronze objects. Ayanis excavations are systematic and encompass interdisciplinary studies. Within the scope of these studies a number of archeo-geophysic, archeo-zoologic, archeo-botanic, ethnoarchaeology, archeo-metallurgy, restoration and conservation works have been performed. at the end of 25 years of excavations, one of the largest collections of Urartian archaeological artefacts has been acquired. This exclusive collection consists mostly of magnificent metal objects. In this essay the innovations to Urartian Archaeology will be examined in the light of visiual and archaeological materails from Ayanis Excavations.

### Before the Flood. The Lower Göksu Archaeological Salvage Survey Project. The results of three seasons of survey along the Göksu River Valley of Mersin Province, Turkey

Tevlik Emre \$ERIFOĞLU, University of Bitlis Eren, Turkey / Naoise MACSWEENEY, University of Leicester, United Kingdom / Carlo COLANTONI, School of Archaeology and Ancient History, University of Leicester, United Kingdom

The Lower Göksu Archaeological Salvage Survey Project (LGASSP) is a survey of settlement patterns being undertaken along the Göksu River valley in the province of Mersin, Turkey. It is a collaborative project between the Universities of Bitlis Eren (Turkey) and Leicester (U.K.). This paper will present a round up of the findings and results from three seasons of survey work (2013-2015) along the valley. The Göksu Valley is considered to have been from prehistory onwards one of the primary means of transit and communication from the Mediterranean coast of southern Anatolia to the central plateau. Previous research in the region has demonstrated the valley's importance as a means of transit and recorded a rich settlement history across many periods. The extensive work undertaken by the LGASSP has built upon this previous work to reveal a growing network of sites for many periods and a complex relationship between site, landscape, religious 'place' and transit routes. Survey has identified sites from prehistory to the Medieval period, with particularly high numbers for the Late Roman/Byzantine period and it has significantly improved our understanding of Early Bronze Age settlement patterns. While intensive on-site survey at the sites of Kilise Tepe and Çigentepe has provided data pointing towards larger than expected communities in the Late Roman/Byzantine period along the valley.

### The excavations in TPC Area at Çatalhöyük East. A new perspective on the Late Neolithic in Central Anatolia

#### Arkadiusz MARCINIAK

The paper aims to present the results of ongoing excavations (2012–2016) of a previously unexplored area on SW slope of the southern prominence of Çatalhöyük East known as the TPC Area. The trench is located between the South Area, representing classic phase of the settlement occupation, and TP Area marking the final period of its occupation and epitomizing significant changes in the lifeways of local community that eventually led to its demise and abandonment of the settlement.

The paper will present the results of the ongoing excavation works, in particular site architecture, burial practices, procurement of raw materials, subsistence, and landscape exploitation. It will further put up these results in a broader regional perspective by discussing transformations of Neolithic groups in what appears to be a major transitional period that made possible their dispersal in different parts of central and western Anatolia and beyond.

#### Archaeological investigations at the site of Sela (Tafila, Jordan)

Rocío DA RIVA, University of Barcelona, Spain / Juan R. MUÑIZ, Pontifical University of Salamanca, Spain / Roser MARSAL, University of Barcelona, Spain

The site of as-Sila has been identified with Edomite Sela, frequently mentioned in the Bible. The site was important in the Iron Age (as demonstrated by the presence of many structures and the Neo-Babylonian monument of king Nabonidus, 556–539 BCE), and also during the Nabatean and Roman periods: there is evidence of occupation from the eight century BCE to the second century CE. The survey work at Sela has revealed a very large site (43 ha.) with a considerable number of structures related to water, and architectonic structures of varying sizes: rock-cut houses, remains of rock-cut large buildings, towers, etc. Surface pottery includes Iron Age, Nabatean and Roman types. However, the most remarkable feature of the site is the presence of canals, reservoirs, cisterns and other structures related to water storage, transport and management (up to 38 cisterns and reservoirs were observed in the course of the survey), making Sela a unique place to study water management in the Edom Plateau during the first millennium BCE.

### Egyptian historical chronology, Tell el-Dab<sup>c</sup>a and the Middle Bronze Age in the Levant: A review of radiocarbon data and archaeological synchronisms

Felix HÖFLMAYER, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria / Michael W. DEE, University of Oxford, United Kingdom / Sturt W. MANNING, Cornell Tree-Ring Laboratory, Cornell University, New York

The low Middle Bronze Age chronology of the (southern) Levant is based on the conventional archaeological/historical dating of the stratigraphical sequence of Tell el-Dab<sup>c</sup>a as proposed by Manfred Bietak. The excavator claimed that four so-called datum-lines link the stratigraphical sequence and the material culture of the site to the Egyptian historical chronology.

Radiocarbon evidence on the other hand has challenged the low chronology and conventional dating of Tell el-Dab<sup>c</sup>a. While during the last decades the discussion mainly focused on the early New Kingdom,

the beginning of the Late Bronze Age, and the Minoan Santorini eruption, where radiocarbon evidence from the Aegean as well as from Tell el-Dab<sup>c</sup>a itself consistently pointed to a higher chronology, recent radiocarbon evidence for the Middle Bronze Age challenges the conventional dates for Tell el-Dab<sup>c</sup>a as well. At the same time, a critical review of the so-called datum-lines finds that conventional dates for Tell el-Dab<sup>c</sup>a do not stand on firm ground.

We critically examine the so-called datum-lines of Tell el-Dab<sup>c</sup>a, challenge its conventional dating and argue for a higher Middle Bronze Age chronology based on radiocarbon evidence from Tell el-Dab<sup>c</sup>a, Tel Ifshar (Israel), and Tell el-Burak (Lebanon).

# Egyptian-South Levantine Interactions, as Reflected in the Finds from a Late Early Bronze Age I Burial Ground at "Nesher"-Ramla Quarry, Israel

Vladimir Wolff AVRUTIS, Zinman Institute of Archaeology, University of Haifa

The site of Nesher-Ramla Quarry is located in the Lod Valley, bordering the Judean Shephelah. The intensive developments of the area lead to a large salvage excavations at the site, ongoing constantly since 2006, on behalf of the Zinman Institute of Archaeology, University of Haifa.

The late EB I necropolis revealed within the perimeter of the site consists of eight burial caves, characterized by multiple, primary interments. The deceased were accompanied by a great variety of funerary gifts: pottery, groundstone vessels, flint tools, metal weapons, and faunal offerings. The ceramic and lithic deposits deriving from the NRQ burial caves are dated to phases within the late EB I.

Revealed imported artifacts from Egypt demonstrate a strong interaction between the material cultures of the southern Levant and Egypt during late EB I/Naqada IIIB–C. Other finds have clear parallels at Qustul in Lower Nubia indicating indirect cultural influences mediated through the cultural filter of Egypt. The present paper offers actual state of the research of cultural interactions between the regions in light of newly excavated data.

#### Tell el-Burak in the Iron Age: Architecture and Town Planning

Hélène SADER, American University of Beirut

Tell el-Burak is situated 9 km south of Sidon. The site offers a unique chance to investigate a coastal site on the southern coast of Phoenicia as archaeological sites are rapidly disappearing in Lebanon due to looting and modern construction works. Eleven seasons of excavations undertaken by a joint team from the American University of Beirut, the University of Tübingen, and the German Archaeological Institute have established the high scientific importance of the site by uncovering a Middle Bronze Age palace (*ca* 1900–1700 BC) with wall paintings, and a Middle and Late Iron Age settlement (*ca* 700–350 BC).

The paper will present the results of five (2003, 2005, 2013–2015) excavation seasons which exposed large parts of the Iron Age settlement. Several buildings and two successive fortification walls as well as an industrial area have been excavated. They date to the 7<sup>th</sup> and 6<sup>th</sup> c. BC. The paper will focus on town planning, architecture, and building techniques. The evidence from Tell el Burak is highly significant for the study of the Phoenician settlements of the motherland, an area of research that has been hardly investigated for lack of archaeological evidence.

#### Jabal Juhayra: Further Evidence for the Neolithic Barrage and Cistern in the Jafr Basin, Southern Jordan Sumio FUJII, Kanazawa University, Faculty of Letters, Institute of Human and Social Sciences

Jabal Juhayra is a small-scale settlement site located in the northwestern part of the Jafr Basin, southern Jordan. Our recent rescue excavations have shown that the site contains both the Late Pre-Pottery Neolithic B settlement (Layer 3) and the final Late Neolithic encampment (Layer 2). The LPPNB settlement included several rectangular masonry structures, a stone-built barrage built across a small gully, and a small cistern paved with scoria cement, whereas the overlying final-LN encampment consisted of rockshelter dwellings and an open-air sanctuary. What attracted our special attention were the two distinct types of water-catchment facilities, both of which were not only constructed in the LPPNB layer but also covered with the LN features or deposits. Thus, they undoubtedly date back to the LPPNB. This paper draws a final conclusion on the date of the barrage and cistern in the Jafr Basin on the basis of current research evidence from the stratified Neolithic settlement.

### Dolmen 534, a megalithic tomb of the Early Bronze Age II in Jebel al-Mutawwaq, Jordan. Preliminary Results of the 2014 Spanish-Italian Expedition in Area Cc South

Andrea POLCARO, University of Perugia, Italy / Juan Ramón MUÑIZ ÁLVAREZ, Pontificia Facultad San Esteban of Salamanca, Spain

The paper presents the results of the Spanish-Italian excavations to Dolmen 534 in the site of Jebel al-Mutawwaq, along the Middle Wadi az-Zarqa Valley, performed in April 2014. The excavations to the site, co-directed since 2012 by J.R. Muñiz Álvarez ("Pontificia Facultad San Esteban" of Salamanca, Spain) and A. Polcaro (Perugia University, Italy), has been since now concentrated on the eastern dolmen field and the eastern and central sectors of the nearby Early Bronze Age I village. The past excavation campaigns proved that almost the whole dolmens in the eastern area of the necropolis, close to the village, were built and used in the EB I. Despite the homogeneous chronology of the site, in 2014 a later mega-lithic tomb (Dolmen 534), built inside the EB I village, partially using the ruins of the oldest phase, has been discovered and excavated. The dolmen had particular architectonical features, like a right-angle corridor entrance, and an EB II burial in the lowest level of the burial chamber, with two entire jugs and a small bronze weapons assemblage.

#### The Japanese Excavations at Tell Ali al-Hajj, Rumeilah, on the Euphrates: Settlement, Material Culture, and Chronology

#### Kazuya SHIMOGAMA, The Ancient Orient Museum, Tokyo

Tell Ali al-Hajj, Rumeilah, on the middle Euphrates of northwestern Syria, is a Bronze and Iron Age settlement site, hardly reported so far. Excavated in the late 1970's by the Ancient Orient Museum, Tokyo, the site has recently been restudied in the light of settlement, Early Bronze Age extramural graves, material culture including particularly ceramics, and chronology.

First occupied during the late Early Bronze Age, when North Mesopotamia saw an unprecedented urbanism, this small settlement of ca. 1.7 ha persisted into the Middle Bronze Age fortified town without any clear break. Although it experienced a hiatus during the Late Bronze and Early Iron Ages, it was reoccupied in the later part of the Iron Age again with a massive fortification. Also supported by AMS radiocarbon datings, the chronology revealed that Tell Ali al-Hajj constituted a small, but long-inhabited site in the region.

The paper will also show the recently conducted material studies with an emphasis on the Ali al-Hajj pottery assemblages, suggesting changing interregional connections through the chronological phases. Compared with data from many other contemporaneous sites in the region, the latest archaeological approaches add important insights into the settlement history in the Euphrates region.

#### Excavation of the Egyptian New Kingdom Fortress in Jaffa, 2011–2014

Aaron A. BURKE, University of California, Los Angeles / Martin PEILSTÖCKER, Johannes Gutenberg-University, Mainz

From ca. 1450 to 1100 BC a small fortress in Jaffa, Israel (anc. Yapu) served as a staging ground for Egyptian military campaigns into Canaan and the administration of its imperial territories. Although Jaffa's role has long been known from a handful of textual references, recent research by the Jaffa Cultural Heritage Project under the direction of Aaron A. Burke (University of California, Los Angeles) and Martin Peilstöcker (Johannes-Gutenberg University, Mainz) has facilitated a wholesale reassessment of the Egyptian presence at the site. The excavations have permitted not only an elucidation of the history of the fortress, but also the nature of interactions between Egyptians and Canaanites during this lengthy period. Of particular note is the evidence for violent interactions that characterized the fortress' existence during no less than three centuries. The combined efforts to publish earlier excavations by Jacob

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Kaplan (1955–1974) and the renewal of excavations of the fortress between 2011 and 2014 reveal the history of an imperial stronghold subject to insurgent activities. A synthesis of archaeological results at Tel Yafo therefore sheds new light on the life of this Egyptian stronghold during the New Kingdom.

#### The material culture of the Second Intermediate Period in Egypt and Nubia: Case Study Abydos

Bettina BADER, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria / Christian KNOBLAUCH, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria

Within the framework of the project Beyond politics: Material culture in Second Intermediate Period Egypt and Nubia a large number of objects from intact contexts will be re-recorded from important sites of the period. The aim of the project is to create independent local chronological sequences of contexts in order to provide a sound foundation for relative connections between sites. This is important because regional differences in some object groups have already been noticed. Multi-scalar scrutiny of regional differences in various object classes will provide a better understanding of the deep social, cultural and political changes that make this period an 'Intermediate' one. The crucial difference to other projects is the bottom up approach, which means that the local sequence will be achieved first before any interregional comparisons are undertaken.

As a case study of the approach and problems/possibilities the ancient settlement, cultic and burial site of Abydos will be presented. Excavations were conducted since the 1800s and amassed innumerable contexts of different quality. Current work demonstrates that a combination of research in old publications, archival material and in museums and collaborations with modern excavation provides the contextual background to understand the complex situation there in the Second Intermediate Period.

### New Researches on the Megalithic Quarries of Baalbek

Jeanine ABDUL MASSIH, Lebanese University, Department of Art and Archaeology

The Lebanese University in collaboration with the DAI, the German Institute of Berlin, conducted the archaeological research program on the Quarries of Baalbek.

In this paper the discovery of the biggest quarried stone of the world in the Roman Quarry of Baalbek (19.60 m long 6 m width and 5.60 m high) will be presented along with the result of the first and the second campaign of excavation (2014–2015).

Previously, the Roman quarry of Baalbek, located at the southern entrance of Baalbek, *ca.* 800m away from the temple, was famous for the large megalith, known as the Hajjar el Hibla (21.50m long, 4.20m high and 4.80m wide). This quarry covered a wide area of about 10 hectares; extending from the Cheikh Abdallah hill to the depression, south of the modern asphalt road, in which another similar (to Hajjar al Hibla) megalithic block had been uncovered during the late 70.

The presence *in situ* of three megalithic stone left in the quarry gave us a unique chance to elaborate our research on the technics of extraction and transport used to move the megaliths. Therefore, we concentrated our excavation around the megaliths to resolve the ways used to move the blocks, why they were left on site and what type of occupation followed the quarrying phase, in this area, during the Byzantine and Medieval Times.

The results on the phases of exploitation of the quarry, the technics of extraction and their use in the construction of the monuments of Baalbek will give us the possibility to work on a new problematic in the future campaigns.

#### Deciphering Destruction Layers: Tel Lachish as a Case Study

Igor KREIMERMAN, The Hebrew University of Jerusalem / Ruth SHAHACK-GROSS, University of Haifa / Yossi GARFINKEL, The Hebrew University of Jerusalem

During the excavations of the Fourth Expedition to Lachish that took place in 2014-2015, destruction layers dating to the Middle Bronze Age and the Iron Age IIB were uncovered. These layers were accompa-

nied by traces for conflagrations such as ash, soot and burnt mud bricks as well as considerable amounts of complete vessels. However, some macroscopic differences in the nature of the fire that took place and the types of finds as well as their preservation were observed.

This paper will present a research that aimed at understanding the formation of these layers and the differences that were noticed in the field. The study combined both macro- and microarchaeological methods. In addition to the analysis of the data from the site, some experiments were conducted in order to elucidate the mechanisms that are active during conflagration. The results of the investigation include both insights on the destructions of Tel Lachish as well as tools for future studies of destruction layers.

#### Results of the first season of excavations at the Medieval Castle of Gbail/Byblos

Anis CHAAYA, Lebanese University, Beirut

The medieval castle of Gbail/Byblos is one of the rare castles built by the Franks in the Latin East. This castle was studied by M. Dunand and P. Deschamps. However, archaeological investigations on the ancient site of Gbail/Byblos where the castle is located came to a halt after the outbreak of the civil war in Lebanon in 1975, except for a few preservation ventures aimed at rehabilitating the site for tourists. In 2015, a new research project took place on the site, 40 years after the last archaeological excavations of M. Dunand. This new project consists of the study of the building techniques of the castle. The program included archaeological excavation in several parts of the castle and its ditch with the aim at understanding the evolution of the construction of the castle and the organization of its defenses. The results obtained are promising and offer a new reading of the Gbail castle. The excavations yielded also new data regarding the place of implementation of the castle, its first foundation on Bronze Age layers, and the evolution of its construction.

#### The Middle Bronze Age at Tell Fadous-Kfarabida (Lebanon): an Interim Statement

Hermann GENZ, American University of Beirut, Lebanon / Metoda PERŠIN, Eberhard Karls University, Tübingen / Karin KOPETZKY, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria / Alexander AHRENS, Orient Department, Damascus Branch

In contrast to the Early Bronze Age levels, the Middle Bronze Age at Tell Fadous-Kfarabida, situated on the northern coast of Lebanon, is characterized by a general absence of architectural features. The period is mainly represented by pits and tombs.

This report will present an overview of the Middle Bronze Age remains of the site, focusing on the typological and chronological range of the Middle Bronze Age pottery, as well as the Egyptian imports and / or local emulations.

Despite the small size of the site and the lack of architecture so far, the range of Middle Bronze Age material represented suggests it was more than a mere hamlet. The possible nature and function of the site will be discussed, especially in the light of the observation of similar developments at neighboring coastal sites like Tell Arqa and Sidon, where the first half of the Middle Bronze Age is also mainly represented by pits and tombs.

#### The Late Bronze I and Iron Age I Remains at Tel Dover in the Jordan Valley, Israel

Amir GOLANI, Israel Antiquities Authority / Samuel WOLFF, Israel Antiquities Authority

Tel Dover, located near the confluence of the Yarmouk and Jordan Rivers and adjacent to the Israel-Jordanian international border, is comprised of a small tell and an adjacent lower city. In 1997, large-scale excavations of the Israel Antiquities Authority in the lower city were the first to have been conducted at the site, revealing remains of ten occupational strata from the Neolithic to the Mamluk periods. The present lecture focuses on the remains of Late Bronze Age IB (15<sup>th</sup> century BCE) and late Iron Age IB (11<sup>th</sup>-10<sup>th</sup> century BCE). Stratum VIII of LB IB consisted of a massive architectural complex built of cyclopean boulders that included a large public building. In Stratum VII of late Iron Age IB, three occupational phases were discerned, interspersed with two phases of burials. Scattered finds of the 8<sup>th</sup> century BCE attest to limited activity in this area as well. Having been occupied during LB IB, then followed by a settlement gap and subsequently reoccupied in Iron Age IB, the settlement history of Tel Dover during the Bronze and Iron Ages is similar to that of Tel Hadar located nearby on the eastern shore of the Sea of Galilee.

#### Pottery Material from Third Millennium Stone-built Monumental Tombs from Terqa (Syria) Juliette MAS, Université de Liège

Terqa is located in the Syrian Middle-Euphrates region, on the right bank of the river, approximately 70 km north of Mari. It represents a key site because of its geographical position and its long sequence of occupation. The site had first been excavated by an American mission directed by G. Buccellati. Since 1987, a French mission led by O. Rouault, has been working at the site. Terqa is best known for its 2<sup>nd</sup> millennium BC levels because of the Royal Archives of Mari. Nevertheless, the last campaigns of excavation, which mainly focused on 3<sup>rd</sup> millennium BC levels, revealed that the site was also an important urban centre at that time. In area F, the archaeological exploration revealed a domestic quarter (dating back to EBIII–EBIVa) and earlier stone built monumental tombs. One of these tombs could be connected to the ones discovered at Mari underneath the Ishtar temple. They offered large and diversified assemblages of complete pottery vessels (over one hundred) dating back to EBIII and connected to several cultural traditions. This paper is aimed to present the pottery assemblages from these tombs, their cultural connections with the other regions of Near East and their significance for chronology.

### The royal well room in Qatna, Syria: a stratigraphical analysis

Giulia BACCELLI, University of Tuebingen / Francesco LEPRAI, University of Tuebingen

The excavation in the royal well room of Qatna (Syria), conducted from 2000 to 2010 produces a composite picture of the various phases of this significant archeological context, the wealth of its filling debris consisting in wall paintings fragments, an collapse of preserved timbers, and remarkable architectural features such has the basalt step staircase.

Recent analyses and the freshly concluded study of the complete stratigraphy provides now some conclusive results; digital tools have been developed in order to understand the stratigraphic assessment and the collapse dynamics.

Particular attention will be reserved to the unparalleled finds of water logged timbers and the analysis of their distraction layers.

#### The Early Bronze Age Palace of Chuera and its Afterlife

Alexander TAMM, Ludwig-Maximilians-Universität München

With an area of almost 3000 m<sup>2</sup> Palace F is the biggest single building excavated till now in the Early Bronze Age settlement of Chuera (Northern-Syria). It thus exceeds the area of even the biggest temple by far. The architecture of the monumental complex shows the very urge of Chuera's ruling elite to display their wealth and power – numerous rooms and courtyards seem to have had no other purpose than to represent its inhabitants. Other aspects like living and working are present in the building but seem to have been of only secondary meaning. With the decline of the settlement between 2300 and 2200 BC the palace was abandoned by its original residents and left open to decay. Only a short time after the building was occupied by new inhabitants from lower class population layers. They divided the building into smaller units and used it in the following century as homesteads. The palace thus not only stands for the power Chuera had at the height of it's development, but also as symbol for the downfall of urban civilization at the end of the 3<sup>rd</sup> millennium BC in the whole of northern Syria.

# Spatial and functional analysis of an EB III elite building (3000–2500 BCE): Building 4 at Tell Fadous-Kfarabida (Lebanon)

Martin MAKINSON / Zuzanna WYGNANSKA, Polish Centre of Mediterranean Archaeology, University of Warsaw

Although 1.4 ha in surface, a site of Fadous-Kfarabida (northern Lebanon) was no ordinary village. Despite the destruction of at least 40% of the mound by bulldozing prior the excavation, fieldwork since 2004 has enabled clarifying the layout of what appears to be, at least in the EB III a central place for gathering of agricultural products by an authority.

One of the constructions excavated appears to be unusually large and was built for a special purpose. Evidence of large scale storage, of administrative procedures involving the sealing of goods and of a massive investment in architecture are particularly apparent in the surviving eastern part of Building 4. This paper aims at reconstructing circulation patterns, activity areas and providing a function for rooms and spaces, as well as presenting evidence for a second storey in a structure which, in all likelihood was closely related to the site of Byblos, located 12 km to the south. Building 4 is one of the main elements enabling one to place Fadous-Kfarabida within hierarchy of settlements of the city-state of Byblos. In order to ascertain the role of space in Building 4 both architecture and finds will be briefly presented in conjunction.

# Tel Akko Total Archaeology Project: The 2014 and 2015 Seasons of Excavation and Survey

Ann E. KILLEBREW, The Pennsylvania State University

The 22-hectare maritime harbor settlement of Tel Akko has dominated the Plain of Akko's ancient landscape for millennia. First inhabited in the Early Bronze Age, Tel Akko served as a major urban center for most of the second and first millennia BCE. During the Hellenistic period, probably as a result of the changing coastline, the population of Akko migrated westward off the tell, to an area now under the modern city and its historic walled Old City. The Tel Akko Total Archaeology Project incorporates a holistic approach to archaeology together with a multi-dimensional research agenda and innovative field school that encompasses archaeological survey, systematic excavation, a robust conservation program, archaeological sciences, a public outreach program, and the incorporation of the largely unpublished results of M Dothan's earlier extensive excavations focusing on Area A/AB/B. This paper will present the results of the 2014 and 2015 excavation and survey seasons including: 1) recent discoveries relating to the Phoenician largescale iron working industrial area dating to the 7<sup>th</sup>–5<sup>th</sup> centuries BCE; 2) the results of an intensive test pitting survey on the tell; 3) our community outreach program to Akko's diverse populations; and 4) the exploration of the Akko Plain hinterland utilizing new innovative technologies in an attempt to reconstruction the Phoenician hinterland and landscape in 3D.

# The Emergency Excavation in Aleppo, north Syria, Season 2011

Youssef KANJOU, University of Tsukuba, Japan & Former Director of the National Museum, Aleppo

Every year in Aleppo region we do several emergency excavations mainly as the result of the discovery of new archaeology evidence by several reasons as the construction of new building or road. In 2011 the year which started the civil war in Syria, was the last year we did emergency excavations, in this year we did several excavation in Aleppo region where we discovered new sites and graves from bronze age to classic period.

In this presentation we present the result of our emergency excavation in particular the excavation at Tell Bajer, south Aleppo, where we discover very important church of Basilica type which date to Byzantine period (500-600 AD) with all their sections included the big mosaic (25\*15m) and two text of Syriac inscriptions, in addition to the Bema which is the characteristic of Syrian church in that period. the arts scene on the mosaic was only geometric and plants as the lotus flowers which reflect the Christians religion in that time.

#### Exploration of the historical fortifications of Erbil

Dara Al YAQOOBI, High Commission for Erbil Citadel Revitalization / John MACGINNIS, University of Cambridge / Mary SHEPPERSON, Institute of Archaeology UCL

The citadel mound of Erbil is believed to have been inhabited continuously for a period of at least 7,000 years. Until recently, however, political and other circumstances did not allow an investigation of the mound. In recent years this has changed. The establishment by the Kurdish Regional Government in Iraq of the High Commission for Erbil Citadel Revitalisation (HCECR), headed by Dara al Yaqoobi, has enabled the formulation of a detailed strategy for the archaeological investigation of the mound. The first excavation has been conducted on the northwestern perimeter of the mound, with the aim of recovering evidence of the historic fortifications. The investigations have been successful in this aim, discovering a monumental wall made of both fired and unfired brick, exposed to its full standing elevation. This must be the wall last in use when the Citadel was besieged and taken by Nadir Shah in 1743. The constructional history is however complex. Below this wall, and an apparent destruction layer, evidence has also been found of an entirely separate earlier massive fortification. This paper will review the background and history of these investigations together with their results and suggestions for future work.

# Kurd Qaburstan – A Second Millennium BC Urban Site on the Erbil Plain: Results of the Johns Hopkins Project 2013–2014

Glenn M. SCHWARTZ, The Johns Hopkins University, USA

Kurd Qaburstan is a 118 hectare site south of Erbil in the Kurdistan Region of Iraq, investigated by a team from Johns Hopkins University (USA) in 2013 and 2014. On the expansive lower town, excavation and surface sherd collection indicated that the Middle Bronze (Old Babylonian) period was the most abundantly represented, but with substantial Islamic occupation also indicated in the southern areas. Excavation of Middle Bronze contexts revealed architecture with pottery vessels left in situ, indicating an abrupt abandonment. The extensive Middle Bronze occupation at the site and the dating of its enclosure wall supports the hypothesis that Kurd Qaburstan was ancient Qabra, the political center of the Erbil plain in the Middle Bronze (Mittani) period occupation below the site surface, with evidence of elite architecture including elaborate water-management installations. Geophysical survey conducted by Andrew Creekmore documented a 30 hectare expanse of Middle Bronze Age architecture in the northern lower town, revealing densely occupied neighborhoods of residential architecture. It is hoped that new insights on the nature of northern Mesopotamian urbanism in the second millennium can be gained from research at Kurd Qaburstan.

#### Excavations in Kunara (Irqi Kurdistan): new results

Aline TENU, Maison de l'Archéologie et de l'Ethnologie, CNRS Nanterre

Kunara is a 7–9 ha site, located near the modern city of Suleymaniyeh in Iraqi Kurdistan. It has been identified during a survey conducted in 2011 by the Mission archéologique du Peramagron, directed at that time by Christine Kepinski. Two seasons of excavation took place in 2012 and 2013. They revealed several buildings, belonging to at least three different levels, mostly dated to the last part of the 3<sup>rd</sup> Millennium and to the beginning of the 2<sup>rd</sup> Millennium. Two monumental edifices have been recognized, one in the lower town, one in the upper town. Their function is still unknown, despite the discovery in one of them of a finely carved cylinder seal. The results of the next campaign scheduled in autumn 2015 will be presented.

#### In the Shadow of The Hilly Flanks – The Sirwan/Upper Diyala Regional Project 2014–15

Jesse CASANA, Dartmouth College / Claudia GLATZ, University of Glasgow / T. Emre ŞERIFOĞLU, Bitlis Eren University

The Sirwan/Upper Diyala Regional Project is an international survey project, which investigates the landscape and settlement history of the Sirwan/Upper Diyala River valley of north-east Iraq/Kurdistan and explores the long-term cultural development and identity of this transitional region situated between the Mesopotamian plains and the Zagros mountains. The project employs an integrated programme of remote sensing, systematic extensive and intensive survey, targeted geophysical prospection and test excavations to investigate this archaeologically rich but to-date little explored region. In this paper we present the results of the past two seasons' of work. Much of our efforts in 2014 concentrated on a cluster of low mounds dating to the later Neolithic and Chalcolithic periods (Hassuna to Uruk) in the southern Khani Masi region. A second focus has been the second millennium BC where our aim has been to contextualise the well-known rock relief of Darband-i-Balula in its wider socio-cultural and political context and to explore the Sirwan valley's relationship with increasingly large-scale, external imperial polities.

#### Iron Age "fortified" rural settlement in Iraqi Kurdistan: Excavations at Qalat Said Ahmadan Shin'ichi NISHIYAMA, Chubu University, Japan

Qala't Said Ahmadan is a small rural settlement located in the Pishdar Plain, northwest of Sulaimaniyah Governorate, Iraqi Kurdistan. The University of Tsukuba (Japan) has conducted the excavations of the site between 2014 and 2015. Apart from the Neolithic and Chalcolithic occupations, we have encountered a unique Iron Age structures. During the Iron Age (ca. 8–6<sup>th</sup> century BC), the mound was surrounded by a large stone-built wall with inner rooms. Considering the size of the site, it is quite unique to have such a firm wall at the edge of the mound. The geo-political location of the site indicated that it was in the border area between the Neo-Assyrian and Median Empire. Why such small settlement have to be "fortified" by the large stone wall? The paper considers the historical significance of the rural Iron Age settlement within the framework of conflicting zone between the two major imperial powers. In addition, the material culture, especially ceramics, excavated from the Iron Age structures seems to provide a hitherto unknown assemblage which can be comparable to North Mesopotamian tradition.

#### The Assur Project - past and future of the work on an old excavation

Friedhelm PEDDE, Berlin

The Assur Project in Berlin started in 1997. Though the financial support of the Deutsche Forschungsgemeinschaft ended in the meantime, the project is still alive. This contribution gives a summary of the work done over the last years and describes the work in progress. Despite the fact that the documentation of old excavations is limited, the Assur Project shows as an example that the work on old collection and documentation is worth the effort and offers amazing opportunities. The results and the large number of publications show the potential of old excavations.

#### The Excavation Seasons 2012 and 2013 at Tell Nader in Erbil (Kurdistan Region in Iraq)

Konstantinos KOPANIAS, University of Athens, Department of History and Archaeology

In April 2011 a new excavation began in the previously unknown site Tell Nader, which lies at the outskirts of the rapidly expanding city of Erbil, the capital of the Kurdistan Region of Iraq. A preliminary report about the results of the first season have been presented in the 8<sup>th</sup> ICAANE. This paper will focus on the finds from the excavation seasons in 2012 and 2013, which allow us to sketch the history of the habitation on this site. It seems to have been in use from the Late Neolithic, in particular the Hassuna period, down to the Middle Assyrian or Early Neo-Assyrian period. The main occupation period in Tell Nader dates to the Late Ubaid/Early Uruk. Among the most important new are four Late Ubaid child burials, kilns for the production of pottery, as well as a complex pyrotechnic construction for the production of metal objects. A summary of the analyses of the archaeozoological, archaeobotanical and anthropological evidence from the Tell Nader excavation will also be included in the paper.

# Timber frame architecture in South Arabia and Eastern Africa from the early 1st Millennium B.C. and comparisons with the Levant and Asia Minor – Recent investigations of the German Archaeological Institute

Mike SCHNELLE, German Archaeological Institute, Berlin

Recent investigations of the Sanaa Branch of the German Archaeological Institute in the Sabaean center Sirwah (Yemen) brought a monumental building to light, whose timber framed walls dates back to 900 B.C. and which is therefore the oldest known monumental timber frame structure in South Arabia and Eastern Africa. Since 2009 up to the present investigations by the Sanaa Branch of the German Archaeological Institute on the other side of the Red Sea, in Yeha (northern Ethiopia, province of Tigrai), center of a community called Di'amat and strongly influenced by the Sabaean culture, were undertaken. Evidences of this so called Ethio-Sabaean culture are as well numerous monumental buildings. One of these complexes is even a timber frame building, which dates around 800 B.C. and which will be excavated and restored simultaneously. This oldest preserved, certainly multistoried timber frame complex in Eastern Africa is even the hitherto greatest roofed timber-frame structure of South Arabia and may be Eastern Africa. A lot of architectural features are evidence for the participation of Sabaean master builders and craftsmen at the erection of this monumental complex and some differs. Similar construction techniques can be detected at numerous architectural structures from Asia Minor to Pakistan - far from South Arabia - and continues in the Axumite architecture – displayed at the famous stelae of Axum - and later on in the Ethiopian church building tradition up to the modern age. The investigations and restoration concepts at the timber frame structures in South Arabia and Eastern Africa and its possible influences will be presented and should be discussed at the conference.

### Preliminary Results of the Studies on the Chalcolithic Age in Farahan Plain

Javad Alaei MOGHDAM, University of Zabol and University of Mazandaran / Seyede Leyla BANIJAMALI, Tarbiat Modares University / Rahmat ABASNEZHAD, Department of Archaeology, Mazandaran University

Farahan plain includes a wide area in the middle of the relatively high mountains and abundant pastures that has been considerably paid attention by human beings due to its favorable climatic conditions, particularly for agriculture. During the archaeological surveys performed on Farahan plain in the past decade and also the complementary studies afterwards, 560 archaeological sites were identified from among which 31 sites had some evidence of Copper and Stone Ages that according to the expansion of the under study region, settlement in this period has a higher density compared to the previous (the Neolithic Age) and the later (the Bronze Age) periods. In terms of cultural materials, these sites are comparable to the archaeological sites such as Silk, Ozbaki, Sagzabad and so on.

The present paper which has been written based on the results Obtained of archaeological field survey and comparative studies on cultural materials, while introducing the Chalcolithic sites of Farahan plain, investigates their cultural communications with each other.

Keywords: Farahan Plain, Archaeological Sites, Chalcolithic Age, Typological Comparison, Cultural Communications





WEILHARTNER Jörg – RUPPENSTEIN Florian (Eds.) Tradition and Innovation in the Mycenaean Palatial Polities Proceedings of an International Symposium held at the Austrian Academy of Sciences, Institute for Oriental and European Archaeology, Aegean and Anatolia Department, Vienna, 1–2 March, 2013



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Vassilis Aravantinos, Anthi Batziou-Efstathiou, Fritz Blakolmer, Birgitta Eder, Erik Hallager, Reinhard Jung, John T. Killen, Marie-Louise Nosch, Françoise Rougemont, Florian Ruppenstein, Cynthia W. Shelmerdine, Jörg Weilhartner

The Mycenaean palatial polities, which flourished approximately between 1400 and 1200 BC, are the first states on the European mainland. For that reason they play an important role for the study of the development of social systems. In these conference proceedings concepts of traditions and innovations are viewed from historical, art-historical, administrative, palaeographical and technological perspectives. The papers discuss aspects hat are essential for understanding Mycenaean society in the palatial period, but which have not been a central focus of research. Some contributors present first results of recent excavations that have the potential to re evaluate our current view of the rise, transformation and interaction of palatial centres. Others focus on administrative practices of the palaces that have produced the oldest deciphered written texts from Europe, the Linear B documents. Within these contributions various interpretative models are addressed and their capacities for contributing to the analysis of innovative and traditional elements are explored. Furthermore, interdisciplinary and contextual approaches play a significant role. In focusing upon the origin and development of Mycenaean palatial polities, the administrative practices employed by their bureaucracies and the material culture that is left behind, both the archaeological record and the written evidence are taken into consideration to provide a deeper insight into the ideas of tradition and innovation during the Mycenaean palatial period.

Die mykenischen Palaststaaten, die etwa zwischen 1400 und 1200 v. Chr. existiert haben, gelten als die ersten Staaten des europäischen Festlandes. Sie haben daher für die Erforschung der Entwicklung von Gesellschaftssystemen eine große Bedeutung. Traditionelle und innovative Aspekte dieser palatialen Staaten werden im vorliegenden Kongressband aus historischer, kunsthistorischer, verwaltungstechnischer, paläographischer und technologischer Sicht beleuchtet, wobei insbesondere auf Gesichtspunkte Bezug genommen wird, die von immanenter Bedeutung für das Verständnis der mykenischen Palastgesellschaft sind, denen aber bislang in der Forschung nicht umfassend Rechnung getragen worden ist. Einige Beiträge stellen erste Ergebnisse aktueller Ausgrabungen vor, die zu einer Neubewertung im Hinblick auf die Entstehung, Entfaltung und Interaktion der mykenischen Palastzentren führen können. Andere Beiträge widmen sich Fragestellungen, die mit der schriftlichen Verwaltung der Palaststaaten zusammenhängen und somit mit den ältesten lesbaren Schriftzeugnissen Europas, den so genannten Linear B-Dokumenten. Die einzelner Autoren bedienen sich nicht nur interdisziplinärer und kontextueller Herangehensweisen, sondern entwickeln auch unterschiedliche Erklärungsmodelle, die in Hinsicht auf ein besseres Verständnis traditioneller und innovativer Elemente ausgewertet worden sind. Das Zentrum des Interesses bilden die Entstehung und Entwicklung der mykenischen Palaststaaten, die Zeugnisse der Verwaltung sowie die materielle Kultur. Die unterschiedlichen Blickwinkel und Gewichtungen tragen zu einem besseren Verständnis der mykenischen Palaststaaten bei.

#### ZAVADIL Michaela Monumenta

Studien zu mittel- und späthelladischen Gräbern in Messenien



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Gräber stellen eine wichtige Quelle zur Rekonstruktion antiker Gesellschaftsstrukturen dar. Die Landschaft Messenien im Südwesten der Peloponnes bildete eines der Kerngebiete der mittel- und späthelladischen Kultur Griechenlands (2100/2000-1200 v. Chr.). Ausgehend von einem Katalog von 57 Fundorten mit etwa 240 Grabanlagen werden in der vorliegenden Monographie die topographische Situation der Gräber, ihre architektonische Ausgestaltung und die Beigabeninventare analysiert. Damit liefert die Arbeit einen Beitrag zum besseren Verständnis der sozialen Hierarchie und der politischen Änderungen in dieser Phase der griechischen Geschichte.

Tombs are an important source for reconstructing ancient social structures. The region of Messenia in south-western Peloponnese was a centre of the Middle and Late Helladic culture (2100/2000–1200 BC). Basis of the present study of tombs in Messenia is a catalogue of 57 find-spots with about 240 tombs. With an analysis of the topographical setting of the tombs, of their architecture and of the burial gifts which were found, the book offers a contribution to the better understanding of the social hierarchies and the political changes that took place during this phase of Greek history.

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# Mass Production, Imitation, and Allusion: Interpictoriality in Mesopotamian Art

Karen SONIK, Department of Art & Art History, Auburn University

This paper explores the range of relationships that exist between pictures in Mesopotamia, considering both implicit and explicit references to other images, the manner in which these references were (consciously or unconsciously) deployed and intended to function, and the types of meaning that were or could be generated through the linking together of different works on the part of the producer and the recognition of these links on the part of the viewer. While the interrelationships established between pictures had, on the one hand, the potential to establish both generic meanings for and the authoritative status of a work through its embedding in a pictorial stream of tradition, the original or earlier meanings or functions possessed by individual pictorial compositions or frameworks, as well as figures and motifs, could also be utterly transformed or subverted upon their deployment in new contexts.

# Socio-Political Perceptions of Southern Levantine Imagery within Early Bronze Age Communication Systems

Yitzhak PAZ, Israel Antiquities Authority

Imagery and symbolism were the components of a non-verbal language that bridged between ancient societies.

Early Bronze Age Southern Levantine glyptic art was a medium in which various ideas and values were encoded. Some of them were illustrated in scenes, others in geometric forms. Some meaningful symbols that played a role in glyptic imagery were carried by long distance communication channels, such as the commercial system that created the 'Metallic Ware' vessels upon which cylinder seal imagery was impressed.

The same symbols were also incised on ceramic vessels (and were designated as 'potmarks') and were employed in other communication channels that were used in short ranges (within settlements) as well as in long ranges (between settlements and between regions). The current paper will demonstrate the perception that the symbols that were impressed or incised on 3<sup>rd</sup> millennium southern Levant pottery carried various socio-political-economic-theological meanings that call for scholarly interpretation. Those symbols were encoded within the ancient channels and circuits of communication, i.e. pottery vessels and were sent via trading routs that played the part of communication systems.

The current paper will also examine the transformation of meanings that occurred when the symbols were used in different contexts – inter-regional trading systems versus in-site domestic households.

# The Construction of Value in Chalcolithic Cyprus: The Picrolite Figurines and Pendants

Sam CROOKS, Department of Archaeology and History, School of Humanities and Social Sciences, La Trobe University, Australia

The construction of value in prehistory has received only limited treatment in archaeological theory. Often invoked uncritically in narratives of emerging social complexity, rank and prestige, value is typically an implied assumption of innate worth mediated through scarcity, production, consumption or exchange. Anthropological, philosophical and sociological discourses, however, reveal value to be a powerful lens through which to apprehend meaning in prehistory, functioning in both the material expression of identity and in its (re)production through praxis.

During the Early to Middle Chalcolithic in Cyprus, picrolite, a soft blue-green stone, was used to fashion anthropomorphic cruciform figurines and pendants, objects of personal adornment thought to function as apotropaic or fertility charms. During the Late Chalcolithic, however, picrolite ceased to be used in this way, apparently having lost its esteem as pre-eminent material fabric.

This paper will develop archaeological approaches to the construction of value in prehistory through analysis of the use of picrolite in Chalcolithic Cyprus. Contexts of acquisition, production, use and final

deposition within mortuary settings will be analysed to build object biographies, providing insight into mechanisms of value creation and the role that value plays in the negotiation of changing identities in Cyprus during the Chalcolithic.

# Evolving Symbolism: Exploring continuity and change in artistic representation during the South Levantine Late Chalcolithic and Early Bronze Ages

Bernadette DRABSCH, University of Newcastle, NSW, Australia

Despite being the focus of numerous recent studies, the nature and significance of the transition from Late Chalcolithic to Early Bronze Age in the southern Levant remains unclear. Accounting for the key changes between these temporally adjacent cultures, embracing the conclusion of the ritually/symbolically elaborate Ghassulian culture and the emergence of an apparently less symbolically enriched Early Bronze Age culture is of considerable importance to our understanding of the path to urban complexity in this region.

This paper will explore two key aspects of material culture across these periods - figurative representations and elite art objects - and seek to address the question of continuity in artistic traditions across the temporal border. Can one argue for the EBA schematisation of formerly naturalistic Ghassulian figurative art?

What can artworks from the Chalcolithic and the EBA reveal about the ritual practices and socio-economic organisation of these societies? How did the loss of the diverse complex symbolic art forms of the Chalcolithic impact on EBA society? What degree of artistic continuity with the Ghassulian past can be documented, and in what form, and with what significance for our understanding of EBA society did innovation develop.

By exploring these questions through the medium of art and symbolism we hope to develop a better understanding of the nature of the transition, charting what was lost, and what was developed, producing a new perspective on the larger questions of changing settlement patterns, population movements, and the transferral of ideas and knowledge.

# Between Myth and Kingship: the Epic of Early Syrian Ebla in the Narrative of Images

Rita DOLCE, Università degli Studi Roma Tre – DSU-MAIS

The wealth of data from the Royal Archives in Palace G have made it possible to reconstruct the economic, social and, perhaps, political systems and structures of one of the leading kingdoms of Syria in the second half of the 3<sup>rd</sup> millennium BC, but not its mythical and ideological apparatus in the absence of "literary" texts clearly connected to the roots of kingship at the site.

Few images from Palace G maybe are connected to this issue and among these, male and female fragmentary heads are quite unique in the documentation from the royal palaces of Early Syria and Early Dynastic Mesopotamia, as the surviving "splinters" of a system of visual communication strongly based on legitimation.

Rather, the sources that can shed light on the mythical and ideological apparatus of Early Syrian Ebla are on the one hand the images of the palace glyptics and on the other the hundreds of wooden carvings, the largest Corpus of wooden works hitherto recovered from the pre-classical Near East.

# The typology of clothes in Syria during the third millennium BC. An iconographic study

Ahmed Fatima KZZO, La Sapienza, University of Rome

At the beginning, wearing clothes was crucial to protect human body from environmental factors like cold, rain and hot. Over time, clothes have taken up additional functions. In fact, clothes reflect identities, roles and social status of the figures that wear them. In other words clothes start to speak, to inform

us on the role of figures. This paper aims to present through iconographic resources the clothes in Syria. The first objective is to distinguish the different types of clothes in different sites (Mari, Ebla, etc.) during the third millennium BC. And then, to make a comparative approach among the different typologies in the different cities of Syria.

# The contribution of Old Assyrian cylinder seals to the elaboration of a local style in Anatolia at the beginning of the II millennium BC

Melissa RICETTI, La Sapienza, University of Rome

Seal impressions from Kültepe constitute one of the largest iconographic and stylistic repertoires for II millennium Near Eastern glyptic. The Assyrian traders settled in the kārum of Kaniš introduced in Anatolia the cylinder seal which in short time became one of the most common sealing media among the local community.

Anatolian artisans were able to absorb and re-elaborate a tool which did not belong to their own tradition. Their effort resulted in an outstanding hybrid style which combines foreign motifs and indigenous subjects. Local patterns show a long familiarity with Mesopotamian art as well as Anatolian imagery which was appreciated also by the Assyrian traders residing in Anatolia.

This paper will focus on the variation of iconographies due to the adoption of cylinder seals within the local Anatolian style. In particular it will point out typical renderings, motifs and compositions adopted both in stamp and cylinder seals in view of the further preponderance of the former within the following Hittite tradition.

#### Early Representations of Temple Architecture: Typological Analysis and Historical Considerations Angelo COLONNA, La Sapienza, University of Rome

The status of early Egyptian temples (architectural form, scale and uniformity) confronts us with specific sets of problems – both methodological and historical – which are strictly related to the kind of sources available. Indeed, besides having a confirmed – although modest – archaeological reality, early religious architecture also received very distinctive visual form(s) in contemporary pictorial and epigraphic evidence (seals, tags, ceremonial artifacts), being elaborated according to specific conventions which resulted from a careful process of intellectual and aesthetical canonization.

The paper will investigate modes of conceptualization and visual codification of sacred buildings on the basis of textual and visual media, following a twofold perspective: 1) a typological analysis of temple images and related scenes, in order to recognize different iconic models; 2) a historical synthesis of the data assembled, so as to articulate them in a chronological framework. The major goal of the study is: 1) to question the documentary value of temple representations as reliable sources both for reconstruction of this category of buildings and possibly for interpretation of their role in society; 2) to consider how such architectural spaces were illustrated and formalized in the monumental discourse promoted by the court, becoming the visual prototypes of later artistic symbols and traditions.

# The perception of prestige and place: the importance of merlons

Amanda DUSTING, School of Philosophical and Historical Inquiry, University of Sydney

The Achaemenid building at the site of Qal'eh Kali in Fars province Iran features a suite of architectural elements that include canonical Achaemenid motifs and forms. These elements parallel those from the royal centres of Persepolis and Susa and therefore suggest a royal connection. The architectural elements include bell shaped column bases decorated with a unique frieze of lotuses and palmettes, a masonry portico, three sets of masonry stairs and a parapet topped with stepped stone merlons. The building at Qal'eh Kali is located across the Fahlian River in direct line of site from Kurangun an important Elamite religious rock relief. The inclusion of such architectural elements at Qal'eh Kali along with its position in the landscape suggests that the building should be viewed as representing a deliberate evocation of imperial iconography. This paper seeks to show that the architectural elements and motifs at Qal'eh Kali point to the prestige of the building and its potential function and to explore the potentially deliberate positioning of the building in the landscape as a representation of the Achaemenid court to a provincial audience.

#### Images of domestication: context and interpretation

Anne DEVILLERS, Royal Museums of Art and History, Brussels

Images featuring animals are omnipresent in Near Eastern art. Exploiting glyptic as a privileged media – in such as providing an abundance of material from a given data source -, a fine-scale analysis of the frequency of species occurrence in a given time in selected localities, here the second half of the third millennium BCE in Upper Mesopotamia, is proposed. A quantitative evaluation of images featuring animals on seals and sealings of known origin shows considerable differences between regions in several parameters, such as the prevalence of some domestic species over others or the ratio of domestic vs wild animals. Examining these specificities in light of local paleo-environmental contexts and regional patterns contributes to the understanding of seal production agency and use and the codes that govern their iconography.

#### Symbolic Images and Ceremonial Space: Hunt Scenes in Context

Lyvia MORGAN, University College London

The paper, which focuses on the spatial contexts of hunt scenes in the period of 18<sup>th</sup> dynasty Egypt, arises from reflections on the extraordinary discovery of the Hunt Frieze from Tell el Dab<sup>c</sup>a. Found in fragments dumped outside the ceremonial Palace F, its architectural context is Egyptian, but idiom and technique is Aegean. The hunt as symbolic action would have been comprehensible to artists, architects, patron, and participants in the ceremonial action that took place in the building. But did Egyptian and Aegean audiences have the same perception of its symbolic agency? Where was it placed and why was it painted?

These questions led me to analyze the spatial contexts of hunt scenes of this period in Egypt and the Aegean. In this paper, I focus on the wall paintings of early 18<sup>th</sup> dynasty Theban tombs. In doing so, I raise the question of whether the spatial distribution of hunt scenes in tombs bears significance that reflects on the context of their palatial prototypes or counterparts. This in turn is brought to bear on the symbolic and metaphorical meanings of hunt iconography in Egypt and the Aegean and the position of the Tell el Dab<sup>c</sup>a Frieze in this enquiry.

# Animal combat scenes and visual communication in the complex political landscape of the Levantine Bronze Age

#### Benjamin GLISSMANN, Universität Tübingen

The animal combat scene is one of the most widely distributed and sustained motifs of Ancient Near Eastern art, spread across the Eastern Mediterranean during the Bronze Age.

Its enormous popularity and frequent use on different types of art objects and in various contexts make it highly plausible that this scene exceeded a solely ornamental function and carried also symbolic meaning in a semiotic manner. The question is: what role did this motif play in the process of visual communication, and by which means could the participants use them to display, establish or maintain power and prestige?

This paper presents first results of my ongoing PhD research project, which focuses on the small- and medium-sized kingdoms of the Bronze Age Levant. One of the main hypotheses is that the wide array of

struggles and negotiations for status and power was often expressed visually via images, in local styles, and through the use of a variety of visual codes. Some selected case-studies will be used to illustrate art historical and semiotic methods, as well as some possibilities and limitations in reconstructing ancient visual communication processes, their participants (sender/audience), and the transferred meaning of the animal combat scene.

#### A Question of Style. Attributing Agency to Old Babylonian Terracotta Plaques

Elisa ROSSBERGER, Ludwig-Maximilians-Universität München

The study of Old Babylonian terracotta plaques has long focused on questions of iconographic identification and function. This paper aims at a stylistic analysis suggesting that diverse stylistic groups reflect different audiences, social functions and object agencies. I will focus on anthropomorphic imagery in general and the pictorial rendering of facial and bodily features in particular.

# Conceptions of gender and body images in the Aegean world and contemporary East Mediterranean societies in the Late Bronze Age

Jörg WEILHARTNER, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria / Melissa VETTERS, University of Salzburg, Austria

The paper discusses the representation of sexual characteristics in humans and animals in iconographic and epigraphic sources of the Late Bronze Age Greek mainland. A brief overview of contemporary body imagery in the Aegean as well as on the Levantine coast will consider gender depictions at different points in time in the LBA Eastern Mediterranean. As emic views of the body in these mostly preliterate societies are beyond accurate assessment, we try to evaluate different body conceptions on a comparative basis to pin-point basic principles of body representations and roles. We will present several case studies, mainly from Mycenaean Greece, to analyse potential concepts of *decorum* and deviant body images and discuss, where such representations occur. We specifically focus on three fragments of an ityphallic terracotta figure from Tiryns which has no close comparanda in LBA Aegean iconography. According to the exant fragments this figure must have been used as a rhyton – we will discuss its find and former use-context and potential Levantine influences that can be traced at the very end of the Mycenaean palatial period in Tiryns.

# Philistine, Cypriot or Aegean? A New Approach to the Ashdoda Figurine as Anthropomorphized Object

Celia BERGOFFEN, Fashion Institute of Technology, NY

If a terracotta figurine has a head, however schematically rendered, combined with a pair of circular protrusions, however small, or widely or narrowly spaced, and wherever located on a fictive torso, however flat or oddly shaped, we are, apparently, culturally conditioned to see a female figure and in that case, an entity bound up with fertility. The fact that the form has no feminine "sex appeal" -- no curves or marked genitalia, poses no difficulty for the identification of such figures as procreative god-desses. Thus, the Philistine Ashdoda is universally understood as an enthroned goddess rather than a piece of furniture with ambiguous sexual characteristics. The proposed classification of the Ashdodas as anthropomorphized objects rather than human figures opens new avenues for interpretation and links the type to the millennial and rich Cypriot repertoire of ceramic models of inanimate and an-thropomorphized objects. As others have shown, the style of the Ashdoda figurines was a product of the culturally hybridized Philistine mileu, which combined Aegean, Cypriot and Canaanite elements. The figurines were found primarily in domestic contexts and were therefore expressions of household or folk cult. Their roots in traditional Cypriot concepts of representation goes to the question of the Philistines' origin and the process of their acculturation in Canaan.

# The Role of the Rosette Motif & Non-Verbal Communication as Embodied Elements of Warfare and Violence: Ancient Cyprus – a Unique Case?

Cheryl HART, School of Archaeology, History & Anthropology, University of Wales Trinity Saint David

My PhD research examines the symbolic use of the rosette motif across the Eastern Mediterranean region during the Bronze and Iron Ages. I perceive the motif to act as a means of non-verbal communication through which symbols have the capacity, not only to express and communicate, but also covertly disrupt established relations of dominance.

In this paper I intend to analyse the seemingly unique character of Cypriot visual imagery in respect to representations of violence and/or warfare. The art of war incorporates forms and images of violence that both support and justify wars, enabling as well as representing them. By focussing on the role of the rosette motif in visual images or representations of warfare from the Cypriot repertoire, including those of the warriors themselves and their associated weaponry and armour, I will consider these representations from the combined perspective of nonverbal communication and embodied experiences.

By analysing the material gained from the Cypriot repertoire, together with comparative data from the wider Near East, I hope to enhance current scholarship by demonstrating that Cyprus had a different ideology in respect to warfare than that of its close neighbours in Egypt and the Near East.

# Approaching a Deity: Introduction and Adoration Scenes in the Bronze Age Aegean and in the Ancient Near East

#### Veronika DUBCOVA

It remains very difficult, if not impossible, to distinguish between the human and divine figures appearing in the preserved Bronze Age Aegean religious scenes. Although they are represented without specific attributes, in the same dress and even with the same gestures as their worshipers, the supernatural status of some of them is often manifested by their position, activities or by their attitude to the associated figures. They are often being approached by other figures, receiving adoration or offerings. The relationship between these scenes and the so-called Introduction and Adoration scenes coming from the Ancient Near East, has already been recognized, most of all because of their composition and the depicted astral symbols or celestial bodies, typical for the Near Eastern cylinder seals. There are nevertheless other elements pointing also to the functions of the depicted figures, most of all to their intermediating role between the human and the divine. They clearly demonstrate that the Near Eastern prototypes had been an important source of inspiration for the Minoan as well as for the Mycenaean artists. A closer examination of these scenes in the different Near Eastern regions and periods brings some new insights into the interpretation of the Aegean images.

#### Illustrating the Divine in the Iron Age Phoenician Levant

Helen DIXON, Faculty of Theology, University of Helsinki

Probably the most recognizable images of the divine from the northern coastal Levant are the bronze and gold-leaf figurines of the stylized striding god in his conical hat found at Ugarit, Byblos, and the like. These striking objects still often adorn publications about ancient Phoenician religion; however, this iconic artefact seems to taper out or disappear from the Phoenician archaeological repertoire following the collapse of the Late Bronze Age. This paper evaluates the available evidence for images of the divine from the Iron Age I-III period Levantine Phoenician "homeland", which indicates that a significant shift in perception of the gods took place at the beginning of the Iron Age. This shift in how gods and goddesses were portrayed reflects not only the changing geo-political realities of the Iron I-III periods, but also an arguably related evolution in the structure of the divine hierarchy. Inscriptional evidence for the identification of divine figures will be used to evaluate the extant iconographical data, and controversial or ambiguous archaeological objects—including miniature clay masks and figurines—from coastal Syria, Lebanon, and Northern Israel will also be re-examined in light of this changing picture of the inhabitants of the heavens.

#### The world in a vessel: representations of a kosmos on some "Phoenician" bowls

Francesca ONNIS, Université Lumière Lyon2, CNRS, Laboratoire Archéorient UMR 5133, Maison de l'Orient et de la Méditerranée, Lyon

The so-called "Phoenician" bowls are a class of metal vessels coming from a Levantine artistic tradition, produced between the second half of the second millennium and the first half of the first millennium B.C., and characterised by a rich figurative decoration. Due to its eclectic character, scholars have usually considered this decoration as an incoherent assemblage of iconographic motifs, put together for a solely ornamental purpose. In fact, these motifs are most often linked by an internal logic, which is based on the values which these motifs express. Moreover, on some items, which will closely be analysed, the motifs are consciously selected and arranged in a precise manner, displaying an ordered world, in which the mankind and the other living beings are represented, as well as the forces that rule it. The compositions then seem to build a *kosmos*, which is enhanced by the vessel itself, by its form and that of the decorative space it offers

### The Figural World of Judah in the Late Iron Age

Josef Mario BRIFFA, Institute of Archaeology, University College London

The female figurines of Jerusalem and Judah in late Iron Age ( $8^{th}-6^{th}$  centuries BC), most notably the Judean Pillar Figurines, are often read in near isolation. Recent studies have related them to Asherah, and to non-official rituals concerned with fertility or protection. In this paper, I move away from this restrictive paradigm, and argue that the female figurines need to be studied as parts of a miniature figural world, which including figurines of horses and riders, and other animals and things.

This study works on two geographical scales. On the micro level, a detailed study of context and of intra-site distribution allows for a reconsideration of the figurines and their use in two major Judahite sites, Jerusalem and Lachish, with particularly focus on key spots like Cave I of Kenyon's excavations. On the macro level, I consider the figurines within the context of the southern Levant, understanding them as part of a wider world, and shared repertoire, of miniature representation.

I argue that the clay figurines help us enter a world of social identities and meanings, expressed, produced and manipulated through the medium of these same figurines, moving from a narrow focus on the figurines themselves, to consider the persons and communities who made and used them.

# Tell Jemmeh: Assessment of a Border Site according to its figurative assemblage

David BEN-SHLOMO, Ariel University, Jerusalem

The paper will discuss an assemblage of figurative objects (mostly terracottas and glyptics) from the Smithsonian Institution excavation at the site of Tell Jemmeh, Israel. The assemblage includes a diverse group of terracottas, scarabs, seals, amulets and seal impressions dating mostly from the Middle Bronze Age through to the Persian period, including human plaque and other figurines, zoomorphic figurines and vessels and mask fragments. The main types of terracottas will be discussed and their chronological and geographical distribution presented. An additional large assemblage of figurines from the Petrie excavations was published in 1928, but these will only be briefly discussed. The seal impression also illustrates a wide variety of themes. The site is located near the Mediterranean coast, on the Besor River, which was the ancient border between Canaan and Egypt. In addition during the Iron Age the settlement was geographically part of Philistia, while during the end of the Iron Age II the site probably accommodated a Neo-Assyrian administrative center. Hence, this class of finds will be assessed, and the various influences coming from Canaanite, Egyptian, Philistine and possibly Neo-Assyrian cultural traditions will be examined.

#### **Emar and its Monsters**

Benedetta BELLUCCI, Università degli Studi di Pavia

Seal impressions on tablets found in Emar reveal a wide number of composite creatures, significantly recorded in all the different stylistic groups detected upon the analysis of the impressions.

Following an introduction to the data set under investigation, I will explore possible reasons for such a considerable employ of composite creatures.

In order to do so, I will survey the archaeological record from Emar and sites located in the Euphrates region, together with a brief view on the state of our knowledge about local cults, and external influences due to the particular geographical and political situation of Emar during the late Bronze Age, all of which could have influenced the human agency beyond the creation of such repertoires on seals.

#### ARCANE ART Some thoughts on the Perception of the Magico – Religious Imagery of Lamaštu Eva GÖTTING, Freie Universität Berlin

Amulets Lamaštu is known as a baby snatching demon that attacks especially children and pregnant women but also men and cattle. To protect the patient from this ill willing demon, rituals and apotropaic amulets were used. These amulets were canonized in Assyria during the 1<sup>st</sup> mill. BC. The result was highly elaborated amulets, depicting divine symbols, urigallū - demons, the patient - scene, including the patient, the priests and the apkallū and of course Lamaštu herself with her antagonist Pazuzu. These amulets can be seen as the physical representations of the different levels of reality involved in the ritual, which range from the physical world to the iconographic level and to the transcendent realm. This paper will focus on the directions of communication existing between these levels and on the role played by each of the active actors/agencies. In the end the questions are to be answered: Who are the agencies and who are the recipients within the framework of the magico-religious imagery? What can be said about the creator of the image? What is the significance of this arcane iconography within the magico-religious practices of ancient Mesopotamia?

#### The God in a Winged Disc and Assyrian Royal Ideology

Simon HALAMA, Albert-Ludwigs-Universität Freiburg

A controversially discussed symbol in Neo-Assyrian art is the god in a winged disc. It has been associated with different gods, mainly the sun god Shamash or the god Ashur, the chief deity within the Assyrian pantheon. In this paper I intend to analyse the different iconographic and architectural contexts (including likely groups of spectators) in which this symbol is displayed in Neo-Assyrian monumental art. Additional information will be derived from comparisons with its appearance in the minor arts. By relating these contexts to what we know about the different deities and their place in Neo-Assyrian royal ideology the different suggestions for the identification of the god in the winged disc will be evaluated.

# Rising moon at Tell es-Serī'a/Tel Sera': a Neo-Assyrian bronze lunar crescent standard and the iconography of the moon-god Sîn of Ḥarrān in southern Levant.

Alessandro MORICONI, La Sapienza, University of Rome

Neo-Assyrian influences over southern Levant had been long debated and criticized. During the 8<sup>th</sup> and 7<sup>th</sup> centuries BC the veneration of the moon-god Sîn experienced a remarkable international reputation, possibly linked to the deity's peculiar status as a protective and legitimating authority for the Neo-Assyrian westward imperialism under the Sargonids.

Considering the meaningful Neo-Assyrian milieu pertaining to architectural and material records unearthed in Stratum V at Tel Sera', the bronze crescent standard may represent a three- dimensional counterpart to both tasseled and pendants-equipped lunar crescent standards portrayed on western royal *stelae* as well as on glyptic, thus revealing an ancient and foreign religious iconic pattern into the Levantine cultural framework during the late Iron Age.

The aim of this paper is to investigate a specific dimension of the Neo-Assyrian cultural impact over southern Levant, focusing on the symbolism and meaning expressed by the bronze lunar crescent standard excavated at Tel Sera', and on its possible use as a ritual paraphernalia and/or military emblem.

### The study of the effects of Neo-Assyrian's ivory art on the North West of Iran Mahta SHEIKHI, University of Tehran, Archealogy Department

In the neo- Assyrian era, with the construction of a rich and powerful state, a proper situation was provided for decorative art and objects, including ivory plaques and monuments. This era is also considered important because of the development and diffusion of cultural phenomena among the ethnic groups of the region, especially in the North West of Iran, most of which was caused by the attacks of power-seeking neighbors such as Assyria, Urartu, and Scythians, with the motive of access to the important livelihood resources which had a phenomenal impact on the basis of intellectual and cultural community.

In this paper, pieces of Assyrian ivory index objects, Ziwiye area and Hasanlu are studied comparatively in terms of techniques, designs and motifs used in making these objects, and are introduced as an index cultural element in that period. In fact, due to the lack of written sources, these objects are considered as valuable documents of unwritten culture and social life, and the indicator of ideas, customs, folklore and religious beliefs of that era. In this paper, field studies and visits to the Museums of Iran Bastan, Sanandaj and also library studies have been performed with the purpose of studying the ivory objects in museums, comparative morphology and finally clarifying the socio-cultural association of these areas with each other. Then the similarities and differences between artistic elements of them were identified and investigated, and through this point the position of the artistic and cultural elements of the Assyrian empire in the region and their mixture with the native art underlying the supreme Achaemenid art in the next century, will be identified.

# The Context as Arbiter Imaginum. Commissioners, audiences and political criteria for choosing images in the Neo-Assyrian Empire. Some reflections

Maria Luisa CIPOLLA, La Sapienza, University of Rome

In the societies of the Ancient Near East where visual communication was dominant, the act of choosing images representing the Power could be regarded as a political act. The result was a careful and precise selection of values. Every detail was studied and positioned to assist in sending understandable messages.

But how much of this act was the result of the commissioner's free choice? Instead, how much of this act depends from the context and from the necessity to speak directly to the audiences through the images?

The aim of this paper is to explore the motivations behind the selection of images in the Neo-Assyrian empire, in the light of the context, which could be regarded as a keystone in the process of comprehension of the art in Ancient Near East.

#### Does size matter? Colossal sculpture in the Early Iron Age

Dirk WICKE, Goethe-Universität Frankfurt a.M.

The phenomenon of large scale, colossal sculpture is rare in the ancient Near East and almost exclusively restricted to Northern Syria and Southern Anatolia during the Early Iron Age. Whereas in Egypt and Archaic Greece colossal statues are used in deliberate combination with their architectural environment in order to create distinct moments of monumentality, their Near Eastern counterparts lack that sense of monumental impression. The paper presents the (small) corpus of such sculpture and discusses the significance of the colossal format in relation to the general meaning of the statues and in particular to their architectural setting.

#### **Be Terrified! Visualizing and Evoking the Emotion Fear in and by Neoassyrian Orthostat Reliefs** Elisabeth WAGNER-DURAND, Albert-Ludwigs-Universität, Freiburg, Germany

Since their first discovery Neoassyrian reliefs have been discussed not only in respect of their elaborateness but also in respect of their alleged brutality. As such, one of their many assignments seems to have been the evocation of emotions, especially that of fear. Whilst the cruelty of some images (the impalement, the beheading etc.) takes effect even into a postmodern world of medial dissolution and indifferency, several aspects have to be (re-)evaluated. First, there is the matter of perception, namely whether those images where both intended to provoke fear and *de facto* provoking fear. Second, we turn to the question of how fear might have been displayed in these images. Paul Ekman, the famous and controversial psychologist, considers body languages, especially so called emblems, as movements 'with a precise (emotional) meaning which are understood by all members of a culture or subculture' (Ekman 2004, 39). Looking for potential emblems, comprising 'hand, head or facial movements' (idem, 40) and discussing their cultural specificity and comprehensibility, this papers aims for first insights to both: the understanding of emotional display in Neoassyrian reliefs and the potential of provoking the emotion of fear in the recipient.

# Arenas of Performance: Audiences as Consumers and Agents in the Palace of Sargon II at Khorsabad Clemens REICHEL, University of Toronto

Far from being reclusive habitats of royal families, Neo-Assyrian palaces were conceived as "theatrical" settings that defined and governed the Assyrian state. Set up as "arenas" for state affairs they not only accommodated audiences as spectators but also engaged them in the performances that were staged in them. Palace reliefs displayed in such locations quite literally set the stage by providing interactive information for targeted audiences. While some of them displayed propagandistic narratives that were intended for passive consumption, others encouraged more active engagement through self-identification of certain audience members in relief scenes. Using the palace of Sargon II at Khorsabad as the most complete example of a Neo-Assyrian palace, this paper will outline various types of interaction between palace reliefs and audiences while highlighting changes in the dynamics between them over time. It will argue that the widespread introduction of "commemorative" themes (scenes that were identified historically and geographically through captions) under Sargon II, often paired with scenes of feasting in clearly delineated spaces, represents a new type of audience engagement that encouraged social networking among Sargon II's military and political leaders through commemorative events to affirm and strengthen their loyalty towards the usurper king.

#### Concealed Paternalism of the Assyrian King: Which Audience?

Ludovico PORTUESE, Germany, Freie Universität Berlin

The prominent figure of the Neo-Assyrian stone bas-reliefs is always the king, depicted in varied roles, and featuring: power, courage, magnificence, piousness, and even **paternalism** and **benevolence**.

Indeed, among the different roles in which the Assyrian king is depicted, the most unusual is the king as '**shepherd**', shown holding a long staff. This image, which throughout the Assyrian royal inscriptions can be read as the metaphor of the shepherd who cares for his flock, is most frequently represented in peaceful scenes. However, very few academic studies have focused on such a specific and unusual image and, where they have, the authors have barely recognised this role or at most made only a passing reference to it.

This paper fills part of this gap by analysing the king as shepherd depicted on the figurative programmes of the Neo-Assyrian kings, from Ashurnasirpal II up to Sargon II. The paper will 1) examine the subtle peculiarities within such image, 2) scrutinise the related architectural context(s) and 3) present a 're-construction' of the steps by which the viewer would have approached, perceived and 'consumed' the images, the aim being to outline the identity of the expected audience.

#### The Public Function and Urban Context of Hilani Architectural Sculpture

Lauri MÄNTYLÄ, University of Helsinki

The hilani reception suites, which were common in the Neo-Hittite principalities of Northern Syria and Southern Anatolia during the Early Iron Age, are noted for their rich architectural sculpture, most typically in the form of ornamented column bases. The most lavish hilani suites also contain orthostat reliefs as well as portal lions and sphinxes, which are features more commonly associated with city and citadel gates.

This paper examines the urban and spatial context of the hilani imagery, and the way the association of the hilani with city and citadel gates reflects the ceremonial functions of the hilani suite in general. It is proposed that the facades of royal hilani suites were, in essence, public art, and that the hilani thus had a significant role in the construction of a communal identity through public ceremony. This emphasis on the local populace as an audience reflects the changed nature of kingship in the Early Iron Age and the increased need felt by Neo-Hittite petty kings to appeal to a shared local identity for legitimacy.

# Comparing Images – The Relief Programme in the Palace of Assurnasirpal II and the Egyptian Mortuary Temples of the New Kingdom

Oskar KAELIN, University of Basel

The reliefs of the NW-palace of Assurnasirpal II at Kalhu/Nimrud stand at the beginning of a new way of representing king and kingship in Assyria. They are the start of the elaborate relief programmes in Assyrian royal residences. The first instance an innovation is introduced, is often the closest to the inspiring model. An analysis of Assurnasirpal II's relief programme as a whole as well as of specific images shows that the best matches, and, therefore, the likeliest models for his programme are to be found in Egypt – within the mortuary temples for the pharaohs of the New Kingdom period. This raises important questions: Why was the imagery of the Egyptian pharaohs quoted, what message did the Assyrian king wish to convey by adopting Egyptian imagery, and who was the intended audience?

#### Gertrude Bell's Mesopotamian Archaeological Photographs

Lisa COOPER, University of British Columbia

With her talent and enthusiasm for photography, Gertrude Bell took hundreds of images during her journeys into Mesopotamia (Iraq) in 1909 and 1911. Although images of people and modern settlements figure in this collection, the majority of photographs document the ancient sites and monuments she visited. In identifying and describing the archaeological remains documented, this paper will consider in particular how such images reflected the practice of archaeology in which Bell was engaged. It will also show how certain individuals with whom Bell came into contact (e.g. Josef Strzygowski, Esther Van Deman, Walter Andrae), not to mention her own developing historical knowledge and perception of the past, had an influence on the images she chose to capture. Lastly, the paper will assess the degree to which Bell's photographs reflect colonialist attitudes in the practice of archaeology, a perspective that has recently been considered vis-a-vis other excavation projects/scholars in the early years of archaeological photography in the Near East.

# "Without Drawing the Study of Antiquities is Lame!" Architectural Reconstructions as a scientific tool? Sebastian HAGENEUER, Freie Universität Berlin

Images of architectural reconstructions are an integral part of Near Eastern Archaeology since its beginnings at the end of the 19<sup>th</sup> century. From hand-drawings like sketches and paintings to copper engravings to three-dimensional computer graphics: Architectural reconstructions are part of many publications, exhibitions as well as the general media for archaeologists and the public alike.

Although these images seem to enjoy a general interest, the academic value is often neglected. The difficulty lies within the unknown reliability and lack of transparency of used sources. Even with the knowledge of the different sources, a real quantification of reliability is impossible. On top of that, there is always a lot of subjectivity involved in creating these images.

This paper aims to call attention to these problems as well as to offer different ways of compensation for them. The combination of proper documentation, the choice of an appropriate mode of presentation and thoughtful communication can help to use these images as a scientific tool for the presentation of our research.

### Persepolis - Fantastic Site, and don't Forget the Tent City

Annelies VAN DE VEN, School of Historical and Philosophical Studies, The University of Melbourne

The royal city of the ancient Achaemenid Empire is not the only attraction within the celebrated site of Persepolis. A more modern set of ruins has worked its way into the spotlight: the structural remains of the tent city of Mohammad Reza Pahlavi Shah's 2500 year anniversary of the Persian Empire.

A remnant of the event that cost the Iranian state 20 million USD the tent city is a contested matter. Originally it stood as a symbol for the power and wealth of the regime, a reference to the great Achaemenid shah's of old. Today its remains stand as a testament to the immensity of the event, but are also a reminder of its decadence, and the revolution that followed. Most recently it has become a tourist destination, and a possible renovation project.

This paper will Analyse shifting interpretations of the camp by its various audiences, local and international, political and touristic. Starting with its original conception as a reinterpretation of the Persian military camp, I will trace how the camp's meaning changed within new conceptions of Iranian history, both pre-Islamic and modern. This to uncover the agency of such sites in mediating the relationship between people and their history.

### Patronage in Context – Anatolia between the 6th and 4th Centuries BCE

Alessandro POGGIO, Scuola Normale Superiore, Pisa

As to the artistic production and the agency dynamics, patrons are one of the main actors, since they play a specific role according to the political and social contexts. Anatolia between the 6<sup>th</sup> and 4<sup>th</sup> centuries BCE offers an interesting case study, in which high-rank patronages can be fruitfully compared.

As suggested by literary and epigraphical evidence, the Lydian King Croesus contributed to the construction of the Archaic Artemision at Ephesus. In 547/6 BCE his kingdom was conquered by the Persians, who appeared in the Mediterranean horizon establishing in the following years the largest empire till then. Nevertheless, this new political framework did not prevent local Anatolian dynasts – in Lycia and Caria for instance – from developing a well-defined ideology of power, in which the patronage of important architectural and artistic activities played a crucial role.

How did the Persian rule affect the Anatolian patronage? Did the local features play any role in such social phenomena? Through the analysis of archaeological and literary sources this paper will consider the role of patrons in order to investigate agency and perception dynamics in various contexts.

# A Historical Analysis on the Contents of the most Significant Achaemenid's Inscriptions

Ali M. TARAFDARI, National Library & Archives of I. R. of Iran

Stone inscriptions and Greek-Roman writings have an important position in researches on Iranian ancient history, in general, and on Achaemenid period, in particular, due to the lack or less local resources, and they are considered as original sources for Achaemenid studies. Therefore, rethinking and efforts to find out the means and concept of the components of Achaemenid reliefs has always been the first step in historical studies of this period for linguists, inscriptions experts, archeologists, and historical issues researchers. Because of the high positions of the great civilizations in ancient Mesopotamia, most of the Achaemenid inscriptions were trilingual, and were carved in three scripts of Achaemenid cuneiform, Elamite, and Babylonian, and they are often viewed as significant and original contemporary resources about Achaemenid kings. At the present paper, the kind of information reflected on the most significant inscriptions of Achaemenid era will be analyzed on comparative aspects, and the main components of Achaemenid reliefs will be studied based on a historical viewpoint.

Keywords: Ancient Iran, Achaemenid, Achaemenid Inscriptions, inscriptions Studies.

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# The Figure of Parthian Women on Archaeological Remains

#### Sara ZOLFAGHARI

Little is known about the role and status of women as portrayed in the remains of the Parthian era. The main reason for this is the lack of written sources which can shed some light on different aspects of daily, religious and court lives of these women. The present research is going to survey the ways in which a woman's appearance, function and presence was used to be presented in Parthian era. To achieve this, 150 Parthian works have been described and analyzed which embodied female figures in forms of heads, busts, figurines, statues, high reliefs, murals, coins, architectural decorations, ornaments, dishes and Raytheon. This survey shows that the Parthian presentation of a female is completely different from the preceding periods. The artistic objects are highly eclectic and do not follow a certain style. The artifacts of the villages, however, have retained their local taste and style and it seems that Hellenic tendencies have only affected the larger and main cities. The images of the Queens and other women on the coins and reliefs express the social role and presence of the women living in that era. It all reveals the fact that in Parthian society the status of woman as the symbol of benevolence and grace was still important and highly respected.

Keywords: Parthian Era (Arsacids), Female, Hellenism. Parthian Art, image

#### Iconography of the scenes of hunting in Sassanid Era

Elham Vosouq BABAE, University of Mazandran, Iran / Hassan Vosouq BABAE, Power and Water University of Technology, Iran

Hunting scenes are some of the most ancient patterns which were created in Sassanid era on artistic works especially golden and silver containers. Iconography is description and interpretation of code and symbolic hunting scenes which contains messages and information that their decoding can clarify different political, social and religious aspects of life in this era. The purpose of this research is studying and analyzing symbolic concepts of hunting scene based on iconography of the elements applied in these scenes. For this purpose, 27 Sassanid artistic works which had hunting paintings were identified and all their information were studied using statistical method and by registering all their information in charts. the results of the research indicate that in contrary to the previous era that gods and high ranked level people were present in hunting scenes in this era only the Sassanid king was at the center of the scene and more significant than the others on the horse. The hunted animals are also of a great significant in Zoroastrian religion. In this era devil creatures are not subjected to be hunted by the king but there are saint creatures that hunting them will bring goodwill for the king and in fact the concept of hunting in this era was more than just an entertainment and gained a religious-political value.

Keywords: Sassanid Art, Iconography, Hunting Scene, Zoroastrian Religion

#### The Mystery of the Sword Cave: Images from Shamshir Ghar, Afghanistan, Revisted

Alejandro Gallego LOPEZ, Universidad Autónoma de Madrid, Departamento de Historia Antigua / Michael FISHER, National Museum of Afghanistan / Oriental Institute of the University of Chicago

Afghanistan during the Bronze Age was a juncture of various cultural interaction spheres, including the BMAC, the Seistan region, and Harrapan Civilization. While related iconography of the period is attested from the Indus Valley to the Mediterannean, similar forms can take on very different meanings depending on both locality and context.

In 1950 the American Museum of Natural History excavated the cave site of Shamshir Ghar, dating the remains from the Kushan period of the early 1<sup>st</sup> millennium AD to the Mongol conquest. However, as modern perceptions of Afghan material culture have changed since the 1950s, we can now redate the earliest levels to the Bronze Age. Furthermore, the initial analysis of images such as stamp seal motifs suffered from the misidentification of their chrono-cultural context.

Through the University of Chicago's partnership with the Kabul Museum, we have been able to examine the excavated remains from Shamshir Ghar first hand. This paper will present the site according to our updated periodization, recontextualize the Bronze Age imagery, and then reconsider its significance within a Bronze Age framework of agents and audiences. The processes of discovery and interpretation at Shamshir Ghar also promote discussion of the implications of the archaeologist as both audience and agent.

#### Tangarud Rock Engraving in Dashtestan County in southern Iran

Hakimeh BARGAHI, Central Tehran University / Mohammad Hossein REZAEI, Neyshabur University / Zeinab DEHGHANI, Central Tehran University

Dashtestan County is located east to Bushehr Province, and is limited to Dashti County from south, to Bushehr Province and Tangestan from west, to Gonaveh County from northwest and to Shiraz Province from east. In general, prehistoric reliefs or art rocks refer to images and carved works created on the walls of rocky reefs and caves by the prehistoric (and sometimes historic) human beings. Tangarud rock engraving with 29°45'N 51°12'E coordinates is located in Dashtestan County 8 km to northwest of Boyeri village and 4km far from Bine Mohammad seasonal village. This region is known as Tangarud (narrow river) due to flow of seasonal river of Sa'dabad through narrow gorges. This rock engraving has been located on the wall of a narrow and deep valley to a height of 5.5 meters above ground level. This rock engraving is 2.60 m long. Unfortunately, a large part of the relief has been damaged due to erosion, and the sediments precipitated on the wall surface cover a portion of the relief. Inscriptions have been created on the height of 2.15 meters from the valley floor. The rock engraving consists of a row of animals and humans, which have been carved in a linear and sequential fashion, and at first glance are often associated with a visual alphabet. The designs include animal motifs, including four goats (in intact shape), a reptile (probably scorpion), an animal head (probably dog?) and human images with hands pointing to top with several other images. We hereby attempt to describe and introduce the designs in detail.

# Interacting with Archaeological Simulation – A Case Study for Re-Contextualising Ancient Near Eastern Assets

Kay KOHLMEYER / Arian GOREN / Arie KAI-BROWNE, HTW University of Applied Sciences Berlin, Landscape Archaeology / Thomas BREMER / Susanne BRANDHORST / Alexander HENNIG / Felix BALDA, HTW University of Applied Sciences Berlin, Game Design / David STRIPPGEN / Sebastian PLESCH, HTW University of Applied Sciences Berlin, Computer and Media Sciences

Utilising digital tools in archaeology for on- and off-field 3D data acquisition is already a well established procedure. However, expectations regarding their employment in archaeological research steadily rise. Incorporating wide spectrum of cutting edge technologies can aid in the production of archives of cultural heritage, and convey archaeological knowledge to both public and scholars through new means. In this respect, manipulating 3D simulation and game-design techniques enables to facilitate the process of interpreting archaeological contexts, and (re)enforce its relevance.

The talk will present current interdisciplinary work exploring the potential of virtual reality platforms in interpretative archaeological applications. Operating in a virtual environment generated by game engine, real-time interaction with a modelled space and its assets, and mutual collaborative scientific work takes place within a single 3D model, simulating the Temple of the Storm God in Aleppo and its relief decoration. In this manner, interpretation of archaeological scenarios can be continuously re-assembled and re-examined by scholars. Furthermore, archaeological objects and compounds can be communicated to the public through various media.

Keywords: integrated data, archaeological interpretation, VR and 3D simulations

# Animalistic Composition on the Goblet from the "Royal Necropolis" of Gonur Depe Robert SATAEV, Institute of Ethnology and Anthropology RAS, Moscow, Russia

In 2004 during the Gonur Depe (Turkmenistan) excavations made by V. Sarianidi in the tomb 3235 at the royal necropolis, a hoard of seven vessels of precious metals was found. The conical goblet with different animals depicted against mountains (the bull, lion, deer, goat, sheep, otter, bear, wolf, hare, fishes) if of the greatest interest. Animals are depicted very realistically and can be easily determined. The bull which can be well determined as a bison (*Bison bonasus*) is a most striking image. However, according to available palaeofaunistic data this animal didn't inhabit the territory of Central Asia and nearby areas in the Late Bronze Age. The southern boundary of its habitat in the Holocene was on Transcaucasia. Possibly the composition on a goblet reflects the real natural situation that existed in III-II millennium BC in the Caucasus. In this case that artifact indicates the presence of active contacts between the population of Gonur Depe with the Caucasus. But doubtless the shape of the vessel, technique and style of image are typical for BMAC and significantly differ from those of the Caucasus cultures appropriate to Gonur Depe.



# 'From Shahristan to Medina', revisited

Donald WHITCOMB, Chicago, Oriental Institute Museum

In 1985, Hugh Kennedy wrote an article, "From Polis to Medina"; this set a new paradigm for seeing the urban transition from Late Antiquity to Early Islam. A monograph on Qasr-i Abu Nasr, evidence of this transition in Shiraz, was published that same year. Kennedy has more recently studied the same subject in Iran, with less impact due to the state of research on Iranian cities.

This paper will explore the archaeology of Sasanian cities and offer suggestions for delineating the Islamic city in Iran. Older excavations of Istakhr, Jundishapur, and Susa will be considered as preliminary models. More important will be new research, for example at Nishapur and Rayy, with some recent initiatives by Iranian archaeologists. Archaeological investigation of cities is a formidable problem and one might begin to suggest some directions for future programs.

# Settlement Abandonment and Site Formation Processes: Case Studies from Late Islamic Syria

Bethany J. WALKER, Department of Islamic Studies, University of Bonn

This paper is concerned with the phenomenon of site abandonment in southern Bilād al-Shām on the eve of the Ottoman conquests. While the phenomenon of rural decline in the 14<sup>th</sup> and 15<sup>th</sup> centuries CE on the regional level is frequently cited in archaeological and historical literature, the actual mechanisms of site abandonment that stand behind it – its catalysts, timing, regionalisms, physical and cultural impact - have not been a serious focus of analysis on the local level. Study of the complex and gradual abandonment of two rural sites – Tall Hisban (a large village and administrative center in central Jordan) and Khirbet Beit Mazmil (a fortified farmstead in the Jerusalem hinterland) – permit a comparison of the localized conditions facilitating and resulting from this "decline" and the physical transformations of the sites (repairs and reuse of constituent buildings and facilities, spatial restructuring of the settlements, transformation of site function, physical patterning of abandoned areas) during their demise. Reference will also be made to other rural sites excavated in the region in order to more accurately describe the realities of village life, and the resilience of local societies, with the collapse of the late medieval state.

# The pre-Islamic and Early Islamic city of al-Hira: first results of the recent archaeological survey

Martina MÜLLER-WIENER, Institut für Orient- und Asienwissenschaften, University of Bonn / Ulrike SIEGEL, German Archaeological Institute, Orient Department Berlin

Ancient al-Hira is situated to the southeast of al-Kufa and al-Najaf in Central-Iraq. The foundation of al-Hira goes back to the 3<sup>rd</sup> century, in the 5<sup>th</sup>-6<sup>th</sup> centuries it became the capital of the Christian-Arab Lakhmid-rulers. The city was a meeting ground located at the interface of several cultural spheres, its remains offer a prime example to study processes of acculturation and transfer that shaped late antique and early Islamic material culture, architecture, and urbanism. Today a multitude of mounds and surface features covering an area of 25 km<sup>2</sup> testify to this. Archaeological research undertaken in and on al-Hira is out of proportion to its significance. The few archaeological excavations conducted since the 1930s focused on isolated structures, whereas their context remained unexplored. The paper will present first results of a project designed to review this previous archaeological work and to prepare and conduct a survey of parts of the area. The project is funded by the Max van Berchem Foundation and conducted in cooperation with the Archaeological Institute of the University of Kufa, the Iraqi State Board of Antiquities and Heritage and the Orient Department of the German Archaeological Institute.

# Ancient Herat

Ute FRANKE, Museum für Islamische Kunst - Staatliche Museen Berlin, Pergamonmuseum

Between 2004 and 2010, the German-Afghan Archaeological Mission to Herat conducted a provincial survey and excavations in Herat City. Although limited by various constraints, the archaeological inves-

tigations produced new evidence on the development of the city and its hinterland from c. 2000 BC through the Timurid era, supplemented by the collections of the Archaeological Museum in Herat.

The paper summarizes the results of this work, with a focus on the 9<sup>th</sup> to 13<sup>th</sup> century CE. Although the importance of Herat during this time is well-known from historical sources and artefacts in international collections, the first hand evidence provides new insights into the varieties and techniques of its material culture. The ongoing stylistic and archaeometric analyses facilitate a better definition of local and trans-regional productions and place this part of Khurasan in a better context.

# Isfahan, the Cradle of Architectural Monuments in the Period of Shah Ismā'il the first of Safavid Neginsadat TABATABAEI, Islamic Archaeology, University of Tehran

When Shah Ismā'il came to power (1501-24) Iran was going through kind of political destabilization. Different parts of Iran were ruled by different powers. That was why Safavid dynasty used to give priority to the occupation of new territories.

Maybe for that same reason and also due to the aftermath of the Chaldoran battle, he himself could never build any monuments. He just ordered to repair the important Shies buildings and add some new parts to Sheykh Safi compound in Ardebil. In his rein, only two constructions were built in Isfahan, mosque of Ali and tomb of Haroon Velayat which are known as the only constructions built during the two first decades of the 16<sup>th</sup> century in the Safavid domain and reflect the architectural style of the Shah Ismā'il I era.

This article intends to examine the strategic situation of Isfahan, why those constructions are important and how the Isfahan dwellers penetrated Shah Ismā'il palace. Also this article wants to shed light on why Isfahan was chosen for setting up the new buildings at the time of Shah Ismā'il though there existed some other big cities like Tabriz.

Keywords: Isfahan, Shah Ismā'il the first, Mosque Ali, tomb of Haroon Velayat, Safavid dynasty

#### In search of the people: new evidence for urban development in Jarash, Jordan

Louise BLANKE, Department of History and Classical Studies at Aarhus University, Denmark

A century of excavations in Jarash in Northern Jordan has uncovered an impressive cityscape consisting of colonnaded thoroughfares, temples, churches, theatres and bathhouses. As such, Jarash is among the best-known archaeological sites in Jordan. However, past excavators' bias towards the monumental architectural remains of the Roman and Byzantine periods have created a discrepancy in which our understanding of the city's longue durée is inadequate and only little is known about the people who once called Jarash their home.

A new archaeological initiative – the Late Antique Jarash Project (LAJP) – seeks to redress this imbalance. Focussing on a domestic area in the southwest quadrant of the site, the LAJP examines the infrastructures of daily life and the city's continuity into the medieval period. A survey of surface remain has revealed an occupational development from cemetery in the Hellenistic period to streets and larger domestic buildings aligned with the Roman grid system. In the medieval period, structures encroached onto the streets and finally, the area saw a transformation into field systems laid out among the ruined buildings. Of particular importance to our understanding of the city's infrastructure is a water network comprised of a large open reservoir and at least nine cisterns that not only supplied the domestic houses, but also constituted the principal water system of the medieval town centre.

Complemented by data from the Danish-Jordanian Islamic Jarash Project, and with reference to contemporary sites in the region, this paper presents the results of the first two seasons of archaeological work carried out by the LAJP. It offers a new perspective on the urban development of a provincial city in the Eastern Mediterranean and addresses how we can discuss the mechanisms of urban life.

# **Evidence of a powerful earthquake in the City of Ramla during the Early Islamic Period** Amir GORZALCZANY, Israel Antiquities Authority

Ramla was established by the Umayyad governor of the Jund and later caliph Sulāyman b. abd el-Malek in the early eighth century CE as the capital of Jund Filastin. Its construction was a planned enterprise that included the mosque, the palace and markets. During the last years emphasis has been put in the research of Ramla, and more than 200 archaeological excavations were carried out by the Israel Antiquities Authority and other institutions.

Significant projects were conducted at the site of Ramla (South). These large-scale excavations became an invaluable source of information for the early days of Ramla and provide a case study on early Islamic urbanism.

An important discovery is the clear evidence, noted for the first time in the history of research, of a powerful earthquake that affected the city during the mid-eighth century CE. The event was dated by firm ceramic evidence. Against the background of sudden destruction and swift recovery, new light is shed on the economic considerations, strategies and choices of the city's inhabitants. Despite the serious damage that affected important parts of the city, Ramla quickly recovered to become, in the words of al-Muqaddasī "...the most beautiful of cities..."

# **Revisiting Rayy: A Fresh Look at Old Excavations**

Renata Holod, University of Pennsylvania

This paper presents an overview of the crafts' areas excavated by Eric Schmidt at the site of Rayy in the late 1930's, and is part of the effort to publish these finds in their fullest detail. The retrieved objects provide evidence for a lively and complex material and visual culture of this Seljuk – period settlement. Signatures on ceramics, bone implements for textile making, molds for metal implements, and tools for drawing contribute to a reconstruction of the traditions and habits of production.

# The Rise of Aswan Painted Wares in Egypt and Nubia

Greg WILLIAMS, University of Bonn

One of the most ubiquitous indications of Late Medieval occupation in Bilad al-Sham is the presence of Hand-made Geometric Painted Wares (commonly referred to as HMGP Wares). As a result of a series of published reports and collaborative and specialized studies, these wares have become a useful tool for creating a more nuanced ceramic chronology and for understanding regional variation within the Later Islamic periods. Aswan painted wares, a distinctive family of ceramics believed to be produced in the Aswan area, can be found at a number of sites along the Nile River from Cairo to Dongola as well as along the Red Sea coast. Excavations in Aswan jointly run by the Supreme Council of Antiquities and the Swiss Institute for Architectural and Archaeological Research in Cairo have produced for the first time a large corpus of this ware from its supposed region of origin. Using relative sequences, a preliminary development of this ware is suggested for the Islamic period in Aswan, which in turn could be enhanced through comparison with other sites in Egypt and Nubia following a similar trajectory as studies of HMGP.

# Preliminary Study of Islamic pottery in Sulaimaniya Region (Iraqi-Kurdistan)

Mustafa AHMAD, Ifpo-Erbil, Université Lumière Lyon 2

Since the rise of Islam, the region of Sulaimaniya (South of Iraqi-Kurdistan) has witnessed the succession of several Muslim political powers, except the noteworthy Mongol phenomenon of the 13th century. This alternation of powers has been reflected on pottery production in the area. Kurdistan region is a raw area for Islamic Archaeology and Islamic Pottery studies, the absence of stratified excavations in the Islamic Archaeological sites in Kurdistan has resulted the lack of our knowledge of Islamic Ceramic in Northern Iraq, therefore an initial attempt to put a Typological and Chronological study of the Islamic

pottery in the area is being conducted through investigating the lots of Islamic ceramic collected through Surveys and recent excavation.

Sulaimaniya Governorate Archaeological Survey (SGAS) is one of the important works being elaborated in Kurdistan since 2012 in order to map the archaeological sites in Sulaimanya Governorate and to understand the Archaeological Landscape of the region through the times.

This paper is presenting a preliminary study of the Islamic pottery collected by the French mission of SGAS (directed by Jessica Jiraud) on typological and chronological levels in the light of main pottery production sites in Syria, Iraq and Iran.

Keywords: Islamic Archaeology, Islamic Pottery, Kurdistan, Iraq

### Non-local Glazed Ceramics from the Islamic Period Yemeni Highlands

Daniel MAHONEY, Institute for Social Anthropology, Austrian Academy of Sciences

Located in the central highlands of Yemen, the Dhamar Plain served as a crossroads for the main northsouth route leading from Aden to Sanaa and further into the Arabian Peninsula as well as other eastwest routes from the Red Sea coast into the eastern desert regions. While much of its ceramic record from the Islamic period consists of locally manufactured unglazed wares, there are also glazed sherds that appear to originate from other regions of Yemen and beyond. This paper will examine more closely these glazed ceramics in comparison to collections from South Arabia, such as those from Zabid and al-Shihr, as well as from other sites that formed part of the wider maritime trade network of the Red Sea and Indian Ocean. Its aims thus are to attempt to establish parallels and links that would connect the Dhamar Plain to this network, as well as to provide a broader understanding of Islamic period material culture in highland Yemen.

# Introducing recently excavated luster tiles at Imamzadeh Fazl ibn-Sulayman- Aveh, 13th century

Maryam KOLBADINEJAD, Department of Archaeology-Islamic Azad University, Tehran, Iran / Arash LASH-GARI, Iranian Center for Archaeological Research, Tehran, Iran

As a result of recent excavation in mausoleum of Fazl ibn-Sulayman at Aveh, large numbers of luster tiles were found. Mausoleum located in the east part of old Aveh, an Ilkhanid city. According to dated tiles this building stands on 13<sup>th</sup> centuries. During excavation huge numbers of various kinds of luster tiles and stucco unearthed which are remarkable. Importance of these new findings is dated tiles, clear provenance and individual typology.

In this case study will survey characteristic features of all kinds of luster tiles like star shape, cross, frieze and pillars categorize them based on different shape, architectural context and introduce inscribed and dated tiles.

The result of this survey will present new collection of 13<sup>th</sup> century luster with clear provenance to researchers and will help curators to attribute many unknown luster tiles which keeping in Museum storages.

#### Production of Metal Vessels in Palestine during the Fatimid Period

Ayala LESTER, Israel Antiquities Authority

Discoveries of the last 15 years have contributed to our understanding of metalware within Palestine during the Fatimid period. The most prominent discovery is the workshop found at Tiberias with 649 articles and about 50 kilograms of production waste, dated up to 1072 CE. The workshop specialized in a few production techniques which will be discussed in the lecture. The metal hoard found at Caesarea encompasses 136 vessels and is very similar, typologically and stylistically, to the vessels from Tiberias, however the dating of it is suggested to be about two decades later. This is in accordance with the exca-

vation diary of Avraham Negev from 1961, in which he mentions metal residues covering one of the halls in the tunnels of Caesarea, near the temple platform.

In addition, there are vessels from many rescue excavations in Ramla which are similar to the vessels from Tiberias and Caesarea, but limited in numbers with a conspicuous number of metal weights. Recently an assemblage of vessels was found at Ramla which is characterized by small articles, many of which were improvised, probably by a craftsman who was familiar with vessels and its manufacturing techniques. There is no evidence of a workshop and this hints to the possibility of actual manufacturing.

These various testimonies point to a solid tradition of metal production in Palestine, which is not mentioned in Genizah documents, but is confirmed by the archaeological finds.

# Islamic-period vistas in a Roman-period urban shell: Heritage strategies for presenting the early Islamic mosque in central Jarash

Alan WALMSLEY, Faculty of Humanities, University of Copenhagen

The discovery of an Early Islamic mosque in the centre of the antiquities zone of Jarash in Jordan has created challenges to the effective presentation of the results to site visitors. The mosque, erected between ca. 730 and 740 CE and in continuous (but changing) use until the tenth century or later, is located at the southern cross-roads of the historic town, which remained a dynamic area of social and commercial life into late antiquity and early Islamic times. With adjacent buildings and a market complex along the street, this area would have been one of the more dynamic zones of the town between ca. the late third and tenth centuries CE. Yet the structures that remain from this once-bustling area are overshadowed by the ponderous urban furniture belonging to the Roman-period town, some of which was reinserted into the site during 20<sup>th</sup>-century rebuilding programs. Using the Jarash mosque example, but drawing on other cases, this paper discusses the difficulties facing restoration projects in the presentation of less familiar archaeological discoveries at sites predominately interpreted from a Eurocentric perspective.

# The Local context of the Early Islamic site of Shuqayra al-harbiyya, west-central Jordan Zakariya NA'IMAT, University of Bonn

This paper attempts to fathom the broad local cultural milieu of the Early Islamic site of Shuqayra al-Gharbiyya, located on the Karak plateau of west-central Jordan. Recent excavations conducted in the site have revealed that the main occupation phase on the site is dating from the early Islamic (Umayyad-Abbasid; 8<sup>th</sup>-9<sup>th</sup> centuries AD) period. Then, the site held a public building, initially interpreted as a *qaşr* (Umayyad Palace). The discovery of Shuqayra *palace* extends the geographic distribution of these Umayyad imperial buildings to the marginal, although fertile area of central Jordan, and raises questions about the social, economic and cultural systems within which such stately buildings operated. The Umayyad period was of intrinsic cultural arabization, political transformation, social renovation and economic reconfiguration. This paper draws on material excavated from the site and collected from its ambience by various archaeological field research projects to examine its relationship to and position within the overall Umayyad settlement in *Kurat* (district) Mo'ãb, an area that has always been considered *terra neglecta* during the concerned era.

# The Copper Mines of Faynan and the Economy of Southern Bilad al-Sham during the $12^{\rm th}$ and $13^{\rm th}$ Centuries AD

Ian W. N. JONES, University of California, San Diego / Mohammad NAJJAR, Department of Antiquities of Jordan / Thomas E. LEVY, University of California, San Diego

Southern Jordan is generally seen as one of the most marginal and least economically important areas of the southern Levant during the Middle Islamic period (1000-1400 AD). Recent research in the copper

ore-rich Faynan district, however, suggests that during the late 12<sup>th</sup> and 13<sup>th</sup> centuries AD — the Ayyubid period, in dynastic terms — this region briefly played an important role in provisioning the emerging sugar industry of the Jordan Valley and Dead Sea lowlands. Using evidence from recent excavations at two copper production sites in the Faynan region — Khirbat Nuqayb al-Asaymir and Khirbat Faynan — and from several archaeological surveys, this paper presents an up-to-date view of the patterns of Middle Islamic period copper mining and metallurgy. It then situates the copper industry more broadly within the major shifts in the economy of southernmost Syria beginning in the 10<sup>th</sup> century AD and the changing relations between the Islamic polities of the Levant, the Crusader territories, and Europe in the late 12<sup>th</sup> and 13<sup>th</sup> centuries. In so doing, we show that the brief exploitation of mineral resources in southern Jordan was not a failed experiment, but a purposeful and somewhat successful reaction to changing regional and international economic circumstances.

#### Medieval Urban Landscape in the Northeastern Mesopotamia – PRESENTED AS POSTER

Karel NOVÁČEK, Palacký University Olomouc

Islamic era witnessed boom and subsequently end of the five-millenia-long era of urbanism in the region which is sometimes considered to be a craddle of city life at all and later a crystallisation core of the urban-based Assyrian Empire. A conspicuous cluster of cities, towns and other centres deserted eventually during Ottoman Period and individual nodes of this network are today well accessible for survey coming from analyses of satellite images and historical sources. The Czech–Kurdish survey project conducted in a wider region of Arbil, capital of Iraqi Kurdistan, is aiming to aswer several historical questions: What was an impetus of development of such dense network of central places? What was the social profil of the cities, particularly in the Early Islamic Period? Did the dynamics of the urban network correlate with political processes and events which took place in the Umayyad and Abbasid Caliphate? And did the cities create a hierarchically structured network of mutually cooperated centres or it rather was a case of isolated, parallelly developed "town states"? The poster will introduce preliminary, partly interpreted results of just completed project.

#### The rural landscape of Lanjān (Lenjān) plain in Işfahān, Iran, during the Islamic period

Jaleh KAMALIZAD, Department of Archaeology, Faculty of Humanities, University of Tehran

Lanjān is an ancient and fertile plain along the Zāyandeh Rūd river in south west of Işfahān. Due to favorable environmental conditions, such as direct access to the Zāyandeh Rūd river, fertile agricultural lands and also ancient highways, the region has long been worthwhile and a key area around Işfahān city.

Moreover due to the existence of prestigious and thriving town, Khān Lanjān and its mountainous castle, there are numerous mentions about Lanjān region in written sources of the early and medieval centuries of Islam.

In this study, according to archaeological survey and written sources, the author is going to consider dynamic changes of Lanjān settlements by using rural landscape approach. This project investigates different aspects of settlements, agricultural lands, water and their relationship during the Islamic period.

Keywords: Landscape Archaeology, Işfahān, Lanjān, Zāyandeh Rūd , Khān Lanjān

# The Archaeology of Islamic Tombstones in the Village of Golfaraj: Changing Process of Funeral Tradition in Azerbaijan of Iran during the Late Islamic Era

Bahram AJORLOO, Faculty of Applied Arts, Department of Archaeometry, Tabriz Islamic Art University / Zeinab KAVYANNIA, NAZAR Research Center for Art, Architecture & Urban Studies

According to the form and inscriptions of tombstones, the late Islamic cemetery of Golfraja, being located next to the Golfaraj village of Jolfa district in the northwest of Iranian Azerbaijan, has been dated to 16<sup>th</sup>—early 20<sup>th</sup> century by the authors. The site is some 10 Km far from the south bank of the River Araxes and Nakhichevan, near to the Irano- Azerbaijani borderline. The tombstones of this cemetery can be categorized into two different types since Safavid times (16<sup>th</sup>—18<sup>th</sup> AD) to the late Qajarid era. These types are as follow: Stone rams dated to the early Safavid times; full comparable with ram stones of Turkic people of Nakhichevan and East Anatolia; and flat tombstones adopted during the Qajarids (1795 – 1925). Moreover, there are some simple graves without any tombstones similar to the graves of Shahsevan pastoral- nomadic tribes of Qaradagh Mountains. Consequently, the cemetery of Golfaraj presents either sides of the changing process of funeral traditions in Azerbaijani Muslim people since Safavids to Qajarids; from pastoral- nomadism to the sedentary way of life; and from stone ram to flat tombstones. On the other hand, graves without tombstones can be related to the pastoral- nomad Turkic people of Qaradagh who were in economic connection with Golfaraj farmers.

Keywords: Azerbaijan, Late Islamic era, Funeral tradition, Pastoral- nomadism, Stone ram, Tombstone

# Resafa – Rusafat Hisham, Syria. New Insights regarding the settlement structures extra muros based on archaeological prospections

Martin GUSSONE, Technische Universität Berlin

Interdisciplinary research of the past decade provided new evidence to reconsider the previously established concepts regarding the residence of Caliph Hisham b. Abd al-Malik (r. 724–743) in the surroundings of Resafa. The results indicate that the archaeological remains belong not only to the Umayyad caliphal residence, but a multi-period settlement. The settlement activity started in the first half of the 6th century and lasted – in varying degrees of intensity and extent – to at least up to the abandonment of the permanent settlement of the town and surrounding areas in the last third of the 13<sup>th</sup> century – and beyond.

Using archaeological prospection methods it was possible to cover large areas of settlement remains *extra muros*. Methods of geophysics such as Magnetic prospection enable us also to 'take a look' at structures beneath the surface. Comparative analysis of the results of various archaeological prospection methods (aerial photographs, digital terrain models, magnetic prospection, surveys and recording of surface features) are allowing now to draw a more accurate picture of the settlement, which existed in the surrounding areas of Resafa during different time layers. Thus it is possible to discuss new insights regarding the residence of Caliph Hisham b. Abd al-Malik.

# Capitalizing Jerusalem & Beyond: Mu'awiya's Urban & Imperial Vision 635-680

Beatrice St. LAURENT, College of Humanities & Social Sciences, Bridgewater State University

Mu'awiya's jurisdiction in Jerusalem from 638 while governor and calph, from 669 until his death in 680, evidenced his urban planning of the Haram and the area south of the precinct wall. Within the sanctuary he built his mosque between 639 and 660 by his investiture as caliph. He also planned and initiated construction of the Dome of the Rock left incomplete at his death. The three main entrances to the precinct were in the southern and eastern walls. His palace south of his mosque was outside the precinct by the city wall. Mu'awiya envisioned a grander scheme initiating construction of the administrative area west of his palace demonstrating his intent to establish Jerusalem as his imperial capital. Jerusalem was part of a strategic imperial scheme begun earlier by the Sea of Galilee including the palace of Sinnabra and bath at Hamat Geder while residing in the Golan.

Evidence is in the historical and physical record documenting the new presence of Islam in Jerusalem and region, and the persistence of the eschatological and royal memories in the urban and architectural traditions of Judeo-Christian Syria – Caesarea the Byzantine capital of Palestine – and pre-Islamic Sabeo-Himyaritic south Arabia – San'a in Yemen.

# Hisham's Palace Reconsidered: archaeological survey and excavations in the hinterland of Khirbat al-Mafjar in Jericho

Mahmoud HAWARI, Khalili Research Centre, University of Oxford

Five seasons of archaeological survey and excavations in the hinterland of Hisham's Palace at Khirbat al-Mafjar in Jericho were carried out from 2010 -2014. Various structural features principally associated with the system supplying water to the palace complex were recorded. These include numerous sections of an enclosure wall that surrounded the palace within an agricultural estate extending to the east, north and south; segments of two aqueducts that supplied the palace and the estate with water from springs a few kilometers to the west, including the remains of three ruined bridges, a large reservoir with an adjacent water mill, which were excavated.

The elucidation of the hydrological system that supplied the palace, its baths and agricultural estate within a large enclosure wall (hayr), of the water mill and the large reservoir on the aqueduct, which seems to be a uniform Umayyad work of the first half of the 8th century, has given new context for Hisham's Palace. It has entirely changed our perception of the palatial complex to conform to a template of numerous Umayyad palaces (qusur) that have been re-examined in Bilad al-Sham during the recent decades. It retains nearly all the structures that comprised a typical Umayyad settlement: a main residential palace, a bathhouse, a mosque, an enclosed agricultural estate, a large reservoir and water mills. Such agricultural settlements aimed both at generating revenues for the state treasury and at extending Umayyad political power into the periphery of urban centres. Despite the earthquake that has destroyed the palace in 749, most probably the settlement continued well into the Abbasid period in the ninth and tenth centuries and and even beyond.

### Al-Qastal reconsidered

Ignacio ARCE, Carsten Niebuhr Institute, University of Copenhagen

The aim of this paper is to present the results of the preliminary results of the research conducted at the Umayyad *qasr* of *al-Qastal* in the Jordanian *Badiya*.

Al-Qastal has been the object of two main campaigns of excavation and research. The first one was conducted by Carlier & Morin in 1983–4, and the second by Ghazi Bisheh in 2000. The first campaign of excavation focused on the qasr, while the second and more recent one, was focused in the mosque and in the recently discovered bath-house found near the birka.

Our research will be centred mainly on the Qasr and the mosque, presenting the hypotheses built on the results of our ongoing research:

On the basis of material evidence we will demonstrate the existence of two phases of construction at the Qasr, with an interruption of the works and a change of plan in the second phase (against the conclusion claimed by Carlier & Morin that "*l'identité des techniques de construction du château et de la mosquée nous font envisager une seule campaigne de construction*" (Carlier & Morin, 1984, p.352).

This change of plan would have included a noticeable reduction in size in relation to the hypothetical original plan, and the availability of *spolia* and better quality materials for its construction, coming from a pre-existing Roman/Late Antique building, which would have existed in the immediate vicinity, and which would explain the reference to the "*two qastals*" ("*qastalain*"). in the Arab sources, and even the Latin origin, which almost all the authors give as explanation for the name itself of "al-Qastal".

Besides, we will review the hypotheses regarding the entrance block and the domed throne hall built in the second floor. The hypothesis put forward by Carlier & Morin, consists in the direct transposition of the *diwan* or *bawh* from Khirbet el-Mafjar, resting on the entrance corridor which would have been covered (according to their hypothesis) by two domes on pendentives. We will review the problems and contradictions of these hypotheses in relation with the actual remains and the architectural structure itself of the building. Finally we will present some further hypotheses on the original structure and appearance of the mosque of the complex, which would correspond to the second phase of construction of the Umayyad *qasr*.

#### Khirbat al-Minya: the dating of the residence building and Umayyad portals

Markus RITTER, University of Vienna

The site of Khirbat al-Minya at the Lake of Tiberias (Bahr Tabariyya) has been excavated in 1932–39 and was re-examined in 1959 and recently. The residence building, which was the focus of the excavations at the site, conforms to the peristyle villa type of an Umayyad qaşr but shows some features that single it out, such as the inclusion of a hypostyle mosque and of a great three-aisled colonnaded hall. The building has been dated to the Umayyad period and the reign of the caliph al-Walīd I. and thus would constitute one of the earliest extant Umayyad quşūr. It was damaged by an earthquake but continued to be used in different stages until the Mamluk period when the place was abandoned. This papers throws a fresh glance at the architecture and the dating of the residence building in Khirbat al-Minya. It re-examines the dating evidence which has rested on a decontextualised inscription and on unstratified coins, and introduces formal arguments to the discussion, in particular the use of a monumental portal with a domed gateway.

#### Considerations on the Pavilion in the Umayyad Cultural Experience

Giulia ROCCABELLA, Hebrew University of Jerusalem, Israel, Israel Antiquities Authority

This paper investigates Umayyad garden architecture through the use of archaeological and artistic data.

Currently, evidences of pavilion garden structure dating to the early Islamic period have been discovered in Greater Syria region only. Khirbat al-Mafjar, Ruşāfa and Haram al-Sharīf provide rare pavilion archaeological samples, while Quşayr' Amra and Damascus Umayyad mosque offers unique figurative representations of it. According to these samples, the pavilion serves the sole purpose of providing access to landmark amenities, whether real or symbolic. However, the different morphological solutions respectively chosen reflect diverse spatial perceptions and ultimately distinct traditions.

This research proposes an investigation of the Umayyad garden pavilion's history through former experiences, i.e. Sasanian pavilion on bronze plate (Bode Museum), Herod's Palace at Jericho, and latest outcomes, i.e. Madīnat al-Zahrā, in order to detect its peculiar cultural values.

Archaeological and artistic sources are analyzed according to a comparative methodology working on diachronic and synchronic axes along the caliphate territory. Besides, literary sources are also employed and provide conforming support.

The results suggest that the Umayyads distinguished between Roman and Iranian garden architecture concepts and structural solutions, and coherently employed them in different sites.

### Social Use and Meaning of the Domestic Architecture of Fusțăț: exploratory analysis of spatial data Matthew HARRISON, University of Southampton

Archaeological interpretations of the Early Islamic domestic architecture excavated at Fustāt, Egypt's first capital under Muslim rule, have previously focused on issues of typology, chronology and infrastructure. How far is it possible to move beyond these matters and to infer from the archaeological record how architectural spaces were conceptualised and used by the inhabitants of the city? Limited preservation of architectural remains, incomplete publication, and the nature of formation processes on the site prove significant barriers to the achievement of such a goal. Yet, even given such a problematic and fragmentary dataset, its scale affords the detection of certain meaningful patterns relating to architectural space. This paper presents the results of the collation and representation of published archaeological data within a geographic information system, and the subsequent analysis of this spatial data using

multivariate statistical methods. Trends suggestive of different spatial categories and patterns of use will be highlighted, as well as limits to our understanding and future avenues of research.

### Fortifications of the Arab Dynasties (10th-11th cents. AD) in the Fertile Crescent

Alastair NORTHEDGE, Université Panthéon-Sorbonne

With the decline of the power of the Abbasid Caliphate from the late 9<sup>th</sup> century onwards, the power vacuum was filled by a number of different tribal dynasties. Here we attempt to look at the kind of fortifications which can be attributed to them, in order to help field archaeologists identify the class.

### Study of the Historic Castles of the East Gilan

Seyede Mona MOUSAVI / Seyyd Rasoul MOUSAVI HAJI, University of Mazandaran / Javad Alaei MOGHADAM, University of Mazandaran

The eastern Gilan according to its strategic location and the importance of its connection with different Iranian states has always had a very significant position in the Iranian political structure so that from the historic to the late-Islamic periods, the region has been regarded as one of the safe shelters for powerful rulers and occasionally for opponents of their governments. Such an attention to this region led into construction of numerous building and strong castles, such strong castles which have been reminded in various stories and myths. During an archaeological investigation conducted aiming at identification and study of the eastern region of Gilan, 13 historic castles (Parthian and Sassanian) were identified and valuable information about the types, styles, and also defensive structure of this construction was obtained.

In the current paper, the authors while introducing the historic castles of the east Gilan, deal with location and structural investigation and analysis of these castles.

Keywords: Gilan, Historic Castles, Archaeology, Architecture Stylistics

#### A castle at Arab-Byzantine Frontier: Toprakkale

Füsun TÜLEK, Kocaeli University Archaeology Dept., Turkey

Toprakkale castle, in East Plain Cilicia, is situated on east-west trade route running at South skirts of the plain just before the first heights of Amanus Mountains and at North entrance of Kisik Pass through which runs the land route leading to northeast shores of the Mediterranean Sea, namely Gulf of Issikos. The castle, placed at such a junction of roads strategically, surmounts a conical hill reaching an altitude of 140 meters with its inner and outer baileys. The kern of the castle encroaches on a steep talus and basalt bedrock with the outer walls adorning the hill like a necklace. Walls rising high 10–15 meters with round and pentagonal towers are awe inspiring. The castle Abbasid in origin and a Mamluk stronghold at its major final phase of use is regarded having an obscure foundation history. Archaeological evidence and Arabic literary sources shed light on historical background of its site. Original name of the castle is controversial; a frequenting name in non-Islamic medieval literary sources adhered. Present paper inquires state and status of the castle through changing ruling cultures from Abbasids to Byzantines, Armenians, Crusades and Mamluks in East Plain Cilicia.

#### Investigation of the Islamic Castles of Sistan

Javad Alaei MOGHDAM, University of Mazandaran / Seyyd Rasoul MOUSAVI HAJI, University of Mazandaran / Reza Mehr AFARIN, University of Mazandaran

Sistan, as the eastern state of Iran, has been the meeting point with of eastern territories and states and this caused Sistan to be considered as a sensitive site of military and non-military communications of the east Iran. The military significance of the region along with the feudal and sub-feudal rule caused the attention of the residents and states to be focused on building numerous military fortifications and castles so that in every corners of this territory, remains of these castles can be observed. Through archaeolog-

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ical surveys, 43 castles and buildings with fortifications related to the Islamic eras were identified which are divided into six groups in terms of their forms, dimensions and size which are somewhat associated with the usage of the main construction.

In the present paper, which has been written based on the archaeological field studies, while introducing the Islamic castles of Sistan, their chronology and also their structural analysis and relationships with each other are dealt with.

Keywords: Sistan, Archaeological Survey, Archaeological Castles, Defensive Fortifications, Military Architecture

### Archaeological Study of Buildings Known as Pigeon tower in Isfahan

Artism BAKHTIYRVAND / Mina SENEMAR / Kosar LOTFI

Pigeon tower is referred to a building constructed in suburbs of different cities with the aim of optimizing the keeping and breeding of birds. These constructions are mainly those buildings in the form of cylindrical towers inside of which small and honeycombed spaces have been designed for keeping birds so that their dungs can be used as fertilizer in agriculture and in industry and even for making gunpowder. Although architecture of Pigeon towers has a single pattern, the Iranian architectural taste and art and also the intended capacity of this building have added a diversity to it. According to the multiplicity, diversity, and importance of this type of buildings in Isfahan region, there is still a paucity of related research in this regard and issues such as chronology of Pigeon towers, the peak period of their usage, their primary and subsidiary applications and also the factors affecting the forms and elements existing in this kind of building are still remained obscure. Therefore, using filed and also documentary studies the authors have investigated these unique buildings of Isfahan. The results obtained from these field and documentary studies have been provided in the present paper.

Keywords: Pigeon tower, Relative Chronology, Architectural Structure and Elements, Naturalism, Scientific Modelling

# Islamic Architecture in Crete: materiality between the Venetian and the Ottoman rule Marta LORENZON, University of Edinburgh

Since ancient times architecture have been tightly intertwined with power and symbolism, as buildings are a physical expression of societies. The architectural process is regularly responsible in building identities, creating and spreading community values and asserting power thanks to a system of figurative meanings societies ascribed to the built environment.

Buildings as expression of identity move through a circle of construction, destruction, alteration and reuse such as the transformations of Aghia Sofia in Istanbul and the Pantheon in Rome. This architectural circle acquires a highly symbolic meaning in Crete during the passage between Venetian (1205–1669) and Turkish rule (1669–1898).

Architectural elements are changed and additional structures are absorbed into the original plan to convey the new allegoric meaning buildings acquire in the Cretan society. Often creative solutions are found where different construction materials are assembled and joint to modify buildings drastically, thus affecting the surrounding landscape. A well-studied case study of this process is represented by the basilica of Aghios Titos in Heraklion, which is characterized by three main construction and alteration phases in Byzantine, Venetian and Ottoman period. Even the language is affected by this transformations and terms like "fenestra" and "fortetsa" become part of the architectural vocabulary of the island.

This paper aims to present few archaeological case studies from different architectural contexts during the Islamic period in Crete: the Augustinian Priory in Rethymnon transformed into the Narantze mosque, the fortress in Ierapetra, the baths in the Khania harbour and the mosque of lunkiar in Heraklion where elements of previous plans have been incorporated and intertwined to express a new narrative. The case

studies analyzed focus on religious and public architecture in order to investigate the relationship between materiality and power. In particular the paper will focus on examples of architectural transformation and re-used, on how the passage of power affected the building materials employed, the typology of buildings and the construction techniques.

#### Excavations and conservation in the Medieval Castle of Thareb (Diwaniya, Iraq)

Abbas AL-HUSSAINY, University of Qadissiya, Iraq

The castle of Thareb is located 41 km to the south-west of Diwaniya and 35 km to the south of Najaf, in a deserted area higher than the adjacent ones. Since the Medieval time it had a military function and also served as a location for the gathering of al-Khezaeal in their resistance to the Ottomans. The castle has a square shape measuring 50\*50 m and is surrounded by a 1m-thick wall, the remains of which still reach up to 6 meters in height. The wall is supported by 49 buttresses and has a tower with two storeys at each of its corners. The University of Qadissiya has carried out excavations within and around the castle and has started the conservation of this outstanding monument.

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#### Materiality & Archaeometry

#### Prehistoric Pottery from Tell Begum (Iraqi Kurdistan)

Olivier P. NIEUWENHUJSE, Faculty of Archaeology, Leiden University, The Netherlands / Takahiro ODA-KA, The University Museum, The University of Tokyo, Japan / Akemi KANEDA, Faculty of Archaeology, Leiden University, The Netherlands / Simone MÜHL, Institute for Ancient Near Eastern Archaeology, Ludwig-Maximilians University Munich, Germany / Kamal RASHEED, Directorate of Antiquities of Sulaymaniyah, Sulaymaniyah, Iraq / Mark ALTAWEEL, Institute of Archaeology, University College London, Great Britain

Renewed excavations at the prehistoric site of Tell Begum, Shahrizor Valley (Iraqi Kurdistan) have yielded ceramic assemblages from two distinct phases; the so-called Halaf-Ubaid Transitional and the LC1–3 or Early Uruk periods. Both periods remain very poorly known not only in the Shahrizor but in Iraqi Kurdistan in general. The study of this material involves typological and ceramic-technological analysis. So far this suggest that while both pottery complexes have much in common with ceramic assemblages from adjacent, better-known parts, in particular from Upper Mesopotamia, they show some unique, regionally distinct features too. Our poster summarizes the ceramic study so far.

#### Gurga Çiya: A Preliminary Analysis of the Late Chalcolithic Ceramics

Michael LEWIS, Institute of Archaeology, UCL

The Shahrizor plain was until recently, a 'terra incognita', with very little in the way of archaeological investigation. In recent years, excavation and survey have taken place under collaboration of teams from the Shahrizor Prehistory Project. The excavations at Gurga Çiya (2012–present) are one such joint project between University College London, and University College London-Qatar.

This paper will provide a preliminary analysis of the ceramic from Gurga Çiya; a small, multi period tell site (Ubaid, Uruk and Late Bronze Age) located in the Shahrizor Plain, Iraqi Kurdistan. Highlighted by the Shahrizor Prehistory Project, the site has seen one pilot excavation, followed by two full excavation seasons which has provided a wide corpus of ceramic which this paper will discuss.

An overview of the ceramic from Gurga Çiya will include consideration of ceramic parallels from neighbouring sites in Northern Iraq. Through discussion of the ceramic and the archaeological evidence, it is hoped to place Gurga Çiya in its relative geographic, and chronological context within the Late Chalcolithic of Northern Mesopotamia.

#### Contextual analysis on 3<sup>rd</sup> Millennium pottery from Tell Beydar (Syria): some cases of study Katia GAVAGNIN, Ca' Foscari University (Venice)

Tell Beydar is an urban centre located in the Upper Khabur region. Excavations carried out on the site for almost 20 years have brought to light several structures (palaces, temples, workshops, storage rooms, private houses, graves, etc.) dated to the EJZ1–2 to the EJZ4. A very huge amount of vessels and pot-sherds has been recovered during this extensive excavations, giving us the great opportunity to study the material not only from the morphological point of view but also to understand how shapes evolved or changed through time. The paper will focus on a new approach in pottery study: the intra-site distribution of the different shapes. The analysis of well stratified materials coming from good and differentiated contexts will allow us to identify possible specialized functional areas, and to understand if there are some shapes that are typical of only one kind of context (i.e. domestic or public, specialized funerary vessels, etc.) or not. It would be possible therefore to determine if and how pottery production changed, in relation both to chronological and functional factors.

#### "Come, tell me how you cook" Cooking Practices in 3<sup>rd</sup> Millennium BC Mesopotamian Households Giulia SCAZZOSI, Department of Humanities, University of Pavia

The poster aims at analysing the cooking pottery assemblages and the kitchen-related facilities from selected late 3rd millennium BC case studies in northern and southern Mesopotamia. In particular, domestic contexts from Tell Brak and Tell Beydar in the North and Abu Salabikh and Fara in the South will be taken into account. A detailed comparison and analysis of both differences and similarities between northern and southern cooking furnitures as well as associated pottery horizons will allow to draw some conclusions on the cooking practices and the types of consumed food in the different areas. Statistical analyses on the capacity of the pots, archaeometric, paleobotanical and archaeozoological data will be integrated with the aim of better understanding the dietary variations as well as the cooking techniques.

In addition to this, some ethnographic evidence will be discussed, in order to compare ancient and modern cooking practices in Iraq and Syria.

# Pottery production and handcraft specialization in the Malatya plain during the second half of the third Millennium BC: comparative analyses of painted and dark burnished wares Pamela FRAGNOLI / Mallegni CHIARA, Sapienza University of Rome

From the half of the third millennium BCE a process of gradual sedentarization began in the Anatolian Upper Euphrates, leading to the development of small well-planned settlements sometimes surrounded by town-walls. This phenomenon is mirrored in the ceramic assemblage: both dark burnished pots of Transcaucasian tradition and light painted ware peculiar of the Malatya and Elazığ regions show a growing trend towards standardization in comparison to the previous period.

In this paper, both pottery classes from Arslantepe and the Malaya Plain, are examined by means of typological and archaeometric analyses, in order to better define the chronological sequence of the Arslantepe VID Period, the organization of the production and its degree of specialization and standardization.

The achieved results reveal that from the EBA3 burnished and painted wares gained a regional homogeneity and share precise manufacturing procedures and supply sources. Different local sources were however exploited for producing either burnished or painted pots.

#### Pottery Industry in Sistan during the Bronze Age Based on Archaeological Evidence

Javad Alaei MOGHDAM, University of Zabol, University of Mazandaran / Seyyd Rasoul MOUSAVIHAJI, Department of Archaeology, Mazandaran University / Reza Mehr AFARIN, Department of Archaeology, Mazandaran University

One of the most significant features of the Bronze Age settlements and sites in Sistan is the unique pottery density on the surface of these sites which is rarely observable in any point on the Iranian Plateau. The unique pottery density, exsitance of numerous deformed potteries and also archaeological sites with evidence of pottery kiln (evidence such as few remains of kiln architecture and high density of kiln slag) are all indicative of the expansion and prevalence of this industry in the region as one of the main industries. According to the significance of this issue, the authors in order to study the archaeological evidence of this industry engaged in archaeological survey and study of the evidence remained in the region. As a result, 367 sites with evidence of pottery kilns were identified and based on the structure and dimensions of the sites and type of furnace evidence, the sites can be categorized into three classes: large and completely industrial independent sites, small dependent industrial sites and large settlement sites in parts of which evidence of pottery kiln are visible. In the current paper, relying on the archaeological surveys and excavations, the results obtained from the studies on the pottery industry during the Bromze Age of Sistan are discussed.

Keywords: Sistan, Pottery Industry, Bronze Age, Industrial Sites, Archaeological Evidence

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#### The Iron Age pottery assemblage from Tell Mishrifeh in its regional context

Giulia RUSSO, Eberhard Karls University, Tübingen

Between 1999 and 2010, archaeological excavations by a German team from Tübingen University in Operation G on top of the acropolis of Tell Mishrifeh (Homs) brought to light a series of buildings and other features which could be ascribed to the Iron Age. The material, mostly potsherds, associated with these structures is of pivotal importance for a better understanding of the role that the city played in the variegated and diverse chessboard of the Northern Levant in the first half of the first millennium BC. This poster displays the results of an intra-site and inter-site analysis of the ceramic corpus with the purpose of integrating the results of the investigations so far carried out at the site in order to shed a new light on a little known period of the history of Mishrifeh.

Keywords: Iron Age, pottery typology, Tell Mishrifeh, inland Northern Levant

### New Research in the Kurdistan Region: some preliminary remarks on the pottery of the post-Assyrian period

Agnese FUSARO, Department of Oriental Studies, La Sapienza, University of Rome / Marco GALUPPI, Irano-Italian Archaeological Mission, La Sapienza, University of Rome / Serenella MANCINI, Department of Oriental Studies, La Sapienza, University of Rome

The Italian Archaeological Mission in Iraqi Kurdistan (MAIKI – Sapienza University of Rome) has focused its activities on the study of the historical, linguistic and cultural development of the Iraqi Kurdish region, in collaboration with local institutions, such as the Department of Antiquities of Sulaimaniyah and the High Commission for the Erbil Citadel Revitalization (HCECR).

Among the field activities a survey was carried out in the area of Sulaimaniyah, during which a heterogeneous *corpus* of materials was collected. The study has specifically focused on ceramics, related to a wide range of productions and a wide time span, from the Uruk-Jemdet-Nasr period up to the Ottoman period.

The pottery study, also supported by archaeometry, has particularly concentrated on technological aspects in order to outline a general frame of local pottery productions and imports.

Moreover, thanks to an agreement with HCECR, we will analyse the pottery from the excavations on the Erbil citadel which will add further information on regional ceramic manufactures and distribution networks.

This study mostly aims to a better understanding of the pottery related to the post-Assyrian period of the Kurdish region, but also, due to the present political situation, it contributes to preserve the history and culture of Kurdistan.

### Investigation and Study of the Parthian Pottery in the Southeast of the Central Iranian Plateau (Case Study: Mahallat City)

Seyede Leyla BANIJAMALI, Tarbiat Modares University / Javad Alaei MOGHDAM, University of Zabol, University of Mazandaran / Mehdi Ghaem PANAH, Tarbiat Modares University

In a survey and identification of Mahallat City performed during the summer 2009, 128 archaeological sites from the fifth millennium B.C to the Qajar periods were identified among which 37 sites belong to the Parthian period.

The potteries collected from the Parthian sites in this region have clays with red, orange, gray, buff, and brown colors. In general, potters of this period tended to cover their vessels with various coatings and colors, though some of them are self-coating. Nearly, in all the potteries, sand and gravel temper has been used. Decorative procedures of the Parthian pottery in this region include Incised, added, stamped, Burnished, and painted designs and the motifs of these decorations have geometric shapes.

Obviously, documentation and typological studies of the significant Parthian potteries of this region and analyzing the results of these studies can achieve some goals such as introducing the indicative types of the region, identifying the indigenous and regional pottery tradition in the Parthian periods, comparative study of the mentioned potteries with similar examples in the neighboring areas and thereby they provide our knowledge of the residents' cultural, economic, and commercial situation in this region associated with its cultural condition during the Parthian period.

Keywords: Markazi Province, Mahallat, Pottery, Parthian Period, Typology

#### Glass workshops of the Islamic period in Baalbek/Lebanon

Bettina FISCHER-GENZ, German Archaeological Institute

The area of Bustan Nassif yielded a large amount of glass and pottery dating to the 12<sup>th</sup> to 14<sup>th</sup> century AD. In general, the glass finds in Baalbek are comparable to the glass from the Beirut Souk excavations, although they differ in details such as the colours and quantity of certain forms. The glass workshops of the Islamic period were probably situated *intra muros* around the Qalaa as fragments of kilns and wasters indicate. Most vessels are free-blown, with only a small percentage of mould blown glass.

Micro-X-ray fluorescence analyses were done by the archaeometric laboratory of the Römisch-Germanisches Zentralmuseum Mainz. The division in mineral soda and plant ash glasses as indicators of either Roman or Islamic production was confirmed for all samples according to the archaeological data. A further detailed analysis of the data provides first indicators for the identification of centres of production and the origin of the glass.

#### **Gold Jewellery of Ancient Parion**

Hasan KASAPOĞLU, Ataturk University Erzurum-TURKEY

Ancient Parion is located in Kemer village in Biga district of Çanakkale, Turkey. With the exception of the Çanakkale Archeology Museum's rescue excavations, during works conducted in Parion Southern Necropolis between the years 2005–2014 a total 216 graves have been revealed and identified. In the necropolis 22 graves which are in-situ and are precisely dated to the Hellenistic Period by their finds were revealed during the works of 2005–2014. These graves consist of; 13 Stone Cist Graves, 6 Flat Gable-roof Tile Graves, 1 Simple Earth Grave and 2 Urn Graves. In Hellenistic Period, stone cist graves made with sandstone and marble plaques were used in general. From these cist grave, funeral gifts consisting of golden jewellery and bronze amphora have been unearthed. These presents show the richness of the city in this period.

Golden jewelleries as being a symbol of status and authority were also contained in the content of votive goods for gods and goddesses, mankind of antiquity believing of another life after death, believed these jewelleries could be used in the after-life and left them in graves. In this context, all golden jewellery discovered in Parion during excavations between 2005–2014 were found in the city's southern necropolis. Grouping these golden jewelleries in five topics as; diadem-wreaths, necklaces, earings, Charon coins (impression coins) and needles is possible.

Keywords: Ancient Parion. Gold Jewellery, Necropolis, Diadem, Neclace, Charon Coins, Burial Customs, Troad Region.

## Preliminary study of metal finds from the temple of Tell Mozan/Urkesh, Syria: new data from old excavations

#### Sarah COMELLI

This poster focuses on the metal finds from the temple area of Tell Mozan, ancient Urkesh, in Northern Syria, retrieved in the 1984–1986 excavation seasons and recently subjected to examination. Metal weapons and tools are amongst the most common type of metal items recovered within temple complexes from the ED period onward in Mesopotamia. Within the temple area of tell Mozan a striking number of different types of metal tools and implements were recovered. Besides ordinary carpenter tools (e.g., chisels and awls) a wide variety of weapons were also found, the majority consisting of spearheads and projectile points. The high number of metal artefacts recovered in the temple area is significant compared to the findings within other temple areas in the Jazirah region in the IIIrd millennium BC. An overview of the types and preservation status of the items is given. A discussion is provided in the attempt of understanding the origin of such striking findings.

#### Iron oxide rock artifacts - an overview

Martine M. MELEIN, VU University Amsterdam, Faculty of Earth and Life Sciences

Small iron oxide rock (hematite, magnetite, goethite) artifacts, - notably weights, seals and beads- , were used in the Near East around 2000 BC. This material group has never before been studied as a whole. In my dissertation I try to anwer questions with regard to the origin of the raw material, the distribution patterns, the factors that led to opting for these materials, the symbolic aspects of the stones. I approached these questions from various angles:

- Archaeology
- Quantative analysis
- Geology and mineralogy
- Material analysis
- Textual evidence

In this poster presentation I'll give an overview of the insights this interdisciplinary approach yielded.

#### Methodology & Analyses

## Digital Technologies in Archaeological Contexts: the cases of Tell Beydar (Syria) and Kani Shaie (Iraqi Kurdistan)

#### Martino CORREIA / Ricardo CABRAL

The application of digital technologies has opened a wide range of possibilities and solutions in the preservation and dissemination of archaeological and cultural heritage, playing an especially important role in unstable socio-political contexts. The sites of Tell Beydar (Syria) and Kani Shaie (Iraqi Kurdistan) were thus chosen as case-studies where innovative approaches to archaeological heritage have been developed.

At Tell Beydar several hellenistic structures have been virtually reconstructed using modern 3D editing software, including its palace and a variety of domestic contexts. These 3D models were then placed in a Digital Terrain Model to better represent the spatial features of the settlement.

Digital technologies are a also cornerstone of the Kani Shaie Archaeological Project. Different photogrammetric surveys have been executed, including aerophotogrammetric surveys of the site with an unmanned aerial quadcopter. This has allowed the tridimensional record of artifacts, structures and the site itself. 3D laser scanning was also used to obtain digital models of the seal impressions, later used to print replicas with a

3D printer. Game-engine software is also being employed in the creation of online interactive environments (virtual museum and virtual tours), in order to potentiate dissemination initiatives on a global scale.

### Just Egyptian Imports? Provenance Analysis of 'Calcite-Alabaster' Vessels from Qaına/Tell Mišrife, Syria, by NAA

Tina KÖSTER, Institute for Ancient Near Eastern Studies, University of Tübingen

Vessels made from 'calcite-alabaster' ('Egyptian Alabaster') were a part of the exchange systems linking the Near East and Egypt in the  $2^{nd}$  millennium BC. Based on well known historical quarries in Egypt and typologically similarities it is widely assumed that vessels found in Levantine Bronze Age context were manufactured in Egyptian workshops. Since 'calcite-alabaster' deposits are also known outside of Egypt, the archaeometric analysis of these vessels may clarify whether Egyptian raw material was used exclusively.

Based on the determination of 25 trace element concentrations by neutron activation analysis, a multistep interpretation procedure to discriminate between different deposits was developed. This was subsequently applied to study the provenance of 67 *calcite-alabaster* vessels, discovered in two Bronze Age grave contexts at Qatna, Syria. Thereby, an Egyptian raw material source could be excluded for ca. 10 % of the vessels. Interestingly, not all of these anomalous vessels can be typologically classified as 'non-Egyptian', neither are they chemically homogenous. This indicates that the typology of a *'calcite-alabaster*' vessel cannot be used as the single criterion for the origin of the raw material. Furthermore, at least for Qatna, a limited supply from other regions need to be considered.

#### From Graphite to Silicon. Graves from Tell El-Farkha, Egypt in Various Documentation Techniques

Karolina ROSIŃSKA-Balik / Joanna DĘBOWSKA-LUDWIN, Jagiellonian University in Krakow, Institute of Archaeology

Methods and techniques of field work documentation are constantly being improved. In the era of visual media, it has become necessary to upgrade traditional drawings and records of structures unearthed during archaeological prospection. Documentation process of excavated sites has always been crucial especially when a considered feature, accordingly to specific destructive character of archaeological examination, is accessible to researchers for limited time. Parallel to graphic and visual improvement go possibilities of data interpretation. The new way of view produces not only eye-catching images but it could be a great resource for further consideration, testing hypotheses or research result presentation.

In our poster we would like to present development in documentation techniques implemented during over 15 years of excavation at the Tell el-Farkha site in Egypt. This Pre- and Early Dynastic site gives great opportunities since different types of features are registered on it starting from domestic structures at a settlement area, through industrial installations and ending on graves. We would like to focus on some specific structures discovered over the time – graves. Over 130 burials were recorded at the site and during the passing years they were documented in various styles. The goal of our poster is to present them all with all their pros and cons.

### Using portable X-ray fluorescence for the analysis of 3<sup>rd</sup> and 2<sup>nd</sup> millennium BC pottery from Tell Arbid, (north-east Syria)

Gerwulf SCHNEIDER, Freie Universität Berlin / Malgorzata DASZKIEWICZ, ARCHEA, Freie Universität Berlin / Anna SMOGORZEWSKA, Institute of Archaeology, University of Warsaw

Portable X-ray fluorescence is an easy technique for chemical analysis of pottery but it has a lot of limitations. Precision and accuracy for light elements are not comparable with conventional methods based on powdered samples. In the consequence the portion of misclassified samples may rises up to over 40% for coarse pottery as is written in some publications. From Tell Arbid 60 pottery fragments of EJZ 1–EJZ 4 periods as well as Khabur ware, and pottery from Mitanni and Hellenistic periods are taken as an example to answer the question how reliable is non-destructive chemical analysis by pXRF. How many samples will be misclassified in comparison to conventional archaeoceramological analysis? The pottery was recovered from excavations at Tell Arbid in north-eastern Syria, conducted by the Polish-Syrian Archaeological Mission, led by Piotr Bielinski (Polish Centre of Mediterranean Archaeology, University of Warsaw).

The following analysis were applied:

 Analysis by portable energy dispersive X-ray fluorescence (pXRF) using a Niton XL3t900S GOLDD RF-Analyser (MINING software, calibration based on twelve own ceramic standards analysed by WD- XRF, measurement 120 seconds on three different spots on cut sections without applying helium in a sample chamber (this was done within a project on the application of pXRF of archaeological ceramics at the Excellence Cluster 264 TOPOI at Free University of Berlin);

- wavelength-dispersive X-ray fluorescence (WD-XRF) of powdered one gram samples which after ignition were melted with lithium borate flux and cast into small discs for measurement with a PANalytical AXIOS spectrometer;
- MGR-analysis (Matrix Group by Refiring) as an independent archaeoceramological method to classify ceramics according the clay used.

The results will be discussed.

#### New evidence for the use of knuckle-bones of sheep and goat in the Middle East during the Early Iron Age

Elena MAINI, Università di Bologna, Dipartimento di Archeologia / Antonio CURCI, Università di Bologna, Dipartimento di Storia Culture Civiltà

Numerous worked and unworked knuckle-bones (*astragali*) were found from the Mediterranean, throughout the Near East till the Arabian Peninsula in archaeological sites with diverse social-cultural functions (cultic, funerary, domestic or public), dating between the Early Bronze Age to the Iron Age. These knuckle-bones usually belong to small ruminants, but the use of bones from other species is also attested. Recently, a group of seven knuckle-bones with traces of anthropic modifications was found within a cinerary urn from the Iron Age necropolis of Yunus (ca. 12<sup>th</sup>–8<sup>th</sup> century BC) near Karkemish, south-eastern Turkey. Four more modified pieces come from Karkemish.

Another evidence of knuckle-bones comes from the long collective grave (LCG-2) under excavation at Daba in the Musandam Peninsula, northern Oman. LCG-2 was in use from the Late Bronze Age (ca. 1600–1350 BC) till the Iron Age II/III Period (ca. 600 BC). A group of 14 sheep and goats knuckle-bones with evidence of modification and traces of red ochre paint was found in connection with human bones, probably kept in an organic bag. Zooarchaeological analysis of these new discoveries, belonging to both funerary and public contexts, provides further support to previous interpretations for the use knuckle-bones as ritual objects, possible amulets, divination tools or gaming pieces.

#### Things we lost in fire: proposal of unified documentation tool for archaeological research of prehistoric fire installations

Lenka TKÁČOVÁ, Masaryk University, Brno

When it comes to prehistoric cooking practices, archaeologists turn to pots, bones and plants for possible evidence. Another important element that can shed light on this issue is the use and function of fire installations- be it simple firepits, hearths or ovens, all of these features have significant information potential for archaeologists. Many promising modern methods are being developed to investigate the fire installations, but this area of research suffers from lack of effective documentation methods that could help Near Eastern archaeologists gain more comparable data of even quality and avoid misinterpretation of different types of combustion features. The proposed method in form of pre-printed standardized worksheet interlinked with digital database of Near Eastern fire installations builds on author's previous study of clay ovens and other types of fire installations typically excavated by Near Eastern archaeologists (e.g. tannurs and tabuns), with focus on Syria and Turkey. It presents an alternative to the conventionally used method at many sites (where no specialist is working on fire installations), and it deals with issues such as discoverability, transparency and interoperability. Let us discuss advantages and potential drawbacks of unified documentation for prehistoric fire installations and explore its possibilities in Near Eastern archaeology.

#### Impacts of climate on society over the last 2000 years: new results from a speleothem from Northern Iraq

Pascal FLOHR / Dominik FLEITMANN / Matt BOSOMWORTH / Roger MATTHEWS / Wendy MATTHEWS / Stuart BLACK, University of Reading, Department of Archaeology and Centre for Past Climate Change

Climate changes are often cited as a major factor in past social, economic, and political changes. For example, for the last two thousand years, the 'Roman Warm Period' has been associated with settlement and population increase during the Roman and Byzantine periods in the Near East, while the 'Little Ice Age' has been associated with the declining Ottoman Empire. However, these issues are under discussion, and especially in these historical periods, socio-economic change is often explained by political events. The debate is limited by the low number of high-resolution, well-dated climate records from the Near East itself. Therefore, we have analysed a speleothem from Gejkar Cave in the Kurdish Regional Government of Iraq region for annual layer thickness and carbon and oxygen isotopes. Here, we present the results of these climate proxies and tie these in with socio-economic changes as observed in the archaeological and historical record over the last 2000 years. We identify that in some cases there is no discernible impact of climate on society, while in other cases there is an interesting correlation between climatic and socio-economic and/or political changes, which may or may not be causal.

#### **Comparative Palaeography of Mittani**

Zenobia HOMAN, SOAS, London

Palaeography remains an under-researched field in cuneiform studies, and often observations are based on intuition rather than scientific methodology. The approach used in this study is statistical, based on a database of sign instances. This allows for the establishment of visual parameters of variation, and the calculation of sign-form frequency. In turn, it is possible to find patterns that connect script to scribe (identity), and script to tablet genre (society). The focus of this project is Mittani (ca. 14<sup>th</sup> century BCE), as there is currently no existing sign-list or complete description of the script. Primary questions include which types of cuneiform Mittani relates to and whether it was a separate script altogether. My working hypothesis is that the standardised nature of the Mittani script may be attributed to a centralised system of scribal schooling in the Mittani Empire – and considering other corpora, it is possible that this was an innovation at the time. In this sense, it may challenge our notion of the origin of ancient Imperial education altogether. To expand on this theory, and to broaden questions of scribal and social identity to the entire Middle East, I have been building a comparative database of Middle Assyrian, Nuzi, and a control corpus of Old and Middle Babylonian. This should not only result in one of the first large-scale, digital and accessible palaeographic comparisons of 'middle' cuneiform, but also a detailed description of the characteristics of each of these script-types, which have received almost as little attention as Mittani.

#### Monuments & Burials

### Illuminating a sanctuary. Artificial lighting at Early Neolithic Göbekli Tepe

Oliver DIETRICH, German Archaeological Institut

The question of artificial lighting is still under-researched for the earliest Neolithic of the Near East. New evidence comes from the Pre-Pottery Neolithic site of Göbekli Tepe. There, during the late 10<sup>th</sup> and early 9<sup>th</sup> Millennia BC, circle-like enclosures made up of up to 5 m high monolithic and often richly decorated pillars were constructed. In a younger building phase, rectangular buildings with smaller pillars substituted the large enclosures. There is good reason to see these buildings in the context of early Neolithic ritual and cult, including large-scale feasting activities.

In both of Göbekli's building phases, a so far mysterious category of finds appears. Flat limestone bowls with drilled holes and a channel were set into the floors of buildings. So far they have been interpreted as offering vessels for libations, given the general character of the site. However, drawing on analogies

from other prehistoric periods and sites, an interpretation as open-circuit lamps seems more probable. This opens up the possibility to add another detail to our knowledge of ritual activities at Göbekli in particular, and on the social dimensions and purposes of artificial lighting in the Early Neolithic in general.

#### From House to Temple – When the concept of a domestic building type got "reserved" for the Gods Nicole GRUNERT, Christian-Albrechts-Universität zu Kiel

In the mid of the 5<sup>th</sup> millennium in the Near East occurred a change regarding the use of tripartite buildings as the usual domestic building. This type of building starts to get used in a slightly enlarged version with a partially changed floor plan as temple by the end of the Ubaid era and is well developed as temple in the early Uruk era, especially in Uruk itself. The tripartite building as a domestic building is still but rather seldom used after the 5<sup>th</sup> millennium BC.

Scholars suggest, that the change from normal multi roomed buildings to a tripartite floorplan in the beginning of the 5<sup>th</sup> millennium all over Mesopotamia corresponds to a more ritualistic lifestyle inside the household. As later Texts refer to the Temple as the House and/or Home of the Gods, it is obvious to choose a preferred form of a House as a Temple.

An average tripartite building from Tell Madhur will be used as domestic example, showing, how these houses were used. In contrast to this building, representing the domestic buildings, building examples from Eridu (Temple VII) and the white and the limestone Temple from Uruk were chosen. These temples show an evolution in layout, construction and decoration as well as a gradual demarcation from the public regarding their surroundings.

The difference between a tripartite domestic House and a Temple is not only its size, number of rooms or decoration, but most of all the existent or non-existent accessibility of the building and the central hall itself. While the domestic house needs bigger storage areas, the side rooms in the temple floorplans are much smaller and not as cross linked as in a domestic building, and the main room enlarges including installations for the cult. There is only one entrance in the domestic building and it don't lead directly into the main room of the building. Instead the visitor has always to go around a corner to enter the main part of the house. In the beginning, the temples show a less private setting than the domestic buildings. The earlier temples in Eridu and Uruk exhibit more than one entrance, a few of them leading directly to the main room on its short side. Only the latest of the here presented temples, the limestone Temple has multiple entrances on the long side, restricting a direct line of sight to the rest of the building or direct access to the sanctuary.

Later textual evidence shows, that the temple as house and home to the god usually is not open to the public. The archaeological contexts of later Temples support this source of information. The contemporary temples to the texts are always restricted by walls, have only one entrance and no direct access to the main sanctuary. Regarding the differing number of entrances as well as their range from direct to indirect access to the temple leaves us with a few options to interpret these.

#### The analysis of Shahr-e Sukhte Grave yard Burial Patterns Based on Burial Goods

Farnaz KHATIBIJAFARI, University of Tokyo, Japan

Shahr-i Sūkhtah, the 3th-4th millennium city, is the most known of southeastern Iran urbanization process.

Shahr-i Sūkhtah graveyard has been excavated during 2000s in which 456 graves were recognized and recovered. The graves included of 544 individuals.

An interdisciplinary study was conducted on the human remains, burial elements, physical aspects, grave structure, and burial goods.

Analyzing the graves, shows burial patterns for the graves and also shows the existance of a kind of social-economic status stratification endorsed on similarities among groups of graves.

Keywords: Bronze Age, Shahr-i Sūkhtah, Graves, Burials Goods

#### Storage Facilities in the third Millennium B.C. Southern Mesopotamian Temples

Eloisa CASADEI, Dipartimento di Scienze dell'Antichità, Sapienza – Università di Roma

During the Third Millennium B.C., southern Mesopotamia underwent thorough a gradual reorganization of the social and economic background, often seen as a new distribution of goods and wealth between a sort of "private and public" properties. The mechanisms leading to this process are still a matter of debate. Because of the greater availability of archaeological data coming from huge non-domestic buildings like "palaces" and "temples", the research has to start from these agencies, and in particular temples, to determine their real impact on the urban economy. The importance of temples in the Third Millennium southern Mesopotamia had always been overvalued. Nevertheless, at the present state of the research, new data and new theories are now available to re-interpreted temples, economy, and their link in the urban society. The present analysis focuses on several case-studies to define the presence of store-rooms and their capacity inside the religious compounds. A quantitative and statistical approach on raw materials and storage facilities such as pottery and *siloi* will allow to determine their economic impact on the urban structure.

#### The Construction History of the Ekur of Nippur

Bernhard SCHNEIDER, University of Innsbruck

The aim of the poster is to present final results of the PhD thesis concerning the construction history of the Ekur temple of Nippur. It includes the main periods of construction and also the sub-phases of use including several phases of restoration which partly revise the established levels of periodization. The poster will illustrate this main Southern Mesopotamian cult center during its history spanning more than two millennia.

#### Orientations of Hittite temples: astronomical alignments or not?

Rita GAUTSCHY, University of Basel

Among the over 33'000 documents retrieved from the former Hittite capital Hattuša were several relating to lunar eclipses and signs of the Moon, Sun and stars. One of the first documents found at Hattuša is the so-called "Prayer to the Gods of Night". It contains a star-list, partly in Hittite orthography, which names four of the planets and 13 constellations. The presence of an astral cult in Hittite Anatolia was thus already recognized during the first season of excavations in 1906. Hittitologists argued that when the temples in the capital were built, no special direction of the compass seems to have been preferred. Only recently astrophysicists and archaeologists began to systematically measure orientations of temples and of other structures such as gates or gate-houses. Since then deliberate alignments of certain structures towards sunset or sunrise at the solstices and equinoxes have been proposed.

I will discuss the theory of astronomical alignments of Hittite structures in comparison to supposed alignments following local topography or prevailing wind directions.

## Changes and transformations of a religious building complex in the ancient settlement of Tayma, Northwest Arabia

Sebastiano LORA, German Archaeological Institute, Orient Department / Barbara HUBER, German Archaeological Institute, Orient Department / Alina ZUR, German Archaeological Institute, Orient Department / Luna WATKINS, Université Paris 1, Panthéon Sorbonne / Arnulf HAUSLEITER, Institute for the Study of the Ancient World, New York University & German Archaeological Institute, Orient Department

Investigations in the centre of Tayma, Northwest Arabia, carried out by the Saudi Commission for Tourism and the German Archaeological Institute, revealed radical changes in the urban fabric of the oasis during the 2<sup>nd</sup> half of the 1<sup>st</sup> millennium BC. Probably already during the period of the dynasty of Liyhan at Dadan (approximately 4<sup>th</sup> to 2<sup>nd</sup> centuries BC), as suggested by a number of inscribed objects, a nearly 500 m<sup>2</sup> large public building (E-b1) of trapezoid shape was built of stone masonry, located in a district of 1,700 m<sup>2</sup> including one of the few identified wells in the ancient settlement. The entire complex, most

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probably serving as a temple, was continuously in use until Late Antiquity and the original building saw numerous alterations in layout and, most probably, also in function. Remarkably, during the Nabataean period, the building was connected with the well by a tunnel. A number of installations were recorded inside and outside of the building, such as column bases, an oven, large water basins, and a monumental stairway. The poster presents a chronostratigraphic overview on this important building complex, which was strictly connected with the most important resource of the site and the region: water.

#### Anonymous God Revisited. A Case of Palmyrenean dedications

#### Aleksandra KUBIAK, University of Warsaw

At least from the 30's of 20<sup>th</sup> century, we acknowledge a term "Anonymous God" in the context of a group of ca. 215 Aramaic votive dedications from Palmyra, in which a proper name of a divinity does not appear. It is replaced by such special formulas as: "He who name is blessed forever", "Lord of Universe" and "Merciful". The evidence reveals on the period of 2<sup>nd</sup> and 3<sup>rd</sup> centuries AD. They seem to have unique and very local character. However, the general phenomenon of replacement of the proper names of gods in Near East seems to be popular and the dedications from Hatra and Edessa could serve as indirect analogies to the Palmyrenean material. A problem of the anonymity of gods in the Palmyrenean case has to be reconsidered while the term is not relevant to every case of omission of a theonym. The aim of the poster is to show new regard on this particular epigraphic evidence in the framework of religious mentality of the Ancients.

#### The Archaeology of Islamic Tombstones in the Village of Golfaraj; Changing Process of Funeral Tradition in Azerbaijan of Iran during the Late Islamic Era

Bahram AJORLOO, Faculty of Applied Arts, Department of Archaeometry, Tabriz Islamic Art University, Tabriz, Iran / Zeinab KAVYANNIA, NAZAR Research Center for Art, Architecture & Urban Studies, Tehran, Iran

According to the form and inscriptions of tombstones, the late Islamic cemetery of Golfraja, being located next to the Golfaraj village of Jolfa district in the northwest of Iranian Azerbaijan, has been dated to 16<sup>th</sup>-early 20<sup>th</sup> century by the authors. The site is some 10 Km far from the south bank of the River Araxes and Nakhichevan, near to the Irano- Azerbaijani borderline. The tombstones of this cemetery can be categorized into two different types since Safavid times (16<sup>th</sup>-18<sup>th</sup> AD) to the late Qajarid era. These types are as follow: Stone rams dated to the early Safavid times; full comparable with ram stones of Turkic people of Nakhichevan and East Anatolia; and flat tombstones adopted during the Qajarids (1795–1925). Moreover, there are some simple graves without any tombstones similar to the graves of Shahsevan pastoral- nomadic tribes of Qaradagh Mountains. Consequently, the cemetery of Golfaraj presents either sides of the changing process of funeral traditions in Azerbaijani Muslim people since Safavids to Qajarids; from pastoral- nomadism to the sedentary way of life; and from stone ram to flat tombstones. On the other hand, graves without tombstones can be related to the pastoral- nomad Turkic people of Qaradagh who were in economic connection with Golfaraj farmers.

Keywords: Azerbaijan, Late Islamic era, Funeral tradition, Pastoral- nomadism, Stone ram, Tombstone

### Hispanic mercenaries' graves in italic world during the roman late republican period between ethnicity and integration

#### Paola PUPPO

The focus of this paper is the analysis of the role of Hispanic mercenaries in the Italic world during the late Republican period. The mercenaries constituted a material risk to human and difficult to handle, even by their principals, and often the Greek and Latin historiography has focused on their lack of gratitude, treachery and cruelty by providing a framework of them quite negative.

The mercenary is actually a very complex figure: become a stateless person to exercise the profession of a soldier in the service of others and exercises the profession of soldier to attain the status of full citizens, often in a community other than that of origin.

The reasons that lead these knights to serve as mercenaries are related to the phenomena of exclusion in the first place within their own family if there existed a patrilineal agnatic system that tended to exclude the cadets and secondly as a result of political infighting in the city of origin.

With ethnic origin remains a link that the man wants to manifest in the first place at the time of burial: we analize some graves with *kalathoi* in Iberian painted pottery founded in Italy.

It is probably that the Hispanic mercenaries have also embarked on a process of integration with indigenous women and have received land properties as payment for their services turning into a civic corporation that remembered the original ethnic group only at the time of burial.

#### Study of Byzantine mosaics and its contest in the city of Madaba

Chiara CASTIGLIA, University of Perugia, Italy

The study of Byzantine mosaics in Jordan is a theme much discussed. In particularly, the Franciscan School has always been engaged in studying the discoveries found in the region, with regards to the city of Madaba and the nearby area of Monte Nebo, by highlighting the importance of the school of mosaicists and their contribution to the field of iconography regarding the entire territory. The research, with the help of new data, not only proposes to analyze iconographic subjects, but also the relationships that they have with the buildings the house them, by emphasizing the strong relation that existed between a specific image and its place within the structure. Mostly of the mosaics analyzed pertains to the main churches of Madaba, as the Church of Martyrs (Al-Khadir), the Church of the Virgin Mary, the Church of Apostles, the one of the Prophet Elias and the Cathedral Church, of the 6<sup>th</sup> and 7<sup>th</sup> century AD, but also samples from domestic buildings, like the Burnt Palace and the Hippolytus Hall, will be considered.

#### Depostion & Use of Space

#### Why manage garbage? New light on the management of garbage in early urban societies

Tim B.B. SKULDBØL, University of Copenhagen, Denmark / Carlo COLANTONI, University of Leicester, England / Mette Marie HALD, National Museum of Denmark

Garbage forms a major source of archaeological material. Nonetheless, garbage is seldom considered as a tool for studying socioeconomic organization of ancient societies. Recent research by University of Copenhagen on the Rania Plain in the Zagros foothills of northern Iraq shows evidence of systematic management of garbage during the mid-fourth millennium BC. In the surroundings and across the site of Bab-w-Kur, the project has recovered large deposits of garbage and evidence of systematic garbage pitting.

This poster presents new data reflecting how early urban societies interacted with and managed the accumulation of garbage. The results are compared with other Late Chalcolithic sites in Upper Mesopotamia. Parallel garbage strategies are for instance found at site of Tell Brak in northeastern Syria though the deposits from Bab-w-Kur are much smaller in scale.

The methods of investigation at Bab-w-Kur include excavation of garbage deposits and pits, geological coring and the excavation of small soundings in satellite mounds of the site. The combination of methods, which the authors also used at Tell Brak, throws further light on how strategies for handling and managing garbage were spatially expressed in early urban societies.

#### The Organization of Storage in the Upper Mesopotamian Late Neolithic

Akemi KANEDA, Faculty of Archaeology, Leiden University / Olivier P. NIEUWENHUYSE, Faculty of Archaeology, Leiden University

Storage of surpluses and administered goods lay at the heart of the Late Neolithic economy in the ancient Near East. Villages abounded with architectural spaces of various kinds and sizes facilitating efficient storage. Buildings and courtyards contained portable storage containers made of clay, plaster and pottery. Portable containers were often embedded within the architecture, effectively becoming integral part of buildings. So far few studies have adopted a close, contextualized reading of the spatial organization of storage in the Late Neolithic household. Using the well-documented site of Tell Sabi Abyad as a case study, we review the technological and spatial variability of storage technologies in this Late Neolithic village and their social implications.

#### Kochar Tepe: the neolithic settlement in the Plain of Qazvin

Lily NIAKAN, Iranian center for Archaeology research / Azar ESFANDIARI, Archeological research center, cultural heritage, handcraft and tourism

The Qazvin Plain is located in the southern foothill of Alborz Mountain where rivers such as Khar-rud, Abhar-rud, Haji-arab and Shahrud flow permanently and seasonal rivers too, usually in spring and winter, take shape in this plain. Due to its geographical location and suitable environmental condition, this plain had long attracted the attention of human groups. Thus, the plain of Qazvin, in terms of its geographical location and favorable environment, can be considered as one of the key areas for culture transformation of Neolithic of Iran.

Over the past few decades, archaeological studies in the plain of Qazvin have shown that there are still invaluable enclosures that could be indicator of cultural and archaeological features at the time of the establishment of villages in the central plateau. The remaining archaeological enclosures there such as Tepe Zaghe, Uzbeki, Ebrahim-abad, Chaharboan, Aje-rband, Ghadeem-abad and tens of others from the Neolithic era suggest that this plain, in terms of understanding the evolution of cultural history of pre-historic Iran and understanding about the distribution of human activities between different regions, is important and noteworthy.

The current article is an outcome of the study of the Kochar Tepe enclosure in the plain of Qazvin in 2004. This archaeological site located at Buin Zahra along the Qazvin highway is in the form of two interlinking mounds (tepe) with the height of 11m and an extent of 6 hectares on a low-elevated agricultural lands with relatively gentle slope. Based on superficial level potteries, this enclosure can be considered as the part of larger settlements in the plain of Qazvin that possesses the cultural sequences beginning from pre-history to history and Islamic periods. Studies on the aforementioned tepe and its introduction could lead to another unidentified Neolithic center and its origin in the process of human settlements in the central Iranian plateau.

Keywords: Qazvin Plain; Kochar Tepe, Neolithic

#### Tepe Hosein-abad: A Settlement from Sialk I in Central North of Iran

Mohsen ZEYNIVAND, Isfahan University of Art, and Department Archaeology of Shahr-e Kord University / Saeid BAHRAMIYAN, Tarbiat Modares University / Mohammad Amin MIRGHADER, The University of Tehran / Ramin YASHMI, Islamic Azad university, Central Tehran branch / Mahnaz TAHERI, Iranian Cutural Heritage, Handicrafts, and Tourism Organizatioin, Alborz province / Mohtaram Alsadat BIDGOLI

Our knowledge about early sedentism in north of Iranian central plateau is from rare archaeological excavations during 1940s to 1970s. It is expanded in recent two decades, as the result of the researches done by the University of Tehran and some other individual scholars. Among the recent works could be named the Sialk Reconsideration Project, excavations in Ozbaki satellite hills in the corridor between Tehran and Ghazvin, and other sites like Zagheh, Ibrahim-abad, and Charboneh in Ghazvin plain, and Pardis in Tehran plain. One of the sites representing material and depositions from 6<sup>th</sup> millennium BC is Tepe Hosein-abad, west of Tehran, which is recognized and surveyed in 2002 but unfortunately not published yet. Besides being more than 2 hectares vast, the site's significance is due to its location at the margin of Karaj alluvial fan, parallel to the desert's border line. This research aims to analyze surface findings and the results of a season of area-determination excavations at Tepe Hosein-abad, and accordingly to study the process of site formation in Tehran plain during the 6<sup>th</sup> millennium BC.

Keywords: North of Central Plateau, Sialk I, Hosein-abad, Pottery, GIS

### Living and working at Early Bronze Age Çukuriçi Höyük: Contextual analysis on pottery – a case study from western Anatolia

Maria RÖCKLINGER, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria

Within a settlement's life cycle, loads of different accumulation and reduction processes take place. Last named actions describe anthropogenic influences like depositions, rearrangements and dislocations of already existing occupation layers. These procedures lead to the situation that artefacts found within a using horizon or a using unit and the actual usage of these structures must not have a direct relation. This means that finds, which were deposited within a room or a building have not necessarily been used there.

The presented case study is based on Early Bronze Age Çukuriçi Höyük, a tell settlement in the direct vicinity of the ancient city of Ephesos, at the western Anatolian coastline. The architectural features, the stratigraphy and the finds offer a broad base for analyzing these processes and continuative to interpret a rooms or a buildings particular use.

Based on the contextualization of the finds, especially the pottery, the individual layers and the stratigraphy it was possible to detect special patterns according to a rooms use.

Examples of such analyses are materials used for erecting floors, fillings of pits or other installations like ovens and closed find assemblages. The aim of this study is to reconstruct the deposition process of particular EBA houses and to retrace daily life.

#### The northermost Hittite monumental building

#### Pavol HNILA, Freie Universität Berlin

This paper will deal with the monumental building uncovered at Oymaagac Höyük, c. 100 km from the Black Sea coast, in the Samsun province, Turkey. The site is almost securely to be identified with the city of Nerik known from the cuneiform texts and located on the northern periphery of the Hittite Empire, in a zone contested with the Kaskas. The monumental building, excavated between 2008 and 2015 is situated on the most prominent part of a fortified tell settlement. It is dominated by a central courtyard and it demonstrates a complex history of changes and renovations, including at least one complete rebuilding. The talk intends to discuss methodological difficulties in differentiating between Hittite temples and palaces, and will present the architectural parallels and peculiarities of the Oymaagac building. The dating evidence obtained from C14-dendrochronology wiggle match will be discussed in detail and an attempt will be made to use the current dating evidence to elucidate the history of the Hittite Imperial involvement in the northern edges of the Empire.

#### The Early Third Millennium BC Period Settlement along the Khabur Basin and in Areas Located Far From the River

Zuzanna WYGNANSKA / Hana KOUBKOVA, University of Warsaw

Poster presents new information about the distribution of the first half of the third millennium BC settlement, the Ninevite 5 culture in particular, in the Khabur Region and results from a study of the pottery deriving from the Khabur Basin Project surveys performed by Yale University under direction of Prof. Frank Hole in 1980s and 1990s. The area under consideration encompasses the Western steppe, the surroundings of Jebel Abd al-Aziz Mountain as well as the Upper Khabur Region. The main goal of this presentation is to provide additional data on Early Jezireh 0–III periods settlement along Khabur river and in areas located far from the river.

#### Economic Structures and Processes in Early Bronze Age City-States. A Household-Centered Perspective Henrike BACKHAUS, University of Cologne

Residential areas form an integral part of early urban settlements in 3<sup>rd</sup> Millennium B.C. Upper Mesopotamia (Early Bronze Age) and have been excavated at a number of sites. Although the commoners living in these houses and households have been called "the real building blocks of society" (Stone 2007, 231), this field of research is still in its infancy: Archaeological research in the region has long focused on elites and only recently shifted its attention towards the analyses of households (e.g. Creekmore 2014; Pfälzner 2001; Wattenmaker 1998). It is evident, that the major part of EBA society consisted of commoners – people working the fields, producing, trading and consuming goods. Yet, small groups – "elites" – possessed the power to control major parts of the economic processes. This side of the coin has been studied *ad nauseam*. Within complex urban societies, such as EBA Mesopotamian city-states, a mixture between top-down and bottom-up factors is always to be expected (Smith 2010) and the project presented in this poster wants to shed light on the latter – the commoners' perspective. The poster shall present research questions and methods employed within a current PhD project at the University of Cologne. The data used in the dissertation is as yet largely unpublished field data from the excavations of "Häuserviertel H", a residential area in the EBA site of Tell Chuera, Syria.

#### Understanding Route Choice in the Past: A Case Study from the North Jazira

Michelle de GRUCHY, Department of Archaeology, Durham University

The aims of this interactive poster are to demonstrate how it is now possible to understand route choice decisions in the past using GIS and quantitative analysis, and to encourage people to think about routes as a source of evidence for understanding past interaction. Key intermediary steps of the process of analysing past route choice are illustrated, including reconstructing the contemporary land cover from archaeobotanical remains and generating custom terrain coefficients.

#### The Second Intermediate Period in Wadi Tumilat: Settlement and Cemetery at Tell el-Retaba

Lucia HULKOVÁ, OREA – Institute for Oriental and European Archaeology, Austrian Academy of Sciences, Austria

One of the regions considered within the project "Beyond politics: Material culture in Second Intermediate Period Egypt and Nubia" is Wadi Tumilat, connecting the Nile delta to Western Asia. Despite its geographical importance, our knowledge of the archaeology of Wadi Tumilat during the Second Intermediate Period is still largely limited to the results of the Wadi Tumilat Survey Project carried out by the University of Toronto, and to material from the Second Intermediate Period cemetery and settlement at Tell el-Maskhuta. Important new data coming from the ongoing fieldwork of the Polish-Slovak archaeological mission at Tell el-Retaba enables us to better contextualise this older work. Since 2011, a part of a settlement and cemetery of the Second Intermediate Period is being excavated, bringing to light a richly stratified sequence of archaeological layers reaching well into the New Kingdom.

These remains form the central data of my PhD-project, the aim of which is to incorporate recent finds from Tell el-Retaba, to compare and contrast them with material known from other sites in Egypt, and thus present a more balanced view of the material culture of the Second Intermediate Period in the Wadi Tumilat. The presentation will give an introduction into this study.

## Indus related artifacts at the Bronze Age Tower ST1, Salut (Sultanate of Oman). Imports or local productions?

Dennys FRENEZ, Department of History and Cultures, University of Bologna / Michele DEGLI ESPOSTI, Department of Civilizations and Forms of Knowledge , University of Pisa / Jonathan Mark KENOYER, Department of Anthropology , University of Wisconsin – Madison

Excavations of the stone tower ST1 at Salut (Sultanate of Oman) are bringing to light a variety of artifacts related to contemporaneous productions of the Indus (or Harappan) Civilization that characterized Pakistan and northwestern India in the Bronze Age. A grooved sherd diagnostic of the Early Harappa Phase (2800–2600 BC) suggests that links were already established in the first half of the 3<sup>rd</sup> millennium BC. Development of commercial aspects in the Harappa Phase (2600–1900 BC) is defined by abundant fragments of Indus trading jars and by a standard seal and a stamped sherd, both with signs of the Indus script. Globular jars and pedestalled dishes painted with Indus motifs attest the need for containers associated with rituals and status, while Indus cooking pots and perforated jars were used to cook and drink Harappan style foods. Ornaments include beads made from a variety of carnelian found in Yemen, but perforated with distinctive Indus drills. This evidence supports similar discoveries from contemporaneous sites at Bat and Ras Al-Hadd and suggests that interactions between Indus site and Oman were much more extensive than previously thought and probably included the presence of individuals and small groups of Harappans settled in interior and coastal Oman.

### Spatial-Functional Analysis of the Central Area of Tayma, Northwest Arabia, during the Nabataean, Roman and Late Antique Periods

Luna WATKINS, Université Paris 1, Panthéon Sorbonne

From the Nabataean to Late Antique periods (1<sup>st</sup> century BC – 6<sup>th</sup> century AD), the southern-central part of the site of Tayma, Northwest Arabia, was covered by a residential area (Area E-South / F, Occupation Levels F:2 until F:4). Under excavation since 2004 by a collaborative project conducted by the Saudi Commission for Tourism and National Heritage and the German Archaeological Institute, the 1,700 m<sup>2</sup> excavated area exhibits sufficient data for a substantial spatial-functional analysis of the architectural remains within its urban environment.

It is in the context of the author's PhD thesis that an Intrasite Spatial Analysis aims at obtaining a better understanding of space and function of the urban environment by investigating patterns of movement, access, activity areas, and the division between private and public spaces. The architectural analysis is based on the concept of Space Syntax, dividing built space into four levels, ranging from Nano (individual) to Macro level (system).

In a second step, an Intersite Spatial Analysis addresses the contextualisation of the obtained results within a wider historical frame, including socio-economic, political, and cultural dynamics on a regional / supra-regional scale.

#### Glazed architectural decoration from 1<sup>st</sup> millennium BCE north-western Iran, Urmia Museum Negar ABDALI, University of Heidelberg

The material culture of the 1<sup>st</sup> millennium populations, be they Manneans or Urartians in Azerbaijan, is elusive. Since only a few written documents have turned up in the Mannaean territory itself, the inscriptions of the contemporary Neo-Assyrian kings who dominated the region which became northern Iraq, are our main source of historic information.

Glazed wall decorations have a brilliant history in Iran well before the famous Achaemenid panels at Persepolis and Susa. Iron Age craftsmen turned to contemporary sources well- known from Mesopotamia and Urartu. Glazed materials from early 1<sup>st</sup> millennium Iran have been little studied.

Some 30 years ago fragments from Qalaichi and later in Rabat, West Azerbaijan province, came to light first from clandestine, later regular excavations which reveal an early 1<sup>st</sup> millennium tradition independent of the Elamite industry of south-western Iran. The decoration is glazed in different colours onto the faces of the rectilinear and stair shape bricks. Some are fragmentary others have no parallels in their size and form. The decorative style and technique have their closest affinities with Neo-Assyrian and Urartian styles and types.

#### Petrographic and Geochemical analysis

The materials of the bricks and glazes have to be studied first microscopically to determine structure and chemistry to answer these questions:

Common questions deal frequently with the colouring substances in the glaze and the kind of glaze/glass technology capability (e.g. natrium lime glass, natrium lime magnesium glass, lead silicate glass etc.).

Are differences noticeable in the major and trace element abundances in the glazes? What kind of kilns were used and what technology (reducing/oxidizing environment)

As a first step thin sections of 12 glazed artefacts from Qalaichi and Rabat have been prepared, and the petrographic and microprobe analysis have been carried out by Prof. Michael Raith in Steinmann Inst., Univ. Bonn. These show a wholly different technology than Achaemenid ones.

Keywords: Glazed artefacts, technical analysis, Manneans, Qalaichi, Rabat

## Achaemenid Architecture: Toward a Revolutionary Progress in the Technology of Architecture in Stone

#### Mahdi MOTAMED, Technische Universität Berlin

The prevailed formalistic perspective toward the analysis of Achaemenid art and architecture diminishes its achievements to products of an eclectic art: a pattern of art that benefited from conquered nation's accomplishments for its expression. Consequently, most surveys in this realm have looked for the roots of this emulation. Yet, technical achievements of architecture in this period do not demonstrate any homogeneity with the attainments of subordinating nations. Rather, they imply a higher level of awareness and uniqueness.

Through presenting unique achievements in roofing long spans in this period, this article demonstrates some structural innovations that provided the necessary technical background for this level of novelty. Specifically, technical developments regarding resistance against destructive seismic loads will be analyzed. This includes surveying the patterns of the intelligent expenditure of materials and jointing techniques.

This study asserts that ancient Iranian master builders, not only benefited from existing technologies, but also localized them and augmented their qualities. Beyond the superficial similarities between emulated shapes, useful arts and above all of them the Achaemenid architecture, experienced some degrees of modifications in order to be harmonized with Persia and its geographical and cultural characteristics. To fulfill this aim, Iranian architects used integrity of architectural forms and structural systems and simultaneously shifted the borders of the available construction technology.

#### **Excavations & Surveys**

### Tepe Kavoosieh a new finding area from 5th millennium B.C. in central of Iran plateau

Maryam MOLLAIE / Mozaffar ZARRINKOUH, National Museum of Iran

The archaeological studies of the 5<sup>th</sup> millennium show fertility of the plateau due to the formation of several settlements. As a result the community was growing and as the time passed some of the settlements have turned to villages. Although the number of known areas of this period is remarkable only a few of them have been excavated. All in all there is not sufficient information about this period. Undoubtedly each new discovery will improved our knowledge of the archaeology of prehistoric Iran. There are several regions in Tehran province that have the old plateau culture (Cheshme Ali and Sialk 2). One of them that recently has been surveyed is Tepe Kavoosieh. This hill is located south west of Tehran with an extent of 10000 m. The Collected pottery sherds on the hill are of red painted pottery with buff color and gray pottery of the Bronze Age. The nearest areas with such culture are Shahriyar Ghare Tepe – Ozbaki Tepe and Qazvin plain. The vastness surrounding with such culture of north to Ano and Giton in Torkamanestan, of west and center to Qom – Sialk-Arisman, north west to Zanjan and north east to Shahrood and Yarim Tepe. It is clear that Tepe Kavoosieh is extremely important to get new information as it is in the heart of the central plateau.

This essay is trying to present data from this new renowned place based on the systematic survey. Each kind of find can be a response to some Questions concerning prehistory in Iran, especially the Bronze Age.

## The results of geophysical survey (magnetic method) in Shahr-e Sukhteh, the Bronze Age site in Sistan-Iran

#### Kourosh MOHAMMADKHANI, University of Lumière Lyon 2

Shahr-e Sukhteh (Burnt City) is located to the east of Sistan-Baluchistan (Iran), some 50kms southwest of Zabol. The site was first recognized by Maurizio Tosi, who conducted surface surveys and undertook excavations in the area between 1967 and 1978 (Tosi 1983). Between 1995 and 2010 and later in 2014 the area was re-investigated by S.M.S Sajjadi in cooperation with a team of ICHHTO and an international team (Sajjadi 2003, 2005, 2006a, 2006b and 2008). Shahr-e Sukhteh is one of the most important sites

of the Bronze Age in the East of Iran and was occupied from 3200 until 1900 BC. According to Iranian and Italian studies, Shahr-e Sukhteh had extensive business relationships with other contemporary civilizations such as in Central Asia, the Indus plains and the western part of Iran plateau. This site covers an estimated surface of 151 hectares and many fragments of pottery on the surface are spread out in an area of more than 120 h. This site is divided into three main areas: the residential central part divided into two sub-sectors (the central residential area and the monumental area); the northwestern part corresponding to the industrial area and the southern part is occupied by the necropolis. The buildings are constructed of mud brick, rammed earth and wood. Each building was divided into six to ten pieces at various levels since the remains of stairs, ceilings and floors were found. Each structure had a kiln. There are also some weak traces of architectural remains on surface. The site is definitively abandoned between 2100 to 1900 BC. According Sajjadi, changing the direction of the Helmand River is the main reason for this abandonment (Sajjadi 2006b: 465). Large scale high-resolution magnetometry has been carried out between the excavated areas to complete the plan of the spatial organization of the settlement. This campaign was organized thanks to a cooperation contract between the Iranian center for Archaeology Research (ICAR) and Iranian center of Heritage, Hand craft and Tourism Organization (ICHTO) in Zahedan.

#### Results of magnetic prospection

For this first campaign, we selected an area of 13 hectares divided into two sectors. In the first one is locates to the west of the eastern residential area and the second one in the central part of the site between the monumental area and Graveyard. The survey was completed with a cesium gradiometer, G-858 Geometrics. The resulting magnetogram shows very concentrated sectors with a dense and planed organization to the south of the central area whereas the eastern sector revealed a more isolated monumental building (fig.3). This building of 38 by 31m is composed by a central courtyard surrounded by rectangular rooms to the north and to the east. The western part has a slightly different orientation, which might be interpreted as a later extension. In the central area, the planed organization is mostly orthogonal and composed by buildings and streets following an almost North-South orientation. There are also some local variations in this orientation, particularly to the west with a highly dense settlement composed by small cells, may be linked to the graveyard area identified by excavations at 100 m to the west. A huge building (at least 60 m side) has been also identified in the southern part of the central area which seems "disconnected" from the planed organization. Whereas city planning from Bronze Age are well known in other geographic areas (Syria and Turkey by instance) (Creekmore, 2010; Gondet and Castel, 2004), this is the first time that such a planned organization is revealed in Iran on a wide surface by a geophysical survey. This first campaign provided major results including domestic and monumental areas, and probably a part of the necropolis.

Keywords: Iran, Sistan, Shahr-e Sukhteh, Magnetic survey, Bronze Age

#### Survey cairn burial of Saravan cemetery and comparison with adjacent areas in Southeast Iran

Javad SALMANZADEH, Sistan and Baluchestan University / Parisa NEKOUEI, Tehran University

Cairn burial is a type of burial graves that has emerged in mountainous areas and places where access to the stone. These graves are often made by nomad communities and the remnants of residences less can be seen around this cemetery. Cairn burials are in wide ranges from Kech-Makran Pakistan to the northern edge of the Persian Gulf in Bushehr and Hormozgan provinces. Cairn burial has emerged in various forms from pre-history up to the Islamic era which has been used in relation to the period and the region.

Gosht Cemetery is located in Sistan and Baluchestan at 50 kilometers of the north Saravan. It is in the distance of 1 km of the Southeast Goasht on the alluvial fans. This region due to its strategic location has been used by nomadic tribes from the third millennium BC to the historical era. Now, nomadic traces and remains, as cairn burial and pottery shards, are found in the mountain middle plain and foothills. The cemetery extent is estimated about 200 hectares. Generally, two types of graves can be identified at the cemetery surface. Both are cairn burial.

Keywords: Cairn Burial, Gosht cemetery, 3rd Millennium BC, historical era, Southeast

#### Excavations of Tell Al-thahab remnants city from the Akkadian period

#### Salah S RUMAIYDH

Tell Al- thahab is located to the east of the city of Baquba up to 12 km, which is aligned to the road link between the city of Baquba and the city of Muqdadiyah, the hill is one of the many sites which wiped by prof Roberpt Adams, and the Department of Antiquities is the other announced Iraqi facts in last century as archaeological sites. Tell subjected to many abuses because of the negligence of the archaeological authority, for example, the establishment of the link road between Baquba and Muqdadiyah at the end of the seventies of the last century and the creation of large department stores to power in the mid-nineties as well. But the Department of Antiquities asked for excavations at the hill and by the fact that the roads department determined the expansion of the highway lies the importance of the tell in it represents a new station highlights the Akkadian period in this region it is within the connecting line between those of Ashnuna city and many sites on Hamrin dam through Tell Muqdadiyah

The results of the excavations carried out valuable beginning in 2013 about the existence of more than five structural layers belonging to different facilities in terms of space and volumes ,but the groundwater hampered exploration down, third, fourth and fifth ones classes back to the Akkadian period evidenced by the presence of plano convex mud bricks distinctive pottery from others before both types of rims or in chilling or bases and most of the cylindrical seals include scene represents a conflict of man and animals superstitious, noted human composite intertwined with lion, where a man wearing Khodh coupler scene in front of me a long beard, and either naked man onto his right foot stomps on the head of an animal either the third man he clashed with the animal probably Ghazal anther .Includes seal the scene to provide where God is sitting on a chair without armrest holds his right hand sticks and ring logo of Justice and the presence of two people in front of the first raising his right hand to greet the God in front of the third person, he holds in his left hand something unclear and raises his right hand to welcome the god who sits behind a machine that sat tree in the form of ringworm Medium-sized cylindrical seal made of alabaster stone represents a scene with the animal rights struggle, as well as many kinds from tarra-cotta and different objects.

#### Excavation at Tape Gourab in Malayer, Western Iran

Esmail Hemati AZANDARYANI, Bu-Ali Sina University, Hamadan, Iran / Ali KHAKSAR, The Cultural Heritage Organization of Hamadan Province, Iran

Tape Gourab is located at Jourāb Village (same name) a Suffragan of Malayer township in Hamadan province, adjacent to the link road Arak-malayer. Archaeological researches led by Ali Khaksar conducted on this hill in 2006 to determine stratigraphy and boundaries of the area which remarkable results were achieved. Tape Gourab has been registered on the National Heritage List with No.1042 in 1984. Then in 2006 archeological excavations of the tape were done under Ali Khaksar's supervision. Archaeological excavations of the tape in two tranche parts were performed to determine the precinct, offering the boundary and stratigraphy. To determine the precinct of the tape and offering the boundary, a total of 14 holes were created in different directions. As a result, the actual dimensions of approximately 200 × 340 m were identified over the area that represents 8.3 hectares. Three tomography workshops were established for stratigraphy of Gourab tape. In three workshops 29.68 of the tape deposits meters with three workshops were under stratigraphical excavation. To provide the absolute dating totally 13 samples of C14 have been taken from the stratigraphical workshop on the tape Gourab. According to the chronology and consider the evidence of absolute chronology (C14), pottery and architectural evidence in Gourab eight cultural periods can be specified: Middle Chalco-lithic, ancient Bronze, Iron III? Or Achaemenid?, Parthian, Sassanid, early Islamic Seljuk and Ilkhanid.

Keywords: Iran, Malayer, Gourab, Stratigraphy, Chalcolithic, Yaniq

#### Results Obtained from First Season of Archaeological Activities in Jam Site of Mahallat City

Seyede Leyla BANIJAMALI, Tarbiat Modares University / Javad Alaei MOGHDAM, University of Zabol, University of Mazandaran

Mahallat is one of the eastern cities in Markazi province, and with respect to its location in a region which has had a significant importance during various periods, it holds valuable archaeological sites.

Jam Site is one of the extensive and important sites in Markazi province located the western coast of La'lvar River in Mahallat city. Topographically, this site consists of ups and downs and small and large mounds extended from the northeast to the southeast. According to the location of this site, its current expanded area, high density and diversity of the surface cultural materials as well as numerous settlement periods on this site, including the Chalcolithic, Bronze, Parthian-Sassanian, and Late-Islamic eras (with reference to the surface pottery), archaeological study of this site is one of the archaeological priorities of Markazi province, as a part of the Central Iranian Plateau.

The mentioned site was selected for archaeological studies in 2014 and various operations were conducted on this site including systematic operations and determination of expansion and bounds. The results Obtained of these studies encompass very precious data about the prehistoric and historic settlements in Markazi province. In the present paper, a brief description of the archaeological activities performed on Jam Site is provided.

Keywords: Jam Site, La'Ivar River, Chalcolithic Period, Parthian-Sassanian Periods

#### Archeological Excavations and Studies in the Zard Ramhormoz River Basin, Khozistan , Iran

Mahnaz SHARIFI, Iranian center for Archaeology Research / Abbas MOTARJEM, Bu Ali Sina University

The archeological studies in the region intended to study and identify the basin of the Zard River and the distribution of the samples and to study the residential patterns. In this study, 14 sites belonging to the pre-historic and historic period and an ancient dam ((-i)) in the region were identified and after that one of the sites near the basin of the river was explored. It is worth mentioning about Jare ancient dam that it is made of stone material founded on the floor stone with cement grout which is made up of Bakhtiari conglomerate. Analogous to Jare ancient dam, especially considering the stone, architecture, and cement grout, are Amir Dam and Bahman Dam located in Fars province founded on the Kor River. Apparently, while planning and building Jare Dam, the oxidized ( $e^{2}$ ) stone of the base and the floor was removed and the dam was founded on the intact floor having been left untouched (with no inclination).

The material used in the construction of Jare ancient dam was of sandstone gathered from the river bed, and the grout was of cement. The archeological explorations in the region focused mainly on the basin of the Zard River. Altogether, ten trenches were provided in the basin of Jare Dam. A typological comparison of the pottery samples in Jare Dam with the ones in other sites showed that the pottery found in this site belong to the historic period. The architecture indicates three phases of residence. Generally, the explorations revealed that the residences mostly occurred around the Zard River. As the cultivable pieces land are limited in number and size and are difficult to reach, the economy of the people residing in the region was fulfilled through seasonal residences and animal husbandry. Basically, this paper is to explain the explorations and the residential phases.

Preliminary report of archaeological rescue excavations in the the sewage pipeline in old tissue Tehran Mohammad Esmaeili SELODAR, Department of Archaeology, Faculty of Letters and Humanities,

University of Tehran, Iran

In the fall of 2014, during a pipe-line operation by Tehran municipal sewage office near the traditional bazaar of Tehran, cultural materials of Islamic era, including fragments of pottery works, and bricks were revealed. As it was evident that some remains are still beneath the modern streets of the discovery spot, further trenching of municipal office was halted and an archaeological team, led by the first author, started a salvage excavation at several trenches which produced cultural remains.

During the excavations, six trenches were excavated. Preliminary results obtained indicate the existence of cultural remains of the Islamic era (the Ilkhanid period onwards) and prehistoric period. The most conspicuous findings of the excavations were two burial dated to the late Neolithic period, late sixth-early fifth millennia BC. The burials were unearthed at the depth of 4m below the modern streets. They were accompanied by simple grave goods, including jug. This discovery is the first inside the urban area of the metropolis Tehran which could get back the history of human settlement in the city to the prehistoric area.

Keywords: archaeological rescue, Metropolis Tehran, Iran, Excavation

#### Archaeological Survey in the Vicinity of the Kuhdasht, Lorestan Province, Western Iran

Poorya KHADISH, Shiraz University of Arts, Shiraz, Iran / Saman Hamzavi ZARGHANI / Mohsen ZEIDI, University of Tübingen

In winter 2007 and at the end of the second season of excavation at Bronze Age site of Tepe Tubre Riz in Kuhdasht district, an intensive survey conducted by the excavation team in a small valley west of the site. The valley and Tepe Tubre Riz are located in the south of Kuhdasht city and is situated in a strategic transhumance route for tribes who migrate from Hamedan in north to Khuzestan in south and vice versa. The main goal for survey was to document all visible archaeological sites especially the Bronze Age localities. Over 15 archaeological sites from various periods have been found. The relative dating of the surface finds suggest that the valley was occupied in the Middle and Late Chalcolithic, Bronze Age, Iron Age, and Parthian and Islamic periods. It is worth mentioning that none of these sites have recorded in the previous surveys. Most of the sites are flat without any indication which might be observable by extensive survey methods. This readily demonstrates that how much the results of extensive survey could be vulnerable. Our team was also able to document an aceramic Neolithic site with typical bullet cores and obsidian blades outside of the valley.

#### Greater Mesopotamia, Reconstruction of its Environment and History

Eric GUBEL / Vanessa BOSCHLOOS / Anne DEVILLERS / Bruno OVERLAET / Véronique VAN DER STEDE, Royal Museums of Art and History, Brussels / Hendrik HAMEEUW, Katholieke Universiteit Leuven

"Greater Mesopotamia, Reconstruction of its Environment and History" is a large-scale research programme of the Belgian Science Policy Office, now in its seventh five year-phase. It aims to study the relation between man and his environment and the evolution of communities in the course of their regional history throughout the Mesopotamian region and its wider periphery. Work is divided into six axes, geophysical surveying, field archaeology, historical geography, environmental geo-archaeology, historical studies and imaging technologies. The proposed poster will outline, through four case studies, the ongoing research in the framework of this project.

### The Soulaimaniah Governorate Archaeological Survey Missions (Iraqi Kurdistan) 2012–2016: district of Rania, Peshdhar and Dukan.

Jessica GIRAUD / Stéphanie BONILAURI / Cécile VERDELLET /Jean-JACQUES HERR / Rocco PALERMO / Johnny BALDI / Mustapha AHMED

This project started in June 2012. Concurrently as the cartography of the Archaeological Map of the Governorate, this project aims to establish the settlement patterns from Palaeolithic to nowadays in the Zagros Foothills. From field surveys and analysis of satellite imagery (Remote sensing), we located more of 172 archaeology sites in the Rania, Peshdhar and Dukan Districts, where the project began. We multiplied by 4 the number of known sites of the Ancient Atlas of Archaeological sites in Iraq. The datation of the sites shows a global occupation from Middle Palaeolithic to Late ottoman period. For each main Period, we can determine some settlement patterns, which show a micro-regional structure in link with the location of both plains (Rania and Peshdar) on the road from Mesopotamia plain and the Zagros Mountains.

## From the Late Chalcolithic to the Early Bronze Age I in the Transjordan Highlands: sharp distinction or inner evolution?

Alessandra CASELLI, Università degli Studi di Perugia

The transition between the Late Chalcolithic and Early Bronze I periods in the Southern Levant has been object of many researches because of the difficulty to define precisely chronological phases between V and IV millennium BCE. While in the Jordan valley and the western regions it was possible to conduct several studies on this subject, in Jordan there are limited excavations' data pertaining to sites of this transitional period. The aim of this research is to identify differences and analogies between the Late Chalcolithic and the Early Bronze Age I through the comparison of some main sites in Transjordanian

Highlands by analyzing public architecture, domestic contexts and materials. New excavation data from Jebel al Mutawwaq will be included in the analysis. The purpose is to understand, through the archaeological data, if the differences are such as to define a severe gap between the two periods or if in the Early Bronze Age I there was an evolution of the aspects inherited from the previous period.

### Egyptians in the Levant: Reconsidering the Role of the New Kingdom in Copper Exploitation in the Aravah Valley

#### Omri YAGEL / Erez Ben-YOSEF, Tel Aviv University

New evidence from the two major copper ore districts of the southern Levant, Faynan and Timna, calls for reevaluation of the role imperialistic Egypt played in the history of copper production in this region. Based on results of the new Central Timna Valley Project (http://archaeology.tau.ac.il/ben-yosef/CTV/), material from yet unpublished excavations of the Arabah Expedition at Timna Site 3, and a new suite of radiocarbon dates, we conclude that copper production during the Late Bronze Age (13<sup>th</sup> – first half of 12<sup>th</sup> centuries BC) was done under Egyptian initiative and control. It took place on a relatively small scale in demilitarized camps, systematically organized in a distinct area at the northern part of the Timna Valley, with no parallel in Faynan. This production system should be associated with the nearby Hathor Shrine (excavated in 1969). The new data also shed light on the transition into the Iron Age, a period when production peaked in the entire Arabah Valley (including Faynan) as new copper production systems were established, replacing entirely their precedent.

#### Pyrotechnical Installations at the oasis of Tayma, NW Arabia

Barbara HUBER, German Archaeological Institute, Berlin

Excavations at the oasis of Tayma, Northwest Arabia, carried out by the Saudi Commission for Tourism and Antiquities and the German Archaeological Institute, uncovered pyrotechnical installations of different periods (Iron Age to Late Roman periods). Most prominent among these installations is a substantial oven located within a large public building (E-b1) in the centre of the ancient settlement. The 2.5 m wide and 1.8 m high multi-phased structure consists of an inner firing chamber surrounded by curved walls on each side. Although exact dates of the foundation and first using stage cannot be provided with certainty, there is clear evidence for a use during the Nabataean-Roman period (63 BCE–323 CE).

Of considerably earlier date (12<sup>th</sup> to 9<sup>th</sup> century BCE, i.e. of Early Iron Age) are a further double-chamber oven in a possible temple building (Area O) as well as a row of five fire installations in a small building at the western wall of Tayma (Area A). Concerning fire and pyrotechnical installations at Tayma, based on the current evidence, there is no consistent pattern recognisable. All installations differ widely in terms of size, form, construction technique and possible function (firing or heating pits not being discussed).

#### Medieval Urban Landscape in the Northeastern Mesopotamia

Karel NOVÁČEK, Palacký University Olomouc

Islamic era witnessed boom and subsequently end of the five-millenia-long era of urbanism in the region which is sometimes considered to be a craddle of city life at all and later a crystallisation core of the urban-based Assyrian Empire. A conspicuous cluster of cities, towns and other centres deserted eventually during Ottoman Period and individual nodes of this network are today well accessible for survey coming from analyses of satellite images and historical sources. The Czech-Kurdish survey project conducted in a wider region of Arbil, capital of Iraqi Kurdistan, is aiming to aswer several historical questions: What was an impetus of development of such dense network of central places? What was the social profil of the cities, particularly in the Early Islamic Period? Did the dynamics of the urban network correlate with political processes and events which took place in the Umayyad and Abbasid Caliphate? And did the cities create a hierarchically structured network of mutually cooperated centres or it rather was a case of isolated, parallelly developed "town states"? The poster will introduce preliminary, partly interpreted results of just completed project.

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#### The Almohad Mosque and Deserterd Village of Cuatrovitsa near Seville (Spain)

Anja HEIDENREICH / Lorenz KORN, University of Bamberg, Germany

Between 2013 and 2015, a deserted Islamic settlement near Seville has been investigated by archaeologists from the universities of Bamberg and Seville. This place named the "hermitage of Cuatrovitas" is well known for its exceptionally well-preserved minaret, standing next to the former mosque (now pilgrimage church). Geomagnetic prospection and excavations have revealed structures in an orthogonal system that can be attributed to housing areas with typical mediterranean single-storey courtyard units. While the mosque can be dated to the Almohad period, archaeological finds push the chronology of the settlement back to late antiquity and to the Emiral period. However, period of greatest prosperity seems to have been the 12<sup>th</sup>-13<sup>th</sup> century, when the settlement was expanded to at least two residential areas. Contrary to previous assumptions, the population of Cuatrovitas seems to have decreased after the Christian conquest (Seville: 1248), but there is clear evidence that the place was not abandoned. There are no signs indicating forced conversions. From this period onwards, the archaeological record is supplemented by written sources, e. g. the "Book of Redistribution" (1253). The poster introduces the site and reports on the results of the first campaings of the joint archaeological project.

Karkemish

### Karkemish and the Sea: Cultural and material contacts with the Eastern Mediterranean during the $8^{\rm th}$ and $7^{\rm th}$ centuries BC

#### Barbara BOLOGNANI / Gabriele GIACOSA

The purpose of this poster is to highlight some cultural connections between the upper Middle Euphrates Valley and the Eastern Mediterranean, focusing in particular on Cyprus, the Levantine and the Aegean coasts. This analysis particularly concerns both the pottery assemblage and the coroplastic repertoire.

As for the ceramic horizon, some specimens of Black on Red (BoR) pottery retrieved at Karkemish are taken into consideration. Among these, jugs and juglets belonging to this class have been found in funerary contexts, together with local simple wares. A typological analysis of some of these kraters and jars is provided, in order to attest the presence of a local production, but related to the Mediterranean coast. These ceramic traditions and influences seem to have moved from Cypriot centres to Al Mina and then throughout the Amuq Valley up to the city of Karkemish, which can be considered as the easternmost point of spread of the BoR pottery.

On the other hand, the iconographic analysis of the Iron Age clay figurines from Karkemish reveals some important similarities with the Aegean world. In particular, the elaborate headdresses worn by the Syrian Pillar Figurines (SPF) represent a relevant link with a West Anatolian style as it is being currently newly defined. This East-West influence may reveal not a mere transmission of iconographies, but also a shared inter-cultural tradition in the public role of women.

#### The Bronze and Iron Age Sequences at Karkemish: the G Sounding in the Lower Town

Sara PIZZIMENTI / Federico ZAINA, La Sapienza, University of Rome

During the 2011–2014 campaigns at Karkemish, one of the main aims of the Turco-Italian Archaeological Expedition, directed by Prof. Nicolò Marchetti (Alma Mater Studiorum – University of Bologna), was to extensively exposing the Bronze and Iron Age town in order to understand the urbanism of the site and to better define its history.

The 2012–2014 investigations in area G, located at the southern foot of the acropolis, provided the first well stratified chronological sequence for the Inner Town at Karkemish, counting 13 structural phases from the Islamic down to the Middle Bronze Age I. The aim of this poster is that of preliminarily investigating contextual and diachronic variations in the Iron Age, Late and Middle Bronze Age pottery assemblages from area G in their regional setting.

#### Aegyptiaca at Karkemish. A new analysis of the finds from the British and Turco-Italian excavations Marzia CAVRIANI, Alma Mater Studiorum – University of Bologna

During the British Museum excavations at Karkemish, several Egyptianizing objects were retrieved, mainly from the Iron III houses in the Outer Town and from a trove at the Water Postern. A few finds of an outstanding quality have also been made in the renewed excavations of the Turco-Italian Expedition directed by Prof. Nicolò Marchetti since 2011: they come from the latest Neo-Assyrian phase in the palatial compound in area C, originally refurbished by Sargon II, and they thus date from the later 7<sup>th</sup> century BC. This chronological consistency seems of interest because it relates to a new pattern of circulation of Egyptianizing objects in Assyrian contexts. Another issue which seems significant is the production milieu for these objects which seems genuinely Egyptian rather than Phoenician as instead often assumed. Finally, the social significance of the diffusion of these objects in the eastern Mediterranean (until the shores of the Tigris, in fact) at the close of the 7<sup>th</sup> century BC will be evaluated afresh.

### Transformations and Continuity at Karkemish from the Iron I through the Early Islamic Period (2011–2015 Campaigns)

Sara PIZZIMENTI, Sapienza University of Rome / Federico ZAINA, University of Bologna / Kevin FERRARI, University of Bologna

The 2011-2015 excavation campaigns by the Turco-Italian Expedition at Karkemish, under the direction of Nicolò Marchetti of the University of Bologna, documented in Area C (located in the Lower Palace Area) a continuous occupation extending over two millennia. 11 structural phases cover a time span from the Iron Age I to the Early Islamic period with almost no gaps. This poster aims at showing how the use of the urban and architectural space in this central area developed through time. Through a detailed stratigraphic and architectural analysis together with associated materials, we will show how different cultures have transformed or simply re-used this neighborhood according to their needs. Connections with other areas at the site will be also evaluated with the purpose of understanding the urban patterning of the city through time.

### Bioarchaeological data from Sounding G in the Lower Town of Karkemish, Turkey. Preliminary notes on economy and environment from macrobotanical and animal remains

Marialetizia CARRA / Antonio CURCI / Elena MAINI, ArcheoLaBio – Research Centre for Bioarchaeology – Dept. of History and Cultures, University of Bologna

Archaeological analysis carried out on biological remains from the levels of a roadway excavated in Sounding G within the lower town of Karkemish (Southeastern Turkey), produced sensible data for reconstructing the general economic and environmental conditions of the site from the Middle Bronze Age to the Late Iron Age III.

Analysis of seeds and fruits remains allowed assessing the importance of agricultural activities in the subsistence economy of Karkemish and contributed to define the human intervention in the ecosystem of the anthropized area. As for agriculture, carpological research identified cereals (wheat, barley and oat), pulses (vetch) and grape. These cultivated genera confirm the inclusion of Karkemish in the general trend of agricultural development in the Near East.

Zooarchaelogical investigations were conducted on a sample of about 1000 osteological remains from levels mainly dating to Iron Age III. Domestic animals were predominant, with sheep and goats covering almost 50% of the total, followed by cattle and equids, both donkeys and horses, while pigs and dogs were rather scarce. Wild animals were rare, represented by a few bones of deer, fallow-deer and possibly also gazelle. Animal economy was evidently based on pastoralism, probably exploiting both primary and secondary products.

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## Textile Workers: Skills, labour and status of textile craftspeople between prehistoric Aegean and Ancient Near East



This workshop aims at opening new perspectives in the archaeological textile research, focusing on a comparative analysis of textile workers in the Aegean and Near-Eastern world, from the Stone to the Iron Age. While archaeological remains such as textile tools, fibres and fabrics have been widely analysed for the technological information they contain, they have not been adequately studied for their potential to provide valuable data about the actors involved in textile production. So the main question is, what do archaeological remains, combined with the iconographical and textual data, can tell us about the prehistoric and early historic textile craftswomen and craftsmen.

Using all available sources, it is indeed possible to start a discussion and set various questions about the actors of textile production: what was their gender and social status? What type of labour did they perform: Domestic or professional? What was their concrete working space – a house or al workshop area? How were they organized: alone or in teams? Which were their body position and their gestures while working? Did they have free choices between different patterns, colours, materials or technics? Which were their specialized skills and their intellectual knowledge, applied at work?

It is possible to answer these questions by a combined study of artefacts, representations and textual data. The presence of textile tools in funerary contexts gives, for instance, information on the gender and social status of the workers; it may, as well, give clues about their working environment (outside/ inside, at home/in the palaces or temples). The iconographical representations depict textile workers in action, showing their gestures, while they sometimes imply symbolic aspects of their work. Written sources record occasionally the names of the workers, their origin and their social status, and they provide insights into their verbatim conditions of work.

With this workshop, we wish to explore if, in all the fields and circumstances mentioned above, we can detect exact parallels, similar patterns, mutual influences or rather major differences between Near Eastern and Aegean worlds, from the Neolithic to the Iron Age.

#### Organizers:

Louise QUILLIEN	Kalliope SARRI
International network Ancient Textiles from Orient to the	The Danish National Research Foundation's Centre for
Mediterranean (ATOM)	Textile Research
University of Paris I Panthéon-Sorbonne	SAXO-Institute – Archaeology, Ethnology, Greek & Latin,
ArScAn-HAROC laboratory	History, University of Copenhagen
21 Allée de l'Université	Amagerfælledvei 56,
92000 Nanterre, France	2300 Copenhagen S, Denmark
louise.quillien@gmail.com	kalliope.sarri@hum.ku.dk
textileworkersworkshop@gmail.com	textileworkersworkshop@gmail.com
Participants	
NOSCH Marie-Louise	HOREJS Barbara
The Danish National Research Foundation's Centre for	Institute for European and Oriental Archaeology
Tautile Desearch CAVO Institute Archaeology Ethnolo	harbara horoic@ooaw.ac.at

The Danish National Research Foundation's Centre for Textile Research. SAXO-Institute - Archaeology, Ethnology, Greek & Latin, History, University of Copenhagen nosch@hum.ku.dk

BRENIQUET Catherine Université Blaise-Pascal, Clermont-Ferrand catherine.breniquet@univ-bpclermont.fr

BRITSCH Christopher

Institute for Oriental and European Archaeology of the Austrian Academy of Sciences chris.britsch@oeaw.ac.at

Institute for European and Oriental Archaeology barbara.horejs@oeaw.ac.at MICHEL Cécile Maison de l'Archéologie et de l'Ethnologie de Nanterre cecile.michel@mae.u-paris10.fr MORANDI BONACOSSI Daniele Department of Humanities and Heritage Studies, University of Udine daniele.morandi@uniud.it PAYNE Elizabeth PhD Yale, independent scholar elizabeth.e.payne@gmail.com

#### Workshops 25 April

PEYRONEL Luca	TENU Aline
University IULM, Milano / Laboratorio Multimediale	CNRS UMR 7041 Archéologies et Sciences de l'Antiquité
Archeoframe	aline.tenu@mae.u-paris10.fr
luca.peyronel@iulm.it	ULANOWSKA Agata
SCHOOP Ulf-Dieter	Centre for Research on Ancient Technologies in Łódź,
University of Edinburgh	Institute of Archaeology and Ethnology, Polish Academy
ulf.schoop@ed.ac.uk	of Sciences
SIENNICKA Małgorzata	a.ulanowska@uw.edu.pl
The Danish National Research Foundation's Centre for	
Textile Research, SAXO Institute -Archaeology, Ethnology,	
Greek & Latin, History,, University of Copenhagen	
siennicka@hum.ku.dk	

#### List of Lectures/Program:

	Lecturer	Title
1	Cécile Michel	Textile Workers in the Royal Archives of Mari (Syria)
2	Marie-Louise Nosch	How to become a textile worker? Training of children in the textile manufac- ture
3	Kalliope Sarri	In the mind of early weavers: perceptions of geometry, metrology and value in the Neolithic Aegean
4	Małgorzata Siennicka	Craftspeople, craftsmanship and textile production in the Early Bronze Age Greece
5	Christopher Britsch	Agencies of Textile Production in western Anatolian and Aegean Prehistory
6	Aline Tenu	Textiles tools, significant markers of gender? The case of the cremation cemetery Tell Shiukh Fawqâni (Syria)
7	Catherine Breniquet	Tracing the Weavers in Early Mesopotamia, 5000–2000 BCE. Evidences from Iconography
8	Louise Quillien	Insights into the Professional Life of a Weaver's Family from Sippar Across the $6^{\rm th}$ Century BCE
9	Agata Ulanowska	Contemporary Actors and Bronze Age Textile Techniques from Greece. Experience Approach to Textile Work, its Specialisation and Apprenticeship
10	Daniele Morandi Bonacossi	A Textile Workshop from the Acropolis of Tell Mishrifeh. New Light on Weav- ing and Dyeing in Iron Age Syria
11	Elizabeth E. Payne	Social Status and Organization of the Textile Workers of Uruk During the Neo-Babylonian Period
12	Ulf-Dietrich Schoop	Social dimensions of textile use in Middle and Late Chalcolithic Anatolia
13	Luca Peyronel	Mediterranean interconnections: Weaving technologies during the Middle Bronze Age

#### Abstracts:

#### How to become a textile worker? Training of children in the textile manufacture Marie-Louise NOSCH

How to become a textile worker? This paper reviews the theories from anthropology of how to learn a craft, and how the learning methods will affect the resulting craft production. It also draws on the author's personal experiences with crafts and with learning processes. These experiences and theories

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are compared to the Linear B inscriptions on the training of children in the Mycenaean textile industry at Knossos, and to evidence on the training of children in other Bronze Age societies. It argues that our knowledge on the standardized textile production in Mycenaean palaces, as well as our knowledge on the training modalities of child labour can help us understand what kind of training was undertaken and organized by the palaces.

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#### Tracing the Weavers in Early Mesopotamia, 5000–2000 BCE. Evidences from Iconography Catherine BRENIQUET

It is well known that textiles badly preserved in Mesopotamian archaeological sites. However, other sources can be studied to understand the role of textiles in ancient societies: archaeology, texts and iconography. Within the frame of the Textile workers' workshop, we will take into account the early periods of Mesopotamia, ca. 5000–2000 bce. This wide time lapse gives the opportunity of see the evolution of societies, from the very late Neolithic communities to the first urban societies. During these three millennia, wool replaces the original vegetal fibres. This major change is linked with the emergence of a new social hierarchy, with the environment, with relations between groups, with the organization of labour and crafts, giving the opportunity to trace the weavers much more than the textiles themselves.

Archaeology (generally speaking) provides information about tools, raw materials but surprisingly, evidences of textiles, workshop or places for work are scarce or missing. Texts record very briefly the uses of textiles in the first urban societies. However, during the Ur III period, written cuneiform sources bring to light the organization of labour in the huge workshops. By contrast, iconography is abundant during the first half of the third millennium bce, especially on cylinder-seals, showing people at work, mainly women but also men, ungendered people and gods. From iconography, it is possible to reconstruct the entire "chaîne opératoire" of the textile work, to document the production tools and the many status of the weavers in early Mesopotamia

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### Agencies of Textile Production in western Anatolian and Aegean Prehistory

Christopher BRITSCH

Findings of textile tools from the earliest settlements in western Anatolia show that the craft of creating textiles was implemented in societies starting at least from the Neolithic. While evidence for such early periods is very rare, recent and current studies could illustrate the importance of this craft for the Chalcolithic and Early Bronze Age. Moreover they demonstrate the potential insight in the social mechanics of prehistoric societies by analysing this craft and its tools.

It can be stated that the whole study of prehistoric textile production in Anatolia and the Aegean is a more or less neglected field. However about the social aspects – more precisely the people behind the textile production – even less is known.

This paper therefore focuses on the agencies in prehistoric textile production. To approach this elementary but difficult question, recent as well as former studies of settlements and burial sites will be taken into comparison. The aim is to show which people were accustomed with this task and what social and cultural impact they had within the societies of western Anatolia and the Aegean.

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Textile Workers in the Royal Archives of Mari (Syria)

Cécile MICHEL

The archives excavated in the royal palace of Mari which document textiles workers are of various types. Administrative lists record the distribution of rations to the personnel: beside the weavers, other special-

ists are mentioned, male or female, producing specific types of textiles or using special technics. Letters dealing with the fabrication of luxurious garments for the king or the queen might refer to skilled textile professionals. Deliveries or receipts of raw materials or finished products may as well cite various textile workers. Looking at all these occurrences, we wish to give a tentative reconstitution of the organization of textile production linked to the palace of Mari by answering to the following questions: Is there a link between the gender of the workers and the tasks to be performed? Are these professionals working in or outside the palace? How are they organized? What can their rations tell us about their social status?

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## A Textile Workshop from the Acropolis of Tell Mishrifeh. New Light on Weaving and Dyeing in Iron Age Syria

#### Daniele MORANDI BONACOSSI

The paper will present the archaeological evidence on craft activities performed on the acropolis of Mishrifeh during the Iron Age II. The excavation of a large craft area yielded facilities and tools mainly pertaining to textile production. This activity was carried out in a complex located in the northern part of a craft quarter where numerous tools associated with textile production and processing have been found. Significant evidence of textile industry has been identified also in other parts of the acropolis and in the city's lower town. Weaving and textile production seem to have been an important economic activity and were performed on a large scale.

Evidence of textile dyeing was also brought to light in the workshop. Other activities, such as washing, fulling and mordanting, may have been performed in the same space.

The evidence excavated in the craft area on the acropolis and in the lower city emphasizes the important role played by Mishrifeh as a textile production centre and offer new important evidence on the textile production technologies employed in the Iron Age Northern Levant.

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### Social Status and Organization of the Textile Workers of Uruk During the Neo-Babylonian Period Elizabeth E. PAYNE

This talk will provide an overview of the social status and organization of the textile workers of Uruk based on the documentation preserved in the Eanna archive (ca. 630–520 BCE). These craftsmen were organized into three professions (washermen, launderers and weavers), who together manufactured and maintained the sacred garments worn by the deities residing in the Eanna temple. Each profession will be characterized by its responsibilities and the type of work done, followed by a discussion of how the workers' social status affected their organization and role within the temple. While all of the temple's textile workers were male, this talk will also present such evidence as there is for female textile workers in Uruk.

### Mediterranean interconnections: Weaving technologies during the Middle Bronze Age Luca PEYRONEL

The use of the warp-weighed loom in Anatolia, the Aegeum and Cyprus since the Early Bronze Age is well testified by archaeological evidences indicating that it was the main weaving technology in the area. On the contrary, the situation of the Levant during the Bronze Age was completely different: interactions between different weaving methods are attested at least since the Middle Bronze Age, when loom-weights testify for the introduction of the warp-weighed loom side by side the traditional Syro-Mesopotamian horizontal ground-loom and probably the new technique of the two-beam vertical loom was also elaborated, later on well documented through iconographic representations in Egypt. The distribution and the typology of the textile materials collected in the Syro-Palestinian regions also suggest that the evolution of the new loom types probably happened in specific interaction zones, along the southern coast, in the 'Amuq valley and in the Nile delta, where the cultural and commercial relations between the Aegeum, Cyprus and the Anatolian plateau have been more consistent. On the socio-economic ground the

presence of the warp-weighed loom in the Levant during the MBA seems to be a phenomenon mainly related to a restrict group of craftsmen linked to the palatial organization, possibly reflecting specific textile products and/or a distinct sector of the local textile industry.

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### Insights into the Professional Life of a Weaver's Family from Sippar Across the 6<sup>th</sup> Century BCE Louise QUILLIEN

This talk aims to reconstruct the professional life of a weaver's family during three generations from the reign of Nabopolassar (627–605) to the one of Cambyse (530–522). Šamaš-ah-iddin, father of Šāpik-zeri and grandfather of Gimillu, was working for the temple of Sippar. His main task was to manufacture the garments offered to the gods during religious ceremonies. He has the speciality of colour wool weaver and dyer. His son has taken following the work, and became the head of a team of weavers, as the grand-son some years after. More than sixty cuneiform texts from the temple archive document the professional activities of the family. The study of this family across the time allows us to understand what were the specific tasks of the coloured wool weaver: what garments they had in charge, what material they used. We can also try to deduce what technics they employed even if they are not described in the texts. We can evaluate the degree of specialization of craftsmen in the temple and see how the workers were organized in teams, with a strict hierarchy. At least, this family is a good example of how the workers passed down their knowledge and social position from one generation to the next.

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### In the mind of early weavers: perceptions of geometry, metrology and value in the Neolithic Aegean Kalliope SARRI

The Neolithic period in the Aegean has not yielded any textile remains. So we know very little about textile production and even less about the identities of the earliest Aegean weavers. Some related information comes from the contemporary toolkit and from textile imprints on wet clay. To this indirect evidence pottery decoration can be added. This often shows symmetrical painted or relief systems, which have been interpreted as textile patterns from their strong similarity with patterns that are timelessly present on textile products. Such ornaments can be seen as representations of coloured textiles while they sometimes allow a recognition of specific textile techniques.

Apart from this, the textile patterns reveal the abilities of the weavers in calculating, in conceptualizing and representing geometrical shapes, in creating hierarchies and in estimating sizes, volumes and values. This observation is the key for the connection of the Neolithic textile art with measuring systems, which are still not known from this cultural stage of the Aegean area.

The communication approaches the tracing of early metric systems in the Aegean Neolithic through the analysis of textile patterns and comments on the calculating abilities of textile workers in a culture whose calculating and metric systems are not yet known.

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#### Social dimensions of textile use in Middle and Late Chalcolithic Anatolia Ulf-Dietrich SCHOOP

Anatolia saw a dramatic increase of interest in textile production beginning in the last centuries of the 5th millennium BC and lasting throughout the fourth and third millennia BC. It is argued that the exchange and the consumption of textiles assumed a key position in the definition of social relations during this time. This contribution aims to investigate the social and economic context in which this development took place, the identity of the producers and their motivation to invest a considerable amount of labour into the manufacture of cloth. I will also offer some thoughts on the question why this development coincided with the widespread adoption of the vertical loom and how the transition from plant to animal fibres fits into the picture. The social role of textiles during the Late Chalcolithic appears to differ in some important respects from that of later times.

#### Craftspeople, craftsmanship and textile production in the Early Bronze Age Greece Małgorzata SIENNICKA-RAHMSTORF

Prehistoric textile production continues to attract the interest of scholars studying the remains of textiles, as well as textile tools made of various materials, particularly clay, stone and bone. From Early Bronze Age Greece (the 3<sup>rd</sup> millennium BC) no actual fabrics have, however, been preserved, thus textile research can only investigate the numerous implements used in their production, primarily found in the settlements. The aim of this paper is to discuss craftsmanship in Early Bronze Greece (particularly the Peloponnese). New insights regarding the use of fibres, textile tools, changes and innovations of techniques and implements, and the organisation of manufacture will be presented. The textile tools commonly preserved at many sites display various qualities and methods of production, from 'home-made' to standardised, and it seems that in some cases (especially in EBA II) they may have been made by professional craftsmen and widely distributed. In other cases they were rather made for private use. By analysing the archaeological contexts of such finds (especially spindle whorls, loom weights, bone and metal objects) it is to a certain extent possible to reconstruct patterns in their use, for example regarding the working areas and the organisation of textile manufacture. There is no secure evidence for textile workshops in this period, but domestic manufacture seems to be more probable than professional or attached production. On account of the wide range of spindle whorls and loom weights attested, it is probable, as far as the types and dimensions are concerned, that textile craftspeople developed specialised skills in the manufacturing of yarns of various thickness and quality, and textiles of diverse quality, patterns and weaves, according to their needs or the requirements of the market, whether it was local or part of wider trade routes.

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#### Textiles tools, significant markers of gender? The case of the cremation cemetery Tell Shiukh Fawqâni (Syria) Aline TENU

For a long time sexual identification of the dead was based on the material associated to them. Spindle whorls for instance were systematically considered as belonging to female graves because the link between textile work and women seemed obvious. The aim of this communication is to address this issue with data provided by the cremation burials excavated at Tell Shiukh Fawqâni (Syria). After a presentation of the material proper and the difficulties of identification it raises, I will discuss its association with female graves (established on the basis of bone analysis) and finally review its possible meanings. Are textiles tools markers of gender, or do they reflect the main occupation of the deceased during his/her life or do they have a symbolic significance?

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# Contemporary Actors and Bronze Age Textile Techniques from Greece. Experience Approach to Textile Work, its Specialisation and Apprenticeship

Agata ULANOWSKA

Textile production with its extensive *chaîne opératoire*, high labour inputs and the highest economic importance has undoubtedly been one of the key crafts in Bronze Age Greece. Its comprehensive understanding requires adopting different methodological approaches, such as studies of textile tools, workshops and dye-works and textual and iconographic investigations. More insights into textile work, the skill of textile workers and their specialisation may presently be grasped thanks to experimental approach to textile manufacturing.

In my paper I will argue that deliberately designed and controlled hands-on experience of modern actors in textile craft may also generate some analogies of how the textile work was organized, performed and apprenticed in the Prehistory, specifically in the Bronze Age Greece. I will draw on my five years' experience in teaching about textile production in Bronze Age Greece at the Institute of Archaeology, University of Warsaw and I will refer to my research project in which I document, asses and monitor the progress of students of archaeology in gaining an initial 'body knowledge' of textile craft over a longer period of time. In these experiments copies of Aegean textile tools are applied and questions about ergonomics and difficulty of various operational sequences of textile work, especially weaving, are asked.



Recent results from petrographic analyses of Levantine EBI–II imported ceramics from the Egyptian royal necropolis at Abydos-Umm el-Qaab have given rise to new questions surrounding the interrelations between Egypt and the northern and southern Levant between 3300–2900 B.C.E. These results suggest that from as early as 3300 B.C.E. the northern Levant played a far more active role than has been previously appreciated suggesting complex exchange networks that may have reached well beyond the coast and into the Levantine hinterlands. In addition, a direct contact via the sea to Egypt may be taken into consideration already at a much earlier stage in history than previously thought.

This workshop aims to bring leading archaeologists and petrographers in this field together to critically review and discuss the new results as well as their potential implications. There will be a limited number of presentations by participants working in Egyptian and Levantine archaeology followed by discussions.

#### Organizers:

E. Christiana KÖHLER Institute for Egyptology University of Vienna Franz-Klein-Gasse 1 1190 Vienna, Austria e.christiana.koehler@univie.ac.at

#### Participants (in alphabetical order):

Vera MÜLLER OREA – Institute for Oriental and European Archaelogy Austrian Academy of Sciences Dr. Ignaz-Seipel-Platz 2 1010 Vienna, Austria vera.mueller@oeaw.ac.at

ADAMS Matthew J	MARCUS Ezra
W.F. Albright Institute of Archaeological Research,	Recanati Institute for Maritime Studies
Israel	University of Haifa, Israel
mja198@gmail.com	ezra@research.haifa.ac.il
BADRESHANY Kamal	OWNBY Mary
Durham University, UK	University of Arizona, USA
kamal.badreshany@durham.ac.uk	maryownby@email.arizona.edu
GENZ Hermann	PELOSCHEK Lisa
American University of Beirut, Lebanon	Austrian Archaeological Institute
hg09@aub.edu.lb	lisa.peloschek@oeai.at
GREENBERG Raphael	PENTEDEKA Areti
Tel Aviv University, Israel	Austrian Academy of Sciences
rafigre@012.net.il	Areti.Pentedeka@oeaw.ac.at
HÖFLMAYER Felix	
Austrian Academy of Sciences	
Felix.Hoeflmayer@oeaw.ac.at	

#### List of Lectures/Program: Starting at 14:00h

	Lecturer	Title
1	E. Christiana Köhler / Vera Müller	Egypt and the Levant during the EBI–II Period – A New Look at an Old Topic
2	Mary Ownby	Petrographic Analysis of Early Dynastic Pottery from Abydos: Approaches and Considerations
3	Matthew J. Adams	The Role of Egypt in the Southern Levant during the EB I–II Transition
4	Hermann Genz	Preliminary Observations on the Pre-Early Bronze Age III Pottery Sequence from Tell Fadous-Kfarabida on the Lebanese Coast

5	Ezra Marcus	From Nile to Cedar Mountain revisited: Egyptian-Levantine maritime interaction during the Early Bronze Age
6	Felix Höflməyer	Egypt and the Levant in the Early Bronze Age I-II period: A Radiocarbon Perspective

#### Abstracts (in alphabetical order):

#### The Role of Egypt in the Southern Levant during the EB I–II Transition Matthew J. ADAMS

New high resolution <sup>14</sup>C chronologies for the 3<sup>rd</sup> Millennium in the Southern Levant (Regev et al. 2012; 2014) and Egypt (Dee et. al. 2013) have forced a reconsideration of the chronology and, therefore, models, of Egyptian interaction with the Southern Levant. In particular, the period of transition between the EB I and the EB II can be more precisely synchronized with economic developments in Egypt and with the presence and abandonment of the Egyptian 'colonies' in the southern coastal plain of the Southern Levant. This paper presents several observations on social and political developments in the Jezreel and Northern Jordan Valleys in the EB I–II transition within the context of Egypt's withdrawal from its colonies. It will make use of new chronological data from Megiddo as well as the results of a new pal-ynological study (Langutt et al. in press) to hypothesize the role of Egypt in the EB I–II transition in the Southern Levant.

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### Preliminary Observations on the Pre-Early Bronze Age III Pottery Sequence from Tell Fadous-Kfarabida on the Lebanese Coast

Hermann GENZ

Despite of almost a 100 years of research, surprisingly little is known about the pottery sequence before the Early Bronze Age III from the Lebanese Coast. Evidence so far is restricted to the large unstratified corpus from Byblos, and small soundings at Tell Arqa and Sidon.

Recent excavations at Tell Fadous-Kfarabida have revealed a stratified sequence below the monumental Early Bronze Age III Building 4, covering the beginning of the 3<sup>rd</sup> millennium and extending back into the 4<sup>th</sup> millennium BC.

The pottery from these early levels will be presented in order to get a better understanding of the ceramic development in the Northern Levant at the transition from the 4<sup>th</sup> to the 3<sup>rd</sup> millennia BC.

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### Egypt and the Levant in the Early Bronze Age I–II period: A Radiocarbon Perspective Felix HÖFLMAYER

For a long time, chronological synchronization between the Levantine Early Bronze I and II periods with Egypt were based on a few partly ambiguous archaeological synchronisms, such as the occurrence of 'Abydos Ware' in early royal tombs in Egypt.

Recent decades have seen substantial progress in the method and application of radiocarbon dating and Bayesian analysis on Early Bronze Age Levant and Egypt. Several sites, such as Tel Yarmuth or Megiddo (Israel), Tell Fadous-Kfarabida and Tell Arqa (Lebanon), or Khirbet ez-Zeraqon (Jordan) produced comprehensive radiocarbon sequences and consistent results for the Early Bronze Age Levant. For Egypt, the Oxford-based project on radiocarbon dating the Naqada relative chronology produced a substantial set of new radiocarbon dates that stimulated discussion on Predynastic Egypt.

This paper reviews the radiocarbon evidence for the Levant and for the Nile Valley and provides a coherent chronological framework based on radiocarbon evidence.

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#### Egypt and the Levant during the EBI–II Period – A New Look at an Old Topic

E. Christiana KÖHLER / Vera MÜLLER

More than 100 years of intensive excavations in the early royal necropolis of Abydos – Umm el Qaab have produced very large quantities of Early Bronze Age Levantine ceramic vessels, which have formed the object of numerous studies into Egyptian-Levantine contacts. But only the methodical advances of scientific analysis methods as well as the growing data base of hard archaeological evidence on either side in recent years have allowed for a better grounding of interpretations explaining the mechanisms behind those contacts. However, discussions are still ongoing especially with regard to the areas of origin of Levantine imports and hence the potential exchange partners. Further, the socio-economic context as wells as mode of production and exchange are yet to be fully understood.

Recent results from petrographic analyses of imported Levantine EBI–II ceramics from Abydos-Umm el-Qaab and from other sites in Egypt (e.g. Helwan, Tell el-Farkha, Abu Roash) have produced new results and given rise to new questions surrounding the interrelations between Egypt and the northern and southern Levant between 3300–2800 B.C.E. This paper will present an overview of the current archaeological evidence from the Egyptian side.

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## From Nile to Cedar Mountain revisited: Egyptian-Levantine maritime interaction during the Early Bronze Age

#### Ezra MARCUS

Situated on either side of the sole land-bridge between Africa and Asia, it was only natural that interaction between the Nile Valley and the Levant would be predicated on terrestrial means of transport. However, concomitant with the rise of complex societies of albeit markedly different scales of size and dissimilar characters, increasing utilization and dependence on maritime means of conveyance may be observed from the Early Bronze Age onward. For Egypt, the Levant was the closest accessible Mediterranean zone from which, inter alia, otherwise unavailable arboreal and horticultural materials and products could be obtained. As the demand for such goods and the size of the bulk products being transported increased, maritime transport became an activity worthy of elite and royal initiative and tutelage. This presentation will survey the archaeological, textual and pictorial evidence for maritime activity in the littoral zone of the easternmost Mediterranean during the fourth and third millennia BCE and consider its contribution to the rise of complex society in both Egypt and the Levant.

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#### **Petrographic Analysis of Early Dynastic Pottery from Abydos: Approaches and Considerations** Mary F. OWNBY

The petrographic analysis of pottery found in Egypt has been ongoing for decades. Much success has been achieved in suggesting provenance areas for the source of imported vessels. This is due in large part to the geological diversity of the Levant. To illustrate this, the results of the petrographic analysis of 30 vessels from Early Dynastic contexts at Abydos are presented. The origins for the imported vessels are considered along with the results of previous petrographic research on similar pottery. Some of the analyzed vessels from Abydos are likely of Egyptian manufacture. The petrographic study of Egyptian pottery has proven challenging in part because of geological homogeneity and the broad distribution of clay sources. Some approaches to such material are offered along with potential avenues for further research.

#### Archaeology of Central Asia during the 1st millennium BC



The workshop will be devoted to the archaeology of Central Asia during the first millennium BC, which is still poorly known. The chronology of this period of Central Asia was established in the middle of the 20<sup>th</sup> century by V. Masson after his pioneer excavations at Yaz depe, in Turkmenistan. During the last few years, the results of many excavations carried out in Uzbekistan, Turkmenistan, Tajikistan and Afghanistan were fundamental in helping to establish a refined, more expanded periodization of this Central Asian historical period, from the early Iron Age to the Hellenistic times. Moreover, they allowed to define these past societies more precisely, and particularly in gathering more information about the architecture and the material culture.

This workshop aims at bringing together this work in order to shed a new light on this challenging period, by characterizing the successive cultural, socio-economical, and political transformations that took place at this time as well as by focusing on broader interactions with the neighboring populations and their role in these developments.

During the workshop we will present papers about the most recent research on key aspects of the archaeology of the first millennium BC in Central Asia, as the periodization, the development of settlements and architecture, the distribution as well as the evolution of material culture.

#### Organizers:

Marcin WAGNER Institute of Archaeology University of Warsaw Szkoła Główna ul. Krakowskie Przedmieście 26/28 00-927 Warszawa, Poland m.wagner@uw.edu.pl

### Participants (in alphabetical order):

····
AMIRI Solmaz
BENDEZU-SARMIENTO Julio
DAFA, CNRS-Unité EXT500
BETTS Alison
University of Sydney, Department of Archaeology
DAUJAT Julie
Department of Archaeology, University of Nottingham
DEBUE Karyne
CNRS UMR 7209/ Muséum National d'Histoire Natu-
relle
HOUAL Jean-Baptiste
CNRS-ENS UMR8546
KĘPA Luiza
Biological and Chemical Research Centre, University
of Warsaw
LINDSTRÖM Gunvor
DAI Berlin, Eurasien-Abteilung

Johanna LHUILLER Hellénismes d'Asie et civilisations orientales CNRS UMR 8546, École Normale Supérieure 45 rue d'Ulm, 75230 PARIS Cedex 05 DAFA, France johanna\_lhuillier@hotmail.com

MARQUIS Philippe
Département des Antiquités orientales du Louvre
MARTINEZ-SÈVE Laurianne
Lille University
MASHKOUR Marjan
CNRS UMR 7209/ Muséum National d'Histoire Natu-
relle
MINARDI Michele
University of Bordeaux, KAE
SHEIKHI Shiva
Université Paris-Sorbonne (Paris IV)
TENGBERG Margareta
Muséum National d'Histoire Naturelle
WAGNER Barbara
Biological and Chemical Research Centre, University
of Warsaw
XIN Wu
W.F. Albright Institute of Archaeological Research,
Jerusalem

#### Workshops 25 April

#### List of Lectures/Program:

	Lecturer	Title	
1	Johanna Lhuillier / Marcin Wagner	Introduction	
Part I	: Central Asia during Iron Age		
2	Johanna Lhuillier / Philippe Marquis / Julio Bendezu-Sarmiento	Ancient Bactra: new elements on the Iron Age occupation of Bactra oasis	
3	Marjan Mashkour / Julie Daujat / Karyne Debue / Shiva Sheikhi / Solmaz Amiri / Johanna Lhuillier / Julio Bendezu-Sarmiento	Animal and plant exploitation during the Iron Age at Ulug Depe, a large proto-urban site in eastern Turkmenistan	
4	Marcin Wagner	Pottery of Yaz I–II period from the temple of fire at Topaz Gala depe, south of Turkmenistan	
5	Barbara Wagner / Luiza Kępa / Marcin Wagner	An Archaeometric study of pottery from Yaz II culture found in the northern part of the Serakhs oasis, south of Turkmenistan	
6	Michele Minardi	The north-eastern border of the Achaemenid empire: introducing the Chorasmian Iron Age	
Discus	Discussion		
Lunch	Lunch break		
Part I	Part II: Central Asia in the Hellenistic period		
7	Wu Xin	Contesting the Land: Power Struggles in Central Asia during the Achae- menid and Early Hellenistic Periods	
8	Jean-Baptiste Houal	Beyond the Hindu Kush, mirage and reality of a greek culture	
9	Laurianne Martinez-Sève	The sanctuary of the temple with indented recesses of Ai Khanoum	
10	Gunvor Lindström	Torbulok – a sanctuary in the Hellenistic East	
11	Alison Betts	A Carved Ivory Cylinder from Akchakhan-kala: issues of dating, work- manship and the ivory trade in Central Asia	
Final	discussion		

#### Abstracts:

#### Ancient Bactra: new elements on the Iron Age occupation of Bactra oasis

Johanna LHUILLIER / Philippe MARQUIS / Julio BENDEZU-SARMIENTO

The French Archaeological Delegation in Afghanistan (DAFA) has been leading researches in Bactra oasis since 2005 (under the direction of R. Besenval first, and of the following directors of the DAFA), sheading a new light on the chronology of the area. In this paper, we will focus on the data related to the Iron Age. Indeed, a thorough examination of the pottery excavated in different parts of the ancient city of Bactra itself indicates an occupation earlier that previously assumed and gives some first elements on the development of the city. The Bala Hissar seems to have been settled first, during the Early Iron Age (Yaz I period), with a continuous occupation during the pre-Achaemenid period (Yaz I period). The Tepe Zargaran and the Northern Fortification Wall (Rempart nord) seem to have been occupied mainly during the Achaemenid period, the more ancient pottery being very scarce, which indicates a large extension of the city at this time. In these areas, some shapes remain almost identical during the following Hellenistic period, especially the large storage jars, confirming some observations made in Eastern Bactria by B. Lyonnet. These first results can help understand the settlement pattern in Bactra oasis previous and during the Achaemenid period, and clarify the chronology of some other sites surveyed by the (DAFA).

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#### Animal and plant exploitation during the Iron Age at Ulug Depe, a large proto-urban site in eastern Turkmenistan

Marjan MASHKOUR / Margareta TENGBERG / Julie DAUJAT / Karyne DEBUE / Shiva SHEIKHI / Solmaz AMIRI / Johanna LHUILLIER / Julio BENDEZU-SARMIENTO

Ulug Depe is one of the most imposing proto-urban sites of Central Asia, with levels from the Middle Chalcolithic to the pre-Achaemenid period, although the occupation is attested from the Late Neolithic. A French-Turkmen archaeological expedition excavates from 2001 in this site following other previous archaeological investigations by Russian teams. A large quantity of animals and plant remains were studied from eleven seasons of excavation.

In this work the faunal and botanical remains of the Iron Age will be presented, locally known as the Yaz period. The faunal spectrum is relatively diversified with a dominance of *Caprini* followed by cattle. Within the wild fauna, the majority of the remains could be allocated to *Gazella* and *Hemionus*. Equid remains are relatively well represented and the presence of horse and donkey can also be verified. As for the botanical remains, macroscopic plant remains (wood, seeds and fruitkernel) indicate the presence of the gallery-forests or the so-called tugai growing along the Kelet and used as a source of fuel. In the particular context of the monumental citadel, juniper (*Juniperus*) wood was used for roofing. As for the cultivated crops, field weeds or genuinely wild plant species are among the carbonised remains.

Archaeozoological and archaeobotanical investigations in this part of Central Asia are still scarce and many questions related to agropastoral practices need a better understanding in a micro-regional scale. Ulug Depe faunal and botanical material are among the best documented assemblages that provide a large set of information on the environmental setting of the site, herding and hunting strategies, production of tools and objects, different modes of exploitation of plants (collecting, cultivating) and use (food, fodder, craft activities, medicine) of these resources and other aspects of every day life.

One of the important issues in Central Asia is to understand how the steppe was used in terms of animal management and its relation with agriculture.

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### Pottery of Yaz I–II period from the temple of fire at Topaz Gala depe, south of Turkmenistan Marcin WAGNER

Since 2009, archaeologists from the Institute of Archaeology at the University of Warsaw have been carrying out numerous excavations at the Topaz Gala depe with financial support from the National Science Centre (UMO-2013/09/B/HS3/04315). They brought to light the remains of the Zoroastrian fire temple, dated to the beginning of 1<sup>st</sup> millennium BC. Pottery shards and good preserved ceramic vessels like bowls, beakers, small and huge jars were found; especially in layers, when the temple existed during the Yaz II period. Only a small percentage of whole collected ceramic material are shards dated to the Yaz I period. This small number of fragments of Yaz I vessels suggest, as it seems, that below the temple from Yaz II period there must have been an earlier building, perhaps an earlier temple, whose wall corner was found at the bottom of a huge pit, located in the center of the mound.

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### An Archaeometric study of pottery from Yaz II culture found in the northern part of the Serakhs oasis, south of Turkmenistan

Barbara WAGNER / Luiza KĘPA / Marcin WAGNER

During the examination of the elemental compositions of ceramic vessels, a comparison of pottery shards found at sites located in the northern part of the Serakhs oasis (Ara depe, Atsyz depe 2, 3, and 5, Oyukly depe and Topaz Gala depe) was carried out. All this sites are dated to the Yaz II period. The most known is the Topaz Gala depe, which has been excavated since 2009 by the Polish Archaeological Mission with financial support from the National Science Centre (UMO-2013/09/B/HS3/04315).

Both inhomogeneous chemical and structural composition of the ceramics created difficulties for analytical studies yet they contain lots of important information for the history of their creation. The major elemental composition of the Early Iron Age pottery from southern Turkmenistan has been achieved by use of a portable X-ray fluorescence (pXRF) and a more detailed study was undertaken with Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS). The pXRF method allows to obtain bulk elemental information about the sample within a short time, while the LA-ICP-MS method is a method with low detection limits and ability to obtain information about isotopic/elemental distribution on the surface of solids. The chemical analysis has supported the archaeological knowledge about the use of heterogeneous ceramic with few exceptions, which were identified in this research.

The study was carried out at the Biological and Chemical Research Centre at the University of Warsaw, established within the project co-financed by European Union from the European Regional Development Fund under the Operational Programme Innovative Economy, 2007–2013.

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#### The north-eastern border of the Achaemenid empire: introducing the Chorasmian Iron Age Michele MINARDI

The Ancient Chorasmia was one of the "nations" considered by the Achaemenids under theirs way. The polity appears in all the Persian records regarding the extent of the empire as well as among the depictions of the "nations" represented as throne-bearers on the royal tombs of Naqsh-i Rustam and Persepolis. There, we find the Chorasmian representative in *Sakā* attire and equipped with an *akinakes*. The archaeological data relative to Ancient Chorasmia seem to confirm the important although scant sources about a Persian influence on the area since the 6<sup>th</sup> century BC, when a new material culture emerges in a dramatic contrast with the local cultural substrata.

This paper has the aim to present the Chorasmian Iron Age in the light of the new evidence provided by the excavations of the Karakalpak-Australian Expedition (KAE) on the background of the works of the former Soviet Khorezm Expedition (KhAEE).

The archaeological evidence recovered from the royal site of Akchakhan-kala underlines the importance of the Achaemenid Impact and of its heritage in Ancient Chorasmia up to the end of the 1<sup>st</sup> millennium BC. Religion, iconography, language and other aspects of the Chorasmian material culture show evident signs of continuity and development in his sedentary outpost toward the steppes at the north-eastern border of the Achaemenid empire.

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#### Contesting the Land: Power Struggles in Central Asia during the Achaemenid and Early Hellenistic Periods

#### Wu XIN

Central Asia's integration into the Achaemenid Persian Empire (ca. 550-330 BC) during the mid-1<sup>st</sup> millennium BC fundamentally transformed the region's political and socio-economical landscape. The Empire's systematic exploitation of the land on its northeastern boundary brought great prosperity to Central Asia. Nevertheless, Persian control over the region was never easy; it was contested – rather frequently – by various populations living inside and outside of the empire. The conflicts in the region only intensified and multiplied when Alexander the Great arrived in Central Asia.

This paper draws upon archaeological evidence from recent excavations at sites in Uzbekistan, primarily Kyzyltepa in the Surkhandarya Valley, to illustrate the power struggles in Central Asia during the Achaemenid and early Hellenistic periods. It also considers the larger impacts of these conflicts on the social life and economy of Central Asia, especially in the 4<sup>th</sup> century BC.

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Beyond the Hindu Kush, mirage and reality of a greek culture

Jean-Baptiste HOUAL

How could the Hellenistic world of Central Asia be brutally stopped in the 145 BC only due to the abandonment of Aï Khanum by its elites? Just as the Achaemenid culture did, the greek culture, knew how to merge with a world which was unknown before, during its short existence; but at the same time descendants of the Alexander's army preserved it, using a certain originality. The question is not to give an answer to different topics carried by A. Foucher or D. Schlumberger in their vision of the Hellenism towards India during a large part of the 20<sup>th</sup> century. The objective of this discussion is to highlight that the frontier between the north and the south has never been an impenetrable limit to the mutual influences: Bactria to India or vice versa. However, great uncertainty reigns in the footsteps of this culture which can be found especially through monetary discoveries or urban excavations like in Taxila or Kandahar. Ceramics, the major identity of a culture, is difficult to define. There is no doubt, however, that the Roman merchants of the 1<sup>st</sup> century AD encountered a friendly cultural context willing to welcome them and help them to access to the gates of the main kingdoms.

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#### The sanctuary of the temple with indented recesses of Ai Khanoum

Laurianne MARTINEZ-SÈVE

The sanctuary of the temple with indented recesses was one of the main sanctuaries of the greek city of Ai Khanoum, in Bactria. It was excavated between 1968 and 1973, but not fully published at that time. A recent study allowed to identify the key phases of its evolution and to connect them to the history of the city. It was founded during the reign of Antiochus I, at a time when the city itself was built for the first time. The sanctuary was completely rebuilt three more times, first under Diodotus I or Diodotus II, probably when these kings had founded the Graeco-Bactrian kingdom, then under Demetrius I and finally under Eucratidus I. Each time these reconstructions are linked with major steps of the development of the city. This study also shows that the sanctuary remained in use after the Greek population had left the city, which underwent an assault, probably until the end of the 2<sup>nd</sup> century BC.

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#### Torbulok – a sanctuary in the Hellenistic East

Gunvor LINDSTRÖM

A sanctuary of the Hellenistic period was recently discovered at the village of Torbulok in southwest Tajikistan. The discovery was based on a random find of a large limestone vessel, identified as a *perirrhanterion* – a vessel for Greek purification rituals. The sanctuary is situated at the base of a mountain ridge, flanked by two prominent rocks. The excavations started in 2013 by a German-Tajik team gave insights into the structure of the sanctuary and confirmed the dating to the 3<sup>rd</sup> and 2<sup>nd</sup> century BC, as Bactria was part of the Hellenistic world. The excavated objects and installations show that the performed rituals were inspired not only by Greek customs – as the purification ritual – but also by local traditions, with a high importance of water and ashes. The site seems to have functioned as a pilgrim sanctuary, associated to the ancient settlement at Dangara at a distance of ca. 30 kilometers.

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#### A Carved Ivory Cylinder from Akchakhan-kala: issues of dating, workmanship and the ivory trade in Central Asia

#### Alison BETTS

Excavations at Akchakhan-kala in Uzbekistan recovered a large, elaborately carved ivory cylinder. Following a series of scientific analyses, this paper discusses issues relating to the dating of this piece, its origins and also its function.

#### Archaeology of the Arabian Peninsula: Connecting the Evidence



New research in the four quarters of the Arabian Peninsula has been thriving in the last decade and is increasing at a rapid pace. However, archaeological investigations in the East, South, West, North and now also the Centre of the sub-continent are still very uneven. Which regions are now on the map, which environments have been explored and for which periods is new data emerging? How is this shaping our reconstructions of the archaeology of this formerly marginal area of the Ancient Near East? This workshop calls for papers to connect and compare new evidence from recent work in the field as well as re-evaluations of old data.

#### Organizer:

Marta LUCIANI Institute for the Study of the Ancient World New York University 15 East 84th St. New York, NY 10028, USA and: Institut für Orientalistik University of Vienna Spitalgasse 2, Hof 4 (Campus) 1090 Vienna, Austria marta.luciani@univie.ac.at

#### Participants (in alphabetical order):

ABUALHASSAN Hussein
Saudi Commission for Tourism and National Heritage
h.abualhassan@scth.gov.sa
ADACHI Takuro
Kanazawa University
AL-NAIMI Faisal
Qatar Museums
ALZAHRANI Abdullah
Saudi Commission for Tourism and National Heritage
ZahraniAb@scth.gov.sa
CHEVALIER Anaïs
Université Paris 1 Panthéon-Sorbonne
anais_chevalier@hotmail.fr
DASZKIEWICZ Małgorzata
Archea, Warsaw / Exzellenzcluster TOPOI FU Berlin
m.dasz@wp.pl
DINIES Michèle
German Archaeological Institute
michele.dinies@fu-berlin.de
FUJII Sumio
Kanazawa University
fujiikun@staff.kanazawa-u.ac.jp
GERNEZ Guillaume
Université Paris 1 Panthéon-Sorbonne
Guillaume.Gernez@univ-paris1.fr
HAUSLEITER Arnulf
ISAW, New York University / German Archaeological
Institute
arnulf.hausleiter@dainst.de

MUHESEN Sultan
Qatar Museums
smuhesen@qm.org.qa
NEEF Reinder
German Archaeological Institute
reinder.neef@dainst.de
NEHME Laïla
CNRS – UMR 8167
laila.nehme@cnrs.fr
PLESSEN Birgit
GFZ German Research Centre for Geosciences, Helm-
holtz Centre, Potsdam
birgit.plessen@gfz-potsdam.de
Jérôme ROHMER
CNRS – UMR 7041 / Fondation Thiers, Nanterre / Paris
jerohmer@gmail.com
SCHIETTECATTE Jérémie
CNRS – UMR 8167 « Orient et Méditerranée »
jeremie.schiettecatte@cnrs.fr
TOURTET Francelin
German Archaeological Institute
francelin.tourtet@dainst.de
ZAID Zaydoon
American Foundation for the Study of Men
zaid.zaydoon@gmail.com

#### List of Lectures/Program:

	Lecturer	Title
10:00	Marta Luciani	Archaeology of the Arabian Peninsula: connecting the evidence. Introducing the Theme
10:00	Michèle Dinies / Reinder Neef / Birgit Plessen / Arnulf Hausleiter	Early to mid-Holocene vegetation and crop cultivation and the begin- nings of settlement at Tayma, NW Arabia
10:30	Sumio Fujii / Takuro Adachi	Wadi Sharma 1: Excavations at a Neolithic settlement in the Tabuk Province, NW Arabia
11:00	COFFEE	
11:30	Małgorzata Daszkiewicz / France- lin Tourtet / Arnulf Hausleiter	Tayma pottery: Chronostratigraphy, archaeometric studies, cultural interaction
12:00	Marta Luciani	Urban Oases in Arabia: New Evidence from the North West
12:30	Hussein Abualhassan	Current research at the Um Darraj site, Al-Ula North-west of Saudi Arabia
13:00	LUNCH	
14:00	Jérôme Rohmer	A Revised Chronological Framework for Northwest Arabia in the Late $1^{\rm st}$ millennium BC. New Evidence from Excavations in the al-Ula Area
14:30	Laïla Nehmé	The distribution of the Nabataean inscriptions in the Arabian penin- sula and the Nabataean long-distance trade
15:00	Abdullah Alzahrani	Productive and economic landscape at the south west of Saudi Arabia
15:30	Jérémie Schiettecatte / Anaïs Chevalier	The oasis of al-Kharj as a case-study of the settlement process in Central Arabia
16:00	COFFEE	
16:30	Guillaume Gernez	A new Iron Age site in Central Oman: recent excavations near Adam
17:00	Zaydoon Zaid	Form and function, local or global. Sabaean architecture as witnessed by the Awam Temple
17:30	Sultan Muhesen / Faisal Al-Naimi	New Archaeological Discoveries from Qatar

Abstracts (in alphabetical order):

#### Current research at the Um Darraj site, Al-Ula North-west of Saudi Arabia Hussein ABUALHASSAN

Um Daraj is one of the most significant archaeological sites in Al-Ula, North West of Saudi Arabia. It can be chronologically dated to the period of control of the Lihyanite dynasty, ruling in NW Arabia ca. from 6<sup>th</sup> to the 2<sup>nd</sup> BCE. An archaeological survey and rescue excavation have recently been undertaken by the Saudi commission for Tourism and National Heritage at Um Daraj site. This paper will focus on the most prominent results of this fieldwork.

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### Productive and economic landscape at the south west of Saudi Arabia

#### Abdullah ALZAHRANI

This paper will present and discuss the most distinctive features of economic productive sites in the pre –Islamic and Islamic period (from the 6<sup>th</sup> to 10<sup>th</sup> century CE) in southern Arabia, specifically on the basis of current discoveries at the Alabla and Asham mining sites, southwest of Saudi Arabia. In addition, it will show the level of development of tools, extraction and productive techniques that have contributed to the growth of the economic production during the previously mentioned periods.

#### Tayma pottery: Chronostratigraphy, archaeometric studies, cultural interaction Małgorzata DASZKIEWICZ / Francelin TOURTET / Arnulf HAUSLEITER

Excavations carried out by the German Archaeological Institute and the Saudi Commission for Tourism and Antiquities at Tayma suggest that the oasis may have been connected to Syria and the Levant already during the early 2<sup>nd</sup> millennium BC. This sheds new light on the site as an important reference point for cultural contacts during the Bronze Age.

In the first part, the paper will present the chrono-stratigraphic sequence of pottery at Tayma obtained during the last years. Comparative evidence suggests that the relations between NW Arabia and the Levant are closer than to any other adjacent region.

The second part will deal with the results of archaeometric analyses of painted ceramics from the Late Bronze Age (Qurayyah Painted Ware, ca. 14<sup>th</sup> and 11<sup>th</sup> centuries BC) from both Tayma and Qurayyah, suggesting a technological autonomy of individual oases in pottery production already during the Late Bronze Age.

The pottery was studied in the laboratory using the combination of geochemical, technological, and mineralogical methods (WD-XRF, MGR-analysis, estimation of ceramic properties, and thin-section studies). Some of the results of the research of pottery from subsequent periods attested the presence of Attic pottery at Tayma and Nabatean fine ware from Petra at this site.

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### Early to mid-Holocene vegetation and crop cultivation and the beginnings of settlement at Tayma, NW Arabia

#### Michèle DINIES / Reinder NEEF / Birgit PLESSEN / Arnulf HAUSLEITER

Water and vegetation are key commodities for humans. The natural vegetation provides pastures, fuel, timber and a vast variety of edible and useful plants that may be gathered. Vegetational changes thus mean a change of available resources and may induce changes in land use.

Yet, our knowledge of the Holocene vegetation of the Arabian Peninsula is scanty. The few published terrestrial pollen records originate from Southern Arabia. Sediment cores from Tayma, NW Arabia, thus provide new insights into the Holocene vegetational development, bridging the palynological records of the eastern Mediterranean and the records from Southern Arabia.

The Arabian terrestrial records show a consistent grassland expansion during early Holocene. These additional natural pastures might have facilitated the spread of mobile herding communities. During the mid-Holocene the vegetational development of Arabia shows differing patterns, with the onset of long-term aridisation between 8000 and 6000 cal BP.

In Tayma the first palynological evidence for crop plant cultivation can be dated to about 6000 cal BP. During this mid-Holocene period, a lithic industry for the production of carnelian beads attests the first evidence for human crafting activities. At around 4000 cal BP, the oasis abruptly (?) develops for a substantial walled settlement.

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### Wadi Sharma 1: New Insight into the Neolithization in the Northwestern Arabia

Sumio FUJII / Takuro ADACHI

Wadi Sharma 1 is a small Neolithic settlement in the northwestern corner of the Arabian Peninsula. The site was found during the *Comprehensive Archaeological Survey Program* taken place in the 1980s, and recently excavated by us over four seasons. The excavations have revealed a few dozen ground-type masonry structures, which yielded a variety of artifacts including chipped flint/calcite tools, grinding utensils, stone vessels, shaft-straighteners, and adornments made of snail or shell. Four of the five C-14 data converge on a limited time range around 7300-7100 cal. B.C., suggesting that the settlement existed for a short period in the Late Pre-Pottery Neolithic B (of the Levantine chronology). In view of the custom

of entrance sealing, it was probably used on a seasonal basis. Wadi Sharma 1 is the first Arabian PPNB settlement to be excavated on a full scale and provides valuable insights into the process of the Neoli-thization in the region. This paper reviews the excavation results at the important site and discusses the issue in a broader context including the southern Levant.

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#### A new Iron Age site in Central Oman: recent excavations near Adam

Guillaume GERNEZ

Recent excavations near Adam (Oman) yielded new data about the margins of the desert in Central Oman during the middle and late Iron Age.

Until the 2014 season, the Iron Age was far to be known in Adam. Several graves and reused burials had been identified during the surveys and the excavations of two graveyards, but it seemed that the area of Adam was not highly occupied during this period, contrary to the situation observed in the major site of Salut, only 40 km to the northwest.

However, the discovery of an enigmatic Iron Age site near Adam allows us to reconsider this first impression. This site consists of a group of structures located on the eastern tip of Jabal Mudhmar, near Wadi Halfayn. The main stone building (E 1193) contains unique bronze weapons (real size, reduced models and miniatures) including arrows, bows, quivers and daggers that could be used for ritual purpose.

From its geographic location and its unusual content, the site could have several functions: a meeting place linked to social, political or religious use, a military place that controls the plain, or a relay on the ancient road between Adam and Sinaw.

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#### Connecting the evidence in the Archaeology of the Arabian Peninsula

Marta LUCIANI

New research in the four quarters of the Arabian Peninsula has been thriving in the last decade and is increasing at a rapid pace. However, archaeological investigations in the East, South, West, North and now also the Centre of the sub-continent are still very uneven. Which regions are now on the map, which environments have been explored and for which periods is new data emerging? How is this shaping our reconstructions of the archaeology of this formerly marginal area of the Ancient Near East? This workshop calls for papers to connect and compare new evidence from recent work in the field as well as re-evaluations of old data.

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#### Urban Oases in Arabia: New Evidence from the North West

#### Marta LUCIANI

While the phenomenon of urban oases has been referred to in the past, new evidence is steadily helping us in clarifying the picture on their origins and formation. On the basis of current research on one of the largest and most significant sites in north-western Arabia (previously referred to as the possible capital of the Kingdom of the Midianites, a people well attested in the Old Testament, Classical sources and the Qur'ān) i.e., the oasis of Qurayyah, we will provide novel data on major aspects of life and death in the site during the 2nd millennium BCE: from the production of everyday pottery and highly decorated vessels, to faience and metal artefact as well as the local burial customs. Looking at the regional distribution of materials and imports of precious artefacts, we can map the interregional connections of this previously reputed 'remote' area that now increasingly seems to have been part and parcel of the international network of the Levant in the Second Millennium BCE. The question of the onset of urban oases can now be discussed basing on a wholly new data-set.

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### New Archaeological Discoveries from Qatar

Sultan MUHESEN / Faisal AL-NAIMI

Systematic excavations in Qatar started in the 1950's with the Danish Expedition to the Arabian Gulf. Further fieldwork followed in the 60's and 80's by teams from Qatar, Britain and France. The actual policy of Qatar Museums (QM) is focusing on research, protection, preservation and presentation of Qatar's archaeology, with special attention given to Al Zubarah as World Heritage Site .joint projects are going on with Copenhagen, UCL, Q, Birmingham, Wales Universities and German Archaeological Institute, DAI. These projects are active in all parts of the country, producing new discoveries of several kinds and periods lasing from Prehistory till Late Islamic time .Some of these discoveries are radically changing the image of Qatar Archaeology and Ancient History, This paper will give an overview showing the state of archaeological research in Qatar, as it is documented by the most recent discoveries which confirmed the rich image of Qatar past and heritage ,indicating the challenging questions of future research.

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# The distribution of the Nabataean inscriptions in the Arabian peninsula and the Nabataean long-distance trade

Laïla NEHME

This contribution will examine the distribution, in the Arabian peninsula, of all the hitherto known, published or unpublished, inscriptions written in the Nabataean or Nabataeo-Arabic scripts (i.e. inscriptions written in characters which are transitional between Nabataean and Arabic). The maps produced by the author will show the distribution of the inscriptions by date (including the mention of the eras), by deities mentioned in the texts, by linguistic features such as the occurrence in them of Arabic loanwords, etc. These distribution maps will also be used to look into the question of the long-distance trade routes in the Nabataean and Roman (i.e. post AD 106) periods, the itineraries and their use, as well as into the corollary question of the intensification of the maritime trade in the Red Sea.

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#### A Revised Chronological Framework for Northwest Arabia in the Late 1<sup>st</sup> millennium BC. New Evidence from Excavations in the al-Ula Area Jérôme ROHMER

Since the first archaeological expeditions to Northwest Arabia in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, the political and cultural chronology of this area in the 1<sup>st</sup> millennium BC has been much debated. Inscriptions refer to several indigenous polities (Dadan, Tayma, Lihyan) and to episodes of foreign rule (Neo-Babylonian, Achaemenid, Nabataean) within this time period, but they provide very few chronological anchors.

The spectacular development of North-Arabian archaeology in the last decade now makes it possible to take a fresh look at this tantalizing issue. Large-scale excavations provide new insights into the settlement history and the material culture of several major North-Arabian oases (Khurayba / Dadan, Mada'in Salih / Hegra, Tayma, Dumat al-Jandal). This paper connects the evidence from these sites in order to propose a new cultural and political chronology for Northwest Arabia in the 1<sup>st</sup> millennium BC. It reassesses the dates of the Lihyanite and Nabataean phases and it suggests the existence of a hitherto unknown period spanning the late 3<sup>rd</sup> to the 1<sup>st</sup> c. BC.

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#### Protohistoric funerary landscape in Central Arabia (al-Kharj area, Saudi Arabia)

Jérémie SCHIETTECATTE / Anaïs CHEVALIER

In the oasis of al-Kharj, a remote sensing analysis allowed the geolocation of approximately 6,000 tumuli. Spatial analysis of these graves shows how their distribution was strongly dictated by proximity to building material and water sources as much as by land marking. The close proximity between the two main necropolises and palaeolakes raises the matter of the long-lasting activity of this hydrological feature in the area, down to the early Bronze Age, questioning the duration of the mid-Holocene Humid phase in Central Arabia. Geomorphological core-sampling realized in 2015 explores this issue.

Finally, field excavation by the Saudi-French archaeological Mission in al-Kharj of several graves in the necropolis of 'Ayn al-Dila' yielded data regarding funerary practices and chronological issues.

All in all, remote sensing and fieldworks provide us with an insight into the way of life, the appropriation of land and resources as well as funerary practices of semi-mobile protohistoric populations.

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### Form and function, local or global. Sabaean architecture as witnessed by the Awam Temple Zaydoon ZAID

Yemen preserves a wealth of pre-Islamic architecture spanning over a long period of time. Yet its buildings and their significant architecture are little investigated in terms of its origin. While the mixture in style and iconography of Yemeni architecture reflect an influence of regional traditions along the Red Sea trade routes and beyond, the range of designs, techniques and materials found there indicate an impact of local regional geography. Based on excavations carried out at Awam temple in Marib, this presentation will try to line out the principles and factors that shaped this kind of architecture, which advanced during the Sabaean period.

#### Palaces in the Near East and Egypt



This workshop seeks to create a dialogue between architectural historians working on palaces of the Ancient Near East and Egypt. Architectural traditions of Mesopotamia enter from the 4<sup>th</sup> millennium onwards the Levant, on the other hand Egyptian culture had its impact on the Levant too. This workshop will discuss the principal differences between architectural traditions of Mesopotamia and Egypt in representative architecture. These traditions met in Egypt and in the Levant and created a kind of cultural interference which can be noticed till the Iron Age.

Within this workshop specialists of Mesopotamian, Syro-Palestinian and Egyptian palatial architecture will present their sites and their assessment of the individual palatial architecture and will merge in discussions about comparative architectural studies. It is the distance and similarity which will disclose original concepts of royal representation and will explain why these concepts result in different architectural expressions.

#### Organizers:

Paolo MATTHIAE Accademia dei Lincei Via della Lungara, 10 00165 Rome, Italy ebla@uniroma1.it Manfred BIETAK Austrian Academy of Sciences OREA – Institute for Oriental and European Archaeology Dr. Ignaz Seipel-Platz 2 1010 Vienna, Austria manfred.bietak@univie.ac.at

#### List of Participants:

BUCCELLATI Federico	Ab del-MAKSOUD Mohamed
Forum Transregionale Studien, Berlin	Ministry of Antiquities, Egypt
BUNIMOVITZ Shlomo	MARGUERON Jean Claude
Tel Aviv University	École Pratique des Hautes Études
CLINE Eric H.	MEYER Jan-Waalke
George Washington University	Johann-Wolfgang Goethe University, Frankfurt/Main
KALLAS Nathalie	de MIROSCHEDJI Pierre
FU Berlin	Centre National de la Recherche Scientifique
KERTAI David	(UMR 7041, Nanterre)
The Hebrew University of Jerusalem	Peter PFÄLZNER, University of Tübingen
KILLEBREW Ann E.	PINNOCK Frances
Pennsylvania State University	La Sapienza University of Rome
KNOBLAUCH Christian	SALVINI Mirjo
OREA – Institute for Oriental and European Archae-	Firenze
ology	TAMM Alexander
KULAKOGLU Fikri	Goethe-Universität Frankfurt am Main
Ankara University	TURRI Luigi
LACOVARA Peter	University of Verona
Emory University, Atlanta	YASUR-LANDAU Assaf
LEDERMAN Zvi	University of Haifa
Tel Aviv University	

#### **Preliminary Program**

	Lecturer	Title	
Part	I: Palaces in Mesopotamia, Ka	anesh and in Urartu	
1	Jean-Claude Margueron	Les grandes phases de l'évolution des palais en Mésopotamie, de l'époque d'Uruk à la fin de l'empire néo-babylonien	
2	Federico Buccellati	Perception in Palatial Architecture: The Case of the AP Palace at Urkesh	
3	David Kertai	The Thronerooms of Assyria	
4	Fikri Kulakoglu	Early Bronze Age Administrative and Religious Buildings at Kültepe-Kanesh	
5	Mirjo Salvini	Urartaean Palaces	
6	Discussion		
Part	II: Palaces in the Northern Lev	vant	
7	Nathalie Kallas	The Levantine Middle Bronze Palatial Architecture: local Traditions and Foreign Influences	
8	Paolo Matthiae The Architectural Culture of the Middle Bronze Palaces of Ebla in a Historical Perspective		
9	Frances Pinnock	The Royal Palace G of Early Syrian Ebla: Structure and Functions	
10	Peter Pfälzner The Royal Palace of Qatna and the modules of palatial architecture in 2 <sup>nd</sup> millennium BC Syria		
11	Alexander Tamm	Squatting the Palace – The Transformation of Tell Chuera Palace F and the Decline of the 3 <sup>rd</sup> Millennium Settlement	
12	Jan-Waalke Meyer	Some reflections concerning the Syrian temple architecture of the 3 <sup>rd</sup> millen- nium BC	
13	Luigi Turri	The Lower City Palace of Qatna. The decentralization of power in a Late Bronze Age Syrian city	
14	Discussion		
Part	III: Palaces in the Southern Le	vant	
15	Shlomo Bunimovitz / Zvi Lederman	A 14 <sup>th</sup> Century BCE Canaanite Palace at Tel Beth-Shemesh, Israel	
16	Pierre de Miroschedji	Early Bronze Age Palaces In The Southern Levant As Seen From Tel Yarmuth	
17	Ann Killebrew	Iron Age Royal Residencies and Palaces in the Levant	
18	Eric Cline / Assaf Yasur-Landau	Renewed Excavations at Tel Kabri: 2005–2015	
19	Assaf Yasur-Landau / Eric Cline	Canaanite Palatial Economy at the Tel Kabri Palace	
21	Discussion		
Part	IV: Egyptian Palaces		
21	Mohamed Abdel-Maksoud	A Palace in the New Kingdom Fortress Tell Hebwa in the Sinai (Zaru East).	
22	Manfred Bietak	The Palace of the Middle Kingdom at Bubastis, Eastern Nile Delta	
23	Peter Lacovara	Development and Evolution of the Royal Residential Palace [in Egypt]	
24	Christian Knoblauch	The "Campaign Palace of Senwosret III" on Uronarti (Northern Sudan)	
25	Final discussion		

Abstracts (in alphabetical order):

#### The Palace of the Middle Kingdom at Bubastis, Eastern Nile Delta Manfred BIETAK

The Palace of the Middle Kingdom at the town of Bubastis was excavated by the Egyptian Antiquities Service and the University of Zagazig 1964–1985. This work has now been pursued by the Austrian Academy

in cooperation with the University of Würzburg under the direction of the speaker. The palace has been uncovered thus far by two thirds and is one of the biggest of Egypt with about 17,000m<sup>2</sup>. It is preceded by an older MK palace and underneath is a cemetery of the late Old Kingdom covering a still older palace of the Old Kingdom. It was thought to be the palace of the governors of Bubastis but its sheer size and the find of a lintel with a representation of king Amenemhat in his Jubilee festival suggests that this complex also served royal presence in this important region of Egypt.

Indeed recent excavations and architectural studies revealed that the palace has two parts, a local administrative one with an entrance in the south towards the town and a royal one in the north with its entrance to the north. Both spheres meet from both sides in the middle in a monumental 6-column hall surrounded with walls more than 5 m strong. Symbolic are also the doorways. The southern doorway leading to the local administration has only a one-bladed door. The northern doorway is not preserved but the door opening from the northern part to the central hall was equipped with a double bladed door which seems to be reserved besides temples and shrines for royal buildings, in this case for the part of the palace reserved for the king. Opening to the north it follows primeval Egyptian concepts of the king, sitting in the centre of the universe within the unseen central axis around which the circumpolar stars circulate on the nocturnal sky.

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#### Perception in Palatial Architecture: the Case of the AP Palace at Urkesh Federico BUCCELLATI

Space, as an expression of the architectural volumes expressed in Mesopotamian palatial architecture, can seem an abstract, distant concept, visible but not understood, and lacking interaction. These volumes, however, carry a deeper meaning: they conditioned and were affected by the daily life of a civilization which is lost in a remote past. By analyzing the architectural spaces of the AP Palace at Tell Mozan, ancient Urkesh, with a view towards understanding aspects of style and perception, one can go beyond mere 'space' as a volume to the familiarity of 'place' - a deeper recognition and understanding of what a volume contains, beyond the merely spatial. The division of the palace into sectors, along with the use of diverse building materials and the mirrored plan of the service sector are all aspects of the AP Palace which aid in the deeper understanding of the

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#### A 14th Century BCE Canaanite Palace at Tel Beth-Shemesh, Israel

Shlomo BUNIMOVITZ / Zvi LEDERMAN

In 2008–2009 a large building, apparently a palace due to its size, architecture and special finds, was discovered at Tel Beth-Shemesh, Israel. Completely sealed by heavy destruction debris, the palace was dated to mid-14<sup>th</sup> century BCE both on archaeological/historical and <sup>14</sup>C grounds. The rarity of palaces from this period in excavated major city-states of the Southern Levant highlights the importance of the palace from Beth-Shemesh. Indeed, the unique assemblage of finds exposed in the palace attests to surprising cultural connections beyond the region, especially with Egypt and the Aegean. Furthermore it raises intriguing questions concerning the role of the palace within the local and the "global" Eastern Mediterranean political and cultural webs. The end of the palace of Beth-Shemesh, which was burnt to the ground and never recovered, may testify to the grim effect of the unruly para-social groups that according to Egyptian sources roamed the Southern Levant in the 14<sup>th</sup> century BCE. More sectors of the palace, still waiting to reveal their secrets, are planned to be exposed in the forthcoming seasons of excavation.

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#### Renewed Excavations at Tel Kabri: 2005–2015

Eric H. CLINE / Assaf YASUR-LANDAU

The 34 ha Middle Bronze Age site of Tel Kabri is located in the western Galilee of modern-day Israel, five kilometers east of Nahariya. At its peak, during the MB II period, it was the center of a polity covering at

least the area between Rosh Haniqra to the north and the northern border of the Akko polity to the south and spreading east up to the western slopes of the Meiron Massif. It has been the focus of two large scale expeditions: the first led by Aaron Kempinski and Wolf-Dietrich Niemeier from 1986 to 1993 and the second led by Eric H. Cline and Assaf Yasur-Landau from 2005 to the present. Our recent excavations have shown that the palace, which was estimated by the original excavators to have been 2000 sq m, in fact covered up to 6000 sq m and may be among the largest found from this period in the southern Levant. This paper will present the history of the palace from its founding in late MB I to its demise in late MBII. It will present new data regarding the date of the founding of the palace (phase DW VI) as well as concerning the architectural development of the palace during the various stages of expansion during MBII (phases DW V-IV). Special attention will be given to the wall and floor paintings found by the previous expedition as well as our own. Finally, we shall describe the latest finds from the last phase of the palace, phase DW III. These include the so-called "Orthostat Building," which is thought to have been used for feasting and other ceremonial activities, and a series of storage rooms from which nearly 120 pithoi and storage jars have been retrieved, of which 40 have been tested to date by Organic Residue Analysis and appear to have held wine.

#### The Levantine Middle Bronze Age palatial architecture: local traditions and foreign influences Nathalie KALLAS

This presentation explores how the inter-cultural connections and influences can manifest in the architecture of the Levantine Middle Bronze Age palaces. The Middle Bronze Age is a period of great inter-regional and international exchange involving the different cultures of the ancient Near East. This interaction which was accompanied by a technological and ideological transfer resulted often in the use of a combination of various traditions in local material culture, which, in turn, led to novel entwined trends. This interchange is quite evident in the Levant, due to its strategic location at the crossroads of several ancient civilizations namely Egypt, Mesopotamia, Anatolia, and the Aegean. The aim is to identify not only the different foreign influences but also the surviving local traditions that shaped the Levantine palaces by focusing on specific case-studies and examining their architecture, precisely the building material, building techniques and layouts.

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#### The Thronerooms of Assyria

#### David KERTAI

Assyrian royal palaces form a special corpus within the history of Mesopotamian architecture, providing unique solutions to the ways in which the royal court was organised. (Though, arguably, this uniqueness is artificially enhanced by our lack of knowledge on the contemporaneous palaces of Babylonia and Elam.) Within the Assyrian palaces, the Throneroom Suite is one of the most characteristic spaces. On a basic level, the suite is merely an elaborate reception suite providing places for the king to sit and welcome guests. But its monumentality, placement within the palace and combination of rooms makes it unique. The suite was present throughout the Late Assyrian period, making it one the most durable types of spaces in Assyria. The suite was moreover not a royal prerogative, but could be found in all elite residences. This paper will discuss the nature of the Assyrian Throneroom Suite and discuss the ways in which it allowed the Assyrian elite to entertain and receive guests.

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#### Iron Age Royal Residencies and Palaces in the Levant

Ann E. KILLEBREW

This paper explores the plan, function and architectural lineage of Iron Age structures often identified as palaces. An examination of the evidence reveals the multi-functional use and regional character of early these first millennium BCE Levantine monumental residencies. The implications of these findings are considered within their broader Iron Age context.

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#### The "Campaign Palace of Senwosret III" on Uronarti (Northern Sudan) Christian KNOBLAUCH

The subject of this paper is a formal mudbrick building of palatial proportions that was excavated by Noel F. Wheeler of the Boston Museum Fine Art (BMFA)/Harvard archaeological mission on the Island of Uronarti (modern Sudan) in 1929/30 and that now lies beneath the waters of Lake Nasser. This structure is generally believed to have served as temporary accommodation for the Middle Kingdom Pharaoh Senwosret III during military campaigns in Nubia. As such it may have constituted just one element of a complex system of Egyptian border fortifications and settlements that were built at the Semna Cataract during the reign of this king. This paper reexamines the evidence for this structure, its date and its relationship to both natural and cultural landscapes utilizing unpublished excavation diaries (BMFA), unpublished aerial photographs (Sudan Archaeological Survey-1960s) as well as new topographic and archaeological data collected during the first three seasons of the Uronarti Regional Archaeological Project.

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#### Early Bronze Age Administrative and Religious Buildings at Kültepe-Kanesh

Fikri KULAKOGLU

The excavations conducted for more than 70 years at Kültepe revealed that complex forms of sociopolitical organization and institutions had been established earlier in the Early Bronze Age, not during the Assyrian Trading Colony Period as previously thought.

Since 2009, the second-term excavations have primarily focused on the Mound, reconfirming that a series of monumental structures adorned Kaneš and that an international trade network was already established during the EBA. Three large buildings constructed on top of one another, each destroyed by fire represent the last phase of the EBA at Kültepe. During the Özgüç era excavations, monumental structures which were destroyed by severe fire were unearthed in Level 12 and 11b. These monumental buildings show a plan hitherto unknown in Central Anatolia. Beside their unique plans and size, alabaster idols and figurines, depata, and imported Cilician pottery recovered during excavation indicates they had been used for religious purposes.

A building complex that was revealed during the second-term excavations at the mound of Kültepe is the largest compound discovered so far in Anatolia. Excavations have yielded two asymmetrical sections of this compound connected with short walls and small rooms along a narrow hallway. Taking the size of the compound into account, it is likely to have been used for official or administrative purposes.

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#### Development and Evolution of the Royal Residential Palace [in Egypt]

Peter LACOVARA

Of the few surviving royal palaces from ancient Egypt, the largest percentage date to the New Kingdom residential royal palace. This periois far richer than any other in the remains of actual palaces, modepalaces and representations of royal palaces. Although all of them vary somewhat, we can see that the ancient Egyptians subscribed to a basic architectural formula for palatial structures and that there was a fairly strict conception of the essential elements of the royal palace in the New Kingdom. These components can also bee seen in private houses, temples and in earlier palaces. This paper will trace their development and examine the adaptations made for each of the New Kingdom residences to accommodate their particular functions.

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#### A Palace in the New Kingdom Fortress Tell Hebwa II on the Sinai (Zaru East)

Mohamed Ab del-MAKSOUD

During the last years excavations by the Supreme Council of Antiquities revealed within a formidable fortress opposite of Ancient Zaru, on the eastern bank of the Ancient Egyptian frontier canal a palace, fit

for a king. The evidence strongly suggests that the king had a facility for his presence at the north-eastern frontier-land of Egypt. One could consider it a campaign residence or a residence for the pharaoh to supervise manoeuvres of his army, stationed at the eastern frontier of Egypt. Such royal residencies in borderland can be found also already during the Middle Kingdom in Lower Nubia.

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### Les grandes phases de l'évolution des palais en Mésopotamie, de l'époque d'Uruk à la fin de l'empire néo-babylonien

#### Jean Claude MARGUERON

Avec la naissance des villes au IV<sup>e</sup> millénaire apparaissent de grands monuments où l'on reconnaît habituellement des palais parce qu'ils dominent largement les premières cités : à l'époque d'Uruk, ils se présentent sous la forme de plans tripartites hypertrophiés où il paraît difficile de trouver des traits spécifiquement régaliens. Cependant, avec l'essor des cités et des royaumes au III<sup>e</sup> millénaire, l'apparition et le développement de bâtiments complexes caractérisés par des traits architecturaux spécifiques témoignent sans doute de l'essor d'un pouvoir royal, même si des signes régaliens ne s'imposent pas encore. C'est avec la III<sup>e</sup> Dynastie d'Ur qu'une salle, issue de la morphologie du temple et désormais appelée « salle du trône », apparaît comme donnant sûrement la qualité palatiale à ce bâtiment : elle caractérise toute une série d'édifices jusqu'au début du troisième tiers du second millénaire. Avec les grands empires assyrien et babylonien, les palais se dotent d'une nouvelle salle, tout aussi majestueuse, mais dont la fonction apparaît plus comme la porte des appartements du roi s'ouvrant vers son peuple que comme une salle cultuelle.

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#### The Architectural Culture of the Middle Bronze Palaces of Ebla in a Historical Perspective Paolo MATTHIAE

In Old Syrian Ebla of Middle Bronze I–II palaces were located in the Citadel, as well as in the Lower Town, at the foot of the Citadel. The Royal Palace, in Areas E, and F of the Acropolis, probably stretched over a large part of the Citadel, as some data from the 2009, and 2010 campaigns lead to infer. On the other hand, as regards the Lower Town, only the Northern Palace in Area P, and the Western Palace in Area Q had functions related with kingship, whereas the Southern Palace, at the south foot of the Acropolis, was a public government building, but probably not related directly with kingship. The Royal Citadel was excavated only for a limited extension, due to the deep stratigraphic superimpositions; yet, it was possible to ascertain that it, and most of all that the three palatial buildings in the Lower Town, featured quite coherent, and constant original planimetric criteria. These peculiar characteristics of the architectural plans, concerning the spatial concept, as well as the functions, allow to reconstruct some basic aspect at least of the architectural culture of the Old Syrian world in the one of the most important political centres of the region, between 2000, and 1600 BC.

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### Some reflections concerning the syrian temple architecture of the $3^{\rm rd}$ millennium BC Jan-Waalke ${\sf MEYER}$

The site of Tell Chuera became known at the beginning of the 20th century, when Max Freiherr von Oppenheim visited it in the course of his extensive travels in the steppe of northern Syria. He was the first to draw attention to a number of tells that all had several attributes in common. They consist of an Upper Town encompassed by a wall, and a Lower Town, which almost encircles the Upper Town and which is surrounded by mound-like elevations. This shape gave those tells the name of "cup and saucer" (in German "Kranzhügel"). As far as extent is concerned, Tell Chuera is with ca. 80 hectares the largest of those settlements.

The German excavations started in 1958 and up to now 33 seasons of field work have been executed. Especially, the geophysical measurings, which had covered the excavation area almost completely, demonstrated that the latest city of period Tell Chuera ID (from ca. 2450 BC) must have been based upon comprehensive planning.

Elements of urban planning are, among others:

- a central axis laid down throughout the Upper Town, along which the major public buildings were erected
- the so called Holy District with Steinbau I, II, III und IV
- the square in the centre of the Upper Town and the adjoining temple complex S ("Steinbau VI"),
- a palace the radial access network,
- the division into Upper and Lower Town with their respective fortification.

Here, we are dealing with the palace. Based on the from Alexander Tamm recently presented plan of the Early Bronze Age palace in Tell Chuera, in thia lecture selected parameter functional comparable complexes in Syria (e.g. Ebla, Tell Bi'a, Tell Beydar, Tell Brak, Tell Mozan, Mari) will be presented. Belonging to the used parameters, the topografical situation of the buildings in the sites, the building material, especially the use of stone, as well as the internal structure – courtyard systems, reception rooms – will be examined. The objective is to prove, if regional determined construction forms are visible.

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### Early Bronze Age Palaces in The Southern Levant as Seen From Tel Yarmuth

Pierre de MIROSCHEDJI

Palace B1 at Tel Yarmuth numbers among the oldest palatial buildings discovered in the Near East, and is also one of the few which have been extensively excavated. The 6000 sq.m. building complex may have included nearly 40 rooms and has yielded more than 150 storage vessels in situ, most of them in storerooms. The paper will examine several aspects among the manyfold contributions of this discovery.

- In the present state of knowledge, the building technologies used in the construction of Palace B1 are so far attested in the southern Levant only in Yarmuth and, to a lesser extent, in Megiddo. Their sophistication bear testimony to the activities of a group of specialized professional builders, i.e., architects stricto sensu, and imply therefore the existence of a palatial building tradition whose geographical extent as well as its connection with contemporary Egypt remain to be established.
- By comparison with other public buildings, palatial or not, in the southern Levant and the ancient Near East at large, the architectural characteristics of Palace B1 contribute to an archaeological definition of archaic palaces in general, as distinct from "patrician" households.
- Hence, it provides information on the process of emergence of palaces in the southern Levant and the evolution of monumental architecture. The latter existed for temples and fortifications since the end of the fourth millennium, but real palaces emerged only in the Early Bronze Age III as a result of profound socio-political changes. In the case of Yarmuth, the existence of two superimposed palaces (B2 and B1) document the appearance and consolidation of a newly established royal power.
- Finally, the variety and spatial distribution of the finds within Palace B1 raise important questions concerning the nature of administrative practices performed within the framework of a pre-literate society.

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## The Royal Palace of Qatna and the modules of palatial architecture in $2^{\tt nd}$ millennium BC Syria <code>Peter PFÄLZNER</code>

The Royal palace of Qatna is the focal point of a set of official buildings in the central part of the city which can be understood as an urban landscape of power. Interestingly, these palatial buildings follow different schemes, which are an indication of different functions. The architectural concept of the royal palace will be investigated in order to identify facets of the negotiation of power through architecture in 2<sup>nd</sup> mill. BC Syria.

To understand the architectural concept of the royal palace of Qatna it is necessary to reflect its building history. There was a two-step planning process. The original Plan, or *Urplan*, was not fully carried out, but substituted by a modified plan during the construction process. Both building phases can be clearly dated to the Middle Bronze Age II period. The plan modification efficiently changed the layout of the central part of the palace. A new concept for the representation of power can be derived from this architectural change. It becomes furthermore evident that the architectural layout of the palace was composed of different modules which could be exchanged.

Through a formal comparison with other contemporary palaces it will be demonstrated that the various architectural modules in the Royal Palace of Qatna were related to different traditions of palatial architecture. There are connections to both the architectural traditions of Syria and Mesopotamia in the Middle Bronze Age. This leads to a general discussion and re-evaluation of the concepts of palatial architecture in Middle Bronze Age Syria in view of the Western Syrian tradition, as visible at Ebla and Ala-lakh, and the Northern Mesopotamian tradition, as visible at Mari, Tuttul and other sites. The typological position of the palace of Qatna within these concepts is especially highlighted

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#### The Royal Palace G of Early Syrian Ebla: Structure and Functions

Frances PINNOCK

Excavations in the Royal Palace G started in 1973, and went on until the interruption of the excavations at Ebla, for the tragic Syrian crisis, in 2010. The structure of the building was presented in several occasions. In this occasion, the attempt will be made to present the state of the art of our knowledge about the functions of the individual sectors of the building, taking into account the chronological articulation of the building activities, the distribution of artifacts and pottery, and what can be inferred from the written evidence.

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#### Urartu. Palace, Temple, Fortress and Town in Texts and Achaeology

Mirjo SALVINI

The most important and visible Urartian sites in their cuneiform foundation inscriptions are defined with the term É.GAL, the sumerian word for "Palace". The corresponding name in the Urartian language is not attested. Both the textual evidence and the results of archaeological excavations show that its meaning and nature is different from the Mesopotamian written tradition. The oldest foundation inscription of an É.GAL in Urartu is that of King Išpuini (ca 830–810 BC) on huge limes stones (CTU A 2-6A-C) in the site of Aşaği Anzaf Kale (the Lower Anzaf Fortress), ca 10 km east of Van city. The geographic location of this rectangular structure (68 x 90 mt), on the old and modern road to Iran, allows to infer that its function was that of a fortress, a military garrison for the defense of the capital Tušpa against attacks from the East. The excavation of the site by O. Belli discovered inside the strong fortress walls an inner courtyard, which was probably occupied by a military detachment. Such a structure can be defined as a kind of "castrum". Inside the site were found cylindrical stones (so called column bases) bearing inscriptions on the construction of a building identified with the simple sumerogramm É. This association of text and archaeological record proofs the opposition between É.GAL "fortress" and another typology of building (È), located within the Fort.

The same situation is know in the other fortress built by Išpuini near the modern village of Zivistan, dominating the road to Edremit some 15 km south of Van.

The most significant identification of an È occurs in the stone inscription Argištis I CTU A 8-24, which is *in situ*, inserted in the wall of a building in Arin-berd identified by the text with the Haldi temple: "To Haldi, the lord, this house (È) Argišti, the son of Minua, erected. …". CTU A 8-18 celebrates temple and fortress, in the following order : "To Haldi, the lord, this house (È) Argišti, the son of Minua, erected. A fortress in perfection (he built)". I called (it) Erbuni (lit.: I gave the name Erbuni), (as) protection of the country of Biainili (and) for intimidation of ennemy countries …". The two buildings are coordinated from

the perspective of a unitary city planning. A group of stelae from Karahan dating from the coregency of Išpuini and Minua (CTU A 2-9A,B; CTU A 5-28-30) celebrate the construction in two towns of different buildings, among which a new É.GAL and an URU, moreover a wineyard and orchards and further buildings defined by unknown names. Commemorative inscriptions generally reflect a strange hierarchy of importance of individual buildings.

The sumerogramm É.GAL defines not only the Urartian fortresses built by the kings but also strongholds in conquered lands; cf. Sarduri II's rock inscription on the Euphrates bank (CTU A 9-4). He destroys 14 É.GAL and sets on fire 80 URU; it seems clear that the first ones are fortresses and the second ones are rural villages. Many É.GALs are individually quoted by name with the determinative URU. They were fortified towns or castles.

Rusa I (ca 730–713 BC) built in the Sevan region two É.GALs, named Haldiei URU and IM-i URU; the second foundation is the huge fortress of Tsovinar (rock inscription CTU A 10-2), is namely a fortified town, not a royal palace..

One of the clearest identifications of the term É.GAL and an archaeological site is that of Ayanis, north of Van, a foundation of Rusa II, the most important Urartian king of the 7th century BC. This É.GAL has as its central building the *susi* temple dedicated to Haldi. The whole sourrounding sacred area is probably defined È.BARA, "sanctuary". The gate inscription (CTU A 12-9) of the fortress celebrate the construction of an È.BARA and a É.GAL, whose name will be "Rusahinili in front of mount Eiduru". On the basis of this survey we have to conclude that the use of sumerogramms by the Urartian scribes offers a semantic "Verschiebung". The king's palace like in contemporary Assyria (e.g. É.GAL KN1 son of KN2 great king ...) does not exist in Urartu. The É.GAL in Urartu is a royal foundation but not properly a royal palace ; it is a whole fortress with temple and storehouses and other commodities, surrounded by mighty walls. No throne room has been identified since now in Urartian sites. Outside there is a non fortified Outer Town (e.g. in Karmir-blur and Ayanis), inhabited by normal workers.

It is proved that the Urartian King built palaces-fortresses throughout the Kingdom and moved from a town or fortress to another with his traveling throne. Rusa II is the best example. Cf. the bulla CTU CB Ba-6 from Bastam: "Year in which King Rusa carried the throne at Rusahinili in front of Mount Qilbani" (*i.e.* Toprakkale).

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#### Squatting the Palace – The Transformation of Tell Chuera Palace F and the Decline of the 3<sup>rd</sup> Millennium Settlement

Alexander TAMM

With an area of 3000 square meters Palace F is the biggest building excavated so far in the Early Bronze Age Settlement of Tell Chuera. It thus stands not only for the domination of the elites over the local population, but also for the role the city might have played in the politics of the wider region.

Around 2300 BC the building was left open to decay in the context of an overall urban crisis in the whole of Northern Syria. While the elites completely vanished, others took their chances, inhabited the monumental building and transformed it to fit their own needs. Already at an early stage of reuse, numerous doorways were blocked by the new residents in order to divide rows of rooms from each other and create smaller housing units. Other areas, like the audience courtyard, were not touched and seem to still have been respected for the meaning they once had.

In later times the building was completely transformed. While some parts were looted in search for building materials, especially the large stone slabs in the audience courtyard, other areas were built up with small houses and pottery workshops. Nothing was left from the once representational character. After a period of 100 years the monumental building was deserted together with the rest of the 3<sup>rd</sup> millennium settlement.

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#### The Lower City Palace of Qatna. The decentralization of power in a Late Bronze Age Syrian city Luigi TURRI

Between the end of the MBA and the beginning of the LBA, Qatna went through a phase of urban and functional reorganization. The excavation of the so-called 'Lower City Palace' has shown that, accordingly to this process, the political and economic power was decentralized in more than one structure. The building displays the typical II millennium Syrian palace architecture: in its elongated structure, it features doorways decorated with basalt slabs, provided with columns, and red plastered walls. Despite it was emptied when it was dismissed, luxury imported goods, many durable animal material inlays – once decorating walls and pieces of furniture – and administrative documents (seals, sealings and cuneiform tablets) were found in it. Altogether, the excavation data clearly show that representative, administrative, bureaucratic, productive and residential activities were carried out not only in the Royal Palace but even in the Lower City Palace.

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#### Canaanite palatial economy at the Tel Kabri palace

Assaf YASUR-LANDAU / Eric H. CLINE

Despite the fact that the Middle Bronze Age palace at Tel Kabri was vast (perhaps up to 6000 sq m), functioned as the center of a polity, had access to Cypriot imports, and could commission wall and floor paintings in an Aegean style, there are no signs of literate administration, or even administrative use of sealings. In order to understand the economic structure headed by the Middle Bronze Age palace at Tel Kabri, we have examined patterns of animal husbandry, textile production, pottery manufacture and consumption, and storage within the palace. These have all provided evidence that the palace may have behaved economically much more like an estate than a redistributive center. Our working hypothesis is that the palace had some aspects of an Oikos economy, i.e., that it functioned as a large household richer and more populous than other households of the period, but with minimal involvement in the economy of the private sector. Another characteristic of the palatial economy is seen in a spatial analysis of activities in the excavated part of the palace. Many of the spaces were dedicated to the consumption of food and drink, conducted in different settings and intended for a variety of occasions, from exclusive feasts for the few or many, to mundane eating by large groups within the palace. It is possible that much of the staple wealth of the polity was consumed within the palace itself, in many different events, each with its political significance. We would suggest that the picture from Kabri might be different in several aspects from contemporary polities in Syria, such as Alalakh and Ebla, as well as possibly its neighbor to the east, Tel Hazor, which had literate administrations and redistributive economies during this same period.

#### Chronology, Economy, and Ecology in the Late Antique and Islamic Periods: A View from the Village of Zivaret Tepe, **Diyarbakır Province, Turkey**



Recent salvage archaeology in the upper Tigris River valley in southeastern Turkey has produced important results from both the Late Antique (4th-6th century) and Middle Islamic (12th-15th century) periods. During the Late Antique period, the upper Tigris region straddled a border between the Byzantine and the Sassanian empires. Likewise, the area was under the control of different rulers during the Middle Islamic period when the Artugid dynasty constituted a main political power, but Seljuk, Ayyubid, and Mongol dynasts also played important roles. Later, the region was under Mamluk and Aq Qoyunlu dynastic control until annexation by the Ottomans. Previous scholarly attention has focused on the large urban administrative centers of Hasankeyf, Diyarbakır, and Mardin. This workshop adds to and complements existing historical scholarship and urban archaeology by focusing on the recently-completed excavations of Ziyaret Tepe, a small agrarian village settlement with Late Antique and Middle Islamic levels. Workshop papers focus on three topics: ceramics/chronology, economy, and human ecology. Recently analyzed primary datasets (ceramic, paleobotanical, zooarchaeological) will be presented, allowing a diachronic analysis of rural life and an exploration of the nature of agriculture, craft production, and trade in from a village perspective.

#### Organizers:

Timothy MATNEY Department of Anthropology and Classical Studies University of Akron OH 44325 Akron Ohio. USA matney@uakron.edu

Valentina VEZZOLI Dipartimento di Studi sull'Asia e sull'A- Dipartimento di Studi Umanistici frica Mediterranea Università Ca'Foscari Venezia Dorsoduro 3462 30123 Venezia, Italy vvezzoli@hotmail.com

Raffaella PAPPALARDO Università degli Studi di Napoli Federico II Via Porta di Massa. 1 80133 Napoli, Italy raffaellapappalardo@libero.it

#### Participants (in alphabetical order):

FOLEY Amanda	McCORRISTON Joy
Ohio State University	Ohio State University
foley.289@osu.edu	mccorriston.1@osu.edu
BERTHON Rèmi	PROCTOR Lucas
Sorbonne Universités, Muséum national d'Histoire	University of Connecticut
naturelle, CNRS	lucas.proctor@uconn.edu
rberthon@mnhn.fr	WAGNER Marcin
GREENFIELD Tina	Institute of Archaeology, University of Warsaw
University of Manitoba/University of Cambridge	m.wagner@uw.edu.pl
tlgreenfield@gmail.com	

#### List of Lectures:

	Lecturer	Title
1	Timothy Matney	Opening Remarks: Upper Tigris River Valley Settlement Patterns and Village Architecture in the Late Antique and Middle Islamic Periods
Part I: The Late Antique Period		
2	Raffaella Pappalardo	New Data from the Upper Tigris Region in Late Antiquity: the Ceramic Evidence from Ziyaret Tepe
3	Lucas Proctor	Farming the Upper Tigris Valley in Late Antiquity: Archaeobotanical Evi- dence from Ziyaret Tepe, Turkey
4	Tina Greenfield	Examining diet and economy during the Late Antique period at Ziyaret Tepe, Turkey, through zooarchaeological remains

5	Discussant		
BREAI	BREAK		
Part II	Part II: Physical anthropology and mortuary practise		
10	Valentina Vezzoli	The ceramic assemblage of the Middle Islamic period (12 <sup>th</sup> -15 <sup>th</sup> cent.) from Ziyaret Tepe: typology, chronology and regional context	
11	Joy McCorriston	Archaeobotanical Perspectives on Middle Islamic Agricultural Practice at Ziyaret Tepe, Turkey	
12	Rèmi Berthon / Tina Green- field	Exploitation of animal resources in Middle Islamic northern Mesopotamia and Anatolia: the example of Ziyaret Tepe and its regional context	
13	Marcin Wagner	Glass finds from Ziyaret Tepe: production and trade in the Late Antique and Middle Islamic periods	
14	Discussant		

#### Abstracts:

# Opening Remarks: Upper Tigris River Valley Settlement Patterns and Village Architecture in the Late Antique and Middle Islamic Periods"

Timothy MATNEY

Archaeological salvage excavations conducted along the Tigris River in southeastern Turkey since the early 1990s in advance of the construction of the Ilisu Dam have generated an enormous new dataset pertaining to the human occupation of the river valley from the Neolithic to the present. One of the most extensively explored sites is Ziyaret Tepe. While reaching urban proportions in the 9<sup>th</sup> century BC, the site was only partly occupied in the Late Antique and Middle Islamic periods, when architectural and artifactual remains suggest that Ziyaret Tepe was a small agrarian village. Good preservation of the Middle Islamic remains allows us to present an example of village architecture located midway between the urban centers of Hasankeyf and Diyarbakır. Smaller areas of Late Antique architecture have been uncovered, but they still provide good primary contexts for evaluating the economy, ecology, and trade relations in the upper Tigris River valley. This paper sets out the spatial context for the workshop contributions, briefly discusses comparative data from the dozens of other excavations within the Ilisu salvage area, and lays out the principal research questions being addressed in this workshop.

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#### New Data from the Upper Tigris Region in Late Antiquity: the Ceramic Evidence from Ziyaret Tepe Raffaella PAPPALARDO

During the last excavation seasons remarkable remains dated to the Late Antique period (4<sup>th</sup>–6<sup>th</sup> century AD) were found in the Ziyaret Tepe lower town (Areas T, U, and J). This phase seems to be completely absent in the settlement on the citadel, thus showing a hiatus on the citadel from the end of the 4<sup>th</sup> century BC to the Islamic period occupation (12<sup>th</sup>–15<sup>th</sup> century AD). Although a small portion of the Late Antique settlement is known so far, nevertheless this is analysed in connection to the related ceramic assemblages, thus constituting one of the few Late Antique settlements studied from a ceramic point of view among Upper Tigris sites. This paper presents a detailed study of the ceramic assemblage from the lower town Late Antique settlement. Chrono-typological, technical, and decorative aspects of the ceramics will be analysed. We will provide comparisons and differences with contemporary material from Upper Tigris settlements and neighbouring regions. Such analysis will be inserted into a broader historical frame concerning this region, pinpointing economic aspects and relationships between major and small urban centers in the Roman/Byzantine and Persian border areas.

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#### Farming the Upper Tigris Valley in Late Antiquity: Archaeobotanical Evidence from Ziyaret Tepe, Turkey

#### Lucas PROCTOR

Extensive archaeobotanical research has been conducted on earlier time periods in southeastern Turkey, however, comparatively few studies have focused their attention on archaeobotanical remains from the Late Antique period. This paper presents the results of an analysis of twenty-nine macrobotanical samples dating to the Late Antique occupation levels at Ziyaret Tepe. Though this dataset is relatively small, it nonetheless provides some important insights into the plant use and agro-pastoral practices along the Upper Tigris River during this period. The examined samples, from pits and surfaces, most probably represent the remains of domestic debris and the use of dung fuel in hearths. Free-threshing varieties of wheat were likely the major staple crop produced and consumed during this occupation, though barley is also present. The ratio of wheat to barley contrasts sharply with the results from earlier occupations at Ziyaret Tepe, where barley was strongly favored. Non-cereal crops, including several types of pulses, fig, and grape, were also present in small quantities, though the overall diversity of cultivars is low for a Late Antique assemblage. While this may simply be the result of formation processes, it may hint at the socio-economic realities of a small village on the Tigris frontier.

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#### Examining diet and economy during the Late Antique period at Ziyaret Tepe, Turkey, through zooarchaeological remains"

#### Tina GREENFIELD

Zooarchaeological remains dated to the Late Antique period (4<sup>th</sup>-6<sup>th</sup> century AD) were recently uncovered during excavations at Ziyaret Tepe, a multi-tiered archaeological site located on the Tigris River in southeastern Turkey. This region is believed to be the most eastern frontier of the Roman Empire during this period. In particular, what might be interpreted as a private villa was discovered in the southern section of the lower town from this period, and is thought to be the remains of a domestic occupation area. Information related to the use, consumption, and management of domestic livestock during the Late Antique period in this region is largely unknown. This paper demonstrates how recently-acquired zooarchaeological data are used to inform on the economic implications for living on the edge of the eastern empire. They can also provide a glimpse of the daily life of the inhabitants. Species consumption patterns, the management of animals across the landscape, and social aspects of the use of animals and their by-products will be discussed within Ziyaret Tepe and also the larger framework of the Late Antique period in southeastern Turkey.

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# The ceramic assemblage of the Middle Islamic period (12<sup>th</sup>–15<sup>th</sup> cent.) from Ziyaret Tepe: typology, chronology and regional context

Valentina VEZZOLI

Rare ceramic assemblages dated to the Islamic period from the Upper Tigris Valley have been published so far with the exception of those from urban contexts (e.g. Hasankeyf) and irregular evidence from regional surveys. Thus, the framework of ceramic production, consumption, and distribution in the region during the Islamic period remains poorly known. This paper aims at presenting, first of all, the chrono-typology of the ceramic assemblage of the Islamic period from the archaeological excavations carried out at Ziyaret Tepe. The main goal of this study is to provide a solid chronological reference for this material, identifying changes, evolution, and continuity of the ceramic groups. The ceramic assemblage from Ziyaret Tepe attests that the site was occupied by a village, connected agricultural and herding activities from the 12<sup>th</sup> until the 15<sup>th</sup>, and probably early 16<sup>th</sup> century. Secondly, this paper will place the ceramic assemblage of the Islamic period from Ziyaret Tepe within its regional context, comparing this material with archaeological data published from the urban site of Hasankeyf, which was also a production cen-

tre, and with data from regional surveys carried out in southeastern Turkey, offering new elements for the reconstruction of the Middle Islamic history of this region.

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#### Archaeobotanical Perspectives on Middle Islamic Agricultural Practice at Ziyaret Tepe, Turkey Joy MCCORRISTON / Amanda FOLEY

There are few carpological studies from the Middle Islamic Near East, yet established methods offer important insights into economic and social history of this period. European researchers have long recognized the potential of archaeobotanical studies not just to supplement history but as a tool to balance existing textual narrative. Ziyaret Tepe has the remains not of castles, battles, and kings but of a rural hamlet occupied during the 14<sup>th</sup> century and situated between several larger urban centers. This study uses charred plant remains to examine the economic life of Ziyaret Tepe and its environmental context before passing to broader regional questions of socio-economy and social history. The authors consider samples from seventy excavated contexts, discuss taphonomic considerations, and explore diversity. An array of agricultural crops, including cereals and legumes, attests to a winter and spring growth; there are also remains of summer crops that may in this region imply irrigation. The presence of fruit and vine seeds hints at long-term investment and land tenure. A quantitative assessment of the effect of sample context on taxonomic inventory is an important first step in the conclusive studies showing that agricultural occurred very close to the site and that harvests were locally processed.

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## Exploitation of animal resources in Middle Islamic northern Mesopotamia and Anatolia: the example of Ziyaret Tepe and its regional context

Rèmi BERTHON / Tina GREENFIELD

Zooarchaeological analyses of Middle Islamic faunal assemblages are still rare in the Near East in general and in northern Mesopotamia in particular. Medieval subsistence strategies are more often considered through the study of textual evidence. However, these documents are mainly of administrative nature and cannot reflect the actual exploitation of faunal resources in one settlement in particular. The archaeological excavations carried out at the site of Ziyaret Tepe in the province of Diyarbakır (southeastern Turkey), yielded a rather large medieval faunal assemblage from two areas which had probably different functions. We will present the results of the zooarchaeological analyses we performed, focusing on intra-site and inter-site comparison of patterns of animal exploitation. Our results will help to understand the status of the settlement, the subsistence strategies, and also the cultural identity of the settlers.

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#### Glass finds from Ziyaret Tepe: production and trade in the Late Antique and Middle Islamic periods Marcin WAGNER

Glass artifacts constitute a numerically small percentage of finds from Ziyaret Tepe, but they represent an important category of material for addressing issues of production and trade. Most of the glass finds from Ziyaret Tepe are dated to the Late Antique and Middle Islamic periods, while only a small percentage of the whole collection are beads and fragments of core-formed vessels from the Late Assyrian times (9<sup>th</sup> to 7<sup>th</sup> centuries BC). Among the collected glass finds from the Late Antique and Middle Islamic periods were numerous beads, fragments of many kinds of bracelets, and pieces of glass vessels, such as tableware (i.e. bowls, sprinklers, and beakers), goblets, and lamps with three round handles around the rim, etc. The majority of the recovered vessels were created almost entirely through the process of free-blowing. The vessels were manufactured mostly from glass in its natural colours, such as bluishgreen, light green, and light blue. Similar glass finds occur on Anatolian sites, along the northern coast of the Black Sea, and throughout the Near East.

# The Connectd Island: Cyprus from the Neolithic to the End of the Bronze Age



Whilst Cyprus appears to be integrated with the surrounding region at certain points during its prehistory, at other times the distinctiveness of Cypriot material and social choices place the island at odds with developments in the Near East and the Levant. Recent research suggests that traditional dichotomies of periods of isolation or integration may be too simplistic. It is perhaps unlikely that Cyprus, at such close proximity to several sea-going societies, could have ever maintained full isolation and we therefore need to interrogate the material record at a deeper level and to explore factors motivating linkages between the societies of the region. This workshop seeks to bring together Cypriot and mainland archaeologists to create a dialogue for understanding the role that Cyprus played as a node in a connected Eastern Mediterranean world, from the early PPN sphere to later Bronze Age commodity production and trade. The workshop will feature presentations discussing these connections; including landscapes and settlements, resources, material culture and shared practices. Participants are also invited to explore technological and social connections, which may be evidenced in the household or mortuary arena, or novel uses of imported ideas and goods at both ends of exchange systems.

The workshop is organised as a collaboration between the Cyprus American Archaeological Research Institute (CAARI) and the Council for British Research in the Levant (CBRL).

#### Organizers:

Lindy CREWE School of Arts, Languages and Cultures The University of Manchester Manchester M13 9PL, UK lindy.crewe@manchester.ac.uk	Andrew McCARTHY Cyprus American Archaeological Research Institute, Nicosia Department School of History, Classics and Archaeology, University of Edinburgh Teviot Place Edinburgh EH8 9AG UK director@caari.org.cy; A.P.McCarthy@ed.ac.uk
Participants (in alphabetical order):	
BOLGER Diane	McCARTNEY Carole
University of Edinburgh	University of Cyprus
Diane.Bolger@ed.ac.uk	carolemcc@cytanet.com.cy
BOURKE Stephen	ÖZYAR Aslı
University of Sydney	Bogazici University, Istanbul
stephen.bourke@sydney.edu.au	ozyar@boun.edu.tr
CHARAF Hanan	ÜNLÜ Elif
Université Paris 1	Bogazici University, Istanbul
CLARKE Joanne	elif.unlu@boun.edu.tr
University of East Anglia	VILAIN Sarah
joanne.clarke@uea.ac.uk	Université de Strasbourg
HEIN Irmgard	s.vilain@ifporient.org
Institut für Ägyptologie, University of Vienna	
Irmgard.hein@univie.ac.at	

#### List of Lectures:

	Lecturer	Title
Part I: Neolithic connections		
1	Carole McCartney	Ayia Varvara Asprokremmos a PPNA Neolithic taskscape on Cyprus – implications of focused resource exploitation for understanding early connections between Cyprus and the mainland

2	Andrew McCarthy	Decapitation cult in Cyprus: evidence from Neolithic Prasteio-Mesorotsos in a Near Eastern context
3	Joanne Clarke	Was Cyprus on the periphery of the Levant in the Yarmoukian? How new excavations in the Jordanian badia may shed light on insularity
4	Discussion	
Part I	I: 3 <sup>rd</sup> Millennium con	nections (Chair: L. Crewe)
5	Diane Bolger	Identities and materialities in prehistoric Cyprus: evidence of foreign cultural interaction before the Bronze Age
6	Stephen Bourke	The Revised Mainland Radiocarbon Record and the Earliest Cypriot Bronze Age: Some Questions that Remain to be Answered
7	Elif Ünlü	Interaction between Cilicia and Cyprus during the 3 <sup>rd</sup> Millennium BCE Based on Ceramic Analysis from Tarsus-Gözlükule
8	Discussion	
Part I	II: 2 <sup>nd</sup> —1 <sup>st</sup> Millennium	connections (Chair: A. McCarthy)
9	Lindy Crewe	Settlement structure and international connections at the transition to the Late Bronze Age on Cyprus
10	Hanan Charaf	Representation and distribution of Cypriot pottery in Lebanon during the Middle Bronze Age
11	Sarah Vilain	The MBA and LBA Cypriote pottery in the Northern Levant
12	Irmgard Hein	The frame of Late Bronze Age Cyprus and Egypt
13	Edgar Peltenburg	Luxury without diplomacy: Egyptian faience in Late Bronze Age Cyprus, c. 1400–1200 BC
14	Aslı Özyar	Cypriot Themes in Cilician Imagery: The Citadel of Azatiwataya//Karatepe-Aslantaş
15	Discussion	

#### Abstracts:

# Ayia Varvara Asprokremmos a PPNA Neolithic taskscape on Cyprus – implications of focused resource exploitation for understanding early connections between Cyprus and the mainland. Carole McCARTNEY

Excavations at the late PPNA site of Ayia Varvara Asprokremmos in central Cyprus provide new evidence of resource exploitation framed within a taskscape that is clearly different from the expected Neolithic 'village' of Mediterranean islands. Site size, organization and the episodic character of excavated contexts combine to illustrate a non-permanent temporality that was focused more on exploiting resources from the surrounding environment than on owning it. Evidence of substantial craft work using chipped stone and ground stone technologies appear linked less to cultivation than serving other craft activities. One of the most unusual features of the Asprokremmos taskscape is found in the collection and processing of considerable amounts of mineral pigments that are present in a wide array of colours. The practices used in the working of these pigments not only intensify throughout the site's history of occupation, but increasingly shape the site's contexts and features. These characteristics of the Asprokremmos site prompt discussions of the roots of specialisation and exchange of valued commodities such as ochre, while the current lack of compelling evidence for the intensive use of pigments elsewhere in Cyprus elicits the consideration of mainland Neolithic traders and/or tradesmen seeking to exploit the island for reasons not associated with farming.

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#### Decapitation cult in Cyprus: evidence from Neolithic Prasteio-Mesorotsos in a Near Eastern context Andrew McCARTHY

The Neolithic practice of decapitation and special treatment of human heads and skulls was widespread in the Near East. Recent excavations at the site of Prasteio-Mesorotsos in the west of Cyprus have uncovered evidence that situates Cyprus in a larger world of Neolithic mortuary and cult activities. An extraordinary pit complex dating to several phases of the Aceramic and Late Neolithic period was discovered to be used to deposit special items for discard, including valued objects, tools and containers, all broken. In one of these pits was discovered the remains of a human head that suggest not only special treatment for this body part, but also treatment of it as an object of special significance. This new evidence will be presented in light of the better-known head cults on the mainland Near East, Anatolia and the Mediterranean.

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#### Was Cyprus on the periphery of the Levant in the Yarmoukian? How new excavations in the Jordanian badia may shed light on insularity Joanne CLARKE

Cyprus was colonised during the PPNB by groups of people from the Northern Levant, yet, at some point in the 7<sup>th</sup> millennium BC evidence for contact with the mainland disappears from the Cypriot archaeological record. The process appears to be a gradual one, so that by the time Khirokitia comes into being similarities with the mainland had been waning for hundreds of years, as attested to by the latest phase at Shillourokambos. This process is often interpreted as a result of geographical isolation and cultural insularity, but to what extent was Cyprus different from mainland marginal regions? New excavations being undertaken in the Jordanian badia may shed light on the differences we observe in the archaeological record of Cyprus and the mainland. Here, the 'peripheral' badia appears to share more in common with a distant island culture than it does with the 'core' Yarmoukian regions.

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### Identities and materialities in prehistoric Cyprus: evidence of foreign cultural interaction before the Bronze Age

#### Diane BOLGER

Following its initial colonisation by migratory groups from the Levant during the early Neolithic, Cyprus became isolated from developments in the surrounding mainland and began to follow its own developmental course. It has generally been argued that the island remained isolated until the middle of the 3<sup>rd</sup> millennium when new forms of material culture and migratory communities from Anatolia triggered significant social and economic change. But a growing body of evidence attesting to interaction between Cyprus and the mainland during the first half of the 3rd millennium challenges this view. Inter-site and inter-regional differences in the reception of foreign cultural elements during the Late Chalcolithic period presents a more complex picture, and suggests that interactions between Cypriots and their eastern Mediterranean neighbours, as well as the emergence in Cyprus of new forms of social identity, were often the result of deliberate choices by local communities to engage, or not to engage, with the outside world. These issues will be explored by considering three categories of material evidence – figurines, ceramics and metallurgy.

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#### The Revised Mainland Radiocarbon Record and the Earliest Cypriot Bronze Age: Some Questions that Remain to be Answered

#### Stephen BOURKE

The orthodox view of the chronology of the initial phases of the Cypriot Early Bronze Age sees a roughly sequential ordering of Late Chalcolithic, Philia and Early Cypriot I-II assemblage groups. A limited radiocarbon database, sourced to reliable Cypriot contexts, would seem to support this orthodoxy. However, the equally orthodox view of the foreign parallels for such materials as the Vasilia tomb assemblages, the still-controversial Vounous jars and a variety of ceramic, faience and weaponry forms can no longer be maintained, given the sharp upward re-dating of mainland assemblages consequent on recent radiometric analyses. Either the long accepted foreign parallels for Cypriot items are incorrect, or the apparently secure relative and absolute chronology of the initial phases of the Cypriot Early Bronze Age needs re-visiting. After outlining the changed chronological circumstances on the mainland and highlighting the key 'pegs' in the orthodox chronological scheme (both Cypriot and mainland), a case will be advanced for a possible re-ordering of the Cypriot relative sequences. It will be suggested that this re-ordering fits far better with key alterations in mainland trade patterns, especially those that impact on copper supply, faience production and elite weaponry distributions.

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# Interaction between Cilicia and Cyprus during the 3<sup>rd</sup> Millennium BCE Based on Ceramic Analysis from Tarsus-Gözlükule

#### Elif ÜNLÜ

The Early Bronze Age spanning the 3<sup>rd</sup> millennium BCE is a period of changing economic and social circumstances in the eastern Mediterranean region. The settlement of Tarsus-Gözlükule in Cilicia gains importance during this period because of its rich agricultural hinterland and its strategic location on already established trade routes since the Neolithic. The material record of Tarsus-Gözlükule shows intensifying contacts with the neighboring regions throughout the course of the millennium. Being in close proximity, Cilicia's interaction with Cyprus goes back to the initial settlement of the island, but becomes stronger during the Early Bronze Age. This leads to fundamental transformations in agricultural and metallurgical technologies on the island. The Early Bronze Age levels of Tarsus-Gözlükule confirms that Cypriot goods reached the settlement throughout the period based on ceramic analysis of the earlier Goldman excavations on the site. These will be considered within the greater Early Bronze Age ceramic repertoire of the settlement to understand the level of material dialogue these interactions prompted on the mainland, as well as on the island.

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### Settlement structure and international connections at the transition to the Late Bronze Age on Cyprus Lindy CREWE

From the later Middle Cypriot period (c. 1850–1650 BC), we see the first Bronze Age development of a number of specialised architectural complexes, encompassing the buildings often referred to as fortifications in the literature, as well as specialised industrial complexes at several sites. Some of these structures exhibit Levantine affinities, as well as evidence for imported goods and ideas, others appear to be indigenous developments. This appears to indicate that the impact of international contacts on Cypriot society at this time was extensive and resulted in a diverse set of responses by local communities. Incorporating evidence from a new large-scale industrial complex dating to this period at Kissonerga-Skalia in the west of the island, this paper explores the relationship between external contacts attested in traded raw materials and finished products and the internal changes seen in Cypriot settlement structure and architectural styles.

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### Representation and distribution of Cypriot pottery in Lebanon during the Middle Bronze Age Hanan CHARAF

Evidence of commerce between cities of ancient Lebanon and the island of Cyprus started during the Middle Bronze Age, a period known for its extensive political and trade relations. Recent research on Middle Bronze Age pottery from Lebanon demonstrated that a substantial amount of Cypriot ceramics was imported to this country. They all fall within the normal range of Cypriot imports to the coastal Levant. Unsurprisingly, the coastal sites yielded the largest amounts of these imports. Two urban sites in particular, Sidon in the South and Tell Arqa (ancient Irqata) in the North, yielded hundreds of pots of different stylistic types. An overview of the contexts in which this ceramic was found shows a predominance of funeral and cultic functions, while the stylistic distribution of Cypriot styles demonstrates a clear preference for White Pendent III–IV Pendent Line Style and White Painted IV–VI Cross Line Style jugs in funeral contexts, and for White Painted V Handmade Ware in domestic loci. The geographical

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distribution of styles indicates that while coastal sites offered a rich array of Middle Cypriot styles, inland sites limited themselves to a few of these, usually within the White Painted repertoire. Further east, sites excavated or surveyed in the Bekaa Valley such as Kamed el-Loz, Tell Hizzin or Tell el-Ghassil are very poor in Middle Cypriot pottery. This paper proposes an overview of the different styles of Cypriot ceramics imported to Lebanon during the Middle Bronze Age with an emphasis on their geographical and intrasite distribution in order to better gauge the true representation of these types of ceramics in Lebanon within the regional networks.

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#### The MBA and LBA Cypriote pottery in the Northern Levant

#### Sarah VILAIN

The Cypriot pottery discovered in the Northern Levant shows an uninterrupted trade between the two regions from MB IIB to the end of LBA. The presence of Cypriot pottery is identified on sixty-nine archaeological sites, mostly located on the Mediterranean coast. The fabrics and shapes imported reflect the regionalism that marked Cyprus during MC III and LC IA. Indeed, despite occasional similarities with the ceramic assemblages from sites located on the southern coast of Cyprus, the Cypriot pottery from the Northern Levant is dominated by production from the east of the island, up until the end of the Late Bronze Age. The success of Cypriot pottery is attested by attempts at local imitation and the creation of new types influenced by Cypriot shapes and styles. The sustainability of exchanges between Eastern Cyprus and the Northern Levant implies a continuity of contacts leading to mutual emulation. These interactions lead to societal changes, as these populations are exposed to new ideas, new techniques and new objects of material culture. The Cypriot pottery discovered in the Northern Levant facilitates understanding of the complex links established between societies of the Eastern Mediterranean in the 2<sup>nd</sup> millennium BC.

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#### The frame of Late Bronze Age Cyprus and Egypt

Irmgard HEIN

The Late Bronze Age expansion of Cypriot goods to the Near East and into the Egyptian area has been systematically reinvestigated in the last decades. In the focus were several pottery wares, such as the Lustrous wares, the White Slip wares, the Bichrome Wheel-made Ware and also Base Ring. Some of the Cypriot wares have been subject to very detailed investigations, mainly from the point of their chronological connectivity, as it was the defined focus of the SCIEM 2000 project.

An overall picture of the appearance of the LC wares in Egypt is however necessary to obtain an update of former results. Studies on the find material from 'Ezbet Helmi in the Eastern Nile Delta have in particular expanded the available information and more facets in the cultural layout are offered. By this contribution it is intended to recollect and to interpret mainly the Late Cypriot materials found in Egypt, and to place the evidence of the material into a wider frame of cultural interpretation.

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#### Cypriot Themes in Cilician Imagery: The Citadel of Azatiwataya/Karatepe-Aslantaş Aslı ÖZYAR

In the wake of the collapse of interconnected Late Bronze Age territorial polities and the demise of their ruling dynasties (ca. 1200 BCE) local elites of varied linguistic pedigree began to reassemble the fragmented political landscape of southeastern Anatolia and northwestern Syria into contiguous citystates. Competing with each other, these emerging new leaders commissioned sculptures and inscriptions on monuments in places of prime visibility and significance. Their patronage created a new venue to commemorate and delineate claims on ancestry, territory and trade routes. The impact of such "speaking" monuments reverberated around the region, at times transpiring farther afield. In this paper the material remains of one particular monument will be explored particularly with respect to Cypriote

#### Workshops 26 April

connections. In the gates of the Iron Age Cilician citadel of Azatiwataya/Karatepe-Aslantaş (ca. 700 BC) the patron of the fortress commisioned a visual public program composed of imagery alongside a bilingual narrative in Luwian and Phoenician. Traditionally, this program has been interpreted within the Neo-Hittite framework with attempts to account for Phoenician elements. Recent research suggests also Aegean affinities in subject matter including Greek readings of names and words in the bilingual text. The images furthermore include distinct iconographic elements that point towards Cyprus, which this paper will examine and explore.

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#### Exhibiting an Imaginative Materiality, Showing a Genealogical Nature: the Composite Artefacts in the Ancient Near East



Composite artefacts are by their nature a different way of interacting with the world, and an interface between the material sphere where raw materials are physically transformed and assembled, and the cognitive sphere where different areas of the brain are involved in performing hierarchical constructive actions (attention, memory, and imagination). They, in fact, possess a transformative agency in relation to their creation and use. In the ANE, the evidence for the widespread use of multi-component objects (statuary and small artefacts, jewelry, vases, furniture pieces, etc.) is undisputable. This workshop is a first occasion to reflect on composite objects as aggregates of associations and relationships. They can be interpreted as: 1) nodes in a web of connections between creativity, mental planning, and making, in this way permitting to explore the complexity of their manufacture (from the choise and availability of materials to the assemblage of contrasting material properties and colours); 2) the sum of fragments serving for the whole (each element possessing a singular material nature, unique origin and context); 3) 'indexes' items, offering a means to enchain relations between peoples, things and places; 4) 'ecological' objects, subject to an extended phase of use, as well as repair and recycling and because changes in environments can act by inviting novel interactions with new materials and technologies.

#### Organizer:

Silvana DI PAOLO Istituto di Studi sul Mediterraneo Antico-CNR Via Salaria km 29,300 Via della Neve 00015 Monterotondo, Italy silvana.dipaolo@isma.cnr.it

#### Participants (in alphabetical order):

CIFARELLI Megan Manhattanville College, New York megan.cifarelli@mville.edu	PAULE Anna Independent Researcher, Altenberg / Linz, Austria annapaule.archaeo@hotmail.com	
DI LUDOVICO Alessandro	PINNOCK Frances	
'Sapienza' University of Rome	'Sapienza' University of Rome	
alediludo@gmail.com	frances.pinnock@uniroma1.it	
EVANS Jean M.	ROSSBERGER Elisa	
Oriental Institute of Chicago	Ludwig-Maximilians-Universität, München	
jmevans@uchicago.edu	Elisa.Rossberger@vaa.fak12.uni-muenchen.de	
FONTAN Elisabeth	WATANABE Chikako E.	
Musée du Louvre, Paris	Osaka Gakuin University	
elisabeth.fontan@gmail.com	chikako@ogu.ac.jp	

#### List of Lectures/Program:

	Lecturer	Title		
9.30	Silvana Di Paolo	Introduction to the Workshop		
Part I: Imagined and Mental Planned				
9.40	Alessandro di Ludovico	A Composite Look at the Composite Wall Decorations in the Early History of Mesopotamia		
10.10	Elisabeth Fontan	Ivories of the Early First Millennium BC.		
10.40	Silvana di Paolo	Before and Beyond the Reality of Things: The Creative Power of Imagination		
11.00 Coffee Break				

Part II: Symbols in Action					
11.30	Chikako E. Watanabe	Composite Animals in Mesopotamia as Cultural Symbols			
12.00	Elisa Rossberger	Shining, Contrasting, Enchanting: Composite Objects at the Royal Tomb of Qatna			
12.30	Megan Cifarelli	Enchained Relations over Geographical and Gendered Space: Multi-Component Personal Ornaments at Hasanlu			
13.00 Lunch					
Part III: Sum of Fragments, Sum of Worlds					
14.00	Jean M. Evans	Composing the Figural Tradition in Early Dynastic Mesopotamia			
14.30	Frances Pinnock	Polymaterism in Early Syrian Ebla			
15.00	Anna Paule	Near Eastern Materials, Near Eastern Techniques, Near Eastern Inspiration: Ex- amples of Colourful Jewellery from Prehistoric, Protohistoric and Archaic Cyprus			
15.30	Final Discussion				

#### Abstracts (in alphabetical order):

## Enchained relations over Geographical and Gendered Space: Multi-Component Personal Ornaments at Hasanlu

Megan CIFARELLI

Hasanlu, in Northwestern Iran, is best known for its catastrophic destruction ca. 800 BCE, perhaps at the hands of the Urartian army. Excavations of the site revealed more than 100 burials from Hasanlu Period IVb, the period leading up to the destruction. Within this cemetery, five adult women are decorated with multicomponent personal ornaments consisting of repurposed copper alloy or iron armor scales with attached garment pins, stone, shell and composite beads, and copper alloy tubes of various lengths. If worn on the body during life, these objects would have been both visually and aurally conspicuous. These beads and tubes are typical of the material culture of Hasanlu, used in mortuary jewelry from the Middle Bronze Age forward. The armor scales, however, are found only in these few female burials at Hasanlu. In the broader ancient Near East, scale armor is associated with male bodies in both military and mortuary contexts, and these particular scales are characteristic of regions to Hasanlu's north (Transcaucasia) and east (the Caspian littoral). This paper proposes that the creation of composite objects from these parts – fragments of masculine armor, components of personal adornment, and sound making tubes – enchained individuals across gendered and geographical boundaries.

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#### A Composite Look at the Composite Wall Decorations in the Early History of Mesopotamia Alessandro DI LUDOVICO

The many complex processes that characterised the Urban Revolution have been variously outlined, but the mental and cultural steps that were combined with the relevant phenomena are rarely discussed, and above all elusive is their connection with the archaeological evidence.

On the other hand, some types of wall decoration techniques that are attested in Lower Mesopotamia in the early historic period can play an important role in revealing the occurrence of remarkable cultural transformation processes. Paying a special attention to the logics and technical organization of some findings, like the Uruk wall cone mosaics, features can be located that serve as clues to explain the development of certain types of mental paths which have a quite direct relation with the dawn of the historical ages.

The central effort of this contribution is dedicated to accomplish these tasks through methodological tools that are provided not just by neurosciences, but also (and more meaningfully) by old and new reflections in the fields of cultural studies.

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### Before and Beyond the Reality of Things: The Creative Power of Imagination Silvana DI PAOLO

In the Ancient Near East, evidence for the use of composite artefacts (statuary and other votive objects, jewellery, furniture pieces, etc.) is indisputable. A fascinating aspect is represented by the creative act. The complexity of their manufacture is, in fact, the result of imagination, mental planning and manufacture: from the choice and/or availability of raw materials (often characterized by contrasting properties and colours), to their assemblage, and their final form. The role of imagination, a world where thought and images form an intellectual concept of what is not present in the 'externalized reality', as well as the combination of 'ideas' in unexpected and unconventional ways seem particularly important in the processes of manufacture.

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#### Composing the Figural Tradition in Early Dynastic Mesopotamia

#### Jean M. EVANS

The Mesopotamian figural tradition, whether human or animal, was built up from different component parts. In the Early Dynastic temple sculpture tradition, the frequent appearance of drilled holes at the neck, underside of the skirt, and other locations on the core stone indicates that the building up of the body from composite parts was a part of the original construction of the sculpture and a fundamental means of assembly. This composite approach to making an image is attested, moreover, regardless of whether the raw materials of composition were prestige metals and stones imported into Mesopotamia or more locally available materials. The composite method for constructing figural imagery led, in the temple tradition, to understanding body parts independently. Therefore, a category of artefact comprised of body parts, which has received little attention, will also be considered here. Ultimately, the contribution argues that the Mesopotamian figural tradition in stone is itself comprised of a larger corpus of human imagery, much of which lies exterior to the aesthetic agenda of traditional art historical inquiry.

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### Near Eastern Materials, Near Eastern Techniques, Near Eastern Inspiration: Examples of Colourful Jewellery from Prehistoric, Protohistoric and Archaic Cyprus Anna PAULE

Cypriot goldsmithing traditions from the prehistoric, protohistoric and Archaic periods are best known for funerary jewellery which was cut out of thin sheets of gold. In addition to these sheet gold ornaments, more elaborate jewellery items have been found that were not exclusively used in burial contexts, but also could be worn in real life. Among these items, the jewellery composed of various materials is most interesting and offers a new perspective for investigations. This applies particularly to dress pins, finger rings and necklaces which were assembled from different parts consisting of two or more distinct raw materials, such as metals, semi-precious stone, vitreous materials, and ivory or related animal materials. Despite this wide range of materials employed in jewellery production, the colourful materials were not used to create naturalistic representations of flora and fauna. Instead, the focus was on the application of rare materials and techniques in order to reflect the wealth and social status of the owner. This includes the enjoyment of expressive colour combinations and patterns, an objective which was best achieved through the application of the cloisonné technique. Fine examples of colourful jewellery from ancient Cyprus are dress pins with beads or ivory heads (Enkomi), a large gold pectoral made using the cloisonné technique (Enkomi), finger rings and pendants of similar style (Enkomi, Kouklia-Evreti) as well as necklaces combining gold beads and elements of semi-precious stone (Salamis, Arsos). However, the influences of Near Eastern goldsmithing traditions as well as the first application of the cloisonné technique and enamel in the Eastern Mediterranean still need clarification. Using Near Eastern jewellery for comparisons, the present paper aims to contribute to further investigations in this research area.

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#### Polymaterism in Early Syrian Ebla

#### Frances PINNOCK

The important buildings of Early Syrian Ebla – the Royal Palace G, the Red Temple, the Temple of the Rock, and Building P4 – yielded a large amount of artifacts. Though they are frequently in a very bad state of preservation, due to pillages, it was possible to reconstruct a number of them. Another reason for their being so fragmentary, and scattered, was certainly the large use of different materials, often on a wooden base, for their production, a use so extended that it may be considered an Eblaic specificity. The evidence will be presented in general lines, and an attempt will be made at understanding the reasons for the lavish use of different materials: was it merely related to their availability, or was it imbued of symbolic meanings too?

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#### Shining, Contrasting, Enchanting: Composite Objects at the Royal Tomb of Qatna Elisa ROSSBERGER

Composite objects often appear to contain an element of enchantment. They captivate the viewer by combining visual and semantic qualities of distinct material elements in an act of artistic virtuosity. The rich inventories of the tombs discovered underneath the Royal Palace of Qatna offer an opportunity to revalue principles, particularities and changes in the use of materials, colors and decorative forms in the artistic production of second millennium Syria. Combining the archaeological evidence with contemporary textual information helps us to understand the peculiar social function of the artefacts' composite nature.

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#### **Composite Animals in Mesopotamia as Cultural Symbols**

Chikako E. WATANABE

Composite animals are the product of our thought processes. They are nonexistent in reality but their occurrence is observed universally. They exhibit a body structure that consists of multiple body parts taken from different animals of reality in order to form a single creature. This paper focuses on composite animals that occur in Mesopotamian iconography in the first millennium B.C. to examine those associated with deities and apotropaic functions. It is aimed to clarify the mechanism of creating such imaginary animals which act as visual symbols to convey values and notions. Their function and particular symbolic aspects are determined by the context in which they occur.

#### The Central / Western Anatolian Farming Frontier



As evidence accumulates that Neolithic expansion in Eurasia involved standstills, punctuated by rapid advances, this workshop will explore the hypothesis that the apparent lag in Neolithic occupation between Central and Western Anatolia reflected an actual frontier, where farming expansion was halted. Radiometric measurements indicate that the advent of food production in Western Anatolia was delayed by up to 2,000 calibrated years – potentially making it the longest standstill in Neolithic history. While ongoing excavations in the Konya Plain and Cappadocia have traced back the origins of sedentary farming in Central Anatolia to the second half of the 9<sup>th</sup> millennium BC cal., not a single farming site in Western Anatolia has produced consistent evidence for pre-c. 7,000 BC cal. occupation, despite intensive research strategies over the last 20 years targeting early human occupation.

Although admitting that the issue under consideration is heavily dependent on the state of research, and that future discoveries may alter the current chronological imbalance, the recent completion or near-completion of several major archaeological digs in Western Anatolia provide, in our opinion, an excellent opportunity for a round-up and the production of the first comprehensive synthesis on this subject. In this respect, another originality of the workshop is that it will bring together researchers working in Central and Western Anatolia, where research has traditionally proceeded in isolation.

#### Organizers:

Maxime BRAMI Austrian Academy of Sciences OREA – Institute for Oriental and European Archaeology Dr. Ignaz Seipel-Platz 2 1010 Vienna, Austria maxime.brami@oeaw.ac.at Barbara HOREJS Austrian Academy of Sciences OREA – Institute for Oriental and European Archaeology Dr. Ignaz Seipel-Platz 2 1010 Vienna, Austria barbara.horejs@oeaw.ac.at

#### Participants (in alphabetical order):

BAIRD Douglas				
University of Liverpool				
D.Baird@liverpool.ac.uk				
BAR-YOSEF Ofer				
Harvard University				
obaryos@fas.harvard.edu				
BURGER Joachim				
Joahnnes Gutenberg-University Mainz				
jburger@uni-mainz.de				
ÇAKIRLAR Canan				
University of Groningen				
c.cakirlar@rug.nl				
CARTER Tristan				
McMaster University				
stringy@mcmaster.ca				
ÇILINGIROĞLU Çiler				
Ege University				
cilingirogluciler@hotmail.com				
GERRITSEN Fokke				
Netherlands Institute in Turkey				
fa.gerritsen@nit-istanbul.org				

GUILAINE Jean		
Collège de France		
jguilaine@wanadoo.fr		
KOTSAKIS Kostas		
Aristotle University of Thessaloniki		
kotsakis@hist.auth.gr		
MARCINIAK Arkadiusz		
Adam Mickiewicz University in Poznań		
arekmar@amu.edu.pl		
ÖZBAL Rana		
Koç University		
rozbal@ku.edu.tr		
ÖZDOĞAN Mehmet		
Istanbul University		
c.mozdo@gmail.com		
ROSENSTOCK Eva		
Freie Universität Berlin		
e.rosenstock@fu-berlin.de		
Discussant:		
SHENNAN Stephen		
Institute of Archaeology University College London		
s.shennan@ucl.ac.uk		

#### List of Lectures/Program:

	Lecturer	Title				
Part I: Introduction and definition of the subject						
1	Maxime Brami	From the origins of agriculture to the spread of the Neolithic: Contextualizing the Central/Western Anatolian farming frontier				
2	Canan Çakırlar	When pigs fly: Understanding subsistence diversity at the Anatolian-European frontier				
3	Joachim Burger <i>et al</i>	Early farmers across Europe descended directly from Neolithic populations in northern Greece and northwestern Turkey				
Part II	Part II: Internal dynamics of the Central Anatolian Neolithic					
4	Douglas Baird	Farming frontiers? A view from Central Anatolia. 9th–8th Millennia BC cal.				
5	Arkadiusz Marciniak	Internal dynamics in the Late Neolithic at Çatalhöyük and the region				
6	Eva Rosenstock	Dot by dot: Phase-mapping Neolithic sites in Anatolia				
Part II	Part III: Neolithic Expansion in Western Anatolia					
7	Tristan Carter	New Mesolithic discoveries in Crete and the Cyclades: What significance for our understanding of neolithisation processes in the insular Aegean?				
8	Barbara Horejs	Migrating social memories: Arrival and adaptation of Neolithic in Aegean Anatolia				
9	Fokke Gerritsen / Rana Özbal	Neolithic Barcin Höyük in regional perspective				
10	Kostas Kotsakis	Neolithic goes West. Concepts and models on the neolithization of the Aegean				
Part I	/: Round Table					
Three Questions addressed to:		Ofer Bar-Yosef				
		Çiler Çilingiroğlu				
illiee	Questions addressed [0]	Rana Özbal				
		Mehmet Özdoğan				
Jean G	Guilaine	written contribution				

#### Abstracts (in alphabetical order):

### Farming frontiers? A view from Central Anatolia. 9th-8th Millennia BC cal.

Douglas BAIRD

The question and utility of the concept of a 'Neolithic frontier' is discussed in relation to the evidence of the late Gacial and early Holocene of central Anatolia, considering Epipapalaeolithic and 9<sup>th</sup>/8<sup>th</sup> millennia cal BC evidence. The implications of this evidence from central Anatolia for our conceptualisation of the spread of farming to the west of central Anatolia are also considered.

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## From the origins of agriculture to the spread of the Neolithic: contextualising the Central/Western Anatolian farming frontier

#### Maxime BRAMI

Ongoing excavations in Anatolia, far from bridging the gap between Southwest Asian and European chronologies, have brought to light an even longer lag in the uptake of food production than earlier anticipated, with no evidence of settled farming in Aegean Anatolia before c. 6,700/6,600 BC cal. What lies behind the differences in the dating between this region and the Central Anatolian Plateau? Have we somehow failed to detect early farming sites in Western Anatolia? This paper will briefly present the conspectus of the research in Anatolia and highlight some of the scenarios that may have contributed the remarkable time lag observed in the record. One possibility is that farming was initially held off

on the Central Anatolian Plateau, where it developed more or less independently, before eventually spreading 'fully-fledged' to the west. Questions subsist regarding the comparatively late adoption of pigs on the Central Anatolian Plateau and the nature of farmer-forager interactions during the 9<sup>th</sup>, 8<sup>th</sup> and 7<sup>th</sup> millennia BC cal.

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## Early farmers across Europe descended directly from Neolithic populations in northern Greece and northwestern Turkey

Joachim BURGER (presenting) / Zuzana HOFMANOVÁ<sup>1†</sup> / Susanne KREUTZER<sup>1†</sup> / Garrett HELLEN-THAL<sup>2</sup> / Christian SELL<sup>1</sup> / Yoan DIEKMANN<sup>2</sup> / David DÍEZ-DEL-MOLINO<sup>2</sup> / Lucy VAN DORP<sup>2</sup> / Saioa LÓPEZ<sup>2</sup> / Athanasios KOUSATHANAS<sup>3,4</sup> / Vivian LINK<sup>3,4</sup> / Karola KIRSANOW<sup>1</sup> / Lara M. CASSIDY<sup>5</sup> / Rui MARTINIANO<sup>5</sup> / Melanie STROBEL<sup>1</sup> / Amelie SCHEU<sup>1,5</sup> / Kostas KOTSAKIS<sup>6</sup> / Paul HALSTEAD<sup>7</sup> / Sevi TRIANTAPHYLLOU<sup>6</sup> / Nina KYPARISSI-APOSTOLIKA<sup>8</sup> / Dushanka-Christina UREM-KOTSOU<sup>9</sup> / Christina ZIOTA<sup>10</sup> / Fotini ADAKTYLOU<sup>11</sup> / Shyamalika GOPALAN<sup>12</sup> / Dean M. BOBO<sup>12</sup> / Laura WINKELBACH<sup>1</sup> / Jens BLÖCHER<sup>1</sup> / Martina UNTERLÄNDER<sup>1</sup> / Christoph LEUENBERGER<sup>13</sup> / Çiler ÇILINGIROĞLU<sup>14</sup> / Barbara HOREJS<sup>15</sup> / Fokke GERRITSEN<sup>16</sup> / Stephen SHENNAN<sup>17</sup> / Daniel G. BRADLEY<sup>5</sup> / Mathias CURRAT<sup>18</sup> / Krishna R. VEERAMAH<sup>12</sup> / Daniel WEGMANN<sup>3,4</sup> / Mark G. THOMAS<sup>2</sup> / Christina PAPAGEORGOPOU-LOU<sup>19\*</sup>

Recent palaeogenetic data indicate that migration played a major role in the spread of farming into central Europe, with local forager admixture occurring only after agricultural communities became established. However, conspicuous uncertainties remain about the relative roles of migration, cultural diffusion and admixture in the early Neolithisation of southeastern Europe. Here we present palaeogenomic data for Neolithic individuals from northwestern Turkey and northern Greece – spanning the time and region of the earliest spread of farming into Europe. We observe striking genetic similarity between early farmers in both regions, and with Early Neolithic genomes from Hungary, Germany, and Spain, supporting demic colonisation from northwestern Anatolia and northern Greece to the rest of Europe.

These data also indicate low but significant admixture with *in-situ* hunter-gatherers during this early phase of farming spread, prior to its arrival in central Europe. Our study demonstrates a direct genetic link between both Mediterranean and Central European early farmers and those of Greece and Anatolia, extending the European Neolithic migratory chain all the way back to southwestern Asia.

Given their striking genetic similarity, Greek and Turkish Neolithic genomes represent the source population for Europe's earliest farmers equally well.

- + These authors contributed equally to this work
- \* Corresponding author (cpapage@he.duth.gr)
- <sup>1</sup> Palaeogenetics Group, Institute of Anthropology, Johannes Gutenberg University Mainz, 55099 Mainz, Germany.
- <sup>2</sup> Department of Genetics, Evolution and Environment, University College London, London WC1E 6BT, UK.
- <sup>3</sup> Department of Biology, University of Fribourg, 1700 Fribourg, Switzerland.
- <sup>4</sup> Swiss Institute of Bioinformatics, 1015 Lausanne, Switzerland.
- <sup>5</sup> Molecular Population Genetics, Smurfit Institute of Genetics, Trinity College Dublin, Dublin 2, Ireland.
- <sup>6</sup> Aristotle University of Thessaloniki, Faculty of Philosophy, School of History and Archaeology, 54124 Thessaloniki, Greece.
- <sup>7</sup> Department of Archaeology, Northgate House, West Street, Sheffield S1 4ET, UK.
- <sup>8</sup> Honorary Ephor of Antiquities, Hellenic Ministry of Culture & Sports, 106 82 Athens, Greece.
- <sup>9</sup> Department of History and Ethnology, Democritus University of Thrace, 69100 Komotini, Greece.
- <sup>10</sup>Ephorate of Antiquities of Florina, Hellenic Ministry of Culture & Sports, 106 82 Athens, Greece.
- <sup>11</sup> Ephorate of Antiquities of Chalkidiki, Hellenic Ministry of Culture & Sports, 106 82 Athens, Greece.
- <sup>12</sup> Department of Ecology and Evolution, Stony Brook University, Stony Brook, New York, 11794-5245, USA.
- <sup>13</sup> Department of Mathematics, University of Fribourg, 1700 Fribourg, Switzerland.
- <sup>14</sup> Ege University, Faculty of Letters, Department of Protohistory and Near Eastern Archeology, 35100 Bornova, Izmir, Turkey.
- <sup>15</sup> Institute of Oriental and European Archaeology, Austrian Academy of Sciences, 1010 Vienna, Austria.
- <sup>16</sup> Netherlands Institute in Turkey, P.K. 132, Beyoğlu 34433, İstanbul, Turkey.
- <sup>17</sup> Institute of Archaeology, University College London, London WC1H 0PY, UK.
- <sup>18</sup> Department of Genetics & Evolution-Anthropology Unit, University of Geneva, 1211 Geneva, Switzerland.
- <sup>19</sup> Laboratory of Anthropology, Department of History and Ethnology, Democritus University of Thrace, 69100 Komotini, Greece.

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#### When pigs fly: Understanding subsistence diversity at the Anatolian-European frontier Canan ÇAKIRLAR

Generalized discussions of westward Neolithisation use "animal husbandry" as an umbrella term, count "domesticated animals" as a single item in the Neolithic package. In these discussions, foraged animals and foraging behavior of the Neolithic people are mentioned only in passing, again with little in-depth analysis of what their elements and differing features are. Dealings with wild animals are viewed as entirely separate activities from 'farmers' engagements with their herd animals. Based on primary osteo-archaeological, organic residue, radiocarbon and aDNA evidence from ninth to seventh millennium sites in western Anatolia and Bulgaria, and a review of work in Greece, this paper will discuss the trajectories of husbandry and foraging traditions at the Anatolian-European frontier. These will be set against the background of environmental parameters and material-culture groups to discuss whether diversity in subsistence traditions was the underlying key factor behind the apparent 'fault-line' between Anatolia and Europe.

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## New Mesolithic Discoveries in Crete and the Cyclades: What Significance for our Understanding of Neolithisation Processes in the Insular Aegean?

Tristan CARTER

This paper considers Cretan and Cycladic earlier prehistory in a broader Eastern Mediterranean context by discussing new Mesolithic finds from Livari (east Crete) and Stélida (Naxos). The chipped stone assemblages from these sites fit within Kozlowksi and Sampson's Early Holocene Aegean island lithic tradition, broadly comparable to the assemblages from the early 9th millennium cal BC sites of Maroulas on Kythnos in the northern Cyclades, and the Cyclops Cave on Youra in the northern Sporades. Links can also be made with the Franchthi Cave material (lithic Phase VII) from the mainland, while general parallels exist between these Aegean microlithic flake assemblages and those from Cyprus (post 11th - pre / early 9th millennia cal BC). These assemblages are however, quite distinct from contemporary Epi-Palaeolithic / Mesolithic / Pre-Pottery Neolithic material from Anatolia and the Levant, whose assemblages are characterised by blades, geometric microliths, and the microburin technique.

The Livari and Stélida chipped stone can therefore be located within a wider Aegean cultural tradition, distinct from Anatolian and Levantine practices, and contributes to our knowledge of early island use in the Aegean. The data also contributes to the important question of the socio-economic traditions and extra-island connections that were in place prior to the introduction of domesticates into Crete at the end of the 8th millennium BC, and the Cyclades some 2000 years later. Our study suggests that the earliest material from Aceramic Neolithic village at Knossos (Stratum X) can now be understood as reflecting a hybrid lithic tradition that meld indigenous knapping choices with foreign, central Anatolian practices. In contrast, the Mesolithic activity in the Cyclades can best be viewed as a failed colonization, with habitation only truly taking root in the 5th millennium BC, established by migrant farmers who likely part-originated in western Anatolia.

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#### Neolithic Barcin Höyük in Regional Perspective

Fokke GERRITSEN / Rana ÖZBAL

Located in the Yenişehir Valley in the Southern Marmara Region, Barcın Höyük is among the earliest settlements inhabited by farming populations in Northwest Anatolia. Evidence from the earliest levels dating to around 6600 BC onwards suggest that inhabitants were immersed from the very beginning in a fully agricultural and animal herding food economy. This shows a deep awareness and long-time engagement with Neolithic lifestyles, which most likely were brought to this region, either directly or indirectly, from Central Anatolia. Yet, other evidence indicates that Neolithization was an ongoing process in the Barcın community, involving innovations and transformations that found their origin at Barcın itself during the course of its occupation. This paper will present and discuss several lines of evidence to

review how Neolithization at Barcın Höyük can be seen as a complex of processes with both local and regional stimuli.

An inspection of some elements such as the presence of horns and horned skulls associated with architecture, intra-settlement burial grounds, and the existence of red floors may all suggest persistent links with contemporaneous settlements across the Anatolian Plateau and beyond. However, the gradual step by step development of ceramics and associated cooking technologies as well as architectural building techniques at Barcın contradict the preconceptions that the pioneers that first settled at Barcın brought with them a complete and well established Neolithic "package" at their first arrival. Ceramics, though known in the earliest phases of occupation, became part of a daily repertoire and were incorporated in ways that transformed inhabitants' lives only in the ensuing centuries through experimentation and improvement of additives, wall thicknesses and shapes. Likewise, the technique of building wooden frame houses at Barcın Höyük went through several stages of development. Surely, in addition to influences from neighboring settlements and regions, some of the modifications in methods of construction and changes in raw materials come from local resources and locally driven choices.

Migrating social memories: Arrival and adaptation of Neolithic in Aegean Anatolia Barbara HOREJS

Recent studies of the earliest known Neolithic settlements at the central coast of Aegean Anatolia (Ulucak, Cukurici) have revealed developed Neolithic societies from settlement founding onwards. Multiple pathways into the area have been broadly discussed, and suggest that early 7th millennium BC migrations via land and sea routes were most probable. Along with up-to-date innovations, the colonizers came with a package of traditional and well-established concepts. Some of them appear to be valid for dozens of centuries in the core zone before their arrival and adaptation in newly occupied regions. They are visible in aspects of materiality and technology, and may have been embedded in the world view of the PPN core zone. This paper focuses on defining and discussing these potential traditional elements and their transfer to new environments. Possible trajectories will be discussed, based mainly on a modified model of Assman's social-cultural memories. Traditional concepts of former PPN societies might support far-reaching and related identities during its first adoption in the Aegean. A regional identity seems to have been established by creating particular characteristics of Pottery Neolithic culture at the Aegean coast as early as around 6500 BC, and continued for more than half a millennium.

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## Neolithic goes West. Concepts and models on the neolithization of the Aegean Kostas KOTSAKIS

For a long time, theories and models for the westward neolithic expansion were dominated by uniformitarian concepts of the long term. Binford has proposed decades ago that transformation to the Neolithic should not be considered as a singular event, but rather as a process, suggesting that some degree of complexity and fluidity was present. However, the systemic bias of his thought and the scientism prevalent at that time led the ensuing discussion to focus exclusively on cultural and economic associations supporting a narrative of migration as a single event taking place in a linear time framework. Rather than clarifying the concepts involved, the discussion evolved into showing the systemic connections between components considered of main importance, either climate or population density, or a combination of the two.

In this paper I argue that this approach is unsuitable to address the complexity produced by the neolithization process. From a theoretical point of view, the main problem here is that mobility of early farming groups introduces variability, while uniformitarian explanatory concepts have to rely on context-free elements which remain constant. However, to understand the cultural aspects of the phenomenon, covering-law type arguments and context-free elements, like those used in natural sciences, are barely sufficient, despite their apparent comforting stability. On the contrary, archaeology needs to take account of social meaning and context. In variable social contexts things acquire different meanings, a fact that renders comparisons a far more complicated task than what arrows in archaeological maps connecting features which appear to be alike seem to imply. The transformations resulting from movement from context to context bring the reality of everyday practices forestage, and underlines the need for a closer examination of the archaeological record to reveal their subtleties.

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#### Internal dynamics in the Late Neolithic at Çatalhöyük and the region

Arkadiusz MARCINIAK

In this paper I intend to discuss the multifaceted internal dynamics in the Late Neolithic communities in the second half of the seventh millennium cal BC in Central Anatolia with a special focus upon the developments in the last four hundred years of the Çatalhöyük occupation, the largest and far the most important settlement in the region. Consequently, major domains of human existence got ultimately transformed into a qualitatively distinct and culturally and demographically powerful version of the Neolithic in the process to be labelled the Late Neolithic transition.

The objectives of the paper are threefold. Firstly, it aims to systematically discuss the nature of this profound social and cultural change. This new mode of existence comprised the individualized and autonomous social units, integrated character of arable-husbandry economy, and significant changes in production regimes. These are well manifested in the Late Neolithic Çatalhöyük, put into light thanks to the ongoing excavations of its upper strata. In the regional scale, this period marks increasing differentiation of local communities, creation of a complicated network of relations between them, dispersal across the landscape into different ecological zones including occupation of forest and coastal areas as well as creation of sacral landscape and changes in the belief systems and transformations of the Neolithic imagery.

The paper further aims to scrutinize consequences of these developments for the dispersal of Neolithic farmers across Western and North-Western Anatolia. I would argue that it is only thanks to these transformations that Neolithic farmers were no longer hold off in this region and significantly accelerated the ongoing developments in Western Anatolia. Different parts of this vast region developed in a diverse pace and became increasingly separated from each other, in spite of existing contacts and relations. In this process, some of the elements were strikingly homogenous, such as dominant forms of spatial organization, while the others varied significantly, such as pottery tradition and lithics technology.

The third objective of the paper is to systematically contrast developments at Çatalhöyük in this period with those in Central, Western and Northwestern Anatolia. Paradoxically, the profound social and cultural changes, that themselves emerged within the Çatalhöyük community, led ultimately to its demise. It did not keep apace of developments in other parts of the region by not adopting new ideas and solutions, as well manifested by pottery lacking major developments in its production. Consequently, the Çatalhöyük groups found themselves largely outside the regional trajectories and lag behind the contemporary developments. Instead, they became largely conservative and increasingly embedded in their own traditions. The community itself was getting smaller occupying increasingly narrower parts of the settlement. Interestingly, despite its conservativism, Çatalhöyük remained a continuous point of reference for the migrating groups, as indicated by presence of its imagery across the region.

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#### **Dot by dot: phase-mapping Neolithic sites in Anatolia** Eva ROSENSTOCK

Ideas about a standstill within the process of Neolithic expansion between Central and Western Anatolia in the 7th millennium have been phrased since at least a decade (Schoop 2005), and first attempts at visualizing this phenomenon have been made more recently (e.g. Guilaine 2007, Schier 2009; Brami/ Heyd 2011).

With a broad geographical scope or based on selected sites, these maps so far show only shaded areas or arrows. The tempo-spatial processes at work, however, might be more complex than a simple E-W trajectory (Arbuckle et al. 2014) and should be studied in more detail by means of dot-by-dot phase mapping which includes all known sites and accounts for the difficulties in dealing with relative dates derived from surveys.

Drawing on a dataset of more than 500 excavated and surveyed Neolithic sites from Anatolia dating up to the end of the 6th millennium BC (Harmankaya et al. 1997; 1998; Rosenstock 2014), this paper explores the potential of such an approach in order to assess the existence, date and location of farming frontiers between Southeastern, Central and Western Anatolia as well as their overcoming.

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#### Tel Bet Yerah and the Early Bronze Age: 15 Years On



Since the start of the Tel Bet Yerah Project in 2001, the site has taken its rightful place as a hub of Early Bronze Age (EBA) research. This session will be devoted to new syntheses of work completed, as well as to new avenues of research that are currently under way. It will range from new contributions to a refined EBA chronology, through comparative studies of material culture, to the latest contributions in environmental studies. All contributors will be tasked with placing the site in its broader context, whether in terms of the beginning of urbanism in the Levant, the relation between Khirbet Kerak and the Kura-Araxes phenomenon, or the interpretation of ancient technology and cultural transmission. Invited contributors include post-doctoral and advanced graduate scholars who have participated in Bet Yerah fieldwork and research.

#### **Organizers:**

Sarit PAZ Martin Buber Society Fellow in the Humanities Dpt. of Archaeology Hebrew University of Jerusalem sarit.paz@mail.huji.ac.il Raphael GREENBERG Dpt. of Archaeology Tel Aviv University grafi@post.tau.ac.il

#### Participants (in alphabetical order):

ASHKENAZI Hai	LONGFORD Catherine
Tel Aviv University	University of Sheffield
haiashke@gmail.com	c.longford@sheffield.ac.uk
BAR-YOSEF Daniella	ROTEM Yael
Tel Aviv University	Tel Aviv University
baryosef@post.tau.ac.il	yael.rotem@gmail.com
BOARETTO Elisabetta	SAGONA Antonio
Weizmann Institute	University of Melbourne
Elisabetta.Boaretto@weizmann.ac.il	a.sagona@unimelb.edu.au
CHESSON Meredith	SHIMELMITZ Ron
University of Notre Dame	University of Haifa
Meredith.Chesson.3@nd.edu	ronishim@gmail.com
ISERLIS Mark	WEISSBROD Lior
DAI – Berlin	University of Haifa
iserlism@yahoo.com	lweissbr@research.haifa.ac.il
KNUDSEN Nadia	
Tel Aviv University	

#### List of Lectures/Program:

nadeshda.knudsen.10@ucl.ac.uk

	Lecturer	Title
PART I:	Stratigraphy, Chronology, and the Evolution of Space	
09:00	Raphael Greenberg	Introduction
09:30	Sarit Paz / Yael Rotem	Urbanization and Domestic Life: The EB I–III Sequence at Tel Bet Yerah (2003–2015 Seasons of Excavation)
10:00	Hai Ashkenazi / Raphael Greenberg	The Tel Bet Yerah Circles Building: A Reassessment
10:30	Johanna Regev / Elisabetta Boaretto	Tel Bet Yerah Absolute Chronology from EB IA to EB III: Cultural Changes or <sup>14</sup> C Wiggles Effect?

Coffee Break	<	
PART II:	Life in the City	
11:30	Catherine Longford / Alice Berger	Growing Complexity: Early Bronze Age Plant Economy of Tel Bet Yerah
12:00	Alice Berger (to be read by R. Greenberg)	"Feeding Cities"? – Preliminary Notes on the Provisioning of Animal Products
12:30	Lior Weissbrod Origins and Development of near Eastern Urban from Explored through an Ecological Lens	
	Lunch Break	
PART III:	Cultural Interaction at TBY	
14:00	Mark Iserlis	Technological Choices: Identifying Kura-Araxes Ceramic Technologies in the Levant
14:30	Ron Shimelmitz	Tracking Technological Traditions in the Interface of Different Cultur- al Groups: the Lithic Perspective from Tel Bet Yerah
15:00	Daniella Bar-Yosef	Mollusc Shells and Stone Beads at Bet Yerah: Insights into Daily Life
15:30	Nadia Knudsen	Tel Bet Yerah – Introducing the Figurines
Coffee Break	(	
PART IV:	Responses and Discussion	
16:00	Meredith Chesson	Response
17:00	Antonio Sagona	Response
17:30	Raphael Greenberg / Sarit Paz	Discussion and closing remarks

#### Abstracts:

#### Urbanization and Domestic Life: The EB I–III Sequence at Tel Bet Yerah (2003–2015 Seasons of Excavation)

#### Sarit PAZ / Yael ROTEM

Renewed excavations west of the Circles Building and the adjoining stone-paved streets at Tel Bet Yerah (Khirbet Kerak) have focused on a detailed re-examination of the densely built-up domestic quarter near the acropolis of the mound. With a rich EB I–III stratigraphic sequence dating back to the earliest phases of occupation at the site, the excavations allow us to study the evolution of the organization and use of domestic space and its incorporation in the wider settlement fabric.

Our paper presents the results of the high-resolution excavations and research conducted in this area. It deals with the development, continuity and changes in planning and construction of houses and their internal installations through time. It also discusses the social implications of the transition from village to incipient urbanism, the continuity displayed throughout the different urban phases at the site, the relation to the construction and occupation sequence in the adjacent Circles Building and Plaza, and the decay of urban life during the EB III.

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#### The Tel Bet Yerah Circles Building: A Reassessment

#### Hai ASHKENAZI / Raphael GREENBERG

The monumental structure known as the Circles Building has fascinated scholars since its discovery during the mid-1940s. Renewed excavation has established that it is comprised of three broad platforms enclosing a courtyard and a central hall, with seven stone-lined circles, each 8–9 m in diameter and furnished with four internal partitions, sunk into the top of the platforms. Long identified as a granary or a sanctuary and dated to the Early Bronze III, recent excavations have shown that it was fronted by a large open plaza, bordered by a massive brick wall, and that both the building and the plaza show intensive occupation by Khirbet Kerak ware users.

Presenting a reassessment of published and unpublished materials from the 1940s and the results of recent excavations of the building and the plaza, our paper discusses the stratigraphy, design, planning and construction of the Circles Building complex, and its intended function versus actual phases of use. It also reviews the possible social function of both the building and the plaza and their importance within EB II and III Bet Yerah.

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#### **Tel Bet Yerah Absolute Chronology from EB IA to EB III: Cultural Changes or** <sup>14</sup>**C Wiggles Effect?** Johanna REGEV / Elisabetta BOARETTO

New radiocarbon dates integrated with microarchaeological methods to identify in-situ contexts have provided a chronological frame encompassing all phases of the Early Bronze Age at Bet Yerah.

The earliest EB I appears around 3700–3550 BC, based on charcoal material. The "old wood effect" cannot be excluded, although there is no Chalcolithic occupation at the site. The EB I/II transition is currently modeled with 68.2% certainty between 3050–2930 BC, very similar to the transition dates obtained at Tel Yarmuth and Tell Abu-el- Kharaz. This transition is complicated by the presence of a wiggle, but a more precise definition both in range and in absolute value could be obtained for Bet Yerah, with denser stratigraphic dating. Pinpointing the precise transition into EB II is of importance, as the duration of the period effects our understanding of the urbanization process.

The EB II/III transition is modeled between 2930–2810 BC. A transition from early to middle EB III was identified between 2840–2710. Interestingly the EB III middle date has more <sup>14</sup>C present than the earlier EB III early phase. These results put the earliest EB III phases in the northern Israel in the 29<sup>th</sup> century BC. This date has been recognized currently only at two sites in the northern Israel: Megiddo and Bet Yerah.

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#### Growing Complexity: Early Bronze Age Plant Economy of Tel Bet Yerah

Catherine LONGFORD / Alice BERGER

This paper will present evidence on agricultural production and crop choices at Tel Bet Yerah throughout the Early Bronze Age. Archaeobotanical analysis provides important insights into the development of urban society in the Early Bronze II (EBII) and the cultural affinity of the Khirbet Kerak Ware users at the site. Over time, food processing and distribution changed at Tel Bet Yerah, shifting from household crop processing to centralised grain distribution in the EBII and back to household crop processing after the collapse of the well organised urban society. In the EBIII, the crop assemblages from Khirbet Kerak Ware contexts include a greater variety of cereal taxa than those in earlier periods or contemporary 'local' contexts. By comparing the crop preferences at Tel Bet Yerah to other sites in the Near East the relationship between Khirbet Kerak Ware and Kura-Araxes sites will be explored. As an expression of identity, food preferences can reveal the group to which a person belongs and can also act an exclusionary tool to emphasise cultural and social difference. The crop choices at Tel Bet Yerah have ramifications for understanding the nature of the Khirbet Kerak Ware occupation at the site.

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#### "Feeding Cities"? – Preliminary Notes on the Provisioning of Animal Products Alice BERGER

The appearance of large fortified settlements in the Southern Levant during the Early Bronze Age was previously viewed as sufficient evidence for urbanization of the region. Yet some scholars rightfully question this notion, pointing out the insufficient evidence for interaction between the large centres and potential supporting hinterlands.

In adjacent regions urbanism was characterized by tributary economy. Evidence for centralized control over food commodities is available both in written sources and the archaeological record; The faunal assemblages in particular demonstrate both import of prime-aged herd mammals into large urban centres, and their export from smaller settlements.

The work presented here attempts to identify similar patterns in the faunal assemblage from Tel Bet Yerah. By examining each of the chronological phases, which represent the whole spectrum from a small village to the onset of urban construction and its demise, changes in the provisioning of the site are interpreted in the light of development of new social and economic structures.

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#### **Origins and Development of Near Eastern Urban Form Explored through an Ecological Lens** Lior WEISSBROD

Increased human population density was one of the hallmarks of the 'urban revolution', listed first among G.V. Childe's ten characteristics of early urban settlements, and providing a major catalyst for interrelated social and economic transformations. Measuring human population density in ancient settlements is also among the most challenging tasks facing archaeologists due to the fact that only a relatively small fraction of the original architectural layouts is ever preserved or exposed through archaeological excavations, and because the level of accuracy in correlating between residential plans and resident numbers is unknown. This study explores the use of archaeological remains of micro-mammals (small rodents and shrews) as a bio-proxy for tracking processes of residential construction is predicted to reduce species diversity in urban ecological communities as seen across present day urban ecosystems. The Early Bronze Age site of Tel Bet Yerah, revealing a high-resolution sequence of incipient urban development (EBA I–III), provides an ideal experimental setting for this study. Initial results reveal a low-diversity pattern for urban phases EBA II-III, consistent with patterns previously detected across Iron Age sites with fully-developed urban forms in the same region.

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## Technological Choices: Identifying Kura-Araxes Ceramic Technologies in the Levant Mark ISERLIS

Typical black and red-black burnished pottery is the most common component of the Kura-Arax and Khirbet Kerak material culture 'packages', which have long been viewed as alien to the local traditions in their areas of third-millennium expansion. Emerging from an earlier study of the differences between traditional and Khirbet Kerak Ware technologies at Tel Bet Yerah, this paper summarizes the results of a technological analysis of assemblages from 26 sites in the Southern Levant, Caucasus and Anatolia, dating from the mid-4<sup>th</sup> to the mid-3<sup>rd</sup> millennium BCE. The application of a well-established ceramic sampling protocol and material science methods has allowed the identification of a sequence of specific technological choices made by ancient potters. They show the persistence of raw material selection strategies and potting techniques from Anatolia and the Caucasus to the Southern Levant. These can be summed up in a list of eleven technical principles, reproduced throughout the South Caucasian and Epi-Caucasian regions associated with the Kura-Araxes tradition. This paper presents these principles, contrasting them with those of the local industries of the Southern Levant.

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## Tracking Technological Traditions in the Interface of Different Cultural Groups: the Lithic Perspective from Tel Bet Yerah

#### Ron SHIMELMITZ

A comparison of the EB III lithic assemblages retrieved from two areas of excavations at Tel Bet Yerah provides significant insights not only into cultural interactions in the later part of the Early Bronze Age, but also into the potential of lithic industries to identify technological traditions and group identity in proto-historic contexts. The first area examined (SA-S) was inhabited by the local Levantine community, and the second (SA-M) by migrants related to the Kura-Araxes/Early Transcaucasian Culture. A reconstruction of *chaîne opératoire* of the expedient tool manufacture, which is represented in most excavated localities, indicates a clear difference in the methods of making flakes. While the technological choices reflected in the material from Area SA-S are more similar to the assemblages of earlier layers at

the site, the material from Area SA-M is more similar to that known from Anatolia and adjacent regions. Since technological choices are socially learned, we can use this aspect as a tool to identify different groups in the archaeological record. The potential of lithics to shed light on the nature of interaction however, is even larger, as disparities in the ability of the two groups to acquire raw material and trade products can be demonstrated.

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#### Mollusc Shells and Stone Beads at Bet Yerah: Insights into Daily Life

Daniella E. BAR-YOSEF MAYER

A sample of about 3000 mollusc shells provides insight into various aspects of daily life at Bet Yerah: Freshwater shells from the Sea of Galilee and Jordan River system were probably associated with floor construction, while those originating in a nearby spring, possibly came with mud for bricks or were inadvertently collected with drinking water. Freshwater bivalves probably supplemented the inhabitants' diet. The fragmentary nature of Mediterranean marine shells, suggests that those might have been brought along with sand, also used for construction. The few shells that were clearly personal ornaments and were used as shell beads were brought from the Red Sea, and were associated both with Khirbet Kerak Ware and EB II occupation levels, testifying to exchange networks of these cultures. A preliminary study of several dozen stone beads at the site broadens the scope of raw material origins at the site. It joins other recent Early Bronze Age bead studies that portray the southern Levant as peripheral to Mesopotamia during this period.

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#### Tel Bet Yerah - Introducing the Figurines

Nadia KNUDSEN

Tel Bet Yerah, the Early Bronze Age mound on the shores of the Sea of Galilee, has been the focus of much renewed scholarly research in the past 15 years. This attention has covered the broad spectrum of the most apparent and abundant groups of material culture. The intention of this presentation, however, is to throw some light on some lesser-known artifacts: the zoomorphic figurines.

Overall, this site had yielded a significant number of zoomorphic figurines that have, to date, not been subject to any published analysis. This presentation will concentrate on the figurines from the current excavations, incorporating all currently available archaeological information such as contextual, descriptive and comparative data. Wider considerations and relationships to other groups of material culture from the site will also be taken into account.

As part of an ongoing broader project, the intention of this preliminary study is to achieve a more detailed understanding of the function and importance of these diminutive objects in the context of the society that produced them.





#### CZERNY Ernst

Tell el-Dab'a XXII - Der Mund der beiden Wege Die Siedlung und der Tempelbezirk des Mittleren Reiches von Ezbet Ruschdi



ISBN 978-3-7001-6994-9 Untersuchungen der Zweigstelle Kairo des Österreichischen Archäologischen Instituts 38

Denkschriften der Gesamtakademie 77 2015, 2 volumes, numerous illustr., 66 profiles, vol. 1: text 480 pp., vol. 2: figures, plates, plans, profiles 532 pp., 30.5x23.5 cm, Paperback Language: German (English and French summary) € 290.00

,Tell el-Dab'a XXII" ist die abschließende und umfassende Publikation der Ergebnisse einer Grabung des Österreichischen Archäologischen Instituts, Zweigstelle Kairo, im Areal von Ezbet Ruschdi, nordöstlich von Tell el-Dab'a (Areal R/I). Bereits in den 1950er Jahren hat eine Grabung der ägyptischen Antikenverwaltung an dieser Stelle die Ruinen eines monumentalen Ziegeltempels der 12. Dynastie nebst umgebender Wohnbebauung freigelegt. Die österreichische Grabung des Jahres 1996 unter der Leitung von Manfred Bietak sollte den damaligen Befund neu untersuchen und in Details klären. Daraus entwickelte sich eine größere archäologische Unternehmung in zwei Kampagnen, die zahlreiche neue Befunde und reichlich Fundmaterial erbrachte. Das Tempelgebäude wurde neu untersucht und aufgenommen; es wird gezeigt, dass die Gründung nicht vor der Mitte der 12. Dynastie (wahrscheinlich im fünften Jahr Seosstris III.) erfolgt ist. Eine darunter gelegene ältere Siedlung aus der ersten Hälfte der 12. Dynastie (wahrscheinlich mit Stellung aus der ersten Hälfte der 12. Dynastie (wahrscheinlich met erkenter Dynastie wurde neu entdeckt.

Tell el-Dab'a XXII is the comprehensive final publication of the results of an excavation by the Cairo branch of the Austrian Archaeological Institute in the area of Ezbet Rushdi, northeast of Tell el-Dab'a (area R/I). A first excavation at that site in the 1950s by the Egyptian Antiquities Organisation had revealed the existence of a large mud brick temple plus surrounding settlement structures of 12th dynasty date. The Austrian archaeological work in 1996 under the directorship of Manfred Bietak had the initial scope to re-examine the previous results and to clarify some details. However, it developed into a more substantial excavation held in two campaigns, which yielded many new results and finds. The temple building was re-studied; it could be established that it was founded not earlier than the middle-12th dynasty (probably in the fifth year of Sesostris III). A previous settlement stretching under the temple was newly discovered. The focal point of the present publication in two volumes (Part 1: text; Part 2: illustrations, plates, profiles) is the presentation of the architecture of both the temple and the houses of the settlement, as well as the presentation and study of the many findings (ceramics, flints, statue-fragments, etc.).

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#### FISCHER Peter M. Tell Abu al-Kharaz in the Jordan Valley

Volume III: The Iron Age



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GAMER-WALLERT Ingrid Die Wandreliefs des Zweiten Lichthofes im Grab des Monthemhat (TT34)



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# AGYPTEN UND LEVANTE

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#### 50 Years at Tell el-Dab'a and a Kick-off for the ERC Advanced Grant "The Hyksos Enigma"



In the summer of 1966 Austrian excavations started at Tell el-Dab'a in the north-eastern Nile Delta - at first under the auspices of the University of Vienna and from 1973 onwards by the newly founded Austrian Archaeological Institute in Cairo, in co-operation with the Austrian Academy of Sciences. In toto about 80 excavation campaigns revealed a city, which was most likely the largest in the Eastern Mediterranean at its time. Soon it became clear that this town was Avaris, the ancient capital of the then little known Hyksos dynasty. Founded as a planned Egyptian settlement at the beginning of the Middle Kingdom, this place gained importance at the end of the 12<sup>th</sup> dynasty when a large group of people from the Near East settled there and controlled the sea trade between Egypt and the Eastern Mediterranean. They established themselves in this town by creating their own mixture of Egyptian and Near Eastern Middle Bronze Age cultures. While the domestic architecture was adopted from the host country, temples, palaces and burial customs were distinctly Near Eastern, showing architectural traditions rooted in northern Syria and Mesopotamia.

It was the strategic position of this town, as one of the largest harbours of Egypt, that made it ideal as a base for military and naval operations during the 18<sup>th</sup> Dynasty. It has to be identified with the major naval base of the Thutmosid kings Peru-nefer. The palaces with Minoan wall paintings dating to this period became a trade mark for Tell el-Dab'a in the archaeological world. During the second half of the New Kingdom the city was part of the enormous Ramesside residence city of Pi-Ramesse at Qantir, 2 km north of Tell el-Dab'a.

The research carried out on Avaris and its population during the last 50 years not only changed our picture of the Hyksos, but also of their impact on the people living in the Nile Valley and the Eastern Mediterranean. The research at this site has spawned over 20 monographs and hundreds of articles in learned journals. The lectures held during this symposium present current research results based on the past and on-going excavations of this important site. At the same time I would like to take this opportunity to create a kickoff conference for the newly started ERC Advanced Grant "The Hyksos Enigma" which tries to throw light on the origin, the way of migration, the way of rule and the causes of decline of the Western Asiatic population which lay behind the Hyksos rule.

#### Organizers:

Manfred BIETAKKarin KOOREA Institute for European and Oriental ArchaeologyOREA InstituteAustrian Academy of SciencesAustrianDr. Ignaz Seipel-Platz 2Dr. Ignaz1010 Vienna, Austria1010 Vienna, Austriamanfred.bietak@univie.ac.atkarin.kop

Karin KOPETZKY OREA Institute for European and Oriental Archaeology Austrian Academy of Sciences Dr. Ignaz Seipel-Platz 2 1010 Vienna, Austria Karin.kopetzky@oeaw.ac.at

#### Participants (in alphabetical order):

ASTON David A.	CZERNY Ernst	HEIN Irmgard
OREA Institute for European and	OREA Institute for European and	University of Vienna
Oriental Archaeology	Oriental Archaeology	irmgard.hein@univie.ac.at
david.aston@oeaw.ac.at	ernst.czerny@oeaw.ac.at	JUNGFLEISCH Johannes
BADER Bettina	FORSTNER-MÜLLER Irene	Ruhruniversität Bochum
OREA Institute for European and	ÖAI Austrian Archaeological Ins-	J.Jungfleisch@gmx.de
Oriental Archaeology	titute	KUNST Günther K.
bettina.bader@oeaw.ac.at	irene.forstner_mueller@oeai.at	Vienna Institute for Archaeological
BECKER Johannes	GRESKY Julia	Sciences
Ruhruniversität Bochum	DAI Berlin	guenther.karl.kunst@univie.ac.at
Jo.Becker23@web.de	Julia.Gresky@dainst.de	

LEHMANN Manuela	MÜLLER Miriam	SCHULTZ Michael
manuela.lehmann@googlemail.	Brown University	Zentrum Anatomie, Universität
com	Miriam_Muller@brown.edu	Göttingen
MATIĆ Uroš	SCHNEIDER Thomas	mschult1@gwdg.de
Westfälische Wilhelms-Universität	University of British Columbia	TILLMANN Andreas
Münster	thomas.schneider@ubc.ca	antiba@t-online.de
urosmatic@uni-muenster.de	SZAFRANSKI Zbigniew	VON RÜDEN Constance
	Instytut Archeologii Warsaw	Ruhruniversität Bochum
	z.szafranski@uw.edu.pl	Constance.vonrueden@rub.de

#### List of Lectures/Program:

	Lecturer	Title
26.4.20	016 18:00h Manfred Bietak I	Key Note Lecture
Chair:	Jean-Paul Thalmann	
8:30	Andreas Tillmann	Network affiliations for Chert Supply in Ancient Egypt? Seen through the Mid- dle Kingdom flints from Tell el-Dab <sup>c</sup> a
9:00	Zbigniew Szafranski	Remarks on the settlement of Auaris patterns
9:30	Bettina Bader	The Late Middle Kingdom settlement at Tell el-Daba in Area A/II
10:00	Miriam Müller	Household Archaeology at Tell el-Dab'a/Auaris
10:30	Karin Kopetzky	Supply and demand: Tell el-Daba – a fence for stolen goods?
11:00 (	COFFEE	
Chair:	Sabine Ladstätter	
11:30	Uroš Matic	Archaeology of death at Second Intermediate Period Tell el-Dab'a: Past, present and future perspectives
12:00	Michael Schultz / Julia Gresky	A rare case of connate coractation of the aorta in a young Hyksos infant from Tell el-Daba - The significance of infantile diseases and possibilities of their medical treatment in ancient Egyptian populations
12:30	Julia Gresky / Michael Schultz	Palaeopathological investigation on human bones from Tell el-Daba, potential and limits
13:00 l	LUNCH	
Chair:	Bettina Bader	
14:00	David A. Aston	Of Plates and Ringstands: Recent Work at Tell el Dab'a
14:30	Günther K. Kunst / Kon- stantina Saliari	Pits, streets, feasts: animal bone landscapes in Tell el-Dab'a
15:00	Thomas Schneider	Hyksos Research in Egyptology and Egypt's Public Imagination: An Assessment of Fifty Years of Assessments
15:30	Ernst Czerny	Skarabäen von Ezbet Helmi
16:00 0	COFFEE	·
Chair:	Mohammed Abd el-Maksou	d
16:30	Irmgard Hein	Investigation of materials from 'Ezbet Helmi
17:00	Constance von Rüden / Johannes Becker / Johan- nes Jungfleisch	The Wall Paintings of the 'Palaces' F and G and their Role in the Eastern Medi- terranean Web
17:30	Manuela Lehmann	Not just an aftermath - Tell el-Dab'a after the New Kingdom
18:00	Irene Forstner-Müller	Tell el-Dab'a- Recent work and future perspectives

#### Abstracts:

#### Fifty Years of Excavations at Tell el-Dab'a/Avaris: New Historical Source Material within an ERC Advanced Grant

#### Manfred BIETAK

Fifty years of nearly continuous excavations at Tell el-Dab'a, the capital of the Hyksos, revealed a wealth of evidence of a western Asiatic population living in Egypt from the late 12<sup>th</sup> till the early 18<sup>th</sup> Dynasty (c. 1850–1530 BC). They became responsible for the Hyksos rule in Egypt – an obscure Period, assessed thus far mainly from textual material.

Now there is abundant archaeological evidence such as settlement patterns, burial customs, temple-, palace-, and domestic architecture besides all facets of material culture revealing cultural interference between the immigrants and the Egyptian population at this border region of Egypt.

In the meantime also other sites such as Tell Hebwa, Tell el-Maskhuta, Tell el-Retaba, Tell Qu'a, Tell el-Yahudiya, Heliopolis, Kom el-Khilgan, etc., produced similar material of Near Easterners, to be connected with the Hyksos rule. In cooperation with all the research teams involved, the recently started ERC Advanced Grant "The Hyksos Enigma" at the Austrian Academy and the Bournemouth University as second Host Institution will try within 8 research tracks to find out if this foreign population in Egypt was homogenous or had different origins. Other questions to be answered are: why did they migrate to Egypt, how did they come to power, why did their rule fail, and what was their impact on the Egyptian Culture of the New Kingdom. Answers to these questions are attempted by onomastic studies, by critically reviewing historical material, by defining their culture in all its variations in order to trace the places of similar cultural habitats; by applying aDNA and other scientific analyses in cooperation with the Egyptian Academy of Sciences it will be attempted to get an overall picture about the origin and the pathological development of this Western Asiatic group in Egypt. Also current methods of social anthropology will be used to assess the cultural interference between these people and the Egyptians. the phases of resistance to acculturation and the final amalgam in the Egyptian New Kingdom. They did not disappear, but brought new cultural expressions and habits to the land at the Nile, among them the use of Akkadian as diplomatic language and the long distance diplomacy. A new understanding of history of this obscure period in Egypt is expected to emerge.

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#### Network affiliations for Chert Supply in Ancient Egypt? Seen through the Middle Kingdom flints from Tell el-Dab'a

#### Andreas TILLMANN

It is of uppermost priority for a state based on agriculture to provide material for tools in sufficient quantity and quality. Its task is to take care that enough flint of high quality is available and distributed all over the country.

Thus keeping this in mind, I would like to look more closely at the flint material from Phase N of area F/I at Tell el-Dab'a. At a first glance it is already obvious that most of the used materials are coming from Wadi el-Sheikh. Amongst the more than 800 artefacts there is hardly any waste material. This would exclude a local production at Tell el-Dab'a and leads to the conclusion that the flint blades were brought to the site as already finished products. A situation which corresponds well with the circumstances at Wadi el-Sheikh, where traces and wasters of all production phases are visible but not the finished products.

In sharp contrast are the raw material compositions of the neighbouring settlement of Ezbet Rushdi dating a little bit later into the 12<sup>th</sup> dynasty. At this site (R/I) two different varieties of flint are predominant. One group consists of blades and half-finished products of flint knives made of a raw material most certainly coming from the Lower Makkatam range in the vicinity of Thebes. The other group is a black homogenous flint, which is to be found in the hinterland of Et-Toth on the right river bank of the Nile.

Waste material of both groups found in the settlement of Ezbet Rushdi, indicate a transport of raw materials down the Nile river and a production of needed tools at the site. The backbone to these phenomena must have been a centrally organized administration with its widely ramified distribution network.

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#### Remarks on the settlement of Auaris patterns

Zbigniew E. SZAFRANSKI

Reviews of the most important towns and settlements examined by archaeological means are presented in literature. Those from the first half of the second millennium BC are represented by several examples. Town patterns and layout of the Egyptian town is the subject of this presentation. Description of the collected material consists of twelve patterns. Some of the settlement or urban elements have been attested only in the written sources or were deduced from the archaeological material and features of settlement stratigraphy.

The twelve-element-tool is arranged according to the following scheme, for example: 1. Walls; 2. Administrative Buildings; (...) 5. Dwellings; (...) 11. Streets, Roads, Routes; 12. Water-Supply Installations.

An analysis of relations between the proposed above twelve patterns leads to conclusions as to their function within the settlement layout. The final description depends on the condition of the preserved materials, the excavated area, quality and quantity of the sources, etc. The type of a settlement, however, is not always clear.

The description of some of the presented sites is not fully representative in the proposed pattern analysis of the settlements. A site, however, is called a "settlement" or "town" after the site excavator who has most extensive knowledge of the chantier, even if the published material is not adequate to the applied term.

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#### The Late Middle Kingdom settlement at Tell el-Dab'a in Area A/II

Bettina BADER

The main settlement layer of the late Middle Kingdom in the area A/II of Tell el-Dab'a is represented by local Phase G/3–1 (ca 1740 to 1710 BC). This paper will present the layout of this settlement and some of the main find contexts as well as new research results, which are important for settlement archaeology of the late Middle Kingdom in Egypt in general. The particular importance of that settlement is that it represents an early stage in the development towards the later mix of Middle Bronze Age and Egyptian culture.

Some of the contexts from this settlement will be used in the larger Project *Beyond Politics: Material Culture in Second Intermediate Period Egypt and Nubia*, which is set up to explore the development of material culture in several regions spread over this area. The time frame of the project includes the period from the late Middle Kingdom to the early New Kingdom. At first local and then regional sequences of material culture in contextual groups will be collated in order to pinpoint regional developments with greater precision.

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#### Household archaeology at Tell el-Dab'a

Miriam MÜLLER

With extensive settlement remains and residential areas in different zones of the ancient city Avaris, Tell el-Dab'a offers many insights into everyday life in the Middle Kingdom and Second Intermediate Period. Household archaeology as a new branch in the archaeological research has been developed in the New World, but also recently been applied in excavations and research agendas in Near Eastern archaeology.

The theoretical and methodological advances over the last couple of years underline its importance for the investigation of settlement remains. By analyzing a specific neighborhood of Tell el-Dab'a, area F/l in the city center, household archaeology and its principles of examining the material record, architecture and finds, the behavioral component, activity areas and their related performance, and the social aspect, conclusions on the composition of the household, have been explored. This paper will summarize the results of a detailed analysis of five different households over a period of four generations from the late Middle Kingdom to the beginning of the Hyksos period and consider aspects of society, economy, religion and identity.

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#### Supply and demand: Tell el-Dab'a – a transshipment centre for stolen goods? Karin KOPETZKY

During the advanced 13<sup>th</sup> dynasty at Tell el-Dab'a occasionally objects appear that typologically belong into the 12<sup>th</sup> dynasty and seemed to be of elite origin. At the same time in the Levant Egyptian Middle Kingdom objects pop up in high status contexts and the local productions of Egyptianizing objects is initiated. Egyptian signs and symbols get integrated into the design of Middle Bronze Age objects that are related with the spheres of power and religion. The site of Tell el-Dab'a, its people and its politics and economy might help to understand this phenomenon and the power games played between the Levantine kingdoms.

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## Archaeology of death at Tell el-Dab'a: Past, present and future perspectives $\mathsf{Uroš}\;\mathsf{MATIC}$

Half a century long work of the Austrian archaeological institute's mission at Avaris (Tell el-Dab'a) produced among else more than 700 excavated and recorded burials of the Second Intermediate Period. These burials proved to be crucial source of information for dating and synchronization of material culture in the eastern Mediterranean and the Near East, reconstruction of culture contacts and the specifically archaeological view on Hyksos ethnicity. Simultaneously, these burials and structures they are associated to (funerary temples) were used for the reconstruction of religious rites and beliefs of the inhabitants of the Second Intermediate Period Avaris. Being that anniversaries are excellent occasions for evaluating the current state of research this paper aims first to provide a history of research on death in Avaris by concentrating on different paradigms behind the research. Secondly, the way death was and still is approached in Tell el-Dab'a will be compared to developments in other archaeologies with the aim to evaluate what was done and what remains to be done. Finally, newly discovered Second Intermediate Period burials from area 'Ezbet Rushdi IV, associated to the area of the main harbor of Avaris, will be introduced on the basis of previously outlined discussion.

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## A rare case of connate coractation of the aorta in a young Hyksos infant from Tell el-Dab'a – The significance of infantile diseases and possibilities of their medical treatment in ancient Egyptian populations

#### Michael SCHULTZ / Julia GRESKY

During the excavation campaign of 2009, the skeleton of a young Hyksos infant excavated from a storage vessel (amphora) has been investigated. The skeleton is well-represented and relatively well-preserved. The bones of the face and the skull base, the shoulder girdles, the ribs, the vertebral column, the right hand as well as the left humerus and radius, and both tibiae and fibulae are present and suitable for the anthropological and paleopathological examination. Interestingly, the shoulder girdle and the thorax show characteristic morphological features of connate coractation of the aorta. The morphology is described in detail and the case is discussed in the context of the health situation of ancient Egyptians.

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#### Paleopathological investigation on human bones from Tell el-Dab'a, potential and limits Julia GRESKY / Michael SCHULTZ

Archaeological bones excavated in the Delta of northern Egypt, mostly show a very poor state of preservation due to the relatively wet soil. However, several skeletal series from the archaeological site Tell el-Dab<sup>c</sup>a were investigated using anthropological and paleopathological methods.

The state of preservation of the bones ranges from small fragments of smashed bones to larger long bone fragments and skulls. Most of the skulls were deformed by postmortem soil pressure. But even more preserved skulls or larger bone fragments were difficult to examine due to their reinforcement with layers of glue. Therefore, in this material, applying measurements for estimating body height, stature or craniometric features is almost impossible, the macroscopic diagnosing of diseases is particularly challenging. At least, using low power microscopy, a number of diseases can be diagnosed in the sample: Apart from dental diseases, meningeal reactions, periostosis, metabolic diseases, chronic heart-lung diseases, and others could be detected.

Thus, even in poorly preserved bones, a paleopathological investigation is worthwhile and many diseases can be identified.

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#### Of Plates and Ringstands: Recent Work at Tell el Dab'a

David A. ASTON

My recent work at Tell el Dab'a, is concerned with two different areas. Firstly in area H/VI, layers dating from the late Hyksos Period to the reign of Horemheb have been preserved. H/VI, excavated between 1999 and 2005, principally covers the area which, during the Tuthmosid period was occupied by Palace J, a short-lived structure that was replaced by workshops probably during the reign of Tuthmosis III. The ceramic material from this area is currently being prepared for publication: the (subjective) catalogue of 4250 items, (564 plates) which represents only a small fraction of what was actually recorded is finished, and I am currently working on the typology and evaluation.

My second project is a study of the contents of a large pit system (L81) excavated between 2006 and 2008 in area F/II that had been cut into one of the courts of the Hyksos palace. More than 35,000 diagnostics were recovered which date to Phases E/1 - D/3. Surprisingly, this complex produced several vessel types not encountered in other areas of Tell el-Dab'a during the, at the time, more than 40 years of previous excavations at the site. The publication, envisaged for 2019, will thus certainly represent the most comprehensive corpus of Hyksos pottery yet known. The function of this pit complex is still a matter of debate, as it has many similarities with offering pits filled with the remains of cultic meals, well known at Tell el-Dab'a, but, at the same time, differs considerably from them in many aspects.

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#### A focus on feasting: animal remains from the palatial area F/II at Tell el-Dab'a (Egypt) Günther Karl KUNST / Konstantina SALIARI

A magnetometer survey carried out in 2004 revealed an extensive building complex in the F/II section of the ruin area of Avaris / Tell el-Dab'a. In the course of excavations started in 2006, remains of mudbrick buildings, erected in an addiditive or agglutinated pattern, were found. These were identified with palatial structures of the 15<sup>th</sup> dynasty and are interpreted as administrative and public buildings.

Although animal bones could be collected from most contexts (courtyards, floors, silos, ovens, ...), marked accumulations occured only within pits. Other contexts, like floors and accumulations, yielded much less remains. Therefore, these latter features were lumped as analytical units according to their categories, while pits could be treated individually. The pit complex L81 alone, situated in a courtyard, produced a huge, homogenous assemblage of over 39,000 remains. It can therefore be taken as a reference point. Its material culture has already been studied in detail (see contribution by D. Aston).

The various contextual aggregations vary in parameters like taxonomic diversity, skeletal part distribution, the occurrence of articulated units and the frequencies of butchery marks. These differences may correspond to varying taphonomic pathways extant in architectural settings: the accumulation of bone debris is often linked to the abandonment of structures and may result from intentional, singular acts (e.g. communal feasting) or from repetitive, time-averaged processes.

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## Hyksos Research in Egyptology and Egypt's Public Imagination: An Assessment of Fifty Years of Assessments

Thomas SCHNEIDER

This paper will take a critical look at the scholarly and public assessments of the Hyksos in the fifty years since the excavation of Tell el-Daba started, and to evaluate how these assessments do or do not correlate with the situation of the evidence. Hailed by some as the progressive harbingers of an Egyptian enlightenment and a cultural revolution, others continue to see in the Hyksos rulers subjecting the Egyptian nation to the yoke of foreign domination. While such assessments have seen a wide dissemination (for the positivist ones, from Wolfgang Helck to Nicolas Grimal; for the negativist ones, most recently Toby Wilkinson and in the area of popular fiction, Christian Jacq's trilogy "La Reine Liberté"), they also display a general inability to account for the complex and underdetermined nature of historical evidence and historiographical reasoning. The lecture will also attempt to provide a framework for a new and better suited historiographical approach.

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#### Scarabs, seals and sealings from the site of Ezbet Helmi

Ernst CZERNY

The excavation area of Ezbet Helmi near Tell el-Dab'a was investigated from 1991 on in many seasons. During these excavations a great number of scarabs, seals and sealing imprints have been found. There are all together 487 objects, both scarabs and imprints in good preservation, but also broken scarabs and fragmentary imprints. While some of the sealings with royal names have been published by Manfred Bietak and Ulrike Zeeger, the bulk of the material has not yet been studied. These include pieces from late Middle Kingdom, 2<sup>nd</sup> IP and early New Kingdom The seals and sealings must be fitted into the complex stratigraphy of the site and typologically and chronologically analyzed. It is to be expected that a closer and more accurate picture of the palatial district of Ezbet Helmi will evolve from the study of this material.

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#### Recent Investigation of Materials from 'Ezbet Helmi

Irmgard HEIN

The Excavations of the Austrian Archaeological Institute in the area of 'Ezbet Helmi have lead in the past 25 years to the discovery of huge palace substructures, (so called platforms F and G) from the Early New Kingdom, overlaying older Hyksos structures, and including some spectacular finds, such as the Minoan frescoes. Within this contribution the focus is directed towards the material culture from the surround-ings of the small platform F. Studies in particular of the ceramic material show a representative range of types within the stratigraphic context. Of specific interest are analytical results of the material, as it can be seen in the application of the recently developed method of digital image analysis of fabrics.

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The Wall Paintings of the 'Palaces' F and G and their Role in the Eastern Mediterranean Web Constance VON RÜDEN / Johannes BECKER / Johannes JUNGFLEISCH

The discovery of thousands of wall painting fragments in the area of the modern village of 'Ezbet Helmi forms an unexpected milestone in the 50 years lasting history of Austrian excavations at Tell el-Dab'a.

Uncovered in an 'Egyptian' palatial district of the 18<sup>th</sup> dynasty, the colorful murals show strong technical and iconographical links to the imaginaries of the Bronze Age Aegean.

Although the wall painting corpus of Tell el-Dab'a stands out for its unique range of iconographical subjects as well as the sheer mass of fragments, similar evidence for 'Aegean'-style '*fresco-secco*' paintings were found in several other 'palace' complexes in ancient West Asia, ranging from Alalakh to Qatna to Tel Kabri. At the first sight, the sudden appearance of these paintings was interpreted as simultaneous phenomenon within the context of the diplomatic exchange between the Aegean and ancient West Asia.

However, differences in chronology of the find contexts, but also the material evidence of the wall paintings itself question an overarching explanation for their emergence. In focusing on technical and iconographical aspects of the murals from Tell el-Dab'a, this paper seeks to examine the differences and similarities in the wall painting traditions of the Eastern Mediterranean.

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#### Change and Innovation – Tell el-Dab'a in the Late Period Manuela LEHMANN

The Tell el-Dab'a Symposium reflects the many different research aspects investigated in this Delta settlement which formed the capital of Egypt in the Second Intermediate Period. During the New Kingdom, Tell el-Dab'a still played an important role; first as palatial dwelling and later as the southern part of the Ramesside capital Pi-Ramesse.

Due to my recently finished PhD research, the resettlement in the Late and early Ptolemaic Periods can be added to the historical timeline of the settlement of Tell el-Dab'a, allowing for an overview of the site, with its changes and innovations, over a very long time period.

In this later stage, the character of the site changed considerably due to a new type of architecture, the tower house. Ethno-archaeological comparisons allow various insights into this new living concept. Comparing Tell el-Dab'a with other cities in the Delta of Egypt allows us to get an understanding of urban life in the Delta during the Late Period.

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#### Tell el-Dab'a - Recent work and future perspectives

Irene FORSTNER-MÜLLER

Tell el-Dab'a, ancient Avaris, the capital of the Hyksos rulers, was one of the most important cities in Egypt and the Ancient Near East during the 2<sup>nd</sup>Millenium B.C.

The Austrian Archaeological mission has been working at this site for 50 years. Its work over that time has provided a general map of the town which permits a more holistic approach to future research, and focusses on the town itself and its organization. Thus Tell el-Dab'a is a key site for understanding the function of an Egyptian town.

Recent work has concentrated on the fluvial system and the harbours(s).The town location on the Pelusiac branch of the Nile, which formed the eastern flank and limit of the fertile Delta, gave the town a strategic position that made it a gateway between the Nile valley and the Near East. It was both a good starting point for expeditions overland via the Sinai and an important harbour town from the Middle Kingdom and the Second Intermediate Period onwards. In the Ramesside period the harbour of Piramesse, the capital of the 19<sup>th</sup> and 20<sup>th</sup> dynasty, was in Avaris, which was then the southern part of the town.

This paper will present the institute's recent work and results and in addition will consider future perspectives and research prospects for further investigations at this important site.

## Pot Burials in the Aegean and the Near East (6<sup>th</sup>-2<sup>nd</sup> Millennium BC)



Pot-burials are widespread in the Eastern Mediterranean from the 6<sup>th</sup> millennium onwards. They were used for cremation and inhumation of both male and female individuals of all age groups, including infants. The burials deposited in vessels are primary or secondary, single or multiple, isolated under house floors or grouped in extra-mural cemeteries. This workshop aims at highlighting the wide variety of practices encompassed by pot-burials and to investigate possible inter-regional cultural contacts. It offers an opportunity to confront the data and expertise of researchers from various field studies and geographical areas.

For the sake of consistency, the topic is restricted to inhumations from the Neolithic and Bronze Ages, excluding Iron Age and cremation burials. Synthetic presentations, rather than case studies, will be favoured.

The main issues to be addressed in this workshop are:

- Emergence and diffusion of pots-burials in the Eastern Mediterranean.
- Relation of pot-burials to other burial types.
- Demographic characterization of pot-burial populations.
- Rituals related to the use of burial pots.
- Status and typology of burial pots (jars, *pithoi* and other vessels): recycling household and storage vessels or producing specifically funerary containers?

#### Organizers:

Bérengère PERELLO Archéorient (UMR 5133), CNRS/University of Lyon 2 7 rue Raulin 69365 Lyon cedex 07, France berengere.perello@mom.fr Sylvie MÜLLER CELKA Archéorient (UMR 5133), CNRS/University of Lyon 2 7 rue Raulin 69365 Lyon cedex 07, France sylvie.muller-celka@mom.fr Françoise LE MORT Archéorient (UMR 5133), CNRS/University of Lyon 2 7 rue Raulin 69365 Lyon cedex 07, France francoise.le-mort@mom.fr

#### Participants (in alphabetical order):

BACVAROV Krum National Institute of Archaeology with Museum Bulgarian Academy of Sciences	LANERI Nicola Università di Catania, Catania, Italy nicolalaneri@hotmail.com
krum.bacvarov@googlemail.com CHRISTAKIS Kostandinos The Archaeological Society at Athens, Greece	McGEORGE Photini British School at Athens, Athens, Greece tinamcgeorge@hotmail.co.uk
christakis@her.forthnet.gr CHAHOUD Jwana Archéorient, UMR 5133, CNRS/Université Lu- mière-Lyon2, France and Lebanese University, Beirut jwanachahoud@gmail.com DOUMET-SERHAL Claude Director of the Sidon Excavation, British Museum, Londres, UK claude.lbfnm@btinternet.com	McSWEENY Kathleen University of Edinburgh, United Kingdom kath.mcsweeney@ed.ac.uk
	ORRELLE Estelle University of East London, London, UK estelleorelle@gmail.com
	POMADERE Maia University of Picardie, Amiens, France maia.pomadere@u-picardie.fr
GIRELLA Luca Università Telematica Internazionale Uninettuno, Rome, Italy Iucagirella@yahoo.it	POULMARC'H Modwene MMSH Aix-en-Provence, France modwene.p@live.fr
	- WHITTAKER Helene Göteborg University, Sweden helene.whittaker@gu.se

#### List of Lectures/Program:

	Lecturer	Title
Part I: th	e Near East	·
9:00	Nicola Lanieri	Containers for the dead: The cosmological value of pots in Mesopota- mian funerary contexts
9:20	Estelle Orrelle	Infant Jar Burials – a ritual associated with Early Agriculture?
9:40– 10:00	Claude Doumet-Serhal / Jwana Chahoud	Sidon and the Levant: jar-burials patterns in the Middle Bronze Age
Part II: A	natolia, Caucasus, Eastern Europe	2
10:30	Krum Bacvarov / Kathleen McSweeney	Jar burial tradition in later prehistory of the Balkans (sixth to third millennium BC)
10:50	Modwene Poulmarc'h	Burials in ceramic vessels from Southern Caucasus
11:10	Bérengère Perello	Early Bronze Age pot-burials in Western Anatolia: common features and diversity
11:30	Discussion	
12:00-13	3:30 Lunch break	
Part III: (	Greece and the Aegean	
13:30	Photini J.P. McGeorge	Pot Burials from Pre-Eruption Thera
13:50	Maia Pomadere	Pot-burials in mainland Greece: a selective use for a small part of the population
14:10	Helene Whittaker	Pithos Burials on the Greek Mainland during the Bronze Age
14:30	Discussion	
Part IV: 0	Crete	
15:00	Konstandinos Christakis	Housing the dead: production and distribution of burial pithoi in the Isthmus region, East Crete
15:20	Vance Watrous / Maira Kaye / Photini J.P. McGeorge	Minoan burials under the Phylakeio at Gournia
15:40	Luca Girella	The long life of pithos-burials during the Palatial period of Crete
16:00	Sylvie Müller Celka	Iconographic evidence of burial pithoi and the question of burial prac- tices in Neopalatial Crete
16:20	Final discussion	

#### Abstracts (in alphabetical order):

#### Jar burial tradition in later prehistory of the Balkans (sixth to third millennium BC) Krum BACVAROV / Kathleen McSWEENEY

Jar burial tradition appeared in the late seventh millennium BC in the Northern Levant, and in the following centuries spread to the Southern Levant, Anatolia, and Southeast Europe. Throughout its early development, this practice included primary and secondary/delayed burial, as well as cremation burial, but in the beginning, most common were burials of infants in jars, often found under house floors.

In this presentation, we will focus on the baby burials, and on the special treatment the deceased infants received. Several interpretative scenarios will be tested based on evidence from various sources.

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#### Sidon and the Levant: jar-burials patterns in the Middle Bronze Age

Jwana CHAHOUD / Claude DOUMET-SERHAL

The tradition of jar burials is widely attested in Levantine sites. The recently excavated cemetery of Sidon revealed new data regarding Middle Bronze funeral practices. The multidisciplinary analyses conducted

on the Sidon burials, including anthropological, archaeobotanical and archaeozoological approaches, enabled a detailed study of the spatial distribution of tombs, the type of burials and rituals and the variety of jars.

Jar burials are the most common type of burials attested in Sidon of the 150 burials discovered so far. Criteria such as age and sex of the deceased, grave goods and position of the jar establish patterns of jar burials rites. These patterns of mortuary practices are discussed in this paper with an attempt to investigate the general practice observed on other jar burials in the Levant.

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## Housing the dead: production and distribution of burial pithoi in the Isthmus region, East Crete Kostis S. CHRISTAKIS

The end of the Early Bronze Age marks a turning-point in mortuary behavior on Crete: the dead began to be encased in large clay jars (pithoi) both in exclusively dedicated cemeteries and inside built tombs. Pithos cemeteries appeared in many regions of the island, with the most significant, in terms of wealth of excavated records, in the Isthmus, East Crete. The present contribution studies the formal, technological and functional performance properties of pithoi used in cemeteries and domestic units of the Isthmus region, aiming to provide a comprehensive look into patterns of production and consumption of funerary receptacles. The emerging patterns reveal a specialized production of pithoi exclusively for mortuary purposes, the use of which had strong social and ideological connotations for the local communities.

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#### The long life of pithos burials during the Palatial of Crete

#### Luca GIRELLA

Pithos and larnax burials became quite common for interment at the beginning of 2<sup>nd</sup> millennium BC (Middle Minoan IA) on Crete, placed either in built tombs or found in 'proper' cemeteries. Following the construction of the palaces (MM IB), one can observe a general decline of tomb construction and cemeteries, as well as a different strategy concerning mortuary representation and funerary behaviour.

The aim of the paper is to discuss changes and regional variation of funerary practices on Crete during the two palatial periods, with special attention to pithos burials and cemeteries. By examining contexts distribution in five distinct regions of the island and grave assemblages, the analysis will show the existence of a complex funerary landscape, whereby the selection of pithos interment can be interpreted along economic, social or probably ethnical choices. It will be clarified how the creation of palatial structures generated an intensification of symbolic display (mostly in architecture, iconographies and craft production), which was not necessarily a sign of new emergent elites but a new code of communication to maintain elite group identity. Within this perspective pithos burials offer a special view to understand the different mortuary behaviours: on one hand extramural pithos cemeteries remain quite extraordinary in the island, on the other one pithos burials appear always within funerary contexts where corporate aspects and collective rituals were brought together in line with a communal ethos.

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#### Containers for the dead: The cosmological value of pots in Mesopotamian funerary contexts Nicola LANERI

Clay, fire and water are the three basic elements necessary for making pottery, but they are also three fundamental elements in framing the mythological dimensions of most of the societies inhabiting the world both in ancient and modern times. In his book *La potière jalouse* (1985), Claude Levi-Strauss clearly understood this important aspect in the creation of mythological stories among native American communities and highlighted the important role played by potters and pottery making in the fundamental process of human religiosity.

In this paper, I will thus try to investigate the cosmological value entangled in pots to be used for funerary depositions in Mesopotamia between the third and first millennia BC. It is especially during this later period that the use of clay containers became widely dispersed among Assyrian and Babylonian communities demonstrating the important role played by vessels in the construction of their funerary tradition.

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#### Pot Burials from Pre-Eruption Thera

Photini J. P. McGEORGE

Human burials were discovered in the Akrotiri excavations for the first time in 1999. They are our first direct link with the earliest inhabitants of the site. The initial discovery was of a mature adult male interred in a North Aegean wine jar. More burials began to appear in different trenches, during 2000–2001, as the excavations for columns to support a canopy over the Late Bronze Age town of Akrotiri proceeded.

In the corner of a room, a pithos, which dates to the Middle Cycladic period, contained only the head of a young adult female, who has rather unusual facial characteristics. Interestingly, more burials, some double, were found in small storage or cooking jars. Virtually all are newborn infants dating to the Early Cycladic period. A small bowl covered the burial of a pre-term infant placed beneath a threshold that dated to the Middle Cycladic period.

The EBA infant burials in small pithoi, also found elsewhere in the Cyclades and the Aegean, and the MBA bowl burial seem to have connections with the Levant.

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## Iconographic evidence of burial pithoi and the question of burial practices in Neopalatial Crete Sylvie MÜLLER CELKA

The puzzling dearth of burials of any kind during the Neopalatial period in Crete (Middle Minoan III to Late Minoan IB), in contrast to the continuing development of urban centres and other settlements, has raised many interrogations and interpretations. Interestingly, the main surviving type of burials in LM IA–IB is a free-standing jar or pithos, which should be considered a key-factor in any attempt to account for the lack of archaeological evidence. Therefore, this paper discusses the specific nature of these burial containers, along with the iconographic evidence provided by Minoan seals. In particular, the objects alternately described as pithoi, baetyls, rock pattern or beehives on Neopalatial signet-rings with "cultic" scenes will be reconsidered in order to explore the question of their possible relation to the use of burial pithoi.

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#### Infant Jar Burials – a ritual associated with Early Agriculture ? Estelle ORRELLE

Jar burials of infants exposed in Pottery Neolithic sites in the Southern Levant share common features with ethnographic data from Africa and the New World, and later historical data on burials of ritually killed infants. Features of the various analogies are analyzed to see whether they allow similar implications to be made for the Neolithic data to suggest that human sacrifice was associated with this period of early agriculture. Using a methodology for research into symbolic subjects which pursues ontological and not scientific truths, mythical, ethnographic and historical evidence is assembled and weighed up against this, and various other hypotheses.

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#### Early Bronze Age pot-burials in Western Anatolia: common features and diversity Bérengère PERELLO

In Western Anatolia, large extra-muros cemeteries that include up to several hundred graves develop during the Early Bronze Age (III<sup>e</sup> millennium B.C.). Three different grave types coexist: earth pits, stone cists and pots-burials. This paper will focus exclusively on pot-burials. These are very common during EBA from the Marmara region in the north to the Lycian region in the south.

Our understanding of the funerary practices of Early Bronze Age Western Anatolia has grown exponentially in the last decades. About 30 cemeteries have been identified and several of them have been excavated extensively (Baklatepe, Demircihöyük, Karataş).

This presentation primarily aims to examine the significance of pot-burials in relation to other grave types and to define the characteristics that pot-burials from the Aegean coast share with those from inland Western Anatolia. However, a thorough study of inhumations in vessel containers across the whole region reveals, beyond similarities, a number of local peculiarities. These need further investigations to determine whether they are related to geographical, chronological or social factors.

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#### **Pot-burials in mainland Greece: a selective use for a small part of the population** Maia POMADÈRE

The use of pots as burial containers is first evidenced in the northern area of Greece in Early Neolithic but it only developed during Late Neolithic. During that period, it primarily concerned infants, a phenomenon which is reminiscent of Neolithic oriental burial customs. During Early Bronze Age pot-burials increased on the Greek mainland, principally to the North, but they never constituted the main way of burying the dead as other types of graves were preferred, mostly in flat cemeteries. Contrary to Anatolian burial customs, burial vessels were used specifically for sub-adults until the Middle Helladic period, when this practice went into decline and eventually disappeared. This study therefore focuses on the treatment of children but also highlights the fact that there was no general rule on the Greek mainland: recent excavations have shown that some groups adopted burial vessels mainly for women whereas others used them for adults of both sexes in burial mounds. We are admittedly not yet able to understand all the factors conditioning the use of pot-burials, but the question of *how* and *whom for* they were used appears to be a community cultural marker.

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#### Burials in ceramic vessels in Southern Caucasus

Modwene POULMARC'H

The practice of burying the dead in ceramic vessels is attested at eight Southern Caucasus Chalcolithic sites: Berikleedebi in Georgia and Alkhantepe, Boyuk Kesik, Chinartepe, Kamiltepe (MPS 16), Leilatepe, Ovçular Tepesi, Poylu II in Azerbaijan. They all belong to the Late Chalcolithic culture of Leilatepe (first half of the 4th millennium BC), except for Ovçular Tepesi dated to the end of the 5<sup>th</sup> millennium BC. At these sites, burials in ceramics vessels are used only for immature individuals. Despite the growing number of such burials (at least 21 so far) the way of deposit as well as the biological identity of the deceased remain poorly known. The recent study of the burials of Alkhantepe offers the opportunity to better understand this funerary practice.

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#### Minoan burials under the Phylakeio at Gournia

Vance L. WATROUS / Maira KAYE / Photini J. P. McGEORGE

The authors are preparing a publication of burials from the Minoan site of Gournia in East Crete unearthed in the early 1960s by the late Prof. Nikolaos Platon. These burials were found when the foundations for the old guardhouse ( $\Phi u\lambda \dot{\alpha} \kappa \epsilon_i o$ ) at the northwest edge of the site were dug.

The location of the burials is just to the west of the North cemetery excavated by Harriet Boyd in 1901– 1904. Like the North cemetery, these tombs, though predominantly Middle Minoan, date from Early to Late Minoan. The burials in the North Cemetery were made in house tombs; this may also have been true for the Phylakeio burials but we possess no evidence for this. Our pottery assemblage is similar to the North cemetery consisting of pithoi and larnakes. It includes a large drip decoration pithos, three larnax lids each 16 cm long, one of which fits a fragmentary larnax, while another is an extremely unusual semi-oval shape. A substantially intact red cooking vessel is, like the larnax, only large enough for a child's burial. Several stone and ceramic loom-weights, a large chunk of obsidian from Nysiros, stone tools including a knife-sharpener may have been possessions that belonged to the deceased. Many cooking vessels, conical cups and a miniature juglet (ca 5cm) suggest that a funerary banquet and drinking were part of the burial ceremony.

Unfortunately, the association between the pottery and the human remains, which were removed from their context and comingled, has been compromised. Nevertheless, as these are as yet the only human remains available for the town of Gournia their publication is important.

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#### Pithos Burials on the Greek Mainland during the Bronze Age

#### Helene WHITTAKER

In this paper I will look at pot burials on the Greek mainland during the Early and Middle Bronze Ages. Burials in pithoi (large storage jars) first occur on the Greek mainland in the Early Helladic period and are found throughout the Middle Helladic period, although they seem to have been more popular in some regions than in others. In my discussion I will focus on the following topics:

- the contexts in which Greek Bronze Age pithos burials are found and their association with other types of burials.
- the particular characteristics of the pithos burials identified on the Greek mainland.
- possible connections with pot burials found elsewhere in the Aegean and the Eastern Mediterranean.
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#### Groundstone and Rock-Cut Tools in the Ancient Near East



The topic of this workshop concerns groundstone tools and rock-cut installations in the Near East from all periods. These two categories of objects have often been overlooked by archaeologists, yet they are very frequent in the archaeological record and, more importantly, their study can reveal crucial aspects of ancient societies. From procurement of raw material to patterns of use and discard, these tools can give us much information about the activities they were involved in, for example food processing and craft productions, and about the ways these activities were organised, thus potentially revealing both hierarchical and horizontal divisions across society (e.g. wealth inequality, gender divisions). Moreover, raw material and finished product procurement patterns can inform us about the relation between specific sites and their environment, potential trade routes and cross-cultural connections among distant regions. The aim of this workshop is to explore all aspects of groundstone tools and rock-cut installations, from their manufacture to their use, and stimulate a debate about new methodologies to approach this material. Constructive discussions will be run about these issues which can be ultimately be connected to socioeconomic aspects of Near Eastern societies.

#### **Organizers:**

Andrea SQUITIERI Institute of Archaeology University College London 31–34 Gordon Square London, WC1H OPY, UK andrea.squitieri.10@ucl.ac.uk

#### Participants (in alphabetical order):

David EITAM Institute of Archaeology Hebrew University Mount Scopus 91905 Jerusalem, Israel david.eitam@mail.huji.ac.il Katherine WRIGHT Institute of Archaeology University College London 31-34 Gordon Square London, WC1H 0PY, UK k.wright@ucl.ac.uk

• • • • •		
BEN-YOSEF Erez	GREENER Aaron	
Tel Aviv University	Bar-Ilan University	
ebenyose@post.tau.ac.il	Aarongreener@gmail.com	
BUONASERA Tammy	ÖGÜT Birgül	
University of Arizona, Tucson	Freie Universität Berlin	
tyb@email.arizona.edu	ogut@zedat.fu-berlin.de	
COHEN KLONYMUS Haggai	GREENELD, Haskell	
The Hebrew University of Jerusalem	University of Manitoba	
hck4@outlook.com	Haskel.Greenfield@umanitoba.ca	

#### List of Lectures/Program:

	Lecturer	Title
1	Aaron Greener / Erez Ben-Yosef	Ground Stones in Metallurgical Contexts: Towards a Definition of Ancient Smelters' Tool Kit
2	David Eitam	Functional study of stone tools: some guidelines for future study
3	Andrea Squitieri	Patterns of exchange of basalt groundstone tools and vessels on the Levant
4	Katherine Wright	Early forms of craft specialization in the Near Eastern Neolithic: ground stone artefacts and the development of craft production, technology and art
5	Birgül Ögüt	A stone with a hole? Functional analyses of ground stones from Aeneolithic Monjukli Depe, South Turkmenistan
6	Haggai Cohen Klonymus	Social Aspects in the Comparison of the Hellenistic and Iron Age Groundstone Tools Assemblages in Khirbet Qeiyafa
7	Haskell Greeneld et al.	Provenance and exchange of basalt ground stone artefacts of EB III Tell es-Safi/ Gath, Israel
8	Tammy Buonasera	Experiments and formal models of hunter-gatherer milling tool designs
Final D	Discussion	

#### Abstracts (in alphabetical order):

#### Experiments and formal models of hunter-gatherer milling tool designs Tammy BUONASERA

This paper will discuss early results from a series of controlled milling experiments. The experiments were designed to provide much needed comparative information on the use of various milling tool shapes and raw material choices observed among a wide range of prehistoric foraging societies. Volunteers processed wild grass seeds, acorns, or tule roots on ten different milling tool designs - from large basalt mortars to shallow sandstone grinding slabs. Results provide empirical data to formally model interactions between tool morphology, raw material choice, product output, wear rates, and overall labor costs. This information can help generate better-informed hypotheses about specific constraints and tradeoffs faced by women in some prehistoric foraging societies under differing conditions of mobility and resource use.

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## Social Aspects in the Comparison of the Hellenistic and Iron Age Groundstone Tools Assemblages in Khirbet Qeiyafa

#### Haggai Cohen KLONYMUS

The site of Khirbet Qeiyafa, in the lowlands of Judea, provides an interesting opportunity to compare two different civilizations, separated by time, but who occupied the same location. Although inhabited during several periods, it was only the short occupations of the Iron Age and the Hellenistic periods that extensively used and covered the hill of Khirbet Qeiyafa. Both of the Iron Age and Hellenistic occupations left over 200 groundstone tools, which were found on the floors and in fills within the well preserved buildings and rooms of each period. A combination of functional typology, attribute analysis, and spatial analysis were used in the study of the groundstone tools assemblages in Khirbet Qeiyafa. Attribute analysis allows us to overcome the generalization of typological definitions by breaking item's characteristics to more specifically defined categories, such as raw material, design, shape, use, maintenance, secondary use, and disposal. The use of attribute analysis creates a common terminology that may be used as the basis for comparison between different assemblages. These attributes are seen as aspects of items' 'life history', and together with functional typology and spatial analysis, highlight the interactions between the human agents and their tools, and allow us a better understanding of the social behavior and social complexity of the site's inhabitants.

Although using the same environment, the Hellenistic and Iron Age inhabitants of Khirbet Qeiyafa used some distinct sources of raw material, had some different preferences of assigning a certain raw material to a specific tasks and used their space in a different manner. As we trace the different characteristics of the Iron Age and the Hellenistic settlements and their different endings, the comparison these two cultures may point at further insights which can be learnt from groundstone tools assemblages on the duration of occupation and the manner in which the site was deserted.

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### Functional study of stone tools: some guidelines for future study

David EITAM

Stone-made utensils (stone tools) in the ancient Middle East and Southern Mediterranean include ground stones and rock-cut utensils. The essence of stone tools is determined by its usage. Consequently, a systematic study of the functions of stone tools concentrate on the significance of the stone-tool, by focusing on its tasks and uses is requested. The research question is therefore what can we learn by studding the functions of stone tools assemblage about a particular site or are, culture or a period? The major problem concerning the study of ground stones and rock-cut utensils in particular is the lack of a comprehensive and agreed-upon methodology. A methodology using a broad and unified classification system, set up to comprise ground stone as well as rock-cut utensils and to match stone tool assemblage es of entities and diverse from a variety of prehistoric and historic periods. The revised system of documentation and presentation by scanning allow accurate and inclusive documenting of stone tools enable eventually the systematic accumulation of data that is vital for future studies. This kind of methodology permits comparative studies of stone tools in different periods (from the Epipaleolothic to late antiquity) and from different aspects in addition to functions, such as usewear or manufacturing processes, the origin of raw material, as well as the cultural and spiritual of some items.

Stone tool functions, as opposed to pottery vessel as an active object embedded in the usage and role of the utensil. This integral complexity of the study is problematic. Furthermore, ground stones in particular were frequently multifunctional or reused utensils and altered forms correspondingly (one or several times) along their 'life' duration. The key issue of ground stones study is therefore to comprehend the entire scale of functions and their significances, achieved by created a more flexible approach, using a multi-variables typology.

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#### Ground Stones in Metallurgical Contexts: Towards a Definition of Ancient Smelters' Tool Kit Aaron GREENER / Erez BEN-YOSEF

The archaeological study of the Timna Valley began over 50 years ago, during which it has become a key site for understanding ancient copper production technologies in the Near East and beyond. In the framework of the renewed excavations at several of the Iron II copper smelting sites, we conducted a pioneering study of the of ground stone assemblage. These tools are found at Timna in fantastic quantities, and include, among others, grinding slabs, pounders, hammering stones, mortars and anvils; most were manufactured of quartzite and granite rocks, exposed in several locations in the valley.

In this paper we will assess the Timna ground stone assemblage in its wider southern Arabah metallurgical context. By utilizing experimental archaeology, laboratory tests, statistical analysis and ethnographic studies, we will attempt to define the ancient smelters' stone tool kit. In addition, observations on the ground stone assemblages help improve our understanding of components of the smelting process itself. For example, the large quantities of grinding tools (in absolute and relative numbers) in smelting contexts strongly suggest that ore was pulverized into powder in preparation for smelting, rather than merely crushed into pea-sized fragments as suggested in several studies.

#### Provenance and exchange of basalt ground stone artefacts of EB III Tell es-Safi/Gath, Israel

Jeremy A. BELLER<sup>1,2</sup> / Mostafa FAYEK<sup>3</sup> / Haskel J. GREENFIELD<sup>4</sup> / Itzhag SHAI<sup>5</sup> / Aren M. MAEIR<sup>6</sup>

On-going excavations at the Early Bronze Age III settlement of Tell es-Safi/Gath, Israel have recovered a small assemblage of basalt ground stone objects in a residential neighbourhood. As basalt is not found within the Shephelah, the occurrence of basalt artefacts at settlements in this region has frequently been cited as evidence of movement of raw material or the exchange of commodities within the southern Levant (cf. Milevski 2008; Rutter & Philip 2008). However, only a limited number of studies have connected basalt artefacts with sources through geochemical provenance from this area of Israel. Using the geochemical profiles from previous studies and an XRF analysis, we attempt to identify the source of origin of 19 basalt grinding stones. The results demonstrate that the basalt artefacts originated from the sources in the East-ern Dead Sea, Jezreel Valley, and Galilee-Golan, thereby supporting previously held hypotheses about the movement of basalt objects over long distances from sources. No artefacts were linked to Egyptian sources and four did not have a suitable match. Consequently, these data provide evidence that EB urban centres, such as Tell es-Safi/Gath, were socio-economically connected even for quotidian objects to other regions of the southern Levant through the non-local exchange of traditionally domestic commodities.

Keywords: Basalt, ground stone, Tell es-Safi/Gath, provenance, Early Bronze Age, southern Levant

<sup>1</sup> Corresponding author/<sup>2</sup> University of Victoria, Department of Anthropology, Victoria BC; V8P 5C2, Canada; beller. jeremy.a@gmail.com/<sup>3</sup> University of Manitoba, Department of Geological Sciences, Winnipeg MB; R3T 2N2, Canada; Mostafa.Fayek@umanitoba.ca/<sup>4</sup> University of Manitoba, Department of Anthropology and St. Paul's College, Winnipeg MB; R3T 2N2, Canada; Haskel.Greenfield@umanitoba.ca/<sup>5</sup> Israel Heritage Department, Ariel University, P.O.B. 3, Ariel 40700 Israel; shai.itzick@gmail.com/<sup>6</sup> Bar-Ilan University, Institute of Archaeology, the Martin (Szusz) Department of Land of Israel Studies and Archaeology, Ramat Gan 52900, Israel; arenmaeir@gmail.com

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## A stone with a hole? Functional analyses of ground stones from Aeneolithic Monjukli Depe, South Turkmenistan

#### Birgül ÖGÜT

Often archaeologists are confronted with objects that seem to have clear functional assignments and can be connected to specific activities. For example, a large stone with a flattened or a convex smooth surface is generally regarded as a grinding slab, which could have been used for grinding grain and therefore for food preparation. Or a stone with a hole is considered a loom weight, which was used for weaving textiles and therefore belongs to the field of textile production.

However, as can be observed from Aeneolithic Monjukli Depe, grinding stones were most probably not only used for grain but for grinding pigments as well, and some door sockets could have been defined in other contexts as mortars or stone vessels.

In my contribution I want to discuss how archaeologist assume the functions of ground stones, how we can approach stones without an obvious functional assignment, and what to do with multifunctionality.

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#### Patterns of exchange of basalt groundstone tools and vessels on the Levant

Andrea SQUITIERI

Studies on the exchange of stone items have often focused on luxury objects made of semi-precious stones such as carnelian and lapis; however, also everyday items such as basalt groundstone tools and basalt vessels were exchanged across long distances in the ancient Levant. In this paper I will discuss about two main methods used to identify basalt object exchange patterns: provenance analysis and typological analysis. Through many examples from Levant spanning from the Natufian to the Persian periods I will show advantages and drawbacks of these two methods and how they have been applied to track down long distance trade routes within the Levant. I will discuss then about the cultural and political borders potentially crossed by exchanged basalt items, and how such a cross-cultural exchange has been affected by events such as the formation of territorial states and the establishment of empires. Ultimately, referring to the object value theoretical framework, I will discuss about the value of basalt items as exchanged items, whether their value of utilitarian tools was altered during the exchange process, and whether their value was re-defined in those cultural contexts different from those where these objects had been originally conceived.

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#### Early forms of craft specialization in the Near Eastern Neolithic: ground stone artefacts and the development of craft production, technology and art Katherine WRIGHT

Many questions about the beginnings of agriculture, agrarian households and craft specialization remain unanswered, but ground stone artefacts have unequalled potential for addressing some of the most central issues about prehistoric social change, especially changes in technology, craft production and early forms of craft specialization. Ground stone artefacts include any artefacts in which abrasion plays a key role in manufacture. Such artefacts therefore include grinding tools, stone beads, stone sculptures and stone vessels. This paper presents results of a long term primary analysis of thousands of ground stone artefacts derived from prehistoric sites across the Near East, including the Levant, Turkey and selected examples from Iraq and Iran. Changes in the incidence and types of ground stone artefacts have been widely mentioned in connection with major models for the origins of agriculture in the Near East. The spatial and social organization of abraded stone tool use also provides crucial evidence for understanding how the agrarian household emerged. A wide variety of evidence points to the early development of household-level craft specialization in the Near Eastern Neolithic. Case studies discussed include the Azraq-Jilat sites (Jordan); Beidha (Jordan); Catalhoyuk East (Turkey); Zawi Chemi Shanidar (Iraq) and Ganj Dareh Tepe (Iran).

#### Working at Home in the Ancient Near East



Ancient Near Eastern archaeological and epigraphical evidence reveals that non-institutional economic agents played a decisive role concerning production, distribution and trade of crafted goods, animal husbandry as well as agricultural activities and credit facilitation since the beginning of Bronze Age. While archaeological data provides us with workshops' remains set up in private houses evidencing several kinds of productions, textual data testifies the role of households and private entrepreneurs, notably thanks to the lists of workmen, ration lists, herding contracts, silver and barley loans. It seems that these private entities could have been very efficient and specialized. They could have even in some cases been assimilated into private enterprises, which were able to handle their own administrative duties and accumulate great wealth.

The aim of this workshop is to gather specialists dealing with both archaeological and textual evidence in order to reconstruct and define the composition, importance and operating model of the private groups both concerning production and trade with the greatest accuracy possible. The papers will focus on detailed analysis of dwellings, their installations and finds as well as epigraphical documentation testifying the role and importance of private individuals, households and merchants within early Near Eastern economic system.

#### Organizers:

Juliette MAS Département des sciences de l'Antiquité Service d'assyriologie Université de Liège place du 20-Août, 7 4000 Liège, Belgium juliettemas@hotmail.com Palmiro NOTIZIA Centro de Ciencias Humanas y Sociales – CSIC C/Albasanz, 26-28 28037 Madrid, Spain pnotizia@gmail.com

#### Participants (in alphabetical order):

BAKER Heather D.
University of Toronto
heather.baker@utoronto.ca
BARJAMOVIC Gojko
Harvard University
barjamovic@fas.harvard.edu
BATTINI Laura
CNRS Maison de l'Orient et de la Méditerranée
laura.battini@mom.fr
BRUSASCO Paolo
Università degli Studi di Genova
Paolo.Brusasco@unige.it
GARFINKLE Steven
Western Washington University
Steven.Garfinkle@wwu.edu
GODDEERIS Anne
University of Gent

Anna.Goddeeris@UGent.be

LANERI Nicola
University of Catania
nicolalaneri@hotmail.com
OTTO Adelheid
Ludwig Maximilians University Munich
aotto@lmu.de
PEYRONEL Luca
Università IULM Milano
luca.peyronel@iulm.it
PRUSS Alexander
Johannes Gutenberg Mainz University
apruss@uni-mainz.de
YOFFEE Norman
University of Michigan
nyoffee@umich.edu

#### List of Lectures/Program:

	Lecturer	Title
Part I – Chair: Juliette Mas		
9:30	Luca Peyronel	Workshops and houses at Ebla during the Old Syrian Period (c. 2000–1600 BC)
10:00	Adelheid Otto	A workshop of a smith and goldsmith in a private house at Tall Bazi (Syria)
10:30	Laura Battini	Working at Nuzi
Part II – Chair: Palmiro Notizia		
11:30	Steven Garfinkle	The House of Ur-Shaga: Ur III Merchants in Their Non-Institutional Context
12:00	Anne Goddeeris	Old Babylonian Flex-Work? The duties of a priest at home and in the temple
12:30	Heather Baker	Domestic space and private enterprise in urban Babylonia
Part III – Chair: Alexander Pruss		
14:30	Paolo Brusasco	Reconstructing the Flow of Life and Work in Mesopotamian Houses: An Integrated Textual and Multisensory Approach
15:00	Nicola Laneri	The entanglement of houses, graves and subsistence strategies in ancient Meso- potamia: An archaeological perspective
15:30	Juliette Mas	Oikoi and State. A new light on Upper Mesopotamian economic system
Part IV – Chair: Steven Garfinkle		
16:30	Alexander Pruss	The organization of labour at Tell Beydar
17:00	Palmiro Notizia	What is Institutional? The case of the House of Ur-DUN
17:30	Gojko Barjamovic / Norman Yoffee	Working at home, traveling abroad: Old Assyrian trade and archaeological theory
Final Discussion		

#### Abstracts (in alphabetical order):

## Domestic space and private enterprise in urban Babylonia

Heather D. BAKER

Although the excavations of Neo- and Late Babylonian houses have produced rather little evidence that may be directly associated with the economic activities of the occupants, the investigation of both textual and archaeological data provides a firmer basis for addressing the question of working at home. The numerous contemporary archival documents shed light on the kinds of activities undertaken by people across the social spectrum, including slaves, members of the temple personnel, and private entrepreneurs. Moreover, the cuneiform texts also sometimes refer to the spaces in which specialist activities were carried out, including shops and workshops. Thus, the integration of cuneiform and material evidence is vital for addressing this topic. In the absence of discrete industrial zones outside of the institutional context (temple and palace), the household formed the focal point for many of the city-dwellers' work-related activities in the private sphere. Building on the author's recent work on the social use of domestic space, the present paper reviews the evidence for economic activity taking place within the urban residential setting. It then contextualises the results in the light of prevailing models of Babylonian urbanism.

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#### Working at home, traveling abroad: Old Assyrian trade and archaeological theory

Gojko BARJAMOVIC / Norman YOFFEE

Our current knowledge of the Old Assyrian trading system effectively challenges previous notions of centralized palace economies controlling the production, distribution, consumption and exchange of goods in the ancient Near East (and elsewhere). In the thousands of texts known to us there is not a single mention of a "palace" at Assur. Yet the privately organized and financed trade required a level of state intervention. The lower mound at Kültepe, thought to be the physical manifestation of the kārum at Kanesh, the hub of the trading system in Anatolia, is not the sole district of Assyrian traders. In addition to presenting new research on Old Assyrian trade, we shall problematize the rigid distinction between public and private economies. Finally, we consider the implications of Old Assyrian data for the study of trade in other times and places in Mesopotamia and beyond.

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#### Working at Nuzi

#### Laura BATTINI

After preliminary remarks on the possibility of recognising workshops in houses and related problems, this communication treats the houses of Nuzi on the basis of archaeological and textual sources.

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## Reconstructing the Flow of Life and Work in Mesopotamian Houses: An Integrated Textual and Multisensory Approach

#### Paolo BRUSASCO

The paper shows that in order to produce a more holistic vision of how life and work are intermingled in ancient Mesopotamian houses an integrated approach of textual, architectural, movement and multisensorial evidence must be adopted. Drawing on third- to second-millennium B.C. case studies from Mesopotamia (Ur, Nippur, Isin, Eshnunna, Babylon, Harâdum, etc.), the author focuses on sensory habitual experience of "lived space" by different kinds of residents and visitors to define how the house is conceptualised in terms of labour, production, local and long distance trade. Archival evidence from Old Babylonian houses such as Ur and Nippur offers a great contribute to the knowledge of different business activities and private enterprises but only the study of kinesthetic changes in multisensory trails (patterns of access, smell, light, isovist) may shed light on the hidden social aspects which are generally blurred in the textual data. It is argued that complex and often atypical regulations of movements are linked to manipulation of access, fields of view, light and shadow, smell, as well as sounds which govern daily life and working activities at different scales. Hence more refined and subtle power negotiations within the family and with the external world can be detected at the level of nonverbal and perceptual semiosis.

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#### The House of Ur-Shaga: Ur III Merchants in Their Non-Institutional Context

#### Steven GARFINKLE

Observers of the early Mesopotamian economy have long recognized the important role played by merchants (Sumerian dam-gar<sub>3</sub>) as facilitators of commerce. The era of the Ur III dynasty (conventionally 2112–2004 BC) provides a wealth of surviving documentary evidence for merchants organizing trade in crafts, agricultural surplus, animals, and precious materials, as well as providing credit.

The activities of merchants were especially significant as managers of exchange on behalf of the large institutions of southern Mesopotamia. Some debate continues as to whether the merchants were under the direct control of the institutions or whether they were engaged in entrepreneurial activities on behalf of their own households. This paper focuses on the evidence for one very active family of merchants at Girsu/ Lagash in order to reinforce my own conclusions that the merchants worked independently of institutional authority.

Using comparative evidence from other late third and early second millennia sites, I will establish the ways in which the families of merchants often served the interests of the crown while benefiting their own households. I will also highlight the ways in which this work was centered on families and on the homes in which they lived.

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#### Old Babylonian Flex-Work? The duties of a priest at home and in the temple Anne GODDEERIS

Unfortunately, no job description of Babylonian clerical offices exists. Even ritual texts offer only tiny scraps of information, moreover shedding light on only one aspect of the multi-faceted employment of a priest. To get a more comprehensive idea of the professional activities of the priests, we must rely on elusive references in judicial and administrative documents.

Whatever a cultic office may have involved, it was certainly not a nine to five job; a priest took his work home, he did not leave his responsibilities and concerns at the temple's threshold. Moreover, cultic offices were considered to be part of the private estate (é ab-ba) of the priest and were accordingly inherited, sold, exchanged and divided in fractions. The implications of this "privatization" of temple offices, for the cult remain to be assessed as well.

In this paper, I will investigate where the Old Babylonian priests took care of their assignments, at home or in the temple. This will be attempted by juxtaposing the data found in the private archives belonging to priests from Ur, Nippur and Sippar to the references to their offices found in the temple administration. In these cities, the archaeological remains of the houses in which the priests lived are preserved. The archaeological context of the temple archives, on the other hand, is not known, or they were found in secondary context –as filling or foundation material.

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#### The entanglement of houses, graves and subsistence strategies in ancient Mesopotamia: An archaeological perspective

Nicola LANERI

During the early second millennium BC, a complex form of long-distance trade of finished goods and raw materials developed between private merchants inhabiting Mesopotamia cities and groups located in Anatolia, Iran and the Persian Gulf. Information about this long-distance trade is available from written cuneiform documents, whereas the archaeological data give us a picture in which emerging groups strongly involved in long-distance trade are located in newly developed neighborhoods, with houses that are planned including residential graves, and have clear access to goods normally relegated to religious or royal elites.

With these perspectives in mind, the paper to be presented at the workshop will investigate, through a comparative perspective of the available archaeological and textual data, the role played by the intermingling of subsistence strategies, house planning and ancestors cult in defining the emergence of these new social groups in the social landscape of Mesopotamian societies during the early second millennium BC.

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## Oikoi and State. A new light on Upper Mesopotamian economic system

Households constituted a main element of the Mesopotamian city. In fact, they were the main labor force and consumption entities but they also employed people to take part in their economic activities. Furthermore, they provided population with the food, goods and services essential for urban life. The official institutions (especially the Palace) were also very important in this regard. However, defining the interactions between oikoi and the Palace is quite difficult, as well as defining the importance of both components. In fact, on one side, the archaeological data provides us with evidence of production in private context. On the other side, the Palace provides us with official textual documentation attesting production, and except in rare cases, we have no identified archaeological evidence of production. In the cases where the public institutions did supply the raw materials, hired workforce, and dealt with the distribution of produced goods, based on the archaeological data, it seems that the production usually

did not take place in the palace itself. Specialized buildings are also very rare, a situation, which contrasts with what could be observed in private houses. Nevertheless, putting together archaeological and textual evidence shall help us to better understand the importance and the role of private economic groups and state entanglement in early Upper Mesopotamian economic system.

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#### What is Institutional? The case of the House of Ur-DUN

Palmiro NOTIZIA

Aside from institutional households (temple and palace), a good number of "private" - or better personal - estates are known from the Neo-Sumerian period, which were part of the greater network of house-holds that comprised the patrimonial state of Ur. These households, named after their heads (members of the royal entourage, of the military or of the local elite, merchants, cultic officials etc.), controlled extensive fields, gardens and orchards, as well as herds of sheep and cattle, but were only rarely mentioned in the administrative documents from the provincial archives. One of the best-documented personal household is the one belonging to Ur-DUN, whose indentity is uncertain. His estate was located in the Girsu/Lagas province and played an important role in animal fattening and wool production. The aim of the present paper is to describe the economic activities of the household of Ur-DUN according to the available sources and to highlight how it interacted with the provincial institutional economy and the crown/military sector.

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## A workshop of a smith and goldsmith in a private house at Tall Bazi, Syria Adelheid OTTO

This paper presents the evidence of a private house in the Weststadt of Tall Bazi, which was destroyed by fire around 1350 BC and therefore still contained considerable parts of its former inventory. The remaining installations, tools, pottery, jewellery and many other objects allows to reconstruct the activities which took place in this house. It turned out, that this was on the one hand a standard house, which was used for living just like the other neighbouring houses. On the other hand it was used as a workshop for the production of bronze tools and weapons and for jewellery. This house is just one example of several in Bazi, where manufacturing and living took place side by side.

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#### Workshops and houses at Ebla during the Old Syrian Period (c. 2000–1600 BC) Luca PEYRONEL

A large quarter of dwellings has been brought to light in the southern Lower Town of Ebla during the 2001–2008 excavation seasons. The well preserved structures, installations and finds retrieved in the destruction level that sealed the buildings, dated to the end of Middle Bronze (c. 1800–1600 BC), allow a detailed reconstruction of the activities carried on in the houses, offering interesting insights on the urban life in an important town of Northern Levant. The evidence from the private quarter is compared with funerary assemblages retrieved in contemporary burials from the Acropolis slopes, suggesting the presence of a sector of the Citadel inhabited by people involved in trade and handicraft production.

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#### The organization of labour at Tell Beydar

Alexander PRUSS

The site of Tell Beydar (ancient Nabada), situated in the Khabur triangle, has yielded substantial information on the organization of a provincial town in late pre-Sargonic Upper Mesopotamia. Both texts (mainly ration lists) and excavated features (private houses and workshops) allow a reconstruction of the labour system in which communal organization of work played a large role.

### Ancient Lagash: A Workshop on Current Research and Future Trajectories

The ancient state of Lagash was one of the major political powers in the Sumerian world of the third millennium BCE. Presently located in southern Iraq, this state incorporated three main cities: Girsu (Tello), Lagash (Tell al-Hiba), and Nigin (Tell Surghul). Early excavations at Tello retrieved textual records and artifacts that remain crucial and inexhaustible sources for our understanding of the social, political, economic, and religious structure of a Sumerian state.

The recent resumption of various excavation, survey and publication projects dealing with the Lagash region necessitate a scientific dialogue. This workshop will bring together scholars from multiple disciplines who are actively engaged in the study of Lagash in order to facilitate collegiality and explore avenues for continuing research and fieldwork. Papers in this workshop will present and compare datasets and analytical results from ongoing projects. Through these presentations, the workshop aims to promote discussions on topics such as chronology, landscape, and urbanism and to facilitate the development of future research designs.

#### **Organizers:**

Davide NADALI Sapienza University of Rome – Italy Dipartimento di Scienze dell'Antichità Vetrerie Sciarra, Via dei Volsci 122 00185 Roma, Italy davide.nadali@uniroma1.it Holly PITTMAN University of Pennsylvania, Elliot and Roslyn Jaffe History of Art Building 3405 Woodland Walk, Philadelphia, PA 19104-6208 hpittman@sas.upenn.edu Andrea POLCARO Dipartimento di Lettere Università degli Studi di Perugia Piazza Morlacchi 06123 Perugia, Italy andrea.polcaro@unipg.it

#### Participants (in alphabetical order):

AL-HAMDANI Abdulamir	POURNELLE Jennifer R.
Stony Brook University, SBAH Iraq	Environment and Sustainability Program, University
ASHBY, Darren	of South Carolina School of Earth, Ocean and Envi-
University of Pennsylvania	ronment
CARTER Elizabeth	RENETTE Steve
University of California	University of Pennsylvania
GOODMAN Reed	REY Sébastien
University of Pennsylvania	British Museum, UK
HRITZ Carrie	ROST Stephanie
American Association for the Advancement of Science	Stony Brook University
Fellow, National Science Foundation-Geoscience	SCHRAKAMP Ingo
JOTHERI Jaafar	Freie Universität Berlin
Durham University	STONE Elizabeth
LECOMPTE Camille	Stony Brook University
CNRS-Université Paris I-Université Paris Ouest Nan-	VACCA Agnese
terre La Défense-Ministère de la Culture	Sapienza Università di Roma
PIZZIMENTI Sara	ZINGARELLO Melania
Sapienza Università di Roma	Sapienza Università di Roma

#### List of Lectures/Program:

	Lecturer	Title
Survey	S	
1	Jennifer R. Pournelle / Carrie Hritz	Cities of the Sealands: Form and Function in Marshland Agricultural Com- munities
2	Jaafar Jotheri	Reconstruction and Dating of Palaeochannels and Marsh in Lagash Region



3	Stephanie Rost	Organizing Canal Maintenance in Ancient Lagash: The case of the "Canal going to Nina"
4	Carrie Hritz	The Umma-Lagash Border Conflict: A View from Above
5	Abdulamir Al-Hamdani	A New Survey for Umma-Lagash Region
Tell Su	rghul/Nigin	
6	Davide Nadali / Andrea Polcaro	Excavating the Ancient State of Lagash: The New Evidences from Tell Sur- ghul/Nigin
7	Agnese Vacca	The Ubaid Period at Nigin: First Results from Area B Excavations and Their Significance in a Regional Perspective
8	Sara Pizzimenti	The Uruk Period in Southern Mesopotamia: New Data from the Area A Exca- vation at Tell Surghul/Nigin within a Regional Perspective
9	Melania Zingarello	Searching for Nigin: Third Millennium BC Archaeological and Textual Data between Presence and Absence
Al-Hiba	a/Lagash	
10	Holly Pittman / Darren Ashby	The Early Dynastic Built Environment at Tell al-Hiba, ancient Lagash
11	Reed Goodman / Elizabeth Stone / Elizabeth Carter	Combining Heritage Data and Digital Technologies: The Architectural Layout of Ancient Lagash
12	Holly Pittman / Steve Renette	The Material Culture of Al-Hiba: Glyptic and Ceramic Evidence
Telloh/	/Girsu	
13	Sébastien Rey / Camille Lecompte / Fatima Yassir Hussein	Tello/Girsu. New research on the religious megapolis of the Lagash city-state
14	Ingo Schrakamp	Water Management in 3 <sup>rd</sup> millennium Mesopotamia. Cuneiform evidence from the Early Dynastic IIIb City-State of Lagash (24 <sup>th</sup> century BC)

#### Abstracts:

### SURVEYS

#### Cities of the Sealands: Form and Function in Marshland Agricultural Communities Jennifer R. POURNELLE / Carrie HRITZ

Over the past century, the settlement landscape of southern Mesopotamia has been reconstructed from archaeological excavation and settlement survey, analyses of accounting records, and translations of ancient texts. From the 3<sup>rd</sup> millennium B.C. onward, it is modelled as an enduring and relatively homogenous settlement system, comprising a central city, located at a nodal point along the river system and containing 80% of the alluvial population, connected to a sprawling hinterland of suburbs and small secondary sites with low population densities interspersed among long, linear, irrigated agricultural fields. Partly due to assumptions about the primacy of irrigated grain agriculture and livestock husbandry in the rise of complex societies, and partly due to inaccessibility, the lower delta of southern Iraq southeast of the Shatt al-Gharraf river has been omitted from these models.

Examining this area to the present shoreline of the Gulf, we demonstrate the density of uninvestigated archaeological sites; reconstruct settlement distributions; identify off-mound features that comprise a settlement's broader economic and cultural landscape; and indicate broad ecological boundaries. While this ecosystem as a whole is resilient, highly productive, and buffered from most extreme effects of climatic variation and upstream change, at the local scale, it is sensitive to both, resulting in dynamic ecological boundaries and resource availability. We show that, in contrast to the geographically extensive, demarcated land tenure systems linking mounded sites, river levees, and irrigable plains on the upper alluvium, the spatial organization of communities in the deltaic lowlands follows a very different logic. We identify six general settlement types, and suggest that these reflect continual cultural, physical, and

economic negotiation and renegotiation of spatially and temporally diverse economic conditions that favored development of more loosely integrated, primarily self-sufficient communities.

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#### Reconstruction and Dating of Palaeochannels and Marsh in Lagash Region Jaafar JOTHERI

Mesopotamia consists of one of the most dauntingly complex landscapes in the world because of the way it has been sequentially deposited by alluvial processes, overprinted by 9000 years of human occupation and deflated by millennia of aeolian activity. Despite this complexity, some elements of the landscape have been argued to have developed along fairly simple principles.

This paper reconstructs the ancient courses of channels in the Lagash region. The focus is on tracing palaeochannel courses, determining when these palaeochannels were active, and understanding the pattern of avulsions. The research was carried out using a combination of geological, geomorphological, remote sensing, historical and archaeological approaches. Fieldwork included "groundtruthing" of the remote sensing work, drilling boreholes (up to 7m in depth), sedimentary and geomorphologic documentation and sample collection for radiocarbon dating.

Three main different periods of channel and marsh have been found. The oldest channels and marsh are associated with the sites such as Adab, Jidr, Zabalam, Umma, Lagash and Nina and dated back from the fourth millennium BC. The second main channel and marsh are from Parthian to Islamic i.e. the Dujaila palaeocanal that used to irrigate an area more than 100 km wide and more than 150 km long, transporting water from the western bank of the ancient Tigris, near the modern city of Kut, towards the south-west, passing the famous Islamic site of Wasit, before finally merging with the marshes. More than 500 human settlements were associated with this canal; most of these settlements were occupied from the Sasanian period to the Islamic period. The third main course is the modern Gharraf branch which is formed after the Mongol invasion.

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#### Organizing Canal Maintenance in Ancient Lagash: The case of the "Canal going to Nina" Stephanie ROST

The organization of irrigation is central to our understanding of early complex societies. Irrigation played a key role in the intensification of agriculture to produce the necessary surplus to sustain the very features of early statehood, such as urbanism, full time labor specialization, state institutions and status hierarchy. In most areas of the world, the study of ancient irrigation practices is based entirely on archaeological remains. However, it is frequently difficult to reconstruct the linkages between these material remains and the social organization of irrigation, particularly with respect to state administration and centralization, as different social realities can lead to similar material manifestations. There are few places in the world that have as extensive an archaeological and historical record on irrigation. The most comprehensive and oldest record on ancient irrigation management derives from the archives of the provincial capitals (mainly Umma and Lagash) of the Ur III state (2112–2004 B.C.). This paper will discuss four rare work assignment texts that provide detailed insights into the organization of the Lagash province and was as the main water artery of tremendous economic importance. The information of its maintenance provides insights into the understanding of the socio-economic organization of this province.

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#### The Umma-Lagash Border Conflict: A View from Above Carrie HRITZ

This paper will present an empirical and synthetic approach to the Sumerian landscape. Traditionally reliant largely on textual records, this consideration will integrate geospatial technologies and datasets,

excavated material and recent ground observations from the area around the site of Girsu to shed light on the border landscape between Umma and Lagash. This study will demonstrate, that when contextualized and correlated, these datasets can reveal a robust picture of real and perceived boundaries in the Sumerian landscape that contributed to fundamental transformations of social, political and economic organization.

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#### A New Survey for Umma-Lagash Region

Abdulamir AL-HAMDANI

Although most of the Mesopotamian alluvial plain has been surveyed and documented, many areas remain without documentation. Among these areas are the area east of Umma (modern Chokha), and the plain between Girsu (modern Tello) and Lagash (modern Telūl al-Hibā) south east to Nina (modern Zūrghol). In 2003–2009, I was able to initiate a series of surveys in the region of Umma-Lagash in order to document the settlement and canal systems.

#### **TELL SURGHUL/NIGIN**

#### Excavating the Ancient State of Lagash: The New Evidences from Tell Surghul/Nigin Davide NADALI / Andrea POLCARO

In 2015 the Italian Archaeological Expedition to Nigin started the exploration of Tell Surghul concentrating on two main areas (Area A and B) and operating a survey of the north-western sector of the city (Area C). The present communication presents the results of the operations carried out at Nigin focusing on the new evidences of the phases of occupation of the city from the 5<sup>th</sup> to the 4<sup>th</sup> millennium BC that in fact give additional information on the historical and archaeological development of the ancient region of Lagash. Actually, in the light of the recent discoveries at Tell Surghul, the paper also intends to point at the future trajectories of the archaeological exploration of the both city of Nigin and the other major urban centers of the region (Lagash and Girsu) and the neighboring landscape (existence of smaller settlements, morphology of the landscape, presence of water sources): the recovery of new archaeological explorations in the Ancient State of Lagash can in fact explain the phenomena of formation of urbanism and the management of landscape and environment.

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### The Ubaid Period at Nigin: First Results from Area B Excavations and Their Significance in a Regional Perspective

#### Agnese VACCA

The chronological scheme for the Ubaid period was first formulated by J. Oates, who proposed a four-folded division (Ubaid 1–4), based on the reanalysis of the long stratified sequence from Eridu. This chronology has been further refined, introducing two more phases, that is the Ubaid 0 or Oueili period and the Ubaid 5 or Terminal Ubaid. The first occupation of the southern alluvial plain dates back to the Ubaid 0, while it is during the Ubaid 3–4, that many elements of the southern material culture spread over a broad geographical area, extending far beyond Mesopotamia into Syria, southeast Anatolia and Iran. From the 1970s the intensification of field activities in the latter areas made the focus shift away from the Mesopotamian heartland, allowing to better define the Late Ubaid period (Ubaid 3–4 or 'Northern Ubaid' in Upper Mesopotamia) out of the southern alluvial plain and to elaborate different interpretative models on the so-called 'Ubaid phenomenon'. New researches in Southern Mesopotamia are crucial in order to bring the focus back on the Ubaid period in its core area; data from Nigin are all the more relevant, since they contribute to better define this period in the area of Lagash, barely touched by previous researches, which focused instead on the areas of Ur, Eridu, 'Oueili and Uruk.

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### The Uruk Period in Southern Mesopotamia: New Data from the Area A Excavation at Tell Surghul/ Nigin within a Regional Perspective

Sara PIZZIMENTI

Surveys conducted in Southern Mesopotamia shown, during the 4th millennium BC, the beginning of a demographic increase, together with a reorganization of the territory following a hierarchical scheme. The first cities make their appearance, a new form of state characterized by the control of the work, of the food production and of the religious power by the elites. The site of Uruk, with ca. 100ha of extension at the beginning of the 4th millennium BC, reached 250ha during the Late Uruk Period, while settlement of minor extension should gravitate around it.

Data on the Uruk Period mostly come from excavations and surveys conducted in Northern Mesopotamia, in the Middle Euphrates (e.g. Habuba Kebira and Jebel Haruda), in the Khabur (e.g. Tell Brak) and in the Malatya regions (e.g. Arslantepe). On the other hand, surveys and excavations focused on the Uruk period in Southern Mesopotamia were mainly conducted in the Uruk region. The new archaeological activities at Tell Surghul/Nigin, with the discovery of at least two Uruk phases in Area A, have given new data regarding the Uruk Period in Southern Mesopotamia, and more precisely in the Lagash region.

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# Searching for Nigin: Third Millennium BC Archaeological and Textual Data between Presence and Absence

#### Melania ZINGARELLO

Recent fieldwork conducted by the Italian Archaeological Expedition at Tell Surghul, ancient Nigin, has revealed evidence of a Third Millennium BC phase mainly consisting of pottery sherds and inscribed bricks and cones scattered on the site surface. This paper examines the information at disposal, both positive and negative, and attempts to evaluate the position of Nigin in its regional setting during the Third Millennium, also on the basis of textual data.

#### AL-HIBA/LAGASH

### The Early Dynastic Built Environment at Tell al-Hiba, ancient Lagash

Holly PITTMAN / Darren ASHBY

This paper presents the outlines of the Al-Hiba Publication Project. Following the death of Donald Hansen, Pittman began systematic work on preparing the final publication of the his work. Her team has prepared an entirely digital data archive that serves as the basis of the analysis and publication. At the time of presenting, Area G, the Early Dynastic I area, will be completely analyzed and the results of that work will be summarized. Darren Ashby will present the results of his reanalysis of the architecture of Area B with reference to temple installations and function. With the completion of the analysis of each area, the data and analysis will be made available on line.

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#### Combining Heritage Data and Digital Technologies: The Architectural Layout of Ancient Lagash Reed GOODMAN / Elizabeth STONE / Elizabeth CARTER

In 1984, a team led by E. Carter conducted one season of systematic surface survey at the southern Mesopotamian site of al-Hiba, the location of the ancient city of Lagash. Until now, these results have only received preliminary publication. As part of the ongoing Al-Hiba Publication Project, we are comparing the original records against an existent GIS, created from remotely sensed imagery. As a result, this paper considers the potential for multi-seasonal satellite data to reveal the intra-site organization of an Early Bronze Age city in the alluvial environment of southern Iraq.

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#### The Material Culture of Al-Hiba: Glyptic and Ceramic Evidence Holly PITTMAN / Steve RENETTE

Six seasons of excavations in four different areas of Al-Hiba uncovered occupation spanning the third and early second millennium BCE. The excavations focused on horizontal exposure of building levels, resulting in a comprehensive ceramic corpus. While this dataset does not provide a continuous sequence, it does present coherent and well-dated assemblages for the ED I, ED IIIA, ED IIIB, and Isin-Larsa periods. This corpus is significant because it not only represents the material culture of Lagash, but it also greatly expands our knowledge of ceramic types of otherwise poorly understood archaeological periods. In this paper, we will the importance of the stratified glypitc corpus as well as the significance of the Al-Hiba ceramic corpus. Methodological issues and avenues for future research will be presented.

### TELLOH/GIRSU

#### Tello/Girsu. New research on the religious megapolis of the Lagash city-state Sébastien REY / Camille LECOMPTE / Fatima Yassir HUSSEIN

Girsu (modern Tello) was considered to be the sanctuary of the patron-god Ningirsu and the sacred metropolis of the Lagash state. Extensively excavated between 1877 and 1933 by four French expeditions, and heavily plundered especially between 1909 and 1929, the site's topographical layout has considerably changed over the past 138 years, i.e., since the first exploration by Ernest de Sarzec in 1877. Today massive amounts of excavation spoil completely conceal, at least for the central mounds of the site, any significant landscape features of the archaic city. A new interdisciplinary research combing the re-examination of the archaeological evidence by means of remote sensing, enhanced by ground reconnaissance and new site explorations, and the reassessment of the textual sources, led to reconstruct the city's ancient landscape. This paper's primary aim is to present the first results of this research.

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#### Water Management in 3<sup>rd</sup> millennium Mesopotamia. Cuneiform evidence from the Early Dynastic IIIb City-State of Lagash (24<sup>th</sup> century BC) Ingo SCHRAKAMP

Southern Mesopotamian state economies were essentially agrarian and therefore based on artificial irrigation. The earliest coherent corpus of cuneiform texts pertaining to water mangement stems from the 24th century BC city state of Lagash and includes administrative texts from large-scale institutional households as well as official inscriptions of the rulers of Lagash. The evidence is manyfold and relates to the technological and social aspects of water management, such as the construction, maintenance, and control of irrigation systems and water management devices as well as the organisation of officials and corvee troops involved. On the basis of these texts, the present paper reviews the cuneiform terminology for water management devices, their administration and the organisation of their construction and maintenance.

# The Throne in Art and Archaeology: From the Dawn of the Ancient Near East until the Late Medieval Period



The throne is one of the most common means of portraying a monarch's elevated status, embodying and actively evoking the propaganda and ideology he or she wishes to convey to audiences earthly and divine. Throughout the periods and cultures of the Near East, thrones have served as visual manifestations of rulers' and deities' power and sovereignty.

The workshop will explore the practical and cultural significance of the throne in the Near East. It presents papers on various periods and cultures between the third millennium BCE and the sixteenth century CE, including Levantine, Aegean, Mesopotamian, and Anatolian. These focus on artistic, archaeological, architectural, and textual evidence of thrones; on dimensions associated with the materiality or symbolic meaning of the actual throne; and on visual and textual representations of thrones. Of particular interest are the throne's design and decorations; the throne's ceremonial role; the throne as a placeholder and substitute for the enthroned figure; and the throne as key to political thought.

Alongside the thematic study of the throne within individual Near Eastern societies, the workshop will also provide a unique opportunity for tracing cross-cultural and chronological connections, shedding new light on the evolution of the throne in the Near East.

#### Organizers:

Liat NAEH Archaeology Institute The Hebrew University of Jerusalem, Israel liat.naeh@mail.huji.ac.il

#### Participants (in alphabetical order):

(in alphabetical of del ).
CRAWFORD Cory Ohio University, USA crawfoc1@ohio.edu
CROOKS Sam La Trobe University, Australia sgcrooks@outlook.com
DAVID Arlette The Hebrew University of Jerusalem, Israel arlette.david@mail.huji.ac.il
HART Cheryl University of Wales Trinity Saint David, UK C.Hart@uwtsd.ac.uk
JOHNSON Christina Ruth Independent Scholar, USA christinjohnson2010@gmail.com
KOLLER Aaron Yeshiva University, USA koller@yu.edu
MANASSERO Niccolò Il Centro Ricerche Archeologiche e Scavi di Torino, Italy

Il Centro Ricerche Archeologicne e Scavi di Ior niccolmanassero@yahoo.it Dana BROSTOWSKY GILBOA Department of Islamic and Middle Eastern Studies The Hebrew University of Jerusalem, Israel danbros@gmail.com

MILSTEIN Rachel
The Hebrew University of Jerusalem, Israel rmilsten@mscc.huji.ac.il
MOSTAFA Heba
The University of Kansas, USA
h797m476@ku.edu
ORNAN Tallay
The Hebrew University of Jerusalem, Israel
tallay@mscc.huji.ac.il
SUTER Claudia E.
University of Bern, Switzerland
claudia-e.suter@unibas.ch
TARAGAN Hana
Tel Aviv University, Israel
taragan@post.tau.ac.il
TULLY Caroline
University of Melbourne
carolinejtully@gmail.com

#### List of Lectures/Program:

	Lecturer	Title
Part I:	Thrones as Platforms for Showc	asing Ideology in the Ancient Near East
8:15	Liat Naeh	Opening Remarks
8:30	Claudia E. Suter	Throne Designs and Their Messages in Third Millennium BCE Mesopotamia

#### Workshops 27 April

9:00	Tallay Ornan / Arlette David	A Throne for Two: Images of Divine Couples in the Ancient Near East and Egypt
Part II:	Relationships between Throne	s, Space and Landscape in the Ancient Near East and the Aegean World
9:30	Cory Crawford	Throne Architecture in Ancient Near Eastern Art and Text
10:00	Caroline Tully / Sam Crooks	Enthroned Upon Mountains: The Construction of Power in the Aegean Bronze Age
10:30	Christina Ruth Johnson	To Sit in Splendor: The Ivory Throne as an Agent of Identity in Tomb 79 from Salamis, Cyprus
11:00- 11:30	Coffee Break	
Part III:	: Thrones as Visualizations of P	ower in the Ancient Eastern Mediterranean
11:30	Cheryl Hart	Royal Flower Power? An Examination of the Rosette Motif as an Icono- graphic Element of Thrones and their Decoration in the Ancient Eastern Mediterranean
12:00	Aaron Koller	The Regalia of the Monarchy in the Ancient Levant: Throne vs. Crown
12:30	Liat Naeh	Levantine Thrones as Visual Expressions of Shifting Political Identities
13:00- 14:00	Lunch Break	
Part IV:	Religious, Political and Iconog	raphical Aspects of Thrones: from Pre-islamic Iran to Medieval Mosul
14:00	Niccolò Manassero	The Ivory Thrones from Parthian Nisa: Furniture Design between Philhellen- ism and Iranian Revival
14:30	Heba Mostafa	The Throne in Early Islamic Sources: Contested Narratives of Religious and Political Authority
15:00	Dana Brostowsky Gilboa	The X-Frame Throne: A Unique Motif in Medieval Islamic Art
16:00	Coffee Break	
Part V:	New Interpretations of Throne	s in the Islamic Culture
16:30	Hana Taragan	Throne and Ritual: The Case of a Thirteenth-Century Inlaid Tray-Stand in the Islamic Museum, Doha
17:00	Rachel Milstein	From King Solomon to Shah Jahan: Myths, Forms and Symbolic Meanings of Islamic Thrones

#### Abstracts (in alphabetical order):

#### The X-Frame Throne: A Unique Motif in Medieval Islamic Art Dana BROSTOWSKY GILBOA

Many medieval Islamic artworks include enthronement scenes that consistently present the ruler sitting on a throne. However, one unique throne shape appears in only a handful of examples from the early thirteenth century: it seems to be portable and has X-shaped, curved legs.

The rare representation of a Muslim ruler on this particular throne raises questions regarding this distinctive choice: Why was the ruler depicted sitting on it? In what contexts? Does this seat hold special meaning for the artist or his patron? Were they aware of the meaning it had in earlier cultures? From what immediate source was the motif adopted?

The image as it is seen in other cultures can serve to illuminate its rare appearances in medieval Islamic art. Indeed, its design calls to mind earlier thrones, e.g. the *sella curulis* from Roman times, which itself may have descended from the X-frame folding stool of ancient Egypt.

This paper explores the unique motif in medieval Islamic art in light of its visual origins. An examination of its meaning can reveal the message conveyed by these artworks. This analysis can offer a

deeper understanding of the Islamic ruler's visual representation and the royal iconography of the medieval era.

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### Throne Architecture in Ancient Near Eastern Art and Text

#### Cory CRAWFORD

In 1996 Michael Roaf drew attention in a brief paragraph to the congruence of monumental religious architecture and furniture as depicted in ancient Near Eastern art. He rightly noted the visual similarity between certain thrones and temple façades. This paper extends the discussion by surveying more comprehensively the representation of enthroned deities on ancient Near Eastern cylinder seals and sculpture from the third to the first millennium. It investigates the range of possibilities for depicting seated deities before moving to treat the affinity between architectural motifs on divine thrones within the context of semantics of enthronement in semitic texts. After discussing strategies of visual composition and the question of representation, the paper attempts to lay out some of the possible reasons for the affinity and connects to ongoing conversations about scale in divine representation, textual and visual. In this way I hope to refine a bit both the visual impact of scenes of enthronement as well as what they reveal about sacred architecture in the ancient Near East.

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#### Royal Flower Power? An Examination of the Rosette Motif as an Iconographic Element of Thrones and their Decoration in the Ancient Eastern Mediterranean Cheryl HART

Critical to society in the ancient world was the preservation of the cosmic order. It was the king who bore the heavy responsibility for ensuring the good order of both human society and of the cosmos at large in which human society was deeply embedded. Frankfort (1948) stated that 'whatever was significant was embedded in the life of the cosmos, and it was precisely the king's function to maintain the harmony of that integration'.

It is accepted that rulers in early cultures sought to project an image of power and authority. Elevation on a dais or throne was, and still is, a symbol of power in many parts of the world; ceremonial regalia and symbols of office further symbolising the sacred power of the rulers. Power-seeking individuals often found it necessary to acquire or adopt such symbols to legitimise their position.

In this paper, I will argue that the use of the rosette motif in association with either images of thrones, or as a decorative elements of the thrones themselves, acted symbolically, as a means of non-verbal communication, to enhance or promote the right of the incumbent to the 'throne' in its widest sense.

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#### To Sit in Splendor: The Ivory Throne as an Agent of Identity in Tomb 79 from Salamis, Cyprus Christina Ruth JOHNSON

The excellent preservation of the ivory-covered Throne Г from Tomb 79 in Salamis calls for a deeper analysis of the object than scholarship has offered since its discovery in the 1960s. My paper offers this indepth analysis by considering the throne as an agentive object. What was the identity that the deceased desired to create for himself by including this throne in his burial? Employing Alfred Gell's theory of object agency, I analyze the throne's various affective "mechanisms"—its nature as a luxury (specifically ivory) object, its sensory qualities (such as luminosity), and its iconography—to arrive at an answer. An imported luxury good, this throne symbolized the deceased's ability to maneuver foreign spaces and participate in a broader Near Eastern *koine* of collecting luxury ivory items. The luminosity of the throne's ivory would have been comprehended as a signal of the sacred, while the figural and geometric iconography carved into the ivories projected ideas of kingship, rebirth, and associations with a solar deity. By way of these mechanisms and others, the throne was meant to agentively mark, and thus legitimize, the deceased as a politically-able, diplomatically-savvy, and divinely-touched figure in the early days of monarchy on Cyprus.

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#### The Regalia of the Monarchy in the Ancient Levant: Throne vs. Crown Aaron KOLLER

In ancient Mesopotamia, the crown was a central icon of kingship (Hallo 1966; 1996:199-200, but see Civil 1980). As Hallo has also observed, however (1996:197), Mesopotamian conceptions of kingship differed deeply from their West Semitic counterparts. The central argument of this paper is that in Iron Age Levantine cultures (including Aramean, Phoenician, and Israelite) the throne was a far more potent symbol of the monarchy than was the crown, as is reflected in the iconography, and especially in texts. Texts from the Bible as well as royal inscriptions from other Levantine cultures make in clear that the preeminent regalia of royalty in the region were not crowns, but thrones and "shoots," or scepters.

Earlier scholars have studied the trappings of Levantine kingship (Von Rad 1947; Ziffer 2002; JC Greenfield 1971; 1987), but there have been no synthetic studies focusing on the epigraphic materials from elsewhere in the Levant. The paper will draw on such materials, as well as comparative evidence not only from Mesopotamia, but also from Egypt and the Hittite world to emphasize the significance of the image of the throne in constructing the image of the monarch in the Levant.

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# The Ivory Thrones from Parthian Nisa: Furniture Design between Philhellenism and Iranian Revival Niccolò MANASSERO

In the first half of the last century, the Southern Turkmenistan Archaeological Complex Expedition (Ju-TAKE) conducted excavations at Old Nisa, capital of the Parthian Empire and dynastic sanctuary of the Arsacid family. During the 1948 campaign, the excavation at the Square House – the Treasury of the royal citadel – brought to light a stunning inventory of ivory items, including the famous rhytons and some 40 parts of furniture.

A study on that furniture is currently being conducted by the applicant with a Grant by the Shelby White & Leon Levy Foundation. The work in progress shows that the items belonged to thrones and beds, whose shapes can be compared to a few similar specimens from various and distant sites, such as Ai Khanoum, Samaria, Duvanlij, and find matches in iconographical sources, such as coins, reliefs, paintings. However, the inventory from Nisa is by far the largest one from antiquity known to date: it is hugely important for our understanding of economical and trade issues of the Parthian Empire, as such amount of ivory could only be bought by royal commitment and likely come from India; and for discussing the Arsacid, and broadly speaking Iranian, ideology of kingship.

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#### From King Solomon to Shah Jahan: Myths, Forms and Symbolic Meanings of Islamic Thrones Rachel MILSTEIN

The myth of King Solomon's throne, which the Bible describes as an elaborate mechanical machine, gave birth to various mythological versions and historical imitations. The most famous among the latter was allegedly seen in the Byzantine court. Muslim rulers too, despite their customary low seating *à l'oriental*, quickly integrated real or imaginary thrones into their actual households or to their depicted images. They fully understood the meaning of the throne as seat of honor and as a symbol of a hierarchical space. More than a mechanical wonder, they considered it as a reference to and a heritage of great historical/mythological kings and they further invested it with cosmic symbols. As a result, the variable form of thrones along the Islamic ages reflects nuances of political, geographical and national or ethnic points of reference and identification. A short survey of the variety of thrones, most of which are known from artistic depictions, suffices to demonstrate how Muslim rulers expressed and diffused their understanding of the royal status and mission, of their special space in religious and cosmic terms, and of their political aspirations with regard to paragons and to rivals.

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#### The Throne in Early Islamic Sources: Contested Narratives of Religious and Political Authority Heba MOSTAFA

In early Islam the minbar came to represent the quintessential expression of authority as the seat of the caliphate. This was not only an homage to the Prophet Muhammad, who introduced the first minbar in Islam at his Mosque in Madina, but also part of an overarching agenda that deliberately shunned the throne alongside traditional vestiges of pre-Islamic kingship, such as crowns or scepters. However the Arabic sources paint a more complex picture regarding early attitudes to seats of authority. Not only did the early caliphs often seat upon various pseudo-thrones, such as the *kursī* (chair or pseudo-throne), and the *sarīr* (couch or bedstead) but the thrones of pre-Islamic rulers and Prophets, specifically the Prophet Solomon, were incorporated into these narratives in fascinating and unexpected ways. Furthermore, the sources problematize the issue of the Throne of Allah (*'arsh*) and his Footstool (*kursī*), and attempt to both locate them within the terrestrial realm while attempting to "track" their location and role within the events of both creation and the Day of Judgment. This paper will explore this context in an attempt to further understand early Islamic attitudes to seats of authority, specifically in relation to the role that the minbar would ultimately come to play.

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# Levantine Thrones as Visual Expressions of Shifting Political Identities

#### Liat NALH

Archaeological excavations have unearthed numerous renderings of thrones from the Bronze and Iron Ages in the Levant. These include two-dimensional depictions of thrones; three-dimensional throne fragments or decorations that may have embellished thrones; enthroned figurines; and models of thrones. Diachronic study of these artifacts traces the development of royal identity in the Levant through two intertwined axes – a religious axis and a political axis, both manifest in throne design and use in the Levant. From a religious perspective, the throne embodies the unbreakable bond between divine and royal iconography in the Levant. Moreover, it associates the ruler with specific protective beings and emblems, indicative of Levantine religious thought and royal ideology. In terms of its political features, the throne exposes inherent tensions: the prevalence of foreign influences from Ancient Egypt and Mesopotamia conflicts with the local Levantine ruler's attempt to define and distinguish his image for his earthly and divine audiences. The combined analysis of all of these aspects of the throne – and specifically the way it evolved from the Bronze Age to the Iron Age – brings to light some new insights on visual expressions of the shifting identity of Levantine rulers.

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## A Throne for Two: Images of Divine Couples in the Ancient Near East and Egypt

Tallay ORNAN / Arlette DAVID

A few representations of a divine couple enthroned, the female figure sitting on the lap of the male one, have survived in Mesopotamian iconography, on terracotta and stone plaques, on the Ur-Namma stela from Ur, and on a Syrian cylinder seal of the 19th-18th centuries BCE. In Egypt, the motif is restricted to the reign of Akhenaten, with a statuette and two stelae figuring Akhenaten and Nefertiti in this fashion. The ancient oriental motif may have traveled to Egypt at a time when Mesopotamian mythological texts were used in Amarna schools and other motifs of eastern origin seem to have been favored.

The representation of a divine/royal couple sharing the same throne in a position usually reserved in Mesopotamian and Egyptian art for an adult figure with a child hints to shared thematics surrounding the throne as a royal emblem, and as a locus of divine apparition and erotic symbolism.

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#### Throne Designs and Their Messages in Third Millennium BCE Mesopotamia Claudia E. SUTER

According to Sumerian literary texts, the throne belonged to the fluid group of accoutrements that were associated with kingship. Since kingship descended from heaven, insignia of kingship pertained to both

divine and human kings. They could also extend to high priests and priestesses who were symbolically married to a deity. While the verbal designations for these regalia do not distinguish between heavenly and earthly spheres, their designs in visual representation could vary with the holder and could change over time. Because regalia were not rigidly fixed in images, archaeologists have generally dismissed their existence. However, there are numerous clues indicating that thrones and other accoutrements associated with kingship were conceived as regalia also in the visual arts. This contribution will explore the subtle symbolical messages that throne designs transmitted in images.

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# Throne and Ritual: The Case of a Thirteenth-Century Inlaid Tray-Stand in the Islamic Museum, Doha Hana TARAGAN

Depicted on numerous brass objects inlaid with silver made in the Jazira, Syria and Egypt dating from the thirteenth and early-fourteenth centuries, are images of the ruler and his court.

I focus here on a tray-stand housed in The Museum of Islamic Art in Doha, Qatar (MW.110). At the center of the narrative is the enthroned ruler, seated on a lion-throne between two pairs of figures with an angelic canopy above his head and was commonly associated with the legendary throne of King Solomon. The other representations relate to his courtiers – mainly the office-holding amirs with all their attributes walking towards the enthroned sultan as if in procession.

Do they represent an event attended by amirs and servants as part of the 'courtly cycle' idea? Or, are they merely following an established tradition of visual rhetoric developed in both the East and West regarding the ruler and his power on the earth below with the grace of the heavens above?

These representations can, I believe, be understood as reflecting the ceremonies held in the courts of the Ayyubid and Bahri Mamluk rulers. They constitute a visual rhetoric that also resonates in the literary texts of the period.

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#### Enthroned Upon Mountains: The Construction of Power in the Aegean Bronze Age

#### Caroline TULLY / Sam CROOKS

The Bronze Age Aegean lacks a readily legible iconography of rulership, permitting widely contrasting speculation on the character of Minoan society; it was egalitarian, heterarchical, gynocratic or a theocracy overseen by priest-kings. That elites did exist is amply attested through mortuary, iconographic and architectural evidence including the Throne Room of the Late Minoan palace at Knossos in which a centrally-oriented throne is incorporated into the architectural fabric of the room. Frescoes adorn the wall into which the throne is set, griffins flanking its large, mountain-shaped back. Iconographic representations of human figures holding sceptres and standing upon mountains, and evidence for the increased palatial control of cultic activity at rural peak sanctuaries during the Neopalatial period (1750–1490 B.C.E.) suggest an association between rulership and the mountainous landscape. Close analysis of seated figures within Minoan iconography reveals architectonic parallels to the Knossian throne, stepped structures surmounted by seated female figures functioning as abstract representations of the mountain form. It will be argued that literal and metaphoric representations of a mountain throne function within an ideological program associating rulership with the natural landscape, offering new insights into the construction of power in the Aegean Bronze Age.

### The CIPA Workshop on Saving the Heritage of Syria: Best Techniques and Methods for Data Capture, Storage and Dissemination



Hazards for tangible cultural heritage, such as historical and archaeological remains, can vary from natural catastrophes, environmental changes to human caused mismanagement and destruction. The importance of detailed documentation especially actualizes in the areas and cases that have become neglected and have faced destruction or loss. A strategy that can adapt the heritage documentation in 3D is needed. CIPA under ICOMOS (International Council on Monuments and Sites under UNESCO) and ISPRS (International Society of Photogrammetry and Remote Sensing), is providing expertise in developing the best technical means for heritage documentation. The aim of this workshop is to provide this expertise to save and revive the heritage of Syria and to share ideas for the benefit of comparable cases. The Near East has been under severe turmoil over the past years, and Syria like Iraq has become the battlefield of various groups. This cradle of human civilization has faced war, destruction and looting of its heritage, the heritage that also belongs to the whole humankind. Remote-sensing, 3D technologies and methods based on laser and digital data capture are increasingly showing their applicability and potential to trace, retrieve and save valuable information to be studied and left for posterity.

Michael DONEUS

University of Vienna

1190 Vienna. Austria

michael.doneus@univie.ac.at

Institut für Urgeschichte & Historische Archäologie

#### **Organizers:**

Minna SILVER Archaeology, Faculty of Humanities 90014 University of Oulu, Finland minna.silver@helsinki.fi minnaangelina@artuklu.edu.tr

Participants (in alphabetical order): ALI Cheikhmous **GRUSSENMEYER** Pierre L'institut national des sciences appliquées de Strasbourg University of Strassbourg acheikhmous@unistra.fr pierre.grussenmeyer@insa-strasbourg.fr ABDULAC Samir MARA Hubert ICOMOS Forensic Computational Geometry Laboratory abdulac@wanadoo.fr hubert.mara@iwr.uni-heidelberg.de ABDULRAHMAN Ammar **MENEGAZZI** Cristina University of Konstanz UNESCO Office Beirut, Lebanon ammar.abdulrahman@uni-konstanz.de c.menegazzi@unesco.org **BEWLEY Robert** MUHESEN Nibal University of Oxford University of Copenhagen robert.bewley@arch.ox.ac.uk nibal@hum.ku.dk BRAEMER Frank Penacho SUSAN University of Nice-Sophia-Antipolis, CNRS ASOR frank.braemer@cepam.cnrs.fr asormaps@bu.edu **CUNLIFFE Emma TUCCI** Grazia University of Oxford University of Florence grazia.tucci@unifi.it emma.cunliffe@arch.ox.ac.uk FANGI Gabriele WALDHÄUSL Peter University of Ancona Vienna University of Technology g.fangi@univpm.it pw@ipf.tuwien.ac.at **GEORGOPOULOS** Andreas VAUGHN Andrew National Technical University of Athens ASOR drag@central.ntua.gr asored@bu.edu **GREENFIELD Haskel** St. Paul's College, University of Manitoba Haskel.Greenfield@umanitoba.ca

### List of Lectures/Program:

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2	Cristina Menegazzi / Ana Almagro-Vidal	The UNESCO Project "Emergency Safeguarding of the Syrian Cultural Heritage"
3	Frank Braemer	Science vs. Darkness: a Utopian View?
4	Michael Danti / Andrew Vaughn / Susan Penacho	The ASOR Cultural Heritage Initiatives: The Cultural Heritage Crises in Syria and Northern Iraq
5	Samir Abdulac / Bijan Rouhani / Elizabeth Lee / Mario Santana Quintero	Partnership for Safeguarding Cultural Heritage in Syria, Yemen and Iraq: Col- laboration between ICOMOS and CyArk
6	Michael Doneus	Techniques and Methods in Archaeological Remote-sensing for Cultural Heri- tage Documentation
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8	Fulvio Rinaudo / Minna Silver Francesca Quenda / Maria Laura Moretti	The CIPA Database for Saving the Heritage of Syria
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10	Gabriele Fangi / Wissam Wahbeh / Eva Salina Malinmevi / Roberto Pierdicca	Realized and Stored 3D Models in a Dedicated Database to Document Some Cultural Heritage Emergencies in Syria
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11	Minna Silver	The Anatomy of the SYGIS Project: Satellite Images, GIS, Fieldwork and 3D Modeling of Landscapes in Central Syria
12	Deland Wing / Haskel J. Greenfield / Aren M. Maeir	The Application of Terrestrial LiDAR Technology to the Study of Early Urban Sites in the Near East: Tel es-Safi/Gath, Israel
13	Hubert Mara	3D Technology within Digital Humanities: Analyzing Cuneiform Script with GigaMesh
14	Johannes Koder / Marcell Restle † / Peter Waldhäusl	Architectural Monuments of the Late Antique and Early Byzantine Time in the Hauran: Results of two Expeditions to Syria (1978, 1980)
15	Pierre Grussenmeyer	Saving the Heritage of Aleppo in Syria: Case Studies Based on Photogrammetry Archives of the Citadel and the Great Omayyad Mosque
16	Grazia Tucci / Valentina Bonora	Documenting Syrian Built Heritage to Increase the Awareness in the Public Conscience
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17	Nibal Muhesen	The Destruction of Syria's Cultural Heritage: a Mapping of Current Challenges and the Prospects for Post-conflict Reconstruction
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19	Emma Cunliffe	Syria: Actions, Reactions, and the International Perspective

#### Abstracts

#### Impact of the Crisis in Syria on Archaeology, Results and Suggestions

Ammar ABDULRAHMAN, University of Konstanz, former Director of the Archaeological Excavations in Syria (DGAM – Directorate-General of Antiquities and Museums, Syria)

It is not new to mention, how important the antiquities of Syria are and how they truly share a major part of the world cultural heritage. In Syria we have a sequence of history from prehistory to modern times, without interruption also witnessing main cultural revolutions such as the invention of agriculture as well as writing.

After the Arab uprising a lot of archaeological sites and monuments have been affected and also in somehow it has been harmful for Archaeology as a science. All the archaeological missions, foreign and national, have been cancelled. Also a lot of professors have lost their positions for different reasons not being able to attend their lectures, and after a while they were fired. On the other hand the students were also not able to attend the seminars and the activities, and in some hot areas, especially those that are out of the government control, they stopped their whole educational system.

The harmful destruction that occurred in the last five years was due to several reasons, and the most important is what have been done by ISIS, especially after their seizing 50% of the space of Syria. All this was faced from some local society with a high degree of responsibility, and they have succeeded in safeguarding a lot of sites and museums. All this would continue without an international interfere in order to prevent this cultural massacre.

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#### The UNESCO Project "Emergency Safeguarding of the Syrian Cultural Heritage"

Cristina MENEGAZZI, Head of the UNESCO-Syria project in Beirut / Ana ALMAGRO-VIDAL, CIPA, Fundación Montemadrid

The sad and dramatic events happened in Syria in the last 4 years of conflict have brought to the forefront the debate on how to protect, safeguard and document Cultural Heritage in conflict areas. Syrian heritage places have become battlefields, sources of illicit trafficking and lately deliberate targets of destruction because of what they represent in terms of cultural values.

These events require an international response, collaboration and effort to seek for ways to preserve the memory of these places. The UNESCO project "Emergency safeguarding of the Syrian Cultural Heritage" is tackling this crisis situation from many different fronts. One of this aspects is through technical assistance to Syrian professionals with the help and support of specialized experts.

The project, launched in February 2014, is developed following a triple approach:

- Monitor and assess the cultural heritage situation in Syria through updated and continued knowledge and documentation through the establishment of an International Observatory of Syrian Cultural Heritage
- Mitigate the destruction and loss of Syrian cultural heritage through national and international awareness-raising efforts
- Protect and safeguard Syrian cultural heritage through enhanced technical assistance and capacity-building for national stakeholders and beneficiaries.

In this sense the project is developing a series of training activities as well as technical meetings with Syrian professionals and stakeholders. Part of the action taken so far regarding built, movable and intangible heritage is the identification of the different needs and approaches that they require to document, assess and monitor cultural heritage, track losses and destruction, as well as enable the national cultural heritage stakeholders to be operational and accurate, not only during the conflict but also when planning post-recovery actions.

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#### Science vs. Darkness: a Utopian View? Frank BRAEMER, CEO, SHIRIN

s h i r ī n is an initiative from the global community of scholars active in the field of archaeology, art and history of the Ancient Near East. It brings together a significant proportion of those international research groups that were working in Syria prior to 2011, with the purpose of making their expertise available to wider heritage protection efforts. Accordingly, its International Committee includes the directors of a number of long-term international research programmes, and others who share their strong commitment to the effective protection of the heritage of Syria.

This s h i r ī n committee was created in response to a request by the participants at the 9<sup>th</sup> International Congress on the Archaeology of the Ancient Near East, in Basel, Switzerland, on June 10th, 2014, during a special workshop funded by the Swiss Society for Ancient Near Eastern Studies (SGOA). It seeks to represent the broad sweep of archaeological and historical research in Syria and is supported by the directors of research programmes active in neighbouring countries.

Representing the major institutions, universities and research centres in Europe, North America, Oceania, Eastern and Western Asia, the main purpose of s h i r ī n is to support governmental bodies and non-governmental organizations in their efforts to preserve and safeguard the heritage of Syria (sites, monuments & museums). It will take account of, and respond to, the needs of Syrian colleagues and authorities regardless of their political, religious or ethnic affiliation, in particular with respect to emergency steps and measures.

Composed of scholars who have, individually, a deep knowledge of the field, and collectively cover all regions of Syria, it will activate local networks in order to support, when possible, concrete actions to ensure the payment of the official site guardians and the protection of the excavation houses and storage depots. s h i r  $\bar{r}$  n – with the help of official and non-governmental bodies – will collect information on damage resulting from the current conflict and identify those cases in which emergency repairs or protective action may be required.

s h i r ī n will also collaborate on the creation of a comprehensive database of elements of Syrian heritage. This will provide a basic core of knowledge to which evidence of damage can be added on a case-by-case basis, and will allow the evaluation of the overall pattern and scale of damage resulting from the conflict, as it presents across different regions of Syria and the various classes of monument. It will thus propose a key source of information that can be made available to those involved in heritage protection at a local level, so that they have the necessary knowledge to prioritize heritage protection efforts in a systematic manner.

s h i r  $\bar{i}$  n also includes members with long and deep experience of architectural and artefactual restoration, and specialists in all the periods of the history and prehistory of Syria. By involving the international research community now, we intend that this capability will be fully formed and thus ready to support the local authorities and communities when the emphasis shifts from safeguarding and the documentation of damage, towards restoration and reconstruction.

Experience and expertise acquired by the members of the s h i r  $\bar{i}$  n Committee might as well be of some help in evaluating the provenience of illicitly excavated or purchased artefacts and artwork.

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#### The ASOR Cultural Heritage Initiatives: The Cultural Heritage Crises in Syria and Northern Iraq

Michael DANTI, FSA, University of Boston, ASOR – the American Schools of Oriental Research / Andrew VAUGHN, ASOR – the American Schools of Oriental Research / Susan PENACHO, ASOR – the American Schools of Oriental Research

Years of civil war in Syria and the seizure of much of northern Iraq and Syria by extremists have precipitated what is currently the world's largest humanitarian crisis. While the international community must focus foremost on ending the conflict and meeting basic human needs, protecting the region's irreplaceable cultural heritage forms an integral and inextricable part of humanitarian efforts. Looting, deliberate destructions of heritage places by extremists, combat damage, and illegal development occur daily in Syria and northern Iraq and are obliterating the cultural patrimony of millennia. Extremists are systematically disassembling the heritage sector in the conflict zone and seek to stamp out cultural diversity in what is nothing short of a war on culture. These crimes threaten to proliferate and spread the conflict, complicate peace efforts, and erode future stability and prosperity. Cultural identities and the futures of countless vibrant communities hang in the balance. To help to address these challenges, the U.S. Department of State and the American Schools of Oriental Research completed a cooperative agreement in August 2014 forming the ASOR Cultural Heritage Initiatives.

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# Partnership for Safeguarding Cultural Heritage in Syria, Yemen and Iraq: Collaboration between ICOMOS and CyArk

Samir ABDULAC, ICOMOS / Bijan ROUHANI, ICOMOS-ICORP-Blue Shield / Elizabeth LEE, CyArk / Mario Santana Quintero, CIPA-ICOMOS, University of Carleton

Given the dramatic events in Syria, Yemen and Iraq, as well as, other imminent sites in the region, ICO-MOS has adopted the Resolution 18GA 2014/21 for the safeguarding of cultural heritage in Syria and Iraq at its General Assembly in Florence, which indicates "with significant concern, the tragic impact of the on-going armed conflict in Syria since March 2011, which has led to a grave loss of every type of cultural heritage in Syria, including old cities, historical monuments, archaeological sites and collections".

For this reason a working group has been established for the coordination with other national and international stakeholders, conduct active monitoring, organize meetings and awareness events, as well as, to channelling information to other ICOMOS members and the public.

Furthermore, the working group has actively participated in capacity buildings activities, provide advice, assistance and the preparation of Action Plans. In this line, also ICOMOS with the contribution with its scientific committees, especially ICORP and CIPA has agreed to conduct a pilot project with Cyark Foundation to mobilize high tech documentation tools to record sites in Iraq and Syria.

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#### Techniques and Methods in Archaeological Remote-sensing for Cultural Heritage Documentation Michael DONEUS, CIPA, University of Vienna

A large part of our cultural heritage is still buried in the ground and remains undetected. This makes it vulnerable to any kind of destructive activities, as erosion, construction works, or looting. Therefore, archaeologists and heritage managers have to apply methods that allow to detect and document archaeological sites over large areas.

Archaeological remote sensing provides an important foundation for any kind of spatial archaeology (settlement-, environmental- or landscape archaeology), including the main methods of archaeological site detection and identification.

Aerial photography is a very cost-effective method for site discovery with the potential to provide detailed maps of archaeological structures. Large numbers of vertical and oblique images are stored in archaeological archives. They provide great archaeological potential, but in order to make use of their archaeological potential, the photographs have to be interpreted and mapped. Therefore, semi-automatic ortho-rectification of aerial photography is a hot topic of research.

Current standard imaging techniques do often not allow the detection of crop-marks if the contrast is too low within the range of the visible spectrum; a problem that may be solved using airborne imaging spectroscopy (also called airborne hyperspectral scanning). The scanning systems divide a part of the electromagnetic spectrum into a large number of electromagnetic bands, which all can be analysed individually. Therefore, a detailed investigation of those parts of the plant's spectral signature, which are most crucial for indicating stress, is possible.

Over the past few years, airborne laser scanning has, due to its active sensing principle (in contrast to photogrammetry and AHS) turned out to be a potential tool for recognition and measurement of

archaeological and palaeoenvironmental features that survived in the topography in open and wooded areas. Aside from geometrical information ALS additionally provides radiometric information (typically near-infrared), which adds another source of information on buried archaeological sites.

Finally, in recent years, airborne topo-bathymetric laser scanner systems are able to measure surfaces above and below the water table over large areas in high detail using very short and narrow green laser pulses, even revealing sunken archaeological structures in shallow water.

The proposed lecture will focus on its potential and recent developments of the mentioned techniques.

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# On the Possibilities for Crowdsourcing and Automated Structure from Motion (SfM) Algorithms for Cultural Heritage Documentation

Andreas GEORGOPOULOS, CIPA, NTUA - National Technical University of Athens

Cultural Heritage all over the world is at high risk. Natural and human activities endanger the current state of monuments and sites, whereas many of them have already been destroyed especially during the last years or are situated in hazardous environments. Very often in situ preventive, protective or restoration actions are difficult or even impossible, as e.g. in cases of earthquakes, fires or war activity. Digital preservation of cultural heritage is a challenging task within photogrammetry and computer vision communities, as efforts are taken to collect digital data, especially of the monuments that are at high risk. Visit to the field and data acquisition is not always feasible. To overcome the missing data problem, crowdsourced imagery is often used to create a visual representation of lost cultural heritage objects. Crowdsourcing has become possible with the advancement of the web technologies and the wide spreading of social media. Initiatives to collect imagery data from the public and create visual representations of recently destroyed or not monuments are presented and discussed in this study. Such digital representations may be 2D or 3D and definitely help preserve the memory and history of the lost Heritage and sometimes they also assist studies for their reconstruction.

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#### Databases and their Use for Protecting and Preserving the Tangible Heritage of Syria

#### The CIPA Database for Saving the Heritage of Syria

Fulvio RINAUDO, CIPA, Polytechnic University of Turin / Minna SILVER, CIPA, University of Oulu

CIPA, a joint organisation of ICOMOS and ISPRS, is contributing with its technical knowledge in saving the heritage of Syria. CIPA is constructing an open access database based on the data that CIPA and its members have collected during various projects in Syria over the years before the civil war broke out. In this way we wish to support the protection and preservation of the environment, sites, monuments and artefacts and the memory of the region that has been crucial for the human past and the emergence of civilizations. This will hopefully provide aid to revive the cultural heritage of Syria as much as it can be done after the destruction, damage and loss that has been taking place during the conflict. The idea is based on saving and providing the recording and documentation in digital data form for conservation, studies, analyses, dissemination and storage to serve institutions, organisations, cultural management stakeholders, individual researchers and private enthusiasts.

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#### Site Damage Databases: A Comparative Review

Robert BEWLEY / Emma CUNLIFFE, EAMENA – Endangered Archaeology in the Middle East & North Africa, University of Oxford

Recent conflicts across the MENA region have caused catastrophic damage to a growing number of archaeological and heritage sites. However, they are also threatened by increases in development, agriculture, and other more peaceful activities. Some of this damage has been widely publicised, enabling groups to record site details and conduct condition assessments. Goals include: awareness raising, site

stabilisation where possible, estimating the costs of rebuilding, and prioritising future reconstruction, amongst others. However, these efforts are relatively new, and there is no agreement on the most effective ways to record damage, as, given the ongoing situations, there has been no time to review the various methods used. A large number of organisations have created databases to record the damage, ranging from simple Microsoft Excel or website lists, to adaptations of market-based products (e.g. Microsoft Access), to custom-built modular designs. This presentation will give an overview of the principles underlying damage recording, and review some of the databases created for this purpose, remembering their different goals, with the aim of drawing out a set of suggestions for best practice.

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### Realized and Stored 3D Models in a Dedicated Database to Document Some Cultural Heritage Emergencies in Syria

Gabriele FANGI, CIPA, University of Ancona / Wissam WAHBEH / Eva Savina MALINVEMI / Roberto PIERDICCA

All six Syrian World Heritage properties were inscribed on the List of World Heritage in Danger, at the 37<sup>th</sup> session of the World Heritage Committee, held in Cambodia in June 2014: Ancient City of Aleppo, Ancient City of Bosra, Ancient City of Damascus, Ancient Villages of Northern Syria, Krak des Chevaliers and Qal'at Salah El-Din and finally the Site of Palmyra (see the following links: https://www.voutube.com/ watch?v=kr.a3e0DL5sA and https://www.youtube.com/watch?v=ltFFjjrUgtU). Apart the Ancient Villages of Northern Syria, the A. visited all the World Heritage sites and partly documented. In 2010, just before the war, the A. made a touristic trip together with Crua (Recreational Club of the Ancona University). It was the occasion to make some fast documentation of some Syrian CH monuments. Mostly of the images were taken by the A. not to make a survey, but as a photographic report, as fast and complete as possible. Syria is a country of many civilizations, Amorite, Aramaic, Phoenician, Roman, Byzantine, Islamic and Ottoman civilizations. Therefore it is full of cultural heritage remains. Unfortunately many of them have been destroyed by the war, beyond the thousand civilian people killed. But, the photographs taken in such a touristic way, have been used to try to get some usable plotting restitutions, and it worked successfully most of the times. These surveys could be useful in case of reconstruction and in case of lack of suitable alternative metric documentation. We built up a data-base of the available material to organize historic information, the localization and the state of the buildings. It was the occasion to define for every cultural heritage remain a collection of data and store it in a devoted database, to retrieve in an automatic way a single report to link a 3d model shared in a dedicated project on the internet.We built up a data-base of the available material.

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#### **Case Studies:**

#### The Anatomy of the SYGIS project: Satellite Images, GIS, Fieldwork and 3D Modeling of Landscapes in Central Syria

#### Minna SILVER, University of Oulu

The Finnish archaeological survey and mapping project SYGIS worked under the present author in the mountainous region of Jebel Bishri in Syria in 2000-2010 using remote-sensing methods, GIS, fieldwork and 3D landscape modelling. The aim was to document and study a vulnerable spatial boundary zone between the Syrian Desert and agricultural and irrigated fields of the Euphrates river and how the cultures have been affected by those environments. The project was an early initiative to use GIS in Syria and included providing GIS course to the members of the Syrian Antiquities Authority. In the 1990s new methods had been developed to study the archaeological remains of the nomads, which the project was able to apply and benefit afresh. Satellite imagery was used in studying environmental changes and prospecting ancient sites that were checked and documented in situ. Such as Landsat and QuickBird images were used with X-SAR data and ASTER-DEM to model the landscapes. The project highlights the importance to document and preserve mobile cultures, such as those of hunter-gatherers and pastoral

nomads. Bedouins are part of the Syrian culture and they are the followers of past pastoral nomads in the region.

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# The Application of Terrestrial LiDAR Technology to the Study of Early Urban Sites in the Near East: Tel es-Safi/Gath, Israel

Deland WING, University of Manitoba / Haskel J. GREENFIELD, University of Manitoba / Aren M. MAEIR, Bar-Ilan University

In recent years, LiDAR technology has been systematically applied to the study of archaeological sites and/or monuments largely as part of the study of landscape topography (including view sheds, architectural relationships, etc.). Rarely it is used as an analytical tool to record dimensions and stratigraphic relationships. LiDAR technology can capture millions of data points in a brief span of time allowing for more subtle imagery and analysis than in more popular data collection techniques. LiDAR technology also allows for disparate excavation areas to be integrated into a single analytical unit. Data from the archaeological site of Tell es-Safi/Gath, Israel, will be used to demonstrate the some of the advantages of this kind of approach to data collection and analysis.

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#### 3D Technology within Digital Humanities: Analyzing Cuneiform Script with GigaMesh

Hubert MARA, FCGL – Forensic Computational Geometry Laboratory, IWR – Interdisciplinary Center for Scientific Computing Heidelberg University

Motivated by the demands of the Digital Humanities we are developing methods to extract characters and other human traces from tangible objects. Thanks to the increased availability of 3D measurement technology within the archaeological domain text sources like cuneiform tablets become more and more available as high-resolution 3D data sets. Therefore we propose a Multi-Scale Integral Invariant filtering approach implemented within our GigaMesh software framework. This allows for improved visualizations and extraction of script – and other man-made feature – in 3D. Therefore 3D meshes are reduced to a minimal graphical representation and exported as Scalable Vector Graphics (SVGs). These automated SVG drawings are – identical to their manually drawn counterparts – highly suitable for further tasks like word spotting and other application of machine learning approaches. We will present examples from our projects within Assyriology and how these methods can be transferred to other domains like Epigraphy.

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#### Documentation of Some Cultural Heritage Emergencies in Syria in August 2010

Gabriele FANGI, CIPA, University of Ancona / Wissam WAHBEH

All six Syrian World Heritage properties were inscribed on the List of World Heritage in Danger, at the 37<sup>th</sup> session of the World Heritage Committee, held in Cambodia in June 2014: Ancient City of Aleppo, Ancient City of Bosra, Ancient City of Damascus, Ancient Villages of Northern Syria, Krak des Chevaliers and Qal'at Salah El-Din and finally the Site of Palmyra (see the following links: https://www.youtube.com/watch?v=kr.a3e0DL5sA and https://www.youtube.com/watch?v=ltFFjjrUgtU). Apart the Ancient Villages of Northern Syria, the A. visited all the World Heritage sites and partly documented. In 2010, just before the war, the A. made a touristic trip together with Crua (Recreational Club of the Ancona University). It was the occasion to make some fast documentation of some Syrian CH monuments. Mostly of the images were taken by the A. not to make a survey, but as a photographic report, as fast and complete as possible. Syria is a country of many civilizations, Amorite, Aramaic, Phoenician, Roman, Byzantine, Islamic and Ottoman civilizations. Therefore it is full of cultural heritage remains. Unfortunately many of them have been destroyed by the war, beyond the thousand civilian people killed. But, the photographs taken in such a touristic way, have been used to try to get some usable plotting restitutions, and it worked successfully most of the times. These surveys could be useful in case of reconstruction and in case of lack of suitable alternative metric documentation. We built up a data-base of the available material.

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# Architectural Monuments of the Late Antique and Early Byzantine Time in the Hauran: Results of two Expeditions to Syria (1978, 1980)

#### Johannes KODER / Marcell RESTLE + / Peter WALDHÄUSL, Vienna Technical University

In 1978 and in 1980 field expeditions were executed by two Byzantinists, Johannes Koder, Vienna, and Marcell Restle, Munich, in the South-Syrian Hauran with the aim to document as much as possible of the important remains of Late-Roman and Early-Byzantine architecture, infrastructure, and inscriptions. More than 100 buildings and complexes have been surveyed and documented. The sponsor, the Austrian Research Fund, demanded serious technical documentation by photogrammetric methods. This role took over Peter Waldhäusl (1978) and Hans Godowitsch (1980) of the Technical University Vienna. During the past 36 years Marcell Restle edited two e-books in cooperation with Johannes Koder *et alii*: AZR'A (2012) and SAQQA (2016). In the first e-book Peter Waldhäusl reported on the geodetic-photogrammetric methodology used. This paper shows which types of objects have been documented and how. For history and architecture the reader is invited to look into the 928 pages of the e-books, published in German language by the Austrian Academy of Sciences as Publications Nr 31 and 40 in the series on Byzantine Research.

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# Saving the Heritage of Aleppo in Syria: Case Studies Based on Photogrammetry Archives of the Citadel and the Great Omayyad Mosque

Pierre GRUSSENMEYER, CIPA, INSA - L'institut national des sciences appliquées de Strasbourg

The paper will present photogrammetry archives, recorded and collected by the author between 1999 and 2002 in partnership with the Engineering Unit of the University of Aleppo. Several terrestrial and aerial archive images of the Aleppo citadel and the Great Omayyad mosque with its well-known minaret have been used at that time for documentation purposes and geotechnical studies. The citadel and the Mosque have unfortunately been seriously damaged during the recent conflict. The paper will present a summary of the documentation available from the past projects as well as solutions of 3D reconstruction based on the processing of the photogrammetry archives with the latest 3D image based techniques.

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#### **Documenting Syrian Built Heritage to Increase the Awareness in the Public Conscience** Grazia TUCCI / Valentina BONORA, University of Florence

The Laboratory of Geomatics for the environment and the conservation of cultural heritage has been involved in the past in two projects that led us to work in Syria. Both of them were funded by the European Union:

- COUPOLES ET HABITATS. Une tradition constructive entre Orient et Occident, in 2007,
- MARE NOSTRUM. A heritage trail along the Phoenician maritime routes and historic port-cities of the Mediterranean Sea, in 2009.

As Geomatics, we contributed collecting spatial data and preparing graphical elaborations aimed to document, in a multi-scale approach, constructive details, buildings, parts of cities that today are probably severely damaged, if they still exist.

In the projects a different approach was followed:

- in the first one, a top-down approach: the core goal of the project was the analysis of the constructional system of earthen buildings in villages in the north of the Syria, that was carried out by an interdisciplinary and international team of experts
- in the second one, a bottom-up approach: Mare Nostrum project was aimed at providing a sustainable mechanism for the protection and management of cultural heritage resources leading to an awareness of cultural heritage in the public conscience. Beside the technical experts team, local public authorities, guides and tour operators, teachers and students were involved, with the aim to enhance the public interest and pride for their own cultural identity.

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#### Damage Assessment/Reconstruction Strategies and Final Discussions:

# The Destruction of Syria's Cultural Heritage: a Mapping of Current Challenges and the Prospects for Post-conflict Reconstruction

Nibal MUHESEN, Copenhagen University

The cultural heritages in Syria, along with its archaeological sites, as well as its museum collections, constitute a unique richness to Syria and the world global heritage as a whole. Syria's heritage is threatened by the on-going armed conflict, especially due to increasing number of destructive actions committed by extremist groups. Taking as its starting point the strategic importance of Syria's heritage locally and globally, and the various aspects of the on-going destruction, this paper will develop/explore questions related to the post-conflict phase, such as the harm inflected on the collective memory and identity, and the importance of international and national law in post-conflict reconstruction policy.

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#### The Old City of Aleppo: Destruction Overview and Rebuilding Strategy

Cheikhmous ALI / Philippe QUENET, APSA - The Association for the Protection of Syrian Archaeology

Beyond satellite imagery, detailed information can only be retrieved thanks to voluntary people on the ground. Using this invaluable and unique documentation about the destruction of the Syrian heritage enables to draw a general picture of the situation in Aleppo, especially in the Old City. There, the Umayyad Mosque and the Citadel are subjects of concern – even more the surrounding neighborhoods which to date, have had domestic, public and economical functions. For those, rebuilding plans are urgently needed.

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#### Syria: Actions, Reactions, and the International Perspective

Emma CUNLIFFE, EAMENA – Endangered Archaeology in the Middle East & North Africa, University of Oxford

As the Syrian conflict enters its fifth year, the international community is seeking to assist the Syrian people to protect their heritage. However, such work is facing numerous difficulties, beyond the obvious problems of working in a conflict situation, leading to duplication of effort, and projects that are disconnected from the broader picture. As Da'ish have extended the conflict into Iraq, and extremist destruction is recorded across the MENA region, it is vital that the international community tackles these issues and seeks ways forward, in order to ensure that the limited funding available is spent effectively, achieving the maximum aid. This paper will review the work so far and consider the issues faced, suggesting ways all parties can act more effectively now and in the future, and highlighting key connections that may not have been considered.

#### Old Excavation Data - What Can We Do?



This workshop brings together projects on legacy excavation datasets to discuss strategies for their preservation and re-use.

Archaeological excavations are destructive and what remains from fieldwork campaigns are resources about the excavated entities such as layers, walls, finds and their geospatial and temporal relations. The preservation of this information is crucial for the analysis and interpretation of an archaeological site and should be seen as part of the protection of our cultural heritage.

Because of technological advances excavation methodologies have changed over time from analogue to digital. As a result, records of early excavations may be fully analogue while resources of many long-term excavations are a heterogeneous set of different types of analogue and digital records. Analogue resources are under threat, e.g. photos and plans deteriorate irreversibly over time. Digital data can be lost because of old software that is no longer supported.

In this workshop we want to bring together projects dealing with resources from older or long-term excavations to discuss preservation strategies and cases of re-use. In particular we want to address questions such as how to integrate heterogeneous datasets of long-term projects, digitization strategies for vast amounts of analogue resources and ways to apply new digital methods to legacy datasets.

#### **Organizers:**

Edeltraud ASPÖCK Institute for Oriental and European Archaeology Austrian Academy of Sciences Dr. Ignaz Seipel-Platz 2 1010 Vienna, Austria edeltraud.aspoeck@oeaw.ac.at

Matthias KUCERA Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology Hohe Warte 38 1190 Vienna, Austria matthias.kucera@archpro.lbg.ac.at

#### Participants (in alphabetical order):

DONEUS Nives
LBI ArchPro
Nives.Doneus@archpro.lbg.ac.at
FREY Jon M.
Michigan State University
freyjona@msu.edu
MARCHETTI Nicolò
Alma Mater Studiorum - University of Bologna
nicolo.marchetti@unibo.it
MÜLLER Sandra
LBI ArchPro
Sandra.Mueller@archpro.lbg.ac.at
NEUBAUER Wolfgang
LBI ArchPro
Wolfgang.Neubauer@archpro.lbg.ac.at
HIEBEL Gerald
University of Innsbruck
Gerald.Hiebel@uibk.ac.at

Karin KOPETZKY Institute for Oriental and European Archaeology Austrian Academy of Sciences Dr. Ignaz Seipel-Platz 2 1010 Vienna, Austria Karin.kopetzky@oeaw.ac.at

Seta ŠTUHEC Institute for Oriental and European Archaeology Austrian Academy of Sciences Dr. Ignaz Seipel-Platz 2 1010 Vienna, Austria seta.stuhec@oeaw.ac.at

PITTMAN Holly
University of Pennsylvania
hpittman@sas.upenn.edu
PROSSER Miller C.
OCHRE Data Service, University of Chicago
m-prosser@uchicago.edu
SCHLOEN Sandra R.
OCHRE Data Service, University of Chicago
sschloen@uchicago.edu
VAN ESS Margarete
Deutsches Archäologisches Institut, Orient-Abteilung
margarete.vaness@dainst.de
HELGESTAD Birger
British Museum
BHelgestad@britishmuseum.org
ZAINA Federico
La Sapienza University of Rome
zaina.federico@gmail.com

#### List of Lectures/Program:

	Lecturer	Title
Part I:	ARCHIVING	
11:30	Aspöck Edeltraud / Karin Kopetzky / Gerald Hiebel	Archiving digital and analogue resources of the Tell el Daba excavations: the 'A puzzle in 4D' project
11:50	Holly Pittman	Al Hiba excavations: The final Publication
12:10	Discussion	
12:20	Nicolò Marchetti	British Museum surveys and excavations at Karkemish 1876–1920 archives and museum holdings
12:40	Margarete van Ess	Uruk excavation archives. The transformation of long term project data into future working tools
13:00	Lunch Break	
Part II	: UPDATING legacy data	
14:00	Discussion	
14:10	Birger Helgestad	Delving into Woolley's legacy: Archives and Ur
14:30	Federico Zaina	Old Excavation Data. What can a Single Individual Do? The Case Study of Kish, Central Iraq
14:50	Discussion	
15:00	Edeltraud Aspöck / Anja Masur / Seta Štuhec	Digitizing Early Farming Cultures: Making new use of digital and analogue resourc- es from Neolithic sites in Greece and Anatolia
15:20	Matthias Kucera / Wolfgang Neubauer / Nives Doneus / Sandra Müller	The Tell el Daba Archaeological Information System: adding the fourth dimension to legacy datasets of long term excavations (A puzzle in 4D)
15:40	Discussion	
15:50	Coffee break	
Part II	I: SOFTWARE	
16:10	Jon M. Frey	The ARCS Project – A "Middle Range" Approach to Digitized Archaeological Re- cords
16:30	Miller C. Prosser / Sandra R. Schloen	Unlocking Legacy data: Integrating old and new archaeological records in the Online Cultural and Historical Research Environment
16: 50	Closing Discussion	
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Abstracts (in alphabetical order):

#### Archiving digital and analogue resources of the Tell el Daba excavations: the 'A puzzle in 4D' project Edeltraud ASPÖCK / Karin KOPETZKY / Gerald HIEBEL

'A puzzle in 4D' is a project dealing with the problem of integration of heterogeneous and incomplete digital and non-digital records of archaeological long-term excavations to prepare them for spatio-temporal analysis, long-term archiving based on national and international standards and open-access online publication for specialists and the general public. The project will be a case study to develop an archive for archaeology data at the ÖAW ACDH.

Fieldwork has taken place at Tell el Daba (TED) in Egypt since 1966 and during this time, the archaeological discipline has seen major changes, most notably developments in information technology have caused a shift from analogue to digitally-born data. As a result, the TED archive at the Institute for Oriental and European Archaeology OREA contains a huge and heterogeneous resource of digital and non-digital documents, photographs, plans and drawings. In our paper we will present work we have carried out so far and discuss the current challenges of the project, which are establishing a metadata model and format, identifier creation specifications as well as testing of content management and archiving software. We will end our presentation with research questions which we hope to discuss as part of the workshop.

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# Digitizing Early Farming Cultures: Making new use of digital and analogue resources from Neolithic sites in Greece and Anatolia (go!digital project DEFC)

Edeltraud ASPÖCK / Anja MASUR / Seta ŠTUHEC

The aims of the project 'Digitizing Early Farming Cultures' (DEFC) are to create standardized and integrated research data of Neolithic and Chalcolithic sites and finds of Greece and Anatolia (c. 7000–3000 BC according to Greek terminology), two neighboring and archaeologically closely related regions usually studied in isolation of each other. The data will be made available open access online ensuring compliance to standards in data production for data sharing (metadata and mappings) and interoperability with related initiatives.

In this paper we will present first results of the project. Based on focus group meetings and analysis of our resources we created a conceptual data model for a site database. In this site database we will integrate information from publications as well as digital resources.

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#### Delving into Woolley's legacy: Archives and Ur Birger HELGESTAD

UrOnline is a resource to digitally reunify the site of Ur. The excavations were some of the largest and most prolific of the 20th century. Tens of thousands of objects were excavated while ten thousands of field and catalogue cards, photographs, drawings, and plans were produced. These resources provide the primary evidence for the state of Ur before excavation but have only rarely been linked to their respective objects and wider context.

Creating these links has been one of the primary purposes of the Ur project but it has encountered a number of challenges. All the objects were registered using their Museum's respective registration systems in a way that frequently did not respect the divisions given in the field. There are also considerable discrepancies between the archival data and publication. For example the Standard of Ur changed from chamber C to chamber D of PG779 between excavation and publication. Recording this information in a way that demonstrates the fluidity of knowledge about Ur while avoiding presenting a single authorial account is just one of the challenges that have been encountered during the Ur project. This paper will discuss such challenges and how the project has worked to overcome them.

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# The Tell el Daba Archaeological Information System: adding the fourth dimension to legacy datasets of long-term excavations (A puzzle in 4D)

Matthias KUCERA / Wolfgang NEUBAUER / Sandra MÜLLER / Nives DONEUS

Archaeological research is dealing with the documentation and analysis of archaeological entities in space and time. During this process information is linked with a specific location and a time stamp. An archaeological Information System (AIS) organizes archaeological entities and associated information according to their specific location using a Geographical Information Systems (GIS). To end up with a stratigraphic sequence of these entities, AIS has to be accompanied by the fourth dimension – time. For this purpose the GIS-based AIS is supplemented with a time-steering tool – namely Harris Matrix Composer<sup>+</sup> - to enable spatio-temporal analysis.

Most archaeological data are based upon already excavated sites. It is crucial for the comparability of archaeological datasets to integrate these existing data for contemporary archaeological data analysis. The long-term excavation at Tell el Daba was chosen as a case study to evolve existing datasets within recent analysis tools using a georeferenced 4D-AIS. The basic research question is to examine the possibility of reconstructing undocumented and missing information. This approach of reverse excavating provides the chance to compare datasets of different provenience.

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### The ARCS Project – A "Middle Range" Approach to Digitized Archaeological Records

Jon M. FREY

While the electronic revolution in archaeology has already begun to yield positive results, especially for projects that were "born digital" during the past decade, it is less clear what should be done with the older "analog" forms of documentation at projects with longer histories of exploration. With this in mind, and with an eye toward the growing costs of digitization and storage, researchers at Michigan State University created ARCS: The Archaeological Resource Cataloging System. This open-source, web-based program, developed with funding from the National Endowment for the Humanities, enables archaeological projects to manage collections of digitized documents either for research or for migration to a digital repository. The design and implementation of the program at the Ohio State University Excavations at Isthmia, which will be described in this presentation, has been guided by the philosophy that it is better to improve upon, rather than replace methods and tools already in existence. This principle applies as much to the desire to collaborate with archival solutions and linked open data initiatives as to the effort to emulate the experience of being present in an actual paper-based archive.

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#### British Museum surveys and excavations at Karkemish 1876–1920: archives and museum holdings Nicolò MARCHETTI

The British Museum excavations at Karkemish were led by several, different personalities, each bringing his own talents to digging and recording. This produced a documentation which varied greatly in quality and volume and which, moreover, has been subject to losses and destructions. Furthermore, our own, recent excavations at Karkemish have revealed documentary attitudes of previous excavators which went unnoticed thus far. By combining filing of all existing documents (which are to a large extent unpublished), classification of all materials kept in museums, many observations issued from our restudy of previously excavated monuments and several newly made topographic inferences we are striving to reconstruct, as much as possible, the contexts excavated at Karkemish between the late 19th and early 20th centuries, adding new evidence and interpretations to the city's history.

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#### Al Hiba excavations: The final Publication

Holly PITTMAN

Donald P. Hansen, Institute of Fine Arts, NYU, lead six seasons of excavation at the site in southern Iraq of AI Hiba, ancient Lagash, from 1972-1990. While preliminary reports had been published, no final report had been prepared for any of the four areas (A, B, C, G) of excavation. Following his death in 2009, Pittman assumed responsibility for preparation of the final publication and moved the project to the Penn Museum, University of Pennsylvania. It was decided to undertake a digital analysis of the remains which required several years to convert the archival assets into digital form and to build a relational database that could assist in the final analysis of the stratigraphy and material remains. This presentation will summarize the challenges and the benefits of undertaking this approach, and will describe plans for public accessibility, sustainability and development of the digital archive.

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# Unlocking Legacy data: Integrating old and new archaeological records in the Online Cultural and Historical Research Environment (OCHRE)

Miller C. PROSSER / Sandra R. SCHLOEN

In our work with archaeological and philological projects at the Oriental Institute of the University of Chicago, research database projects usually begin with a set of pre-existing legacy data, from excavation

paperwork, to top plans, to supervisors' notes, to documents of published texts. This data is a valuable component of the project's data set going forward but often needs a certain amount of conversion and janitorial work in order to be adequately represented in a digital format. The item-based approach of the Online Cultural and Historical Research Environment (OCHRE) allows a project to atomize its data to capture its essence then organize it using hierarchies, sets, maps, links, and other strategies. Once digitized, this data becomes part of the larger network of research data available to the project. Value is added by integrating resources of various formats (GIS, photography, PDFs, etc.). Once fully integrated, the data—both old and new—can be presented in dynamic and interactive online formats. In this presentation we will give examples of how legacy data can coexist with data born digitally in a common database framework in ways that are productive for further analysis and research, and we will illustrate tools provided by OCHRE to serve this goal.

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#### Uruk excavation archives. The transformation of long term project data into future working tools Margarete VAN ESS

Excavations in Uruk have been carried out since 1912. Depending on the period of fieldwork the expedition archives comprise of different kinds of documentation, carried out on several kinds of materials and in different techniques. In the meantime, the conservation of this archival material became an important part of the ongoing Uruk project as well as the transfer of all excavation data to a GIS, the digitization of photographs and plans or the integration of old digital data. Aim of this part of the Uruk project is to give easy access to the published data for interested scholars and to prepare an interactive working tool for future fieldwork and conservation project at the site.

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#### Old Excavation Data. What can a Single Invidual Do? The Case Study of Kish, Central Iraq Federico ZAINA

Reconsidering early excavations is a challenging task, playing an important role in interpreting cultural heritage. From the early 1950s onwards, this academic kind of salvage archaeology has been tackled by several individual scholars as well as larger teams in a number of ways. The onset of the digital era boosted it by enhancing and quickening data collection and elaboration thanks to computers and other devices. In addition to this, the now greater accessibility not only of archives and museum collections, but also of research grants, allowed the development of large-scale and long-term projects, besides the many researches led by individual scholars.

In this paper, using the case study of ancient Kish, I will show how single-scholar researches can contribute to the study and reconstruction of an early excavation. The site of Kish is a perfect study case for designing a proper research strategy: it was excavated between 1923 and 1933, the excavation data have been recorded at differing degrees of quality and badly published, being only partially reconsidered by following studies. The Kish material are scattered in various museums which only in the last years started own digitization projects with a view to sharing their collections and archives. This paper discusses single-scholar research protocols, especially focusing on some key-aspects such as funds, accessibility, data collection and storage.



http://defc.eos.arz.oeaw.ac.at/defcdb/

The objective of Digitizing Early Farming Cultures (DEFC) is the standardization and integration of archaeological research data from the Neolithic and Copper Age (7000 – 3000 BC) in Greece and Western Anatolia and to make them available open access online.

Greece and Western Anatolia are two neighbouring and archaeologically closely related regions. However, they have usually been studied in isolation from each other, resulting in fragmented data organized according to different knowledge schemes. Independent terminologies and chronologies have developed, hindering collaborative research. To provide a basis for studying archaeological phenomena collaboratively across the whole region, this project aims to harmonize existing datasets, digitize analogue data from publications and integrate metadata for easy access and data reuse.

> Institute for Oriental and European Archaeology

ÖAW ACDH

Research Group Digital Archaeology Anatolian Aegean Prehistoric Phenomena (AAPP) research group Austrian Center for Digital Humanities

### The Jordan Valley at the Dawn of the Urban Age: Charting the Transition from the Chalcolithic through the Early Bronze Age



The Jordan Valley is commonly acknowledged as one of the earliest centres of urban life in the south Levant, and yet the settlement history of the region has been largely ignored in recent syntheses on the development of EBA urbanism across the Fertile Crescent.

Many of the largest and most impressive early urban centres in the southern Levant are located in the Jordan Valley or on its fringes, but in almost every case, the preceding Chalcolithic period occupation in major sites comes to an end at some stage before the advent of the Early Bronze Age. This raises the key question of the degree to which earliest EBA society owes anything to the complex but generally agreed to be 'pre-urban' society of the later Chalcolithic. If there is relatively little continuity between the south Levantine Chalcolithic and the succeeding EBA, it raises the concomitant question of the primary locus from which EBA social and economic architecture derived.

The intent of the workshop is to examine critically the evidence bearing on the latest horizons of Chalcolithic and the earlier horizons of EBA occupation in and around the major settlement sites within the Jordan valley and adjacent upland regions. The aim is to characterise latest Chalcolithic and earliest EBA occupation, and to begin to assess the significance of any identified differences. The ultimate intent is to identify the origin, key elements and developing socio-economic architecture, of the 'walled town culture' that comes to characterise the later Early Bronze Age.

Some elements in this assessment will include:

- Settlement patterns and site hierarchies
- Site sizes, location and internal morphology
- Fortifications and militaria
- · Civic architecture and administrative complexes
- Cult practice and public temple complexes
- Major artworks (wall paintings, art mobilier)
- · Burial customs, cemetery locations and internal morphology
- · Procurement regimes and trade networks
- Novel economic strategies (horticulture, irrigation, pastoralism)
- Climate regimes and geomorphological context

#### Organizer:

Stephen BOURKE Pella/Ghassul Excavations Department of Archaeology, University of Sydney stephen.bourke@sydney.edu.au

#### Participants (in alphabetical order):

BETTS Alison	COLLINS Steven
University of Sydney, Australia	Trinity Southwest University, USA
alison.betts@sydney.edu.au	archaeos1@msn.com
BRAUN Eliot	DRABSCH Bernadette
W.F. Albright Institute for Archaeological Research in	University of Newcastle, Australia
Jerusalem eliotlaurencebraun@gmail.com	Bernadette.drabsch@uon.edu.au
BURTON Margie	FISCHER Peter
University of California, San Diego, USA	University of Gothenburg, Sweden
CHESSON Meredith	peter@fischerarchaeology.se
Notre Dame University, USA	FRASER James
meredith.chesson.3@nd.edu	University of Sydney, Australia
	jfra4013@uni.sydney.edu.au

GREENBERG Raphael	MÜLLER-NEUHOF Bernd	
Tel Aviv University, Israel	Deutsches Archaologisches Institut, Germany	
grafi@post.tau.ac.il	bmn@orient.dainst.de	
KERNER Susanne Copenhagen University, Denmark kerner@hum.ku.dk	PAZ Sarit Tel Aviv University, Israel saritpaz@post.tau.ac.il PHILIP Graham University of Durham, England graham.philip@durham.ac.uk	
LEVY,Thomas E. University of California, San Diego, USA thomasevanlevy@gmail.com		
LOVELL Jaimie	ROTEM Yael	
University of Sydney, Australia	Tel Aviv University, Israel	
jaimie.lovell@sydney.edu.au	yael.rotem@gmail.com	
DE MIROSCHEDJI Pierre	SEATON Peta	
CNRS, France	University of Sydney, Australia	
pierre.de.miroschedji@mae.u-paris10.fr	pse85280@bigpond.net.au	

#### List of Lectures/Program:

	Lecturer	Title
9:00	Stephen Bourke	Introduction
Part I		
	Graham Philip	The Late 4 <sup>th</sup> millennium BC at Tell esh-Shuna North in its Regional Context
	Raphael Greenberg	Notes on the Earliest Occupation at Tel Bet Yerah (Khirbet el-Kerak)
	Eliot Braun	Megiddo and Beth Shean and the Transition from the Chalcolithic to the EBA
	Pierre De Miroschedji	Tell el-Farah: From the Chalcolithic to the EB II
11:00 0	Coffee Break	
Part II		
11:30	11:30 Jaimie Lovell	The Wadi Rayyan and Horticulture in the Late Chalcolithic: Chronological or Con- ceptual gap?
	James Fraser	Dolmens, settlement and geology: The east rift escarpment in the $4^{\rm th}$ millennium BCE
	Peter Fischer	Tell Abu Kharaz and its Hinterland across the Chalcolithic/Early Bronze Ages
13:00 L	unch Break	
Part III		
14:00	Bernd Müller-Neuhof	Did South Levantine urbanization emerge in the east? The colonization of the Jawa hinterland in the $4^{\rm th}$ millennium BC
	Alison Betts	Tell Um Hammad Reconsidered
	Peta Seaton	Plurality, Orthodoxy, Disruption or Continuity: Cult practice as evidence for politi- cal and social constructs from the Chalcolithic to the Early Bronze Age
	Bernadette Drabsch	Evolving Symbolism: Continuity and change in artistic representation during the South Levantine Late Chalcolithic and Early Bronze Ages
	Steven Collins	The Chalcolithic/Early Bronze Age Continuity at Tall al-Hammam
16:00 0	Coffee Break	
Part IV		
16:30	Susanne Kerner	The Ritual Landscape of Murayghat
	Meredith Chesson	Ras an-Numayra and the Initial Settlement of the Southeast Dead Sea Plain
	Thomas E. Levy / Margy Burton	The Chalcolithic Metals Monopoly Viewed from the Source – Perspectives from the Faynan Copper Ore Resource Zone, Jordan

#### Abstracts (in alphabetical order):

### Tell Um Hammad Reconsidered

#### Alison BETTS

It is more than two decades since the excavations at Tell Um Hammad were published and much new data is now available on the Early Bronze Age in the Jordan Valley and the hill country and steppe to the east.

This paper reviews the evidence from Tell Um Hammad in the light of more recent archaeological work in Jordan, and presents an updated view of this key site at the start of the Early Bronze Age.

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#### Megiddo and Beth Shean and the Transition from the Chalcolithic to the EBA Eliot BRAUN

Recent decades have seen much excavation that has radically altered perceptions of the Late Chalcolithic to Early Bronze 1 transition in the southern Levant; major chrono-cultural periods originally defined at sites such as Megiddo, Beth Shan and other large tells, which do not preserve remains of any transition between those periods. Thus, a previously "observed", almost complete rupture in human society for a brief span of time, with EB 1 following closely Late Chalcolithic, is now being replaced by mounting evidence for a decidedly lengthy transition during the early 4<sup>th</sup> millennium, from ca 3800 to ca 3500 BC.

This presentation discusses the evidence for the transition from a series of sites in different sub-regions of the southern Levant, which are helping to "flesh out" the archaeological record of the transition. Discussed are recently excavated sites definitively identified with that period, as well as suggested interpretations of others, which seen through this newly discovered "lens", are likely to date to the transition.

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#### Ras an-Numayra and the Initial Settlement of the Southeast Dead Sea Plain

Meredith CHESSON

The test excavations conducted in 1983 by the Expedition to the Dead Sea Plain at the EB IB site of Ras an-Numayra offer a brief glimpse into the initial EBA settlement on the south-eastern Dead Sea Plain in the late fourth millennium BCE. While most of the site has been eroded into the Wadi an-Numayra, a small portion of the settlement remains.

Excavators uncovered a large 1.5-meter wide wall with a series of floors and hearths indicative of a residential context. In particular the well-preserved paleo-ethnobotanical evidence indicates that inhabitants utilized irrigation technology to grow grapes while also investing in agricultural production of flax and wheat.

Ras an-Numayra provides a small glimpse into the nature of settlement and daily life during the EB IB, complementing the settlement and mortuary evidence from neighbouring Bab adh-Dhra`.

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#### The Chalcolithic/Early Bronze Age Continuity at Tall al-Hammam

#### Steven COLLINS

The southern Jordan Valley – the Transjordan Middle Ghor (TMG) – provided a fertile, stable environment for sophisticated human endeavour in terms of agriculture and cultural development from the Chalcolithic Period (CLP) through the Early Bronze Age (EBA). This continuity is particularly striking at Tall al-Hammam (TaH), which rose from its late Chalcolithic foundations to become an EBA city-state of significant proportions (subsequently evolving into its MBA equivalent).

The fortuitous demise of the large settlement at Teleilat Ghassul toward the end of the CLP may have precipitated a sudden rise in the population of TaH. From that 'moment' forward, TaH became the cultural epicentre of the region, and, by the late 4<sup>th</sup> millennium, a major fortified city with numerous sat-

ellite towns and villages within its gravity. That the EBA of the TMG was a protraction of its CLP cultural complex is arguable and reasonable given the area's proclivity toward social continuity over several millennia (from at least the 4<sup>th</sup> millennium through the mid-2<sup>nd</sup> millennium). This paper tracks multiple factors contributing to the evolution of the TaH city-state from its CLP roots, and the material remains signalling its long history of cultural stability.

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### Evolving Symbolism: Continuity and change in artistic representation during the South Levantine Late Chalcolithic and Early Bronze Ages

Bernadette DRABSCH

Despite being the focus of numerous recent studies, the nature and significance of the transition from Late Chalcolithic to Early Bronze Age in the southern Levant remains unclear. Accounting for the key changes between these temporally adjacent cultures, embracing the conclusion of the ritually/ symbolically elaborate Ghassulian culture and the emergence of an apparently less symbolically enriched Early Bronze Age culture, is of considerable importance to our understanding of the path to urban complexity in this region.

This paper will explore two key aspects of material culture across these periods – figurative representations and elite art objects - and seek to address the question of continuity in artistic traditions across the temporal border. Can one argue for an EBA schematisation of formerly naturalistic Ghassulian figurative art?

What can artworks from the Chalcolithic and the EBA reveal about the ritual practices and socio-economic organisation of these societies? How did the loss of the diverse complex symbolic art forms of the Chalcolithic impact on EBA society? What degree of artistic continuity with the Ghassulian past can be documented, and in what form, and with what significance for our understanding of EBA society?

By exploring these questions through the medium of art and symbolism we hope to develop a better understanding of the nature of the transition, charting what was lost, and what was developed, producing a new perspective on the larger questions of changing settlement patterns, population movements, and the transferral of ideas and knowledge.

### Tell Abu Kharaz and its Hinterland across the Chalcolithic/Early Bronze Ages Peter FISCHER

The 12 ha large Tell Abu al-Kharaz lies in the ancient landscape of Gilead in the Central Jordan Valley. This dominating site is located just above the eastern border of the Jordan Valley, north of the perennial Wadi al-Yabis/Rayyan. The earliest identified period with a permanent settlement is the Early Bronze Age IB, dated by radiocarbon around 3100 BCE.

There are stray finds of pottery that may be dated to the first part of the Early Bronze Age and even to the Chalcolithic period. Nevertheless, after 17 seasons of excavations by the Swedish Jordan Expedition, the existence of a permanent Chalcolithic settlement could not be verified. Surface surveys and limited excavations demonstrated Chalcolithic remains west of Tell Abu al-Kharaz in the Jordan Valley, and east of the site along the Wadi al-Yabis. This paper will present hypotheses seeking to explain why such a strategically important site as Tell Abu al-Kharaz was not used as a permanent settlement in the Chalcolithic period.

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# Dolmens, settlement and geology: The east rift escarpment in the 4<sup>th</sup> millennium BCE James FRASER

There is a fundamental disparity between our general approach to the archaeology of death in the southern Levant in the 4<sup>th</sup> and 3<sup>rd</sup> millennia BCE, and our particular approach to the mortuary traditions associated with dolmens in the EBA. On the one hand we expect significant developments in EB social organization to be manifest in changing mortuary behaviour; yet on the other we envisage the place-

ment of the dead in above-ground stone cists as a tradition that possibly endured from the Chalcolithic period to the end of the EB IV.

A swelling corpus of newly discovered materials, suggests that trilithon dolmens were constructed predominantly in the EB I in a discrete area of the east rift escarpment, between Irbid and the Madaba Plains. This paper attempts to approach the development of this tradition with respect to changing settlement systems in the late Chalcolithic period and the early horizons of the EBA. It is argued that vast, extramural Chalcolithic cemeteries at sites such as Adeimeh and Shiqmim presaged the development of extensive, extramural dolmen cemeteries that appeared in the EB I. This transition coincided with an eastward shift in settlement from the soft marls and alluvial fans of the Jordan Valley floor to new geological zones in the foothills and lateral wadis of the rift escarpment through the 4<sup>th</sup> millennium BC.

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#### Notes on the Earliest Occupation at Tel Bet Yerah (Khirbet el-Kerak)

Raphael GREENBERG / Yael ROTEM / Sarit PAZ

The earliest recorded settlement on the 30-hectare mound of Bet Yerah appears to be limited to the summit of the low mound, where soundings in several different locations uncovered surfaces, pits, jar-burials and mudbrick detritus associated with an early phase of the Early Bronze I. Radiocarbon and OSL dates indicate a foundation date in the second quarter of the fourth millennium BCE.

The pottery assemblage reveals contributions from a highly localized household industry as well as more widely distributed regional traditions. Some of these can be associated with pockets of non-Ghassulian Chalcolithic traditions that survived in the northern Jordan Valley.

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#### The Ritual Landscape of Murayghat

Susanne KERNER

Dolmen, standing stones, and stone circles exist in many parts of the world from Britain to Jordan, and they are usually considered ritual structures. In Murayghat, central Jordan (close to Madaba), there is a whole landscape of horseshoe shaped and circular stone structures positioned on a central knoll, surrounded by dolmen. The dolmen (originally over 150) are nearly all oriented towards the central knoll, so that structures on the knoll are all visible from the dolmen. Two monumental standing stones are also part of the landscape.

The current project studies these elements and their relationship to each other, and compares them to other dolmen fields in the surrounding landscape. Dating points to the Late Chalcolithic/Early Bronze Age I, and the Middle Bronze Age II.

The lecture will discuss the material evidence and question the connection between the settlements of the relevant periods and these landscapes of ritual structures. What role did they play in ritual and demarcation and how did they interact with the ritual structures in the contemporary towns.

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#### The Chalcolithic Metals Monopoly Viewed from the Source – Perspectives from the Faynan Copper Ore Resource Zone, Jordan

#### Thomas E. LEVY / Margie BURTON

Over 25 years ago, a model was proposed suggesting that with the earliest emergence of smelting technologies in the southern Levant, the Chalcolithic inhabitants of the Beersheva Valley held a monopoly over copper production.

According to this model, the control of copper production by elites in this drainage system led to the rise, consolidation and maintenance of a chiefdom-level society. This paper re-examines this model in light of new excavation data from the southern Levant in general and in particular, surveys and excavations in the main source area for copper during the  $5^{th}-4^{th}$  millennia BCE – Jordan's Faynan district.

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# The Wadi Rayyan and Horticulture in the Late Chalcolithic: Chronological or Conceptual gap? Jaimie LOVELL

This paper develops thoughts on the role of site location, the provision of adequate radiometric datasets, and a disjunction between west Valley and east Valley site locations in the generation of quite different perspectives on the impact of horticultural uptake across the Chal/EBA transition.

Because we lack clearly dated sites that are connected up and down key lateral wadis on both sides of the Valley, it has been difficult to unpick the significance of horticulture in the Chal/EBA transition. And yet it seems highly probable that it was critical. Bourke (2001/2008) has suggested that domesticated olive came late to the north Jordan Valley, but spread into the foothills and eastern uplands rapidly, on the basis that olive stones from Ghassul and Pella provide dates in the early phases of the Chalcolithic, and the fact that the clearest evidence for the actual domestication of olive comes from Ghassul.

This paper incorporates recent data, further explores the role of horticultural land use in the transition to the Early Bronze Age, and makes some additional observations about the spread and significance of domesticated olive.

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### Tell el-Farah: From the Chalcolithic to the EB II

Pierre DE MIROSCHEDJI

At Tell el-Fâr'ah, as in the Jordan Valley with which it was so closely connected, the millennium and a half encompassing the Chalcolithic and the Early Bronze Age I remains shrouded with uncertainties, as only a few archaeological markers line up this extended period of time. This paper intends to list the data at hand and the broad lines of the local cultural development.

The Middle Chalcolithic (Wadi Rabah Horizon) is represented both on the tell and in *Grotte* U. It is apparently followed by a period of abandonment, marked only by some Late Chalcolithic remains discovered in *Grotte* U, then used as a funerary cave. The paper will present the full inventory of this LC tomb, including a fragment of an ossuary. It should be noted that LC occupation is attested elsewhere in the Wadi Fâr'ah.

The reoccupation of Tell el-Fâr'ah and its vicinity took place during the Early Bronze Age I, at, or close to, the beginning of the EB IB. The EB IB occupation of the tell and the period of use of the necropolis seem to be synchronous, although the use of some EB IB tombs extended into the following EB II period. The impression is that the necropolis served both a settled and an itinerant population, the latter keeping close connections with the Jordan valley, the Beth Shean and Esdraelon Plain, and the Coastal Plain.

On the tell, the transition from EB IB to EB II is sharp: the first fortifications and the associated dwellings were erected right on top of the (intentionally ?) levelled ruins of the dwellings of the EB IB village. The new urban settlement exhibits a new material culture, derived from that of the EB IB, but with many new and clearly distinct developments.

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# Did South Levantine urbanization emerge in the east? The colonization of the Jawa hinterland in the $4^{\rm th}$ millennium BC

### Bernd MÜLLER-NEUHOF

Several years of intensified archaeological research has been carried out in the northern Badia in NE Jordan, focusing on evidence for socio-economic activities in the 4<sup>th</sup> millennium BC.

The discovery of large flint mines with adjacent 'industrial-sized' cortical scraper production, evidence for terraced agriculture facilitated by rainwater harvesting irrigation, and the discovery of two permanently occupied hill-fort settlements east of Jawa, sheds new light on a hitherto underestimated region regarding its suitability and potential for socio-economic activities in the EBA.

The contribution will present recently obtained radiocarbon dates from the early phases in Jawa, and from the new discovered hill-fort site of Tulul al-Ghusayn. In this context the emergence of fortifications

and agricultural rainwater harvesting irrigation technologies, both dating into the mid of the 4<sup>th</sup> millennium BC will be discussed. This will lead on to a reevaluation of the status of Jawa. The general view of this site as a remote and isolated settlement located in the far eastern periphery of the Southern Levant will be challenged.

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#### The Late 4th millennium BC at Tell esh-Shuna North in its Regional Context

Graham PHILIP

Excavations at site of Tell esh-Shuna (1991–1994) produced a sequence of occupation levels spanning 3600–3000 BC. In the intervening period, both the analytical techniques, and the interpretative frameworks for the 4<sup>th</sup> millennium BC, have moved forward considerably. As a result, we can now offer an interpretation of the site that is both deeper in its range of analyses, and broader in terms of the wider context, than would have been the case immediately after excavation.

Accordingly, this paper will assess the nature of social and economic developments at the site during the later 4<sup>th</sup> millennium BC, through a consideration of the evidence pertaining to the agricultural economy, the acquisition of raw materials, the production and exchange of manufactured goods, and the forms taken by architectural units and portable material culture. Building upon ideas raised in a recent publication (Wilkinson *et al.* Journal of World Prehistory 2014), the presentation will also seek to compare the organization and diachronic trajectory of societies in the North Jordan Valley during the 4<sup>th</sup> millennium BC, with key examples of 4<sup>th</sup> millennium BC communities in other regions of the 'Fertile Crescent'.

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#### Plurality, Orthodoxy, Disruption or Continuity: Cult practice as evidence for political and social constructs from the Chalcolithic to the Early Bronze Age Peta SEATON

Recent archaeological research in the Jordan Valley has deepened our understanding of cult practice in the Chalcolithic and Early Bronze Ages. New data from previously unexplored Chalcolithic and EB sites (such as Khirbet al Batrawy) and re-examination of known evidence (Teleilat Ghassul, Nahal Mishmar) raises insistent questions about the nature of the cultic landscape across the Chal/EBA transitional period (ca. 3800–3400 cal BC).

Some sites present what seems to be staccato interruption in settlement continuity towards the end of the Chalcolithic and across the earliest phase(s) of the EBA, while others display both spatial and temporal separation between later Chalcolithic and earliest EB establishments.

Survival of the Ghassulian broad-room temple form in EB I–II cultic contexts from north Jordan to the Sinai, along with the development of pluralist characteristics within some Ghassulian contexts, invites closer examination of associated cultic material, symbology, and special-function objects across the Chal/EBA boundary.

This analysis will seek to highlight commonalities and significant differences, drawing out essential features of cult practice across the divide, helping to characterize the political and social paradigms these cult practices served – or perhaps shaped.

# Finding Common Ground in Diverse Environments: Survey Archaeology in the South Caucasus



Over the past two decades, there has been a boom in archaeological survey projects operating in Georgia, Armenia and Azerbaijan. These have brought new insights and approaches to the region's diverse landscapes, and are a departure from Soviet-era research which was principally site-based and focused on excavation. Individual approaches that incorporate systematic prospection, remote sensing and palaeoenvironmental research, for example, have informed significant and long-standing debates whose relevance extends throughout the Near East. However, there has been little coordination or conversation so far between survey projects.

This workshop aims to bring together practitioners of survey archaeology in the South Caucasus and neighbouring regions for an exchange of information and ideas. The emphasis will be on stimulating dialogue about research aims, methodologies and data analysis and management. Although a single formula cannot be applied to the varied physical and archaeological conditions in the South Caucasus, and uniformity is in any case not necessarily desirable, there is a need to identify common ground.

We encourage speakers on topics in the following areas:

- Thematic and historical debates; e.g., the Caucasus as crossroads between Central Asia and the Middle East; nomadic versus sedentary lifestyles; the impact of later territorial empires on the landscape.
- Methodological issues; e.g., integrating data at different scales; integrating survey data with geoarchaeological and paleobotanical studies; GIS as a tool for problem solving.
- Heritage management; e.g., data sharing and presentation.

#### Organizers:

William ANDERSON Historical and Philosophical Studies, University of Melbourne 161 Barry Street Parkville 3010 VIC, Australia williama@unimelb.edu.au

Giorgi KHABURZANIA National Agency for Cultural Heritage Preservation of Georgia Tiblisi, Georgia giokhabu@gmail.com Kristen HOPPER Department of Archaeology Durham University South Road Durham DH1 3LE, UK k.a.hopper@dur.ac.uk

#### Abby ROBINSON University of Melbourne Centre for Classics and Archaeology The University of Melbourne Parkville 3010 VIC, Australia abbyr@unimelb.edu.au

#### Participants (in alphabetical order):

CARMINATI Eleonora	LAWRENCE Dan	
University of Melbourne	Durham University	
e.carminati@student.unimelb.edu.au	dan.lawrence@durham.ac.uk	
FABIAN Lara	LINDSAY lan	
University of Pennsylvania	Purdue University	
lfabian@sas.upenn.edu	ilindsay@purdue.edu	
GREENE Alan F.	NASKIDASHVILI Davit	
Stanford University	Iv. Javakhishvili	
afgreene@stanford.edu	Tbilisi State University	
KRSMANOVIC Damjan	RATTÉ Christopher	
University of Leicester	University of Michigan, Ann Arbor	
dk176@leicester.ac.uk	ratte@umich.edu	
KUNTNER Walter	RICCI Andrea	
University of Innsbruck	German Archaeological Institute – DAI	
Walter.Kuntner@uibk.ac.at	andrea.ricci@dainst.de	

O'NEIL WEBER Kathryn Anthropology Department Cornell University SNAPE-KENNEDY Lisa Durham University I.m.snape-kennedy@durham.ac.uk WORDSWORTH Paul University of Oxford paul.wordsworth@orinst.ox.ac.uk

# List of Lectures/Program:

SESSION	N 1 – Chair: Giorgi Khaburzania	
9:00	Kristen Hopper / Lisa Snape-Kennedy / Lyudmila Shumilovskikh	A multi-scalar approach to landscape investigations on the Sasani- an Frontiers in the South Caucasus
9:30	Lara Fabian	Mountain passes and coastal paths: Long-distance route analysis in the South Caucasus
10:00	Eleonora Carminati	'Re-searching' into past archaeological data: the 'Early Kurgan archaeological survey' attempt
10:30	Abby Robinson / Giorgi Khaburzania / Kristen Hopper	The South Caucasus Aerial Photo Archive (SCAPA) project
11:00	Coffee Break	
SESSION	N 2 – Chair: Dan Lawrence	
11:30	Andrea Ricci	The Late Neolithic Landscapes of the Southern Caucasus: The results of the 2010–2015 ANR-DFG Kura projects
12:00	Walter Kuntner / Sandra Heinsch / Hayk Avetisyan	The political landscape of Iron Age Aramus
12:30	M. Negus Cleary / N. Tskvitinidze / W. Anderson / D. Krsmanovic / J. Birkett-Rees	Integrating the History and Archaeology of southern Georgia in the Early Ottoman Period
13:00	Lunch Break	
SESSION	N 3 – Chair: Abby Robinson	
14:00	Paul Wordsworth	Understanding provincial structure in the early Islamic Caucasus – a rural-urban case study from the Kura plain, Azerbaijan
14:30	Christopher Ratté	The Vani Regional Survey (VRS) and the Eastern Vani Survey (EVS)
15.00	Dan Lawrence	The Edge of Empire? Remote Sensing, Survey and Excavation in the Mil Plain, Azerbaijan
15:30	lan Lindsay / Alan F. Greene	Investigating Long-term Landscapes of Warfare and Fortification in the Bronze and Iron Age South Caucasus
16:00	Coffee Break	
SESSION	N 4 – Chair: Kristen Hopper	
16:30	Davit Naskidashvili	Archaeological Surveys of the Rioni River Delta aiming to locate ancient Phasis
17:00	Kathryn O'Neil Weber	Two-dimensional Survey in Four-dimensional Tbilisi
17:30	Giorgi Khaburzania	The National Cultural Heritage GIS Database System for Sys- tematizing, Managing and Sharing Information about Georgia's Archaeological Heritage
CLOSIN	G DISCUSSION	

#### Abstracts (in alphabetical order):

### 'Re-searching' into past archaeological data: the 'Early Kurgan archaeological survey' attempt Eleonora CARMINATI

The frequently inaccurate recording of site locations is one of the main issues to face when dealing with the analysis of Early Kurgan period sites (mid-3rd millennium BC) in the southern Caucasus. Publications and preliminary reports vaguely account for geographical information on *kurgans* (barrow burials), focusing instead on the description of grave structures and material finds. With this type of data it is not possible to conduct a comprehensive study of this period in trying to determine land management and exploitation.

The main goal of the Early Kurgan archaeological survey project is to relocate on a macro and micro scale Early Kurgan sites already surveyed and/or excavated in the last 70 years. The aim of this paper will be to discuss the validity and reliability of this methodological approach, its major features, and what type of analyses can be carried out with this type of data.

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# Metallurgical Landscapes in the South Caucasus: New Approaches to Integrating Archaeometric and Survey Data

Nathaniel ERB-SATULLO/ Brian GILMOUR/ Nana KHAKHUTAISHVILI

Chemical and mineralogical analyses of archaeological artefacts have rarely been integrated with survey data. The intensive nature of chemical and mineralogical analyses is often difficult to reconcile with the extensive nature of survey data. However, the highly distinctive metallurgical landscapes of western Georgia provide an ideal opportunity to combine spatial and archaeometric questions. The region contains an exceptionally large number of copper smelting sites, most of which date to the late 2nd and early 1st millennia BC. Through careful use of portable X-ray fluorescence spectrometry, we provide new insights on the organization of production. Because these metalworkers mined zoned ore deposits with differing chemical and mineralogical compositions, the slags at these sites have major differences in chemical suggest that despite the large aggregate scale of the industry, metalworkers were mining and smelting numerous deposits without any overarching top-down coordination or control. This industry differs dramatically from well-studied contemporary metal production industries elsewhere in the Near East.

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# Mountain passes and coastal paths: Long-distance route analysis in the South Caucasus Lara FABIAN

The South Caucasus is often described as a 'crossroads'—a critical link connecting the Eurasian Steppe to the Near East, or the Pontic world to the Iranian one. In the ancient period as today, the region sat at a key juncture between a several spheres of interaction, and no doubt played an important role in linking these zones. However, evidence for the ancient routes that residents and travellers actually used to move through the region's diverse landscapes is scarce.

This paper explores the use of GIS to analyze the mechanics and patterns of network connectivity among the Iberian, Albanian, and Armenian polities in the South Caucasus during the 3<sup>rd</sup> c. BCE–3<sup>rd</sup> c. CE (Hellenistic and Roman/Parthian periods). Drawing on geospatial data including topography, satellite imagery, historical and ethnographic accounts of regional mobility, and data from archaeological survey, I generate speculative 'route maps' for the South Caucasus.

While not intended to be predictive, these maps highlight areas of the landscape that seem to have attracted travel. Ultimately, I argue that landscape archaeology plays a critical role in explaining the differing strategies of these three polities as they articulated their positions on the tumultuous edge of empires.

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# Investigating Long-term Landscapes of Warfare and Fortification in the Bronze and Iron Age South Caucasus

# Alan F. GREENE/ Ian LINDSAY

The South Caucasus witnessed long-term shifts in fortress settlement systems and political transformation between ca.1500–200 BC, from the initial construction of hilltop forts during the Late Bronze Age, to their florescence under Urartian imperial dominion, to their repudiation in the Achaemenid Iron III period. Throughout this time, ancient fortified landscapes and warfare served as important social and material conditions through which political processes unfolded. Less clear, however, are the shifting patterns of fortress construction and use, residential mobility, and site destruction and abandonment that figured in the daily lives of Bronze and Iron Age subjects. In this paper, we discuss initial results of a multiyear program of pedestrian survey and test excavations in the upper Kasakh River Valley in northwestern Armenia. We also highlight some methodological developments, such as our cloud-based mobile GIS data collection system, which has aided in the speed and precision of in-field data collection; and dronebased photogrammetry, which is aiding in the documentation of new typological categories of fortified spaces in this region. Our objective is to energize discussions of ancient warfare by juxtaposing material indications of conflict with long-term patterns of settlement, political association, goods circulation and consumption, ritual practice, and social identity.

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# A multi-scalar approach to landscape investigations on the Sasanian Frontiers in the South Caucasus Kristen HOPPER / Lisa Snape-KENNEDY / Lyudmila SHUMILOVSKIKH

Within the framework of the *Persia and its Neighbours Project* we have been investigating diverse landscapes of the Sasanian Empire (AD 224–651), including both highland and lowland environments in Georgia and Azerbaijan. These include both landscapes of destruction and survival, leading to both over and underrepresentation of archaeological sites and features from specific periods. Understanding landuse practices over the long term and their impact on the survival of past landscapes is therefore crucial. As such we have taken a multi-scalar approach to understanding landscape change over the long-term.

Examination of historical and modern satellite imagery has allowed us to remotely survey large areas and focus on key regions for intensive topographically-informed field survey. This has resulted in the identification of many landscape features related to agriculture and water control that indicate periods of human investment in the landscape from at least Late Antiquity to the present day. Building on this, detailed geoarchaeological and paleoenvironmental investigations have allowed us to refine our understanding of the development and use of well-preserved examples of these features through time and on both local and regional scales.

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# The National Cultural Heritage GIS Database System for Systematizing, Managing and Sharing Information about Georgia's Archaeological Heritage Giorgi KHABURZANIA

Cultural heritage is a dynamic entity, changing every day, and technologies and forms of recording are changing with it. Thousands of archaeological projects have been carried out in Georgia since the Soviet period and most of the information gathered has been stored in the institutions responsible for those projects or in private archives—in Georgia and abroad. The inconsistent ways that data has been recorded and kept makes it difficult for researchers in most cases to access even minimal information about sites, such as location, type and date. Until now, there has been no facility where all records could be stored in systematized form.

In 2013, under an agreement between the Norwegian Cultural Heritage Directorate and the National Agency for Cultural Heritage Preservation of Georgia, the Georgian Cultural Heritage Database Management System and GIS portal project was launched. It is a complex system with different modules for immovable heritage and its protection zones, for wall paintings and stone carvings, and for museums,

museum-reserves, galleries and movable heritage. Its goal is to preserve and systematize information from past research, and to create standards and develop new ways of recording cultural heritage in the future. Ultimately, a public user interface will enable local and foreign researchers to access the information already in the database and to share their own data.

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#### The political landscape of Iron Age Aramus

Walter KUNTNER / Sandra HEINSCH / Hayk AVETISYAN

The conquest of the basin of Aramus by king Argishti I in the first quarter of the eighth century BCE led to a comprehensive reordering of its political landscape with sustained repercussions also on its ecology. The reorganisation of this region within the kingdom of Biainili-Urartu does not appear, however, to have been as violent as one would be inclined to assume from contextually related cuneiform sources. The archaeological evidence from the Aramus basin achieved within the Aramus Excavations and Field School project since 2004, both from excavations at the main fortress and during surveys on the four Iron Age satellite fortresses, shows in fact for the eighth century the coexistence and for the seventh century BCE the amalgamation of autochthonous so-called Lchashen-Metsamor and allochthonous so-called Biainili culture features, in particular in stone masonry building techniquesandpotterymanufacture.

This fact is interpreted as evidence for the systematic integration rather than political oppression of at least parts of the Etiunian tribes into the kingdom of Biainili-Urartu since the 'Urartian reorganisation' of the basin of Aramus outlived the fall of the kingdom, that is, its initiator, by preserving Lchashen-Metsamor but simultaneously waiving Biainili culture features. The evidence from Aramus offers a so far unique case example to examine the relationship between Biainili and Urartu as recently defined in the proceedings of the eponymous symposium held at Munich in 2007.

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# The Edge of Empire? Remote Sensing, Survey and Excavation in the Mil Plain, Azerbaijan Dan LAWRENCE

Several seasons of remote sensing, survey and excavation work carried out by a team from the German Archaeological Institute, the Azerbaijan National Academy of Sciences and latterly including a group from Durham University have revealed a complex and diverse landscape in the Mil Plain of Southern Azerbaijan. The area investigated demonstrates a high degree of landscape preservation, and consequently very rich archaeological remains. The landscape is dotted with numerous tepes dated to the Neolithic and Chalco-lithic periods as well as several larger sites attributed to the Late Antique and Islamic periods. Extensive work at the site of Oren Qaleh, a major Sasanian fort excavated by Russian archaeologists during the Soviet period, has revealed a substantial lower town and two large canals. This paper will provide an update on the work being conducted, with a particular focus on the later landscapes of the region and the impact of the Sasanian and Early Islamic empires on the local environment. The results of the Sasanian Empire at a continental scale, allowing us to contextualise the landscapes of the Mil Steppe within broader patterns of imperial investment and control across the Caucasus and beyond. We will also discuss the methods employed, including remote sensing techniques, drone photography, OSL dating and targeted excavation, to demonstrate how data can be organised and interpreted across a range of scales.

Archaeological Surveys of the Rioni River Delta aiming to locate ancient Phasis Davit NASKIDASHVILI

The ancient city of Phasis was established by Greek colonists in Colchis (modern West Georgia) in the sixth century BC The matter of the city's location has long been a subject of discussion in Georgian archaeology. However, despite many attempts, unfortunately it has not yet been possible to identify the exact site of the city. The Archaeological Institute of Iv. Javakhishvili Tbilisi State University is actively investigating this problem by developing four different projects:

- 1. Archaeological excavations;
- 2. Interdisciplinary survey of the Rioni River Delta;
- 3. Cartographic analyses of West Georgia, and;
- 4. Archaeological surveys of the Rioni River Delta using GIS with historical and modern maps

My presentation is concerned with the last of these four projects. The survey will run for three years. In my presentation, I will report on the results of the first year.

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# Integrating the History and Archaeology of southern Georgia in the Early Ottoman Period M. Negus CLEARY / N. TSKVITINIDZE / W. ANDERSON /Damjan KRSMANOVIC / J. BIRKETT-REES

Since 2013, the Landscape Archaeology in Georgia (LAG) Project has conducted archaeological surveys in the Akhaltsikhe and Aspindza districts of Samtskhe-Javakheti province, south-west Georgia, using a combination of intensive and extensive methods. The results so far have shown a significant proportion of archaeological remains from later medieval and post-medieval periods. These span the flourishing and decline of the Georgian Kingdom, its fragmentation into smaller principalities, and the incorporation of the latter into the Ottoman Empire in 1578.

In addition to the archaeological data generated by the LAG surveys, historical texts add invaluable detail to the picture of the survey region's landscape in the late and post-medieval periods. The Great *Defter* (Register) of the Vilayet of Gurjistan, an Ottoman census and taxation document from 1595, provides significant socio-economic information. The information contained therein can be combined with archaeological results relating to settlements, religious buildings, cemeteries, terracing, and communication routes ('drove roads'). The historical 'snapshot' offered by the *Defter* facilitates the interpreting of patterns of interaction, continuity, disruption, and re-occupation in Samtskhe-Javakheti in the later 16<sup>th</sup> century. Accordingly, this paper will integrate data from intensive/extensive survey and historical sources to discuss the extent of socio-political change in southern Georgia following the Ottoman annexation.

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# The Vani Regional Survey (VRS) and the Eastern Vani Survey (EVS)

# Christopher RATTÉ

The Vani Regional Survey (VRS) and the Eastern Vani Survey (EVS) were carried out by Georgian-American teams between 2009 and 2013. The purpose of the VRS was to integrate existing knowledge about Vani and environs into the kind of technological and conceptual framework characteristic of contemporary American survey archaeology. Of particular importance was the use of Geographical Information Systems (GIS) as an organizational and analytical tool, and of geophysical prospection both in the immediate environs of Vani and at regional sites. The EVS applied techniques of intensive survey to a relatively unexplored area immediately east of Vani. Like all regional surveys, our projects recorded evidence of all periods, from prehistory to the present day, but we were particularly interested in investigating the increasing social complexity of Colchis in the mid- and later 1<sup>st</sup> millennium BC – when Greek explorers began to establish colonies on the Black Sea coast of Georgia, and the Persian empire pushed up against the mountains of the Caucasus. What was the nature of Colchian society in this period? How was it affected by interaction with the larger Greek, Persian, and Pontic worlds? And how can regional survey at Vani and throughout Colchis help us to address these questions?

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### The Late Neolithic Landscapes of the Southern Caucasus: The results of the 2010–2015 ANR-DFG Kura projects Andrea RICCI

Modern landscape archaeological projects have long neglected large parts of the Southern Caucasus. Under the umbrella of the French-German Kura initiatives (ANR-DFG '2010-2012 Ancient Kura' and

'2013–2015 Kura in Motion' projects) a team of landscape archaeologists has been investigating three regions along the Kura River Valley and its tributaries. This paper discusses the methods and presents the results of these intense landscape studies, which shed light on previously unknown late Neolithic patterns of occupation in some regions of the Southern Caucasus. In the landscape of survival of the Mil Plain in southwestern Azerbaijan, a number of flat or shallow mounds dated to the mid-6<sup>th</sup> Millennium BCE suggests short-term but dense occupation of the region. Excavations indicate the highly varied nature of these sites. Targeted surface collection in the Kvemo Kartli region of southeastern Georgia has documented more intense population than previously thought on the fertile alluvial plains stretching south and north of the Mašavera River. Here a more stable late Neolithic occupation than in the Mil Plain led to the formation of proper artificial *gora* already during the 6<sup>th</sup> Millennium BCE.

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### The South Caucasus Aerial Photo Archive (SCAPA) project

Abby ROBINSON / Giorgi KHABURZANIA / Kristen HOPPER

Aerial photography has long been recognised by archaeologists as a crucial resource for identifying sites and landscape features. An archive of approximately 300,000 images, covering most of Georgia and parts of Armenia and Azerbaijan, is currently housed in the Centre for Archaeological Studies at the Georgian National Museum in Tbilisi. The images date from the 1950s to 1985, a period of profound change in the region. Preliminary analysis of a sample of the images show their potential for identifying many previously unrecorded archaeological sites that may have since been attenuated or destroyed by agricultural practices and other activities. Equally, by comparing these images with modern imagery available on Google Earth and data from field surveys, we can assess rates and types of damage that have had an impact on and may still be threatening archaeological sites. In this paper we will present details of the *South Caucasus Aerial Photo Archive* project, which we have instigated in order to both preserve these unique and invaluable images and make them widely available. Plans include digitising, cataloguing and geo-rectifying the photos, and creating a purpose-built public database, web-mapping service, and mobile applications. Our plans also include the training of students and museum staff in every part of the process, with a view to boosting GIS skills and facilities in the region.

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# Two-dimensional Survey in Four-dimensional Tbilisi

Kathryn O'NEIL WEBER

In this paper I discuss the challenges of systematic survey in a fractured landscape and the implications for the scientific method, by discussing the results of an intensive pedestrian survey of an undeveloped area of land outside of the city of Tbilisi, Georgia. The area is broken by natural features like gorges, rivers, and lakes and anthropogenic features such as modern villages, roads, and cemeteries. In addition, the soil deposition and visibility vary radically across the survey zone. How can we create a survey design that is both scientifically rigorous and realistically applicable, by doing more than flattening a three dimensional world? I consider how GIS tools might contribute to more effective survey design, and offer a defence of targeted survey techniques. I suggest that survey should be used to read both the cultural and 'natural' landscape (which likely also includes include human earthworking at a variety of scales). Furthermore this survey is useful as a heritage management tool; in the development landscape of the area, archaeologists are well placed to offer tools to facilitate the protection of as yet undiscovered sites.

Understanding provincial structure in the early Isl

# Understanding provincial structure in the early Islamic Caucasus – a rural-urban case study from the Kura plain, Azerbaijan

Paul WORDSWORTH

The modern town of Barda on the edge of the Kura plain, betrays almost no evidence of its historical political significance. This lowland area – a frontier zone of the early Islamic world; a strategically and

economically important region; and an area of fluid political control – could potentially reveal a great deal about the structure of 'borderlands' under the Abbasid Caliphate and its successors. The visible historic centre of Barda is represented, however, by a lone 14<sup>th</sup> century mausoleum and a short section of mudbrick rampart. The patchy archaeological remains of the surrounding region are also difficult to interpret, as intensive agricultural development has erased and masked most of the historical landscape. In order to understand provincial organisation in the early Islamic period it is necessary to bring together the fragmentary evidence of urban and rural settlement.

This paper presents the first results of intensive landscape survey and a programme of dispersed excavation in the modern town, and reflects on how these methods can reconstruct such a fragmented landscape. The archaeological data has begun to reveal how regional infrastructure and the urban layout speak both to continuity in the city's internal organisation, but also to a shift in economic focus after the expansion of the Abbasid Caliphate.

# Encapsulating the "Amarna Age" Spirit: The Late Bronze Palace at Tel Beth-Shemesh, Israel



The 14<sup>th</sup> century BCE — the Amarna Age *senso lato* — is characterized not only by the religious revolution of Amenhotep IV/Akhenaten and the shift of the kingdom's capital but also by an unprecedented fresh and innovative spirit. The international diplomatic and commercial relations peacefully established by Amenhotep III with all great powers of the Ancient Near East and the Eastern Mediterranean, changes in Egyptian artistic representations, and significant modifications in gender relations reflected in these artworks, clearly manifest the uniqueness of the Amarna era. What impact had these cultural developments on the regions subject to Egypt, especially on the Canaanite city-states documented in the Amarna letters?

Surprisingly, the archaeological answer to this intriguing question is vague at best since excavations at many of the Canaanite city-states hardly exposed 14<sup>th</sup> century BCE remains. This disappointing situation brings into relief the importance of the recent excavations of an Amarna Age palace at Tel Beth-Shemesh, Israel. The spacious building, destroyed in a tremendous conflagration, contained rich and varied assemblage of finds: more than 150 pottery vessels, many of them containing plant remains, two rare Late Minoan III A1 cups, a commemorative scarab of Amenhotep III, imported Cypriote vessels, a unique plaque figurine depicting a female ruler, and more. Intriguingly, each of these finds sheds new light on a certain aspect of the Amarna Age, e.g. Egypt's intercultural connections with the Aegean, entanglement of Egyptian elite practices and new gender relations by the Canaanite ruling class, and more. The workshop aims, therefore, at a thorough discussion of the finds from Beth-Shemesh that uniquely encapsulate the "Amarna Spirit".

# Organizers:

Zvi LEDERMAN Tel Beth-Shemesh Excavations Institute of Archaeology Tel Aviv University POBox 39040 Tel Aviv 69978, Israel zvi.lederman@gmail.com

# Tel Beth-Shemesh Excavations Institute of Archaeology Tel Aviv University POBox 39040 Tel Aviv 69978, Israel bunimov@post.tau.ac.il

Shlomo Bunimovitz

#### Participants (in alphabetical order):

BOARETTO Elisabetta
Weitzmann Institute
Elisabetta.Boaretto@weizmann.ac.il
BRANDL Baruch
Israel Antiquities Authority
brandl@israntique.org.il
CHOVANEC Zuzana
Albany State University
zuzana.chovanec@gmail.com

STOCKHAMMER Philip Wolfgang Ruprecht-Karls-Universität Heidelberg Philipp.Stockhammer@uni-heidelberg.de WEISS Ehud Bar-Ilan University Ehud.Weiss@biu.ac.il ZIFFER Irit Eretz-Israel Museum irit.ziffer@gmail.com

#### List of Lectures/Program:

	Lecturer	Title
1	Zvi Lederman / Shlomo Bunimovitz	Setting the Scene: New Light from Tel Beth-Shemesh on 14th Century BCE Inter- cultural Relations
2	Shlomo Bunimovitz	A Recently Discovered Late Bronze Age Palace at Tel Beth-Shemesh
3	Baruch Brandl	Commemorative Scarabs of Amenhotep III from Beth-Shemesh and Sellopoulo: Minoan – Egyptian Synchronization, Mycenaean – Egyptian Contacts and Canaan- ite – Egyptian Network

9	Zvi Lederman Discussion	"Amarna Spirit"
		The Late Bronze Age Palace at Beth-Shemesh: An Archaeological Capsule of the
8	Irit Ziffer	Gender and Rulership: A Unique Amarna Age Plaque Figurine from Beth-Shemesh
7	Ehud Weiss	Foreign Plant Food at the Late Bronze Age Palace at Beth-Shemesh – 'Prestige Materials' for Ceremonial feasts?
6	Zuzana Chovanec	International Opium Trade in the Amarna Age? Organic Residue Analysis (ORA) of Cypriot Pottery from Beth-Shemesh and Late Bronze Age sites in Cyprus
5	Philipp W. Stockhammer	Aegean-type pottery from Tel Beth-Shemesh: Chronological and Social Perspec- tives
4	Elisabetta Boaretto	One day, one event and one Pharaoh: radiocarbon dating, Amenhotep III scarab from Tel Beth-Shemesh, and implications for Early Aegean Chronology

# Abstracts (in alphabetical order):

### One day, one event and one Pharaoh: radiocarbon dating, Amenhotep III scarab from Tel Beth-Shemesh, and implications for Early Aegean Chronology Elisabetta BOARETTO

The Amenhotep III commemorative scarab – an historical reference - recently found together with Late Minoan IIIA1 cups under the destruction debris of the Late Bronze Age palace at Tel Beth-Shemesh – an instantaneous event – represents a highly desirable archaeological context to synchronize Late Bronze Age levels around the Eastern Mediterranean. Radiocarbon dating of short lived material found *in situ* in close relation to the historical and cultural remains has provided an absolute timing for this archaeological context.

Synchronization of Beth-Shemesh context with similar finds from Tomb 4 at Sellopoulo (Knossos) involves several assumptions and interpretation which requires time resolution challenging the accuracy and precision of dating with <sup>14</sup>C. This is even further complicated as no earlier and later strata datable with short lived material are for the time being available at Beth-Shemesh. In absence of multilayer chronology, a different strategy has to be applied based on high precision dating and association to cultural and historical remains in the entire region. The same approach should be applied also to other sites where ambiguous association between dates and cultural material are detected. The resolution of the different records (e.g. historical/cultural and radiocarbon) are not easily comparable and therefore the implication for the regional chronology has to be carefully studied.

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# Commemorative Scarabs of Amenhotep III from Beth-Shemesh and Sellopoulo: Minoan – Egyptian Synchronization, Mycenaean – Egyptian Contacts and Canaanite – Egyptian Network Baruch BRANDL

In summer 2009 a medium-size (43.5 mm long) Egyptian scarab was found sealed under the mass of fallen mudbrick debris covering the Late Bronze Age palace at Beth-Shemesh. The scarab, bearing a cartouche of Amenhotep III with an additional epithet, was found in an assemblage of artifacts also including two complete rare Late Minoan IIIA1 cups. This discovery, and a similar occurrence of a scarab of Amenhotep III alongside Late Minoan IIIA1 pottery in Tomb 4 at Sellopoulo (Knossos), help in dating and illustrating important geopolitical events and processes that took place in mid-14th century BCE:

1. Synchronization between Late Minoan IIIA1 pottery and the later years of Amenhotep III reign. This is based on his scarabs from the palace at Beth-Shemesh and Tomb 4 at Sellopoulo (Knossos), which are identified as Middle-Size and Regular-Size Commemorative Scarabs related to his first Jubilee or *Sed*-festival.

- The distribution of Amenhotep III scarabs beyond the Greek mainland in sites that are included in the "Aegean List" from his mortuary temple in *Kom el-Hetan* suggesting that the list may reflect the Mycenaean expansion to Crete and Rhodes.
- 3. The important role of Beth-Shemesh within the network of Canaanite vassal city-states, as deduced from the Amarna Letters and the distribution in Canaan of the re-dated Large Commemorative Scarabs.

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#### A Recently Discovered Late Bronze Age Palace at Tel Beth-Shemesh

#### Shlomo BUNIMOVITZ

This introductory lecture first contextualizes the recently discovered Late Bronze Age (14<sup>th</sup> century BCE) palace of Beth-Shemesh within the wider framework of the archaeological investigation of the site that spans over a century. It then focuses on the palace and presents the circumstances of its discovery, the innovative analysis of the destruction debris that sealed the spacious building on its contents, its plan and architecture, and the spatial distribution of the great variety of finds discovered in its rooms. A well preserved collection of plant remains stored in one of the palace's rooms may hint to the integration of Beth-Shemesh within the international diplomatic and economic web of the 14<sup>th</sup> century BCE. This idea is further corroborated by the unique assemblage of artifacts concentrated in another room, presumably of a ceremonial function. The main finds from this room will be thoroughly discussed in the subsequent lectures as they shed new light on the cultural relations encompassing Egypt, Canaan, Cyprus and the Aegean in the Amarna Age.

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# International Opium Trade in the Amarna Age? Organic Residue Analysis (ORA) of Cypriot Pottery from Beth-Shemesh and Late Bronze Age sites in Cyprus Zuzana CHOVANEC

Half a century ago, Robert S. Merrillees proposed that the Cypriot Base Ring juglets were used for the transport of opium in the Eastern Mediterranean during the Late Bronze Age with the vessels' distinct design serving to nonverbally communicate the contents held therein. In light of the paucity of scientific evidence to support this hypothesis, 18 Base Ring juglets underwent residue analysis at the University of New York at Albany. Eleven juglets originated from stratified contexts dating to the Late Bronze Age from Tel Beth-Shemesh, Israel and Episkopi *Bamboula*, Cyprus. The remaining seven originated from collections at the University at Albany and the Semitic Museum at Harvard University. Results of the analysis of the juglets will be presented and implications for a proposed Mediterranean trade in opium discussed.

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# The Late Bronze Age Palace at Beth-Shemesh: An Archaeological Capsule of the "Amarna Spirit" Zvi LEDERMAN

Canaanite Beth-Shemesh reached its zenith in the later days of pharaoh Amenhotep III and his Great Royal Wife queen Tiye. This large Canaanite city continued into the early years of Akhenaton's and Nefertiti government from the newly established capital Akhetaten at el Amarna. The excavations at Beth-Shemesh have uncovered an expansive mid-14<sup>th</sup> century BCE palace from this Canaanite City, and this palace reveals connections with Egypt.

The spacious palace was packed with finds from almost all corners of the ancient world, showcasing both the city's significance and international connections. Some of the more important finds may hint to special relations with the Egyptian court, and may reflect the great changes that Egypt was experiencing. A meticulous study of the evidence from the palace indicates that Canaanite elite borrowed from neighbouring cultures and reveals an entanglement of social phenomena and practices characteristic of the Egyptian Royal court during the Amarna Age. There are indications for Amarna-style banqueting, ceremonial drinking, the use of exotic aromatic oils, and more. Moreover, a unique plaque figurine, showing strong Egyptian influence in art and ideology, might have heralded the melting down of some gender

barriers. The Egyptian connections are clear and certain, and it is plausible that the city's established female ruler followed Egypt's eighteenth dynasty models of authority. In summary, the Late Bronze Age palace at Beth-Shemesh seems, therefore, to encapsulate the "Amarna Spirit".

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# Setting the Scene: New Light from Tel Beth-Shemesh on 14<sup>th</sup> Century BCE Intercultural Relations Zvi LEDERMAN / Shlomo BUNIMOVITZ

The Amarna archive provides us with a great wealth of knowledge on 14<sup>th</sup> century BCE Canaan. More than 150 letters from Canaanite rulers are registered in the Amarna archive, doting the map with sites securely identified. Many of these sites were vastly excavated in recent decades. Surprisingly, very little (if at all) archaeological evidence was yielded to shed new light on Canaan city states, their social matrix, hierarchy and behavior.

This brings into relief our recent excavations at Tel Beth-Shemesh. A very large palace was exposed, securely dated, both by relative and <sup>14</sup>C analyses to mid-14<sup>th</sup> century BCE. The examination of the finds retrieved from this palace portrays a vital and energetic hub enmeshed in an international economic system of trade and gift exchange.

During the new kingdom Canaan was, for the most part, under the domination of the Egyptians, who never gave up gaining economic advantages from their province. Some of the most intriguing finds from Beth-Shemesh may indicate a close and special relationship with the ruling class in Egypt, in time when the Nile valley was swept by a fresh and innovative spirit.

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#### Aegean-type pottery from Tel Beth-Shemesh: Chronological and Social Perspectives Philipp W. STOCKHAMMER

Within the last years, the ongoing excavations at Tel Beth-Shemesh have produced a considerable number of Aegean-type vessels – among them a unique pair of Minoan conical cups. The presentation will first evaluate the corpus of Minoan and Mycenaean pottery from Tel Beth-Shemesh from a chronological perspective, as the site seems to have the potential to shed new light on the absolute chronology of Aegean-type pottery. In the second part of the lecture, Aegean-type pottery will be considered with a practice-oriented approach that aims at understanding the local appropriation of Aegean-type pottery and the redefinition of function and meanings of these vessels in Tel Beth-Shemesh. It seems that especially the Minoan conical cups epitomize the transformative potential of intercultural encounter. Finally, the presentation will deal with the diachronic development of the social meaning of Aegean-type pottery at Tel Beth-Shemesh and beyond in the 14<sup>th</sup> and 13<sup>th</sup> century BCE.

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# Foreign Plant Food at the Late Bronze Age Palace at Beth-Shemesh – 'Prestige Materials' for Ceremonial feasts?

Ehud WEISS

Storeroom L1505 comprises part of the large Late Bronze Age palace recently discovered at Tel Beth-Shemesh. The palace was destroyed in a heavy conflagration. Storeroom L1505 contained numerous deposits of carbonized crop plants, which had been kept in storage jars and bags arranged along its walls and in its center. Many of these deposits were in discrete concentrations, often still contained in the jars; others had spilled out onto the floor. The ca. 60,000 plant remains were identified and the results will be presented. In most concentrations highly clean (99.5%) food plants were found; in five out of the eight concentrations, seeds belonged to one crop, while the other three jars had two crops, one jar with wheat and Fava beans, and two jars with wheat and Winged vetching. The latter is a unique legume which was not discovered in such quantities outside the Aegean world, nor at any other site in the Levant. Interestingly, even in the Aegean world, it was found only in the LM II Unexplored Mansion in Knossos. The unique plant assemblage of Late Bronze Age Tel Beth-Shemesh will be presented and used to reconstruct the site's environment and its inhabitants' diet, as well as culture and foreign trade.

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# Gender and Rulership: A Unique Amarna Age Plaque Figurine from Beth-Shemesh Irit ZIFFER

A unique plaque figurine from the Late Bronze Age palace at Tel Beth-Shemesh belongs to a special class of anthropomorphic cult objects that became abundant in the third quarter of the 2nd millennium. Characteristically, they depict a frontal naked female with a Hathor-wig in a variety of postures, sometimes holding plants or animals.

The Beth-Shemesh plaque is different: it shows a male figure with short hair and a fillet, clad in a short kilt which is held in place by a broad belt. Striding to the left, his bent (V-shaped) arms are extended sideward, each holding a lotus stem. The head in profile and the wide stride are characteristic of the warrior in smiting pose. The V-shaped arms, however, are typically feminine, recalling the figure of Canaanite goddesses.

Whose portrait does the plaque commemorates? Divine or human? There may have been some sense of conflict with the sex and the role of <sup>f</sup>NIN-UR.MAH.MEŠ, presumably the female ruler of Beth-Shemesh mentioned in Amarna letters 273–274. In order to resolve this conflict, she might have presented herself as male, yet preserved the feminine gesture of the arms grasping lotus flowers, typical of the naked female representations but also the Canaanite emblem of rulership.

# Iconography and Symbolic Meaning of the Human in Near Eastern Prehistory



The human iconography in Near Eastern prehistory was so far only discussed in some aspects. For a long time research focused on Late Neolithic figurines with an emphasis on fertility cult and gods representations.

However, the field research of the last 30 years widened the spectrum of human representations in ancient Near Eastern prehistory enormously. The heterogeneity of anthropomorphic representations, especially their themes, motifs and contexts, require therefore new discussions on the human representation, self-perception and self-expression in prehistoric Near Eastern art.

The chronological frame of the workshop covers the period from the Epi-Palaeolithic (Natufian) to the Early Chalolithic (c. 12.000 BC–4000 BC). A period characterized by the development of substantial foundations on which later Mesopotamian civilizations built on, with effects on the iconographic representation of humans.

The workshop starts with lectures on the corpus of iconographic representations, which will be contextualized with physical-anthropological information and archaeological data referring to burial practices. Combined with contributions on modifications and decorations of the human body as well as gestures, a general view of human self-perception and self-expression of prehistoric humans in their social communities will be generated.

#### Organizers:

Jörg BECKER Deutsches Archäologisches Institut Orient-Abteilung Podbielskiallee 69–71 14195 Berlin, Germany joerg.becker@orientarch.uni-halle.de 
 Claudia BEUGER
 Bernd MÜLLER-T

 Martin-Luther-Universität Halle-Witten
 Deutsches Archä

 berg, eminar für Orientalische Archäolo
 Orient-Abteilung

 gie und Kunstgeschichte
 Podbelskiallee 6

 Brandbergweg 23c
 14195 Berlin, Ge

 06120 Halle (Saale), Germany
 bernd.mueller-re

Bernd MÜLLER-NEUHOF Deutsches Archäologisches Institut Orient-Abteilung Podbielskiallee 69–71 14195 Berlin, Germany bernd.mueller-neuhof@dainst.de

#### Participants (in alphabetical order):

Department of Archaeology, Classics and Egyptology       Ca         University of Liverpool       Sc         BIEHL Peter       University of Buffalo – State University of New York       Department of Anthropology         University of Buffalo – State University of New York       Department of Anthropology       Eff         University of Buffalo – State University of New York       Department of Anthropology       Eff         CAMPBELL Stuart       Ha       School of Languages and Cultures       Fi         University of Manchester       Cc       Cc         CHAMEL Bérénice       Lc       Lc         UMR Archéorient, Maison de l'Orient et de la Méditer-ranée       Date         CONARD Nicholas       Br       Br         Universitä Tübingen       Ga       Abteilung Ältere Urgeschichte und Quartärökologie       Fia         COQUEUGNIOT Eric       Un       Un       Un       Ga         DIETRICH Oliver       In       In       In	
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UMR Archéorient, Maison de l'Orient et de la Méditer- ranée DETRICH Oliver III	GOMEZ BACH, Facultat de Filo
	Universitat Aut GORING-MOR Department of
Deutsches Archäologisches Institut, Orientabteilung	Institute of Arc The Hebrew Ur

DRABSH Bernadette Casual Academic
School of Design, Communication and IT
University of Newcastle
ERDAL Yılmaz
Department of Anthropology
Hacettepe University Ankara
FINLAYSON Bill
Council for the British Research in the Levant (CBRL),
London
FLETCHER Alexandra
Department of the Middle East
British Museum
GOMEZ BACH, Anna
Facultat de Filosofia i Lletres
Universitat Autònoma de Barcelona
GORING-MORRIS, Nigel
Department of Prehistory
Institute of Archaeology
The Hebrew University of Jerusalem

NIEUWENHUYSE, Olivier Universiteit Leiden Faculteit Archeologie, Near Eastern SCHULTZ, Michael Georg-August-Universität Göttingen Universitätsmedizin Abteilung Anatomie und Embryologie, Arbeitsgruppe Paläopathologie WATKINS, Trevor School of History, Classics and Archaeology University of Edinburgh

# List of Lectures:

28.4.	Lecturer	Title
8:30	Jörg Becker / Claudia Beuger / Bernd Müller-Neuhof	Introduction
Part I: S	ymbolism and Iconography	
9:00	Trevor Watkins	When Do Human Representations Become Superhuman Agents?
9:30	Nicholas Conard / Mohsen Zeidi	Continuity and discontinuity between Paleolithic and Neolithic im- agery
10:00	Lee Clare / Oliver Dietrich / Jens Notroff	Anthropomorphic Iconography at Göbekli Tepe
10:30	Olivier Nieuwenhuyse	To see or to touch? The sensual context of prehistoric human imagery
11:00	Coffee Break	
11:30	Jörg Becker	Anthropomorphic Figurines of the Halaf Period
Part II: I	Physical anthropology and mortuary	/ practise
12:00	Michael Schultz	Health and disease in the prehistoric and early historical Near East. A contribution to the reconstruction of ancient living conditions
12:30	Anna Belfer-Cohen / Nigel Goring-Morris	Epipalaeolithic mortuary customs in Southwest Asia
13:00	Lunch Break	
14:00	Douglas Baird	Treatment of the dead at Epipalaeolithic Pınarbaşı
14:30	Bill Finlayson	PPN mortuary patterns, archaeological models, people and society
15:00	Yılmaz Erdal	Post-Depositional Treatment of Dead at Körtik Tepe: Symbolic and Social Implication
15:30	Alexandra Fletcher	Changing faces, from individual to ancestor: a plastered skull from Jericho
16:00	Coffee Break	
Part III:	self-perception and self-expression	of the of the human being
16:30	Peter Biehl	Forming and Transforming the Human Body in the Near Eastern Neolithic and Chalcolithic
17:00	Bérénice Chamel / Eric Coqueugniot	Human self-perception and self-expression in the Early Neolithic of North Levant: Funerary practices and symbolic meaning of the human representations in Dja'de (Syria)
29.4.	Lecturer	Title
9:00	Nigel Goring-Morris / Anna Belfer-Cohen	Skulls, plastered skulls and masks during the Early Neolithic – Self-per- ception and self-expression
9:30	Bernd Müller-Neuhof	Signals from the past: gestures in SW-Asian anthropomorphic iconog- raphy – preliminary observations
10:00	Claudia Beuger	Clothing and nudity in prehistoric Near East
10:30	Bernadette Drabsh	Nude, Robed and Masked Processions: Considering the Figural Images in the Teleilat Ghassul Wall Paintings

11:00	Coffee Break	
11:30	Miquel Molist / Anabel Ortiz / Anna Gomez Bach	Symbolic Documents in Euphrates Valley in the Middle and Late PPNB. Results of the Tell Halula Project in Interpretative Context
12:00	Stuart Campbell	Treatment and representation of humans in the later prehistory of northern Mesopotamia: integrating approaches
12:30	Jörg Becker / Claudia Beuger / Bernd Müller-Neuhof	Final discussion and resumee

Abstracts (in alphabetical order):

# Treatment of the dead at Epipalaeolithic Pınarbaşı

Douglas BAIRD

Epipalaeolithic burials at Pinarbaşı in central Anatolia show elaborate symbolic practices associated with the body and especially the head. A comparative perspective on these practices is developed in this paper, which thus also considers other evidence for treatment of the body and objects associated with the body in the Epipalaeolithic mortuary record.

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#### Anthropomorphic Figurines of the Halaf Period Jörg BECKER

Typical finds of the early 6<sup>th</sup> millennium calBC in Upper Mesopotamia, i.e. the Halaf culture, are terracotta figurines. The anthropomorphic figurines, easily formed by hand, are dominated by female representations, often painted or incised. Out of their characteristic appearances – with little variations – they are often labelled as magna mater and associated with thoughts of fertility. Together with horned quadrupeds, mostly described as bulls, such female votive figurines are seen as a counterpart of a bullcult, which seem to be indicated also through the widely distributed bucrania-motifs on the pottery of that culture.

After another interpretation they may have functioned together with seals and tokens in an administrative system as symbols testifying some kind of contractual obligations. Keeping in mind, that we are largely ignorant of the spiritual universe symbolized by them, we can observe that most these figurines were intentionally broken in the frame of magic-ritual practices. In their socio-cultural background they were used by a rural late Neolithic community, based on villages and hamlets, probably organized in kinship related groups, and could be used nearly in every household without any agents or institutions.

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#### Epipalaeolithic mortuary customs in Southwest Asia

Anna BELFER-COHEN / Nigel GORING-MORRIS

Recent research in S.W. Asia, most particularly in the Levant, has documented numbers of earlier Epipalaeolithic burials, and though the amount rises dramatically with the emergence of the Late Epipalaeolithic Natufian complex, the variability of the mortuary treatments of these earlier, rather sporadic burials is comparable to that observed in the latter.

Mortuary practices reflect social customs and beliefs as well as self-perception and self-expression of the group and its members. The accruing data supports the notion expressed by some that, contra to the prevailing belief, there was a significant state of flux in the socio-cultural domains including funerary practices throughout the 15,000 years of the Epipalaeolithic in the region. Apparently, the notion of a monolithic Epipalaeolithic, continuing the life-ways of the Upper Palaeolithic hunter-gatherers, end-ing relatively abruptly with the Neolithic transformations should be modified. The diversity apparent in the burials of the various cultural entities dating to the Early and Middle Epipalaeolithic continues also during the Natufian, when the growing number of burials is not accompanied by standardization/canon-

ization of pan-Natufian burials customs. It is of interest to note that elements of some of these practices are emphasised during the subsequent Neolithic.

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#### Clothing and nudity in prehistoric Near East Claudia BEUGER

This lecture is an attempt to draw a picture of the clothing and body decoration habits of prehistoric men in Near East. For this purpose, initially the possible sources are discussed. Such sources are of course to be found in the first place in the iconography of prehistoric art – figurines, seal impressions, ceramics, wall paintings, rock art. Moreover evidence from graves or our knowledge of early leather and textile technology must be included here. Just as important as the question of the type of clothing is also a reflection of the degree of nudity in everyday life. Finally it should be examined whether purely functional factors shape the picture of prehistoric men, or whether we can recognize symbolic or social factors.

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# Forming and Transforming the Human Body in the Near Eastern Neolithic and Chalcolithic Peter F. BIEHL

This paper discusses how studying visual representations of the human body from the Neolithic and Chalcolithic in the Near East can aid us in understanding identity and personhood in the past. The paper looks at anthropomorphism and miniaturization as well as at embodiment and entanglement of the human figure as represented in figurines as well as on pottery and wall paintings especially from Central Anatolia. It will also scrutinize corporeal as well as ideational and symbolic attributes of the visual body in order to better understand identity and personhood in the 7<sup>th</sup>-6<sup>th</sup> millennium BC.

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# Treatment and representation of humans in the later prehistory of northern Mesopotamia: integrating approaches

# Stuart CAMPBELL

A growing focus of work on the later 7<sup>th</sup> and early 6<sup>th</sup> millennia BC in north Mesopotamia has demonstrated an increasing level of symbolic richness and complexity in many contexts, with an emphasis on performance, variability and reinvention as much as repetition and conformity.

This data provides important evidence concerning the ways in which human remains were treated within wider ritual practice, the often complex relationships between humans and other categories of being, and the way in which humans were depicted within a diverse symbolic world. This demands an integrated and imaginative response in archaeological interpretation, seeking new understandings of what it meant to be human, how that meaning could be manipulated and how new meanings could be created.

Human self-perception and self-expression in the Early Neolithic of North Levant: Funerary practices and symbolic meaning of the human representations in Dja'de (Syria)

Bérénice CHAMEL / Eric COQUEUGNIOT

Located on the left bank of the Euphrates River, ca. 100 km NE of Aleppo and 30 km SW of Aïn el Arab/ Kobane, Dja'de is the only site in the North Levant that covers the whole of the 9<sup>th</sup> millennium (late PPNA and EPPNB), a crucial phase for the process of Neolithization. Six to nine meters thick, the archaeological levels are particularly rich of indications on the techniques, the social organization and on the human self-perception.

With a total of 103 individuals, spread into 34 funerary deposits, Dja'de has the largest late PPNA and EPPNB human remains collection. Although a very strong link were noticed between the deceased and the architecture, no significant associations were recorded between the funerary practices and the age at death, the sex or the presence/absence of grave goods.

Human representations are limited to figurines (in clay, limestone, chalk and bone). The female ones are varied and do not seem related to the unique principle of fertility (only one represents a clear pregnant woman). Others seem masculine and one wears scarification marks.

Both aspects suggest that the inhabitants of Dja'de had a perception of themselves different from what we know for the  $8^{th}$  millennium and beyond.

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#### Anthropomorphic Iconography at Göbekli Tepe

#### Lee CLARE / Oliver DIETRICH / Jens NOTROFF

The early Aceramic Neolithic site of Göbekli Tepe in Upper Mesopotamia stands out as one of the extraordinary sites from the early Holocene. Dating to a time of early sedentary communities and coinciding with the very beginnings of processes that culminate in the domestication of plants and animals, the Göbekli Tepe site is well known for its impressive megalithic architecture. This takes the form of large circular monumental enclosures, also comprising impressive T-shaped pillars. These pillars carry characteristic anthropomorphic features in low-relief, such as hands, arms, and items of clothing. In addition to these larger-than-life monolithic figures, the site has also produced various other forms of anthropomorphic representations. These include depictions of humans carved onto the surfaces of the T-pillars themselves, limestone sculptures and figurines, and engravings on stone plaquettes.

In this paper, we focus on different expressions of anthropomorphic depiction at the site, and propose that the observable variety could correlate with diverging levels of symbolic meaning, providing unparalleled insights into human worldview at this important transition in human history.

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#### Continuity and discontinuity between Paleolithic and Neolithic imagery

Nicholas CONARD / Mohsen ZEIDI

Both Paleolithic and Neolithic figurative imagery is dominated by depictions animals and humans. This paper touches on key aspects of the Paleolithic record from Europe and compares them with the imagery from the aceramic Neolithic of the Zagros. Particular attention is placed on results from the authors' excavations in Aurignacian deposits in southwestern Germany and at the early Neolithic site of Chogha Golan in Ilam Province, Iran. In both contexts representations of women are the most common form of human depictions. Although the depictions from both regions vary they do include some unifying features as well as substantial differences in the media used and the nature of the depictions. This paper compares and contrasts the iconography of both periods and regions and touches upon possible explanations for these observations.

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# Nude, Robed and Masked Processions: Considering the Figural Images in the Teleilat Ghassul Wall Paintings

#### Bernadette DRABSCH

The wall paintings from Chalcolithic (ca. 4700–3600 cal BC) site of Teleilat Ghassul in the south Jordan Valley are rich with symbolism and human iconography. The figural images depicted in the complex 'procession' scenes are vital elements in our understanding of this enigmatic preliterate culture. This paper will consider the anthropomorphic figures and their associated motifs in two ways.

Discussion will establish key attributes of the figures, such as elaborate clothing (or lack of clothing), the masks, associated implements, bodily decoration and posture, thus viewing the human bodies as inscriptive. Scene compositions will then be considered, exploring aspects alluding to social stratification and ritual practice.

Secondly, the human representations will be viewed from a more phenomenological viewpoint, considering the experience of individuals depicted in the scenes (and those viewing them), while exploring the role clothing and nudity played in shaping public and private identities.

### Post-Depositional Treatment of Dead at Körtik Tepe: Symbolic and Social Implication Yılmaz Selim ERDAL

Cutmarks on the bones of ten individuals from Körtik Tepe site in Southeastern Anatolia, which was dated from Late Epi-Paleolithic to Pre-Pottery Neolithic period, were analyzed using a bioarchaeological approach. More than 800 skeletons have been excavated. Ten individuals possess cutmarks on their crania only while half of them have cutmarks on both their cranial and postcranial skeleton among analyzed 450 individuals. Both the morphology of cutmarks and the burial customs reveal that the individuals were subject to human intervention in the decomposition process.

Defleshing was interpreted as part of post-burial practices rather than secondary burials. Gypsum and red and black pigments on the bones support the post-depositional treatments in the graves. It is proposed that some funeral practices aim to purify the flesh with special treatment of it. Moreover, there is symbolic approach for separation of the bone from flesh in Near Eastern belief system. The bone versus flesh explain the complete decay of soft tissue. Bone reflects both lineage and life in belief system of some Anatolian communities.

Together with ethnographical information, cutmarks at Körtik Tepe individuals are interpreted as intervene the decomposition process and accepted as an attempt to purify the corpse and to separate death from life.

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# PPN mortuary patterns, archaeological models, people and society

**Bill FINLAYSON** 

PPN mortuary evidence has been a significant focus for research on PPN society, being used to examine such issues as ritual behavior and belief, developing concepts of lineage, inheritance and property, and the structure of PPN social organization. While the consequent debates have often been sophisticated and have recognized change over time during the course of the Neolithic, they have mostly produced single narratives, obscuring the diversity of practice that can be seen on a regional, or even site-by-site, basis. An examination of this diversity has the potential to reveal expressions of local identities and beliefs, and consequently differing Neolithic pathways. This variety of social and ideological responses within the Neolithic transformation provides a more richly textured account of this process that is probably a more accurate reflection of the nature of change than the single strand narrative common in most Neolithic synthesis.

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# Changing faces, from individual to ancestor: a plastered skull from Jericho Alexandra FLETCHER

The so-called Jericho skull in the British Museum's collections is one of seven plastered human skulls found by Kathleen Kenyon at Neolithic Jericho in 1953. Archaeologists have long considered skull removal, decoration and caching as an important part of understanding the mortuary and social practices of the Pre-pottery Neolithic (PPN) B period, (c.10, 500-8, 700 calibrated 14C years B.P). Advances in imaging techniques, have now allowed us to reassess the Jericho skull by 'seeing' beneath the plastered surface and gaining insight into ritual practices that were of significance for this individual and their community. The Jericho skull was part of a series of ritual practices involving skulls, plaster and clay figures, decorated skulls and stone masks that linked place with group identity, ancestors and memory. Ancestor worship celebrates a community's shared history and thereby reduces social tension. After death, the selection of the skull for plastering appears to have changed the status of the remains from being an individual to an 'ancestor'.

This research therefore has further implications for the study of skull cult, ancestor worship and responses to social change in the Neolithic Levant.

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# Skulls, plastered skulls and masks during the Early Neolithic – Self-perception and self-expression Nigel Goring-MORRIS / Anna BELFER-COHEN

The tradition of post-mortem human skull removal is first documented during the Late Epipalaeolithic Natufian complex in the Levant, but is widely considered to represent a hallmark of the subsequent Pre-Pottery Neolithic and even later mortuary customs. The practices pertaining to special treatment of the skull sometimes included the embellishment of selected skulls, as well as the modelling of facial features. This is observed especially during the Middle/Late PPNB, at which time anthropomorphic masks and statues are also a notable element of the symbolic repertoire in the Southern Levant.

However, it is important to stress that skull removal was by no means ubiquitous during the PPN, and that it was applied to adults of varied ages and both sexes as well as to children. Various interpretations have been proposed to explain the phenomena, all of which relate to the changes in the various realms of existence as evidenced in the Neolithic transformations in the Levant.

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# Symbolic Documents in the Euphrates Valley in the Middle and Late PPNB Results of the Tell Halula Project in Interpretative Context Miquel MOLIST / Anabel ORTIZ / Anna GOMEZ BACH

The presentation explores the symbolic elements found in the archaeological site of Halula (Syria), and also in relation to the symbolic figurines and other artifacts, such as items associated architecture (painting walls) or funerary structures. All these elements are important and its discussion and contextualization can contribute significantly to the understanding of the symbolic world of the Middle Euphrates region in VIII millennium.

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# Signals from the past: gestures in SW-Asian anthropomorphic iconography – preliminary observations Bernd MÜLLER-NEUHOF

The increasing number of new discovered Neolithic anthropomorphic representations in Southwest Asia in the recent years has facilitated the establishment of a suitable data base of Neolithic anthropomorphic images, which can be used for further research for instance on the iconography of these images.

A characteristic of anthropomorphic representations in SW Asian Neolithic is a restriction of the stylistic variability in the respective Neolithic cultures / phases, which is also visible in a confined set of gestures in SW Asian anthropomorphic iconography across all Neolithic cultures / periods. An interesting observation here is that the depiction of some of these gestures can also be found in human images of much later periods in SW Asia.

The aim of this contribution is to present a preliminary characterization of these gestures and subsequently to hypothesize some theories concerning their meaning and significance.

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### To see or to touch? The sensual context of prehistoric human imagery Olivier P. NIEUWENHUYSE

From the later seventh millennium onwards (Pre-Halaf and Halaf periods), anthropomorphic imagery appears occasionally on pottery containers in Upper Mesopotamia. Applied and painted scenes show human beings in a variety of poses and ritualized activities.

Interpretations tend to emphasize either the political-ideological functions of images showing feasting people, or the presumed religious-mythological roles of the individuals shown as shamans or deities. Intriguingly, the practical context of use of the images is often ignored.

In my contribution I briefly review the current evidence for human iconography in the Upper Mesopotamian Late Neolithic. I focus on the sensual context of the Late Neolithic anthropological imagery: how were these images perceived, and what might this tell us about their meanings in the past? The main point I wish to make is that while some categories of human images were meant to be seen, others were more likely meant to be touched.

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# Health and disease in the prehistoric and early historical Near East – A contribution to the reconstruction of ancient living conditions

Michael SCHULTZ

Paleopathology and bioarchaeology are scientific disciplines which enables the researcher to reconstruct ancient living conditions. Archaeological skeletal remains, mummies and bog bodies are bio-historical documents because they report on the everyday life, afflictions and illness occurring at the origin of human cultures when no written records were available. In certain cases, the results of the paleopathological investigation allow to establish the biography of an individual who lived thousands of years ago, of course within certain limits. Furthermore, these results characterize different living conditions in various ancient communities shedding light on some aspects of prehistoric life, such as nutritional (deficiency diseases) and occupational stress (enthesopathies), forensic incidents (e.g., trauma), funeral customs (drying of the corpse) and, additionally, help in reconstructing the ancient biotope (e.g., ecology). The sum of certain diseases distributed as disease profiles characterizes the health of a population in a comparative way. As old people and, particularly, infants and children are the weakest groups within a population, the nature, the occurrence and the frequencies of diseases in these age groups are a reliable indicator of the quality of living conditions. To conduct reliable investigations, special methods and techniques should be applied (e.g., radiology, endoscopy, microscopy, proteomics, and molecular biology). To illustrate the scope of the paleopathological investigation, examples from the late PPNB of the Levant (Basta), the Bronze Age of Slovakia (Jelšovce) and Anatolia (İkiztepe, Lidar Höyük), the Iron Age of Mesopotamia (Nimrud) and Egypt (Tanis) are presented.

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#### When Do Human Representations Become Superhuman Agents?

Trevor WATKINS

In the north of the Levant at the beginning of the Neolithic there is an unprecedented burst of monumental architecture and a rich diversity of symbolic sculpture in stone. Among the many representations of humans the schematic anthropomorphic monoliths that inhabit the circular enclosures at Göbekli Tepe are the most impressive, and difficult to understand.

First, it is necessary to appreciate the scale of the social and cultural transformation that was being realized in the early Neolithic period, with the emergence of the first, large, permanently co-resident communities; and these communities invested in networking on a local, regional, and supra-regional scale. In that context, we should understand the monuments at Göbekli Tepe as demonstrations of the common symbolic culture of a very large regional super-community.

The second context is the rapidly developing field of evolutionary theory on religion. There is a general acceptance that the concept of gods as superhuman agents emerges with large-scale (generally historic) societies. I suggest that these inscrutable anthropomorphs document the earlier emergence of powerful new religious ideas that express and sustain the solidarity of the first large-scale societies.

# **Deposits in Early Dynastic Temples**



In Mesopotamia and Syria, Early Dynastic Period is highly marked by the rise and development of temple deposits rituals. Together with the setting of formal pantheons leading to the construction of distinct temples as houses of the gods within their own geographical or state area, these practices evoke a time of high official or human involvement in religious rituals.

The workshop aims to give a comprehensive study of this very phenomenon, defining and specifying the deposits practices through different case studies. After a general overview of the geographical distribution of ED deposits and kind of materials involved, a first part will drive attention on some major sites as Mari, notably its Ishtar temple, Assur with its noteworthy Ishtar temple, The Diyala sites, etc. A second session will consider the question of the topographical location of deposits inside or outside the temples, while the Third session will focus on specific types of deposits and related rituals. Statues deposits will be considered through different approaches as well as mother of pearl so-called pannels and their peculiar iconography or the highly symbolic deposits of metals.

### Organizer:

Sophie CLUZAN Near Eastern Antiquities, Musée du Louvre 75058 Paris, France sophie.cluzan@louvre.fr

#### Participants (in alphabetical order):

ALI Cheikhmous	EVANS Jean
Université Marc-Bloch-Strasbourg II	The Oriental Institute, University of Chicago
BEYER Dominique	jmevans@uchicago.edu
Université Marc-Bloch-Strasbourg II	LECOMPTE Camille
dominique.beyer@misha.fr	CNRS, ArScAn-VEPMO, Nanterre
BUTTERLIN Pascal	AL-MAQDISSI Michel
Université Paris 1 Panthéon-Sorbonne	University of Damascus
Pascal.Butterlin@univ-paris1.fr	michelesyrien@hotmail.com
COUTURAUD Barbara	MARCHETTI Nicolò
Institut Français du Proche-Orient	University of Bologna
b.couturaud@ifporient.org	nicolo.marchetti@unibo.it
DABIN Margaux	MARGUERON Jean-Claude
University of Strasbourg	Ecole Pratique des Hautes Etudes
DOLCE Rita	MULLER Béatrice
Università degli Studi Roma Tre	CNRS, ArScAn, Nanterre
ritadolce@quipo.it	OBREJA Sidonia
	Université Paris 1 Panthéon-Sorbonne

#### List of Lectures/Program:

	Lecturer	Title	
Part I: Pr	Part I: Présentations général		
9:15	Sophie Cluzan	Présentation générale et définition	
9:30	Parscal Butterlin	Questions de chronologie	
10:00	Jean-Claude Margueron	Le Lieu Saint et le Lieu Très Saint dans le temple oriental	
	11:00 Coffee Break		
Part II: Géographie, typologie et représentations des dépôts			
a: Le monde syro-mésopotamien			
11:30	Nicolò Marchetti	Ritual deposits in Early Bronze Age Mesopotamia: patterns and problems	

12:00	Sidonia Obreja	La diversité des dépôts d'objets votifs en Mésopotamie à l'Age du Bronze Ancien
12:30	Sophie Cluzan / Camille Lecompte	Les objets inscrits des dépôts : données générales et typologie (textuelle et matérielle)
		13:00 Lunch Break
14:00	Cheikhmous Ali	Représentation des temples, des offrandes et des dépôts de fondations dans l'iconographie du IV <sup>e</sup> -III <sup>e</sup> millénaire avant notre ère
b: Le mo	nde syro-levantin	
14:30	Michel Al-Maqdissi	De Ras Shamra-Ougarit à Amrith-Marathos quelques commentaires sur des dépôts cultuels
Part III: E	tudes de cas	
15:00	Pascal Butterlin / Sophie Cluzan	L'iconographie du temple d'Ishtar de Mari
15:30	Dominique Beyer	Dépôts à l'extérieur du temple du Seigneur du Pays de Mari
16:00 Coffee Break		
16:30	Barbara Couturaud	When iconography meets urban organization. Some thoughts about the distribution of images in the temples of Mari
17:00	Béatrice Muller	Le matériel du temple d'Ishtar du niveau G à Assur
17:30	Jean Evans	Les temples de la Diyala
		Friday 29 April
9:00	Margaux Dabin	Les dépôts votifs de Tello
9:30	Sophie Cluzan / Jean- Claude Margueron	Un lot d'objets exceptionnels au pied du temple d'Ishtar de Mari: vers une tentative d'interprétation
Part IV: objets votifs et rites associés		
a: Statues		
10:00	Rita Dolce	Temple deposits and "lieux de culte" in Early Mesopotamia: some suggestions
10:30	Pascal Butterlin	La cachette du temple du seigneur du pays, vie et mort des statuettes mariotes
11:00 Coffee Break		
11:30	Sophie Cluzan	Des marques corporelles sur les statues votives: ornement, consécration, désactivation ou dépréciation
b: Autres dépôts		
12:00	Dominique Beyer	Offrandes d'argile pure dans les temples
12:30	Juan-Luis Montero Fenollos	Les clous de fondation en métal dans les temples de Mari: des Dynasties archaïques III à l'époque Shakkanakku

Abstracts (in alphabetical order):

# Représentation des temples, des offrandes et des dépôts de fondations dans l'iconographie du IV<sup>e</sup>– III<sup>e</sup> millénaire avant notre ère

Cheikhmous ALI

Dès l'époque d'Uruk, des monuments à fonctions diverses sont illustrés dans l'iconographie. Parmi ceuxci, certains sont des temples vers lesquels des cortèges portant des offrandes se dirigent sans que la divinité ne soit figurée. Cette dernière est représentée dans l'iconographie à partir de l'époque postérieure devant laquelle des orants avec des offrandes se présentent. D'autre part, quelques scènes exceptionnelles représentent des dépôts de fondations. La question qui subsiste est de savoir quelles sont les formes des temples et des clous de fondations, ainsi que la nature des offrandes ainsi représentés. Reflètent-ils une réalité archéologique ?

# Dépôts à l'extérieur du temple du Seigneur du Pays de Mari

Dominique BEYER

Les fouilles d'André Parrot avaient dégagé les vestiges du Temple aux lions de la période des Shakkanakku puis ceux des Temples anonymes de la période d'Akkad. Sous la direction de Jean Margueron puis Pascal Butterlin, j'ai dégagé sous les Temples anonymes les vestiges d'un temple accolé au Massif Rouge qui s'est révélé appartenir au Seigneur du Pays au DA III. Les trois temples appartiennent à la même entité divine à travers le temps et montrent, avec quelques différences, l'usage de certains dépôts (statues surtout) situés à l'extérieur du sanctuaire ou à sa porte. Cette permanence originale est-elle à mettre en relation avec la personnalité de la divinité ?

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#### Offrandes d'argile pure dans les temples

Dominique BEYER

Dans les temples mésopotamiens du DA, à Mari en particulier, divers dépôts, plus ou moins importants, d'argile pure ont été constatés en cours de fouille. Ces vestiges, assez informes et peu spectaculaires, ont été peu soulignés par les fouilleurs. Ils ne font pas moins partie du catalogue d'objets et de matériaux que les anciens Mésopotamiens offraient à leurs divinités au sein des dépôts votifs, plus ou moins organisés, dans leurs temples. On s'interrogera alors sur la signification de ces modestes offrandes.

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### La cachette du temple du seigneur du pays, vie et mort des statuettes mariotes Pascal BUTTERLIN

La découverte en 2009 d'une cachette contenant quatorze fragments de statuettes à Mari a relancé les débats sur le rôle et le fonctionnement de ce type d'installations. La fouille a permis d'étudier non seulement les modalités du dépôt, le contexte d'enfouissement mais aussi les objets eux-mêmes. Cette étude permet de proposer toute une série de conclusions sur la manière dont cet ensemble clos a été constitué et sur le traitement subi par ces statuettes.

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#### Questions de chronologie

#### Pascal BUTTERLIN / Sophie CLUZAN

Les dépôts votifs ont joué un rôle clef dans la définition de la chronologie du monde mésopotamien au III e millénaire, mais les études récentes ont montré à quel point leur position stratigraphique tout comme leur composition s'avèrent parfois très problématique, rendant leur usage pour la chronologie incertain. Il en résulte des incertitudes majeures pour fixer la chronologie du dynastique archaïque et des relations entre les divers grands centres du monde suméro-akkadien.

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### L'iconographie du temple d'Ishtar de Mari Pascal BUTTERLIN / Sophie CLUZAN

Le temple d'Ishtar de Mari présente un certain nombre de spécificités qui le distingue au sein de l'espace urbain et religieux de la ville II de Mari. Les objets qui y ont été déposés constituent une de ces particularités, leur matériaux et leur iconographie signant le lien de l'édifice avec la royauté, la richesse du royaume et sa capacité guerrière. On s'interrogera également sur la répartition préférentielle de certains dépôts à l'intérieur du sanctuaire.

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### Des marques corporelles sur les statues votives: ornement, consécration, désactivation ou dépréciation Sophie CLUZAN

Au cours de leur usage, certaines statues votives ont reçu des marques. Portés sur l'objet, ces signes soulèvent la délicate question de leur signification ainsi que de celle du geste ou du rite les accom-

pagnant. L'exposé partira de deux cas exemplaires retrouvés à Mari pour étendre les remarques qu'ils suscitent à l'ensemble du corpus actuel des statues mésopotamiennes marquées.

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# Un lot d'objets exceptionnels au pied du temple d'Ishtar de Mari : vers une tentative d'interprétation Sophie CLUZAN / Jean-Claude MARGUERON

Les fouilles d'André Parrot au temple d'Ishtar ont mis en évidence la richesse des dépôts retrouvés dans un espace méridional (espace 20 de la nomenclature du fouilleur) que les récentes analyses s'accordent à considérer comme extérieur au sanctuaire. Après un état de la question topographique et stratigraphique du lieu et des hypothèses que l'on peut émettre sur les couches archéologiques que l'on y a dégagées, une présentation synthétique des objets votifs et de leurs particularités, permettra d'évaluer la valeur de ce lot dans l'ensemble des dépôts du temple d'Ishtar et de la confronter aux hypothèses issues de l'analyse archéologique afin d'en questionner la raison d'être.

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# Les objets inscrits des dépôts : données générales et typologie (textuelle et matérielle) Sophie CLUZAN / Camille LECOMPTE

Le vaste corpus des inscriptions votives et de fondation de l'époque présargonique se caractérise par une diversité de supports (vases, coupes, plaques et statues), de types de textes (allant de la simple expression votive à la glorification du souverain), de situations culturelles (du pays sumérien et aux régions sysro-mésopotamiennes), de divinités honorées et de dédicataires (rois, hommes et femmes de haut rang). Ce corpus ayant fait l'objet d'éditions de référence, on proposera ici une synthèse sur ce matériel, plus particulièrement une typologie des objets, de leur utilisation et de leur contexte social. On comparera ainsi la proportion entre vases, coupes, statues etc. parmi les dépôts retrouvés dans certains des temples les mieux connus, temples de Ninni-zaza, Gishtarat et d'Ishtar à Mari, temple d'Inanna à Nippur. Les supports, emplois et contextes archéologiques des inscriptions royales seront également analysés. Une des perspectives adoptées ici consistera par ailleurs à confronter les types d'objets inscrits par aire géographique, notamment afin de distinguer des usages locaux ou régionaux.

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# When iconography meets urban organization. Some thoughts about the distribution of images in the temples of Mari

# Barbara COUTURAUD

Mari has delivered the most important series of inlays of the Ancient Near East during the Early Bronze Age. They were part of figurative panels that were displayed in nine buildings, including seven temples. This incredibly rich source of images was unfortunately violently destroyed during Antiquity, depriving us of the original scenes. Nevertheless, one can restitute the types of images depicted and the iconographic themes to which they belong: military, ceremonial, religious, etc.

Interestingly, it is possible to draw links between these themes, the temples in which they were displayed and their location within the city. Indeed, it seems that the sanctuaries were either isolated or associated with others in specific areas of the city - depending on some of their similarities - and that the panels were not displayed by chance among them but were probably meant to bear a specific iconography, directly linked with the function of the building, the deity to which they were dedicated or their location inside the city.

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# Les dépôts votifs de Tello

Margaux DABIN

Les dépôts de fondation découverts à Tello s'échelonnent sur une période allant du dynastique archaïque jusqu'à la troisième dynastie d'Ur. Ils montrent des modes d'enfouissement spécifiques à chaque pé-

riode : dépôt « en pleine terre » ou au sein de contenants. Certaines figurines, comme celles de la Construction Inférieure (Tell K), ont également fait l'objet d'une disposition particulière.

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#### Temple deposits and «lieux de culte» in Early Mesopotamia: some suggestions Rita DOLCE

Le sujet abordera, d'une part la question des " lieux des dépôts", en se focalisant sur les favissae du temple d'Inanna à Nippur et, si possible, sur la spécificité des installations et rites associés et, d'autre part, les lieux sacrés où l'on trouve des statues anthropomorphes decapitées, suggérant l'existence d'une sorte de "déposition" aux valeurs idéologiques de long terme.

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#### Are sacred objects universal? The Sin Temple at Khafajah

Jean EVANS

The material assemblages of the Khafajah temples were not simply variations in quality and quantity. Rather, each temple appears to have had distinct aspects within its assemblage. Regarding hoarding activities, these temples practiced different methods for taking sacred objects out of circulation. Focusing on the Sin Temple at Khafajah, it is possible to gain a more complete picture of the life of sacred objects by building up the assemblage around the usual inscribed categories of Early Dynastic dedications.

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#### De Ras Shamra-Ougarit à Amrith-Marathos quelques commentaires sur des dépôts cultuels Michel AL-MAQDISSI

Présentation d'une série de dépôts cultuels trouvés de long de la côte syrienne durant presque un millénaire (Bronze récent et Fer) dans le but de rapporter un éclaircissement sur plusieurs aspects de la tradition religieuse en Phénicie. L'analyse détaillée de ce matériel va permettre d'approfondir la nature du culte dans cette région de la Méditerranée orientale.

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### Ritual deposits in Early Bronze Age Mesopotamia: patterns and problems Nicolò MARCHETTI

The well-known Mesopotamian phenomenon of deposits buried inside temple buildings and precincts needs to be framed not just within Early Dynastic cultic practices, but rather within sets of behaviours (both functional and social) of a ranked society and its changes through time. By reviewing the relevant evidence, I'll try to point out differences and similarities in ritual patterns and their possible significance.

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#### Le Lieu Saint et le Lieu Très Saint dans le temple oriental

Jean-Claude MARGUERON

Un tour d'horizon sur les questions que pose la sacralité du temple. Les analyses porteront principalement sur les temples des sites d'Uruk (Temple Blanc), de Mari, de Khafadjé ..., qui présentent une grande variété dans la nature des informations. Un choix de questions est aujourd'hui nécessaire : pourquoi abandonner le terme de « cella » au profit de Lieu Très Saint ? Rôle et fonction du Lieu Très Saint ? Le podium, situation et signification ; table d'offrandes, position et emplacement ; sacralisation du Lieu Très Saint, modalités et rites ; évolution morphologique du podium ...

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# Les clous de fondation en métal dans les temples de Mari : des Dynasties archaïques III à l'époque Shakkanakku

# Juan-Luis MONTERO FENOLLOS

Mari, le rituel et l'acte de fonder à la ville étaient liés à la coutume d'introduire des clous de métal dans les dépôts de fondation des monuments cultuels. Ces clous en cuivre/bronze trouvés dans les dépôts de fondation des temples mariotes des villes II et III peuvent se classer en deux types principaux :

– Un grand clou (fiche) enfoncé de façon perpendiculaire dans un autre qui possède un anneau (anneau à tige), accompagnés de deux petites tablettes anépigraphes, l'une en lapis-lazuli et une autre en albâtre. C'est le temple d'Ishtar qui a donné l'ensemble le plus important de ce type de clous, qui date de l'époque des Dynasties archaïques III (Ville II).

 Une plaque quadrangulaire en métal, avec une inscription ou anépigraphe, percée par un clou et protégée, en général, par un coffre en pierre. C'est un dépôt typique de la dynastie des Shakkanakku (Ville III).

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# Le matériel du temple d'Ishtar du niveau G à Assur

Béatrice MULLER

Depuis la publication par Walter Andrae en 1922, le temple d'Ishtar a été reconsidéré par Öhnan Tunca, dont l'analyse stratigraphique a permis d'en prolonger l'occupation à l'époque agadéenne (p. 100-102, p. 242). Le matériel recueilli et les installations mises au jour sur le sol du Lieu Saint ont également été passés au crible des observations de Tunca, qui a opéré la distinction entre les niveaux H et G (plans fig. 189 = plan d'Andrae, fig. 190 = niveau G seul). C'est sur ce dernier que gisaient les fameux Tonhäuschen, tables à degrés fenestrées. – non répertoriées par l'auteur, qui ne prend en compte que les installations fixes.

C'est ainsi que l'abondant matériel cultuel – installations immobilières comprises – mis au jour par le fouilleur n'a pas fini d'être expoité, et que le réétudier à travers le prisme d'Ishtar par comparaison avec le temple de Mari ouvrira certainement de nouvelles perspectives.

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# La diversité des dépôts d'objets votifs en Mésopotamie à l'Age du Bronze Ancien Sidonia OBREJA

Sur le territoire de la grande Mésopotamie à l'Age du Bronze Ancien on rencontre une extraordinaire diversité de dépôts votifs. Placés dans des temples ou à proximité des sanctuaires dans des zones sacrées, sans une composition homogène dans la plupart des cas, ils posent de vrais problèmes d'analyse et d'interprétation. Nous allons tenter une classification de ces dépôts rituels, favissae, dépôts d'offrandes, cachettes d'objets, en tenant compte de leur répartition géographique, ainsi que du contexte stratigraphique et de la composition de ces ensembles (statues, masses d'armes, sceaux cylindres, vases en pierre, objets en métal, objets en céramique).

# CRANE: Large-Scale Data Integration and Analysis in Near Eastern Archaeology



The rapid proliferation of digital data in Near Eastern Archaeology, precipitated by an ever expanding array of data capture technology, has created an urgent need to establish a collaborative research environment with the capacity to address long-standing issues of access, data compatibility, integration and analytical capability. The CRANE (Computational Research on the Ancient Near East) Project is a multidisciplinary consortium of archaeologists, historians, paleo-environmentalists and computer scientists that seeks to facilitate the creation of such a collaborative framework. CRANE has focused on the Orontes Watershed, a cohesive geographical unit and region uniquely positioned as a cultural microcosm of the broader Near East, as an initial operational test case. CRANE also seeks to create computation tools that will facilitate the modeling and visualization of the interrelationships of social, economic and environmental dynamics at multiple spatial and temporal scales of analysis in order to gain more meaningful insight into the rise and development of complex societies in the ancient Near East. This Workshop will present a series of papers organized into four thematic sessions, drawing on the results of the CRANE Project achieved to date, with the aim of exploring the analytical capability and research utility of the CRANE collaborative approach.

### Organizer:

Timothy P. HARRISON Department of Near and Middle Eastern Civilizations University of Toronto 4 Bancroft Avenue Toronto, ON, M5S 1C1, Canada tim.harrison@utoronto.ca

#### Participants (in alphabetical order):

BADRESHANY Kamal	KLASSEN Stanley
Durham University	University of Toronto
kamal.badreshany@durham.ac.uk	stanley.klassen@utoronto.ca
BATIUK Stephen	LANGIS-BARSETTI Dominique
University of Toronto	University of Toronto
sbatiuk@ku.edu.tr	LIPOVITCH David R.
CARRERA Espartaco	Wilfrid Laurier University
Université Laval	dlipovitch@wlu.ca
CHRISTIANSEN John H.	LORENTZEN Brita
Argonne National Laboratory	Cornell University
jhc@anl.gov	bel9@cornell.edu
COOPER Lisa	MANNING Sturt
University of British Columbia	Cornell University
licooper@mail.ubc.ca	sm456@cornell.edu
EDWARDS Steven	PHILIP Graham
University of Toronto	Durham University
ELENDARI Rasha	PROSSER Miller
University of Toronto	OCHRE Data Service, University of Chicago
FORTIN Michel	m-prosser@uchicago.edu
Université Laval	SCHLOEN Sandra R.
Michel.Fortin@hst.ulaval.ca	OCHRE Data Service, University of Chicago
JOBLONKAY Darren	sschloen@uchicago.edu
University of Toronto	WELTON Lynn
KARAKAYA Doğa	University of Chicago
Tübingen University	lynn.welton@uchicago@edu

# List of Lectures/Program:

	Lecturer	Title	
Part I: The CRANE Project and Large-Scale Data Integration			
1	Timothy P. Harrison	CRANE Project Overview	
2	Sandra R. Schloen / Miller C. Prosser	Collaborative Research in a Database Environment: Putting to Rest the Problem of Unlikely Bedfellows	
3	Stanley Klassen	CRANE Data Integration: The Process, Results to Date, and Future Plans	
4	Discussion		
Part II: Artifact Analysis			
5	Darren Joblonkay	Knowledge Discovery from Archaeological Data (KDAD): Implementation of Data Mining Techniques for Analyzing Social Organization in Northwest Syria in the Iron Age	
6	Lynn Welton	Computers Have Data, People Want Answers: Computerized Approaches to Ceramic Analysis	
7	Lisa Cooper / Lynn Welton	The CRANE Ceramics Project: Computational Classification and Analysis of Ceramic Data within the Orontes Watershed Region	
8	Kamal Badreshany	EBA Transport Jars and their Role in the Development of Highly Integrated Regional Economies: A Case Study from the Northern and Central Levant	
9	Steven Edwards	An Exploratory Network Analysis of Toponyms in the Ebla Texts	
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Part II	I: Architectural Analysis and	Regional Landscapes	
11	Dominique Langis-Barsetti	Wind Modeling in Archaeology: An Assessment of the Feasibility and Practicali- ty of Generating Wind Models over Archaeological Architectural Remains	
12	Stephen Batiuk	3D Visualization Tools for Landscapes, Urban Settlements and Architecture	
13	Dominique Langis-Barsetti / Rasha Elendari	The CRANE Regional Database Project	
14	Espartaco Carrera / Michel Fortin	Middle Orontes Valley Settlement Patterns	
15	5 Discussion		
Part IV: Paleoenvironmental Reconstructions			
16	David R. Lipovitch	The Zooarchaeology of the Orontes Watershed: Current Prospects and Future Directions	
17	Doğa Karakaya	Archaeobotanical Investigations of the Ancient Flora of the Orontes Watershed	
18	Graham Philip	Local Settlement Trends in the Orontes Watershed: The Intersection of Local Microenvironments and Regional Political and Economic Factors	
19	Sturt Manning / Brita Lorentzen	Towards a High Resolution Timeframe for the CRANE Project: The North Oron- tes Region in the later 3 <sup>rd</sup> millennium BC and later 2 <sup>nd</sup> through early 1 <sup>st</sup> millen- nium BC	
20	Lynn Welton / John H. Christiansen	Modelling the Interaction of Social and Environmental Processes in the Orontes Watershed: The CRANE Simulation Project	
21	Discussion		
22	Discussant		

Abstracts (in alphabetical order):

#### EBA Transport Jars and their Role in the Development of Highly Integrated Regional Economies: A Case Study from the Northern and Central Levant Kamal BADRESHANY

This paper will use a combination of unpublished ceramic data from Tell Nebi Mend along with data from sites surveyed in the wider Homs region, the Beq'a valley, and on the Lebanese coast, to investigate the production and distribution of the earliest transport jars in the Levant during the Early Bronze Age. The data from recent petrographic and ICP-AES and MS analyses of these vessels indicates the existence of highly integrated regional interaction spheres, identifiable by closely related, centralized craft production modes and linked distribution networks. The research sheds light on the development of a nucleated settlement landscape during the Early Bronze Age in Lebanon and western Syria and gives greater insight into the concurrent economic, social, and political changes.

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# 3D Visualization Tools for Landscapes, Urban Settlements and Architecture

Stephen BATIUK

As a result of the growing number of available computer applications and technologies in data recording, organization and analysis, the field of archaeology has experienced explosive development in methodological approaches to the integration of archaeological data with complex visualization tools that have been created by the computational industry. This presentation will focus on CRANE's development of 3D models as research tools at the regional landscape level, at the scale of settlements, and the individual structure, and how these multiple scales integrate and facilitate the diverse research aims of the CRANE Project. The utilization and reusability of 3D models in a variety of contexts, including real-time applications of 3D modelling in virtual museums or archaeological parks, and the integration of 3D data collected in the field with 3D modelling and GIS application, will also be explored.

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### Middle Orontes Valley Settlement Patterns

#### Espartaco CARRERA / Michel FORTIN

Following a two-year survey of a portion of the Middle Orontes Valley, the Ghab Depression, led by a Canadian team, the data collected have been analyzed using social relations network analysis based on viewshed matrices. The survey data have also been interpreted in light of observations made at the site of Tell 'Acharneh, a major tell located in the center of the Ghab Depression, which has been excavated during several seasons by the same team. This excavation data has been integrated into CRANE using OCHRE, an XML database system with a Java user interface that facilitates inter-project queries without modifying their idiosyncrasies. This data aggregation, through thesaurus building, opens new interpretative possibilities in regional studies, especially in regard to cultural propagation and discontinuity, and regional variation through space and time.

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# The CRANE Ceramics Project: Computational Classification and Analysis of Ceramic Data within the Orontes Watershed Region

#### Lisa COOPER / Lynn WELTON

Ceramics represent one of the most important categories of archaeological data, due to both their ubiquity and their ability to address key issues regarding chronology, craft production, and socio-political organization. Inter-site comparison of ceramic data is often hampered by the sheer volume of data, as well as by the use of differing terminologies and different systems of data recording. Acknowledging these challenges, the CRANE ceramics team has been exploring the use of a variety of computational solutions to assist with the comparison and categorization of ceramic wares. Building on previous work aimed at automating the process of ceramic classification based on the matching of ceramic shapes (particularly vessel sizes and profiles), the CRANE Project is also exploring the integration of other variables such as color, texture and fabric, recognizing the full range of ceramic attributes that help to constitute 'real' typological categories. In addition to a wide variety of other datasets, CRANE has compiled a large database of ceramic forms, categorized according to various previously devised typologies. The value of the CRANE initiative is that these datasets at its disposal can be used, in tandem with the aforementioned computational approaches, to translate between the typological terminologies used by different excavation projects, and also to more rapidly gather and incorporate data from newly excavated materials. This paper will use as case studies particular key vessel categories of the late 3<sup>rd</sup> millennium BC within the Orontes Watershed to demonstrate the potential of this approach for inter-site comparison of ceramic data, and ultimately to examine macro-scale questions and understand key cultural processes within the ancient world.

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#### An Exploratory Network Analysis of Toponyms in the Ebla Texts

#### Steven EDWARDS

The Ebla texts contain more than two thousand distinct toponyms referring to cities, towns and villages spanning much of northern Syria and Iraq, and southeastern Turkey. This repertoire constitutes our most important resource for studying the historical geography of the northern Levant and Upper Mesopotamia during the Early Bronze Age. Previous reconstructions have generally relied on two basic assumptions concerning the grouping of toponymns on individual tablets. The first assumption is that toponyms are grouped according to geographical proximity. If a town with an unknown location is mentioned alongside one or more towns with certain locations, it is assumed that the former town's location should be sought in close geographical proximity to the towns whose locations are known. The second assumption is that toponyms are grouped together based on political status. In this case, towns with similar political rankings, such as places governed by Eblaite overseers, will tend to appear together in the texts. To test these assumptions, this paper adopts an exploratory network approach to the toponymic data in the Ebla texts. By including a large corpus of texts in the analysis, several new patterns emerge, and it is seen that both geography and political status play important roles in the grouping of toponyms.

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#### Knowledge Discovery from Archaeological Data (KDAD): Implementation of Data Mining Techniques for Analyzing Social Organization in Northwest Syria in the Iron Age Darren JOBLONKAY

The perception among archaeologists that data is intrinsically theory-laden has become axiomatic within the discipline. Yet, while data is becoming more commonly perceived in the discipline as dynamic, mobile, and dialectic, the data environment (i.e., the DBMS) is typically seen as static and immobile. This is further exacerbated by a specious notion that databases are simply objective placeholders of raw data, a subaltern environment of the ubiquitous computer. As Chrysanthi et. al. (2012) recently noted, archaeological computing with its wide range of applications and methodologies has gradually become central to most archaeological practice, yet computer applications are still viewed merely as a set of tools, albeit ones that often provide innovative solutions to traditional problems and constraints. While the latter is undoubtedly true, such a mentality runs the risk of marginalizing these methods, and separates computational approaches from more generally conceived archaeological practice. The unfortunate result is that despite their importance and ubiquity, archaeological database systems are rarely the subject of theoretical analysis. This has been particularly true in North America (Labrador 2012). Furthermore, the majority of archaeologists fail to recognize the potential of computer generated archaeologies to provide an appropriate context for reflexive interpretation (Gidlow 2000). I would like to propose that databases be perceived as analytic environments in their own right, an enriching 'third space', in which lies the potential for knowledge discovery from archaeological data (KDAD). I will argue that it is within such domains that knowledge is readily imagined, constituted, contested and reconceptualized. Archaeological databases not only constitute a set of tools that enhance archaeological interpretation, they also provide an interactive interpretative environment.

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# Archaeobotanical Investigations of the Ancient Flora of the Orontes Watershed Doğa KARAKAYA

In this study we analyzed ancient plant remains to distinguish certain environmental, climatic and anthropogenic factors that might have affected the environmental stability at Tell Tayinat. Our analysis aims to diachronically compare the ecological characteristics of different plant species through the Bronze and Iron Ages. To date, approximately 150 archaeobotanical samples have been analyzed. Preliminary results indicate that the proportions and ubiquities of certain wild/weedy plant taxa differ dramatically during Early Iron Age in comparison to earlier Bronze Age periods. The ancient plant remains from Tell Tayinat offer a number of important aspects to investigate in Near Eastern Archaeology, such as climatic and/or anthropogenic effects on the environment, human decision for crop plant use, and the introduction of new crop species into cultivation.

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# CRANE Data Integration: The Process, Results to Date, and Future Plans

#### Stanley KLASSEN

Data integration has been a key priority of the CRANE Project since its inception in 2012. To test and operationalize the OCHRE system, data sets were drawn from the ongoing excavations at Tayinat and Zincirli, two prominent Bronze and Iron Age settlements within the Orontes Watershed. Both of these large-scale, long-term archaeological field projects have produced hundreds of thousands of individually registered finds and architectural contexts. The quantity of data integrated in this initial stage of analysis has amounted to terabytes of data, captured in diverse formats (bitmapped images, vector maps, video files, structured tables, and unstructured text), each recorded according to its own project-specific taxonomy, and has provided a valuable initial test case involving projects with divergent recording systems and descriptive nomenclature. This initial phase of the CRANE Project has now been expanded to include a wider range of field projects and data sets, involving both raw and published data, from the Orontes Watershed. This paper will provide an overview of the data integration process we have developed and the results achieved to date, highlighting some of the challenges we have faced in dealing with the diverse datasets that have been produced by the wide range of research traditions and recording systems represented by the projects that have conducted fieldwork in the region. The prospects for continued expansion and broader utilization of the burgeoning CRANE database and research network will also be explored.

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# Wind Modeling in Archaeology: An Assessment of the Feasibility and Practicality of Generating Wind Models over Archaeological Architectural Remains

Dominique LANGIS-BARSETTI

This paper will present ways in which an important environmental factor such as wind can be used to further our understanding of archaeological remains. This research relies on Computational Fluid Dynamics (CFD) and three-dimensional reconstructions of architectural remains to simulate wind flow in outdoor and indoor settings at different scales, mainly individual structures and groups of structures, up to entire settlements and their surrounding landscape. Although none of the equations and techniques employed here are new, they have seldom been used in archaeology and thus required some adaptation. One of the aims of this research was thus to elaborate a workflow for generating wind simulations over archaeological features at various scales while making use of easily accessible datasets and software, as well as relying on data formats typically produced by modern archaeological research. The goal is to appropriate techniques more commonly used in architecture and engineering and apply them to an archaeological environment, while keeping data reformatting to a minimum and setting aside costly specialised software that would discourage non-specialists of the field of CFD. To illustrate the types of output CFD can provide, this approach will be used to study the effects of features such as high city walls and a dense urban fabric on ancient urban settlements and the living conditions within.

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#### The CRANE Regional Database Project

Dominique LANGIS-BARSETTI / Rasha ELENDARI

Born out of the collaboration of international scholars from a number of disciplines, the CRANE Project has brought together a diverse range of archaeological field projects operating within the Orontes Watershed region. In order to facilitate cross-project collaboration, and the exploration of broader regional issues, a region-wide site database that can address a wide range of questions, be they settlement patterns or ceramic distributions, has been created. Drawing on data from a large number of published and unpublished surveys conducted over the past century, the database covers the whole of the Orontes Watershed and its immediate surroundings, with plans to incorporate neighboring regions, including central Anatolia and Cyprus, thus making large-scale regional studies possible. This comprehensive database, involving several thousands of archaeological sites dating from the Palaeolithic to the Ottoman period, seeks not only to record quantitative and qualitative data such as site size and periods of occupation, but also the careful mapping of all these sites in a GIS environment. This paper will present the current status of this ongoing effort.

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# The Zooarchaeology of the Orontes Watershed: Current Prospects and Future Directions David R. LIPOVITCH

Now that the potential contribution of zooarchaeology to an understanding of the material culture of the Orontes Watershed has generally been recognized, the analysis of faunal remains has become an integral part of current research strategies in the region. As a result, many of the principal sites within the Orontes Watershed have produced substantial collections of zooarchaeological data. The ongoing excavations at Tell Tayinat, for example, have now resulted in the analysis of more than 38,000 bone fragments spanning the Early Bronze Age IV through Iron Age III. While there is an informal network of zooarchaeologists in the region, there is a clear need for more formal collaboration including the establishment of a shared reference collection, regular formal discussions of finds through online symposia, and most importantly, the sharing of datasets. The CRANE Project now offers an exceptional opportunity to facilitate such data sharing. However, to efficiently use these shared databases, a consistent strategy for the collection, recording, and analysis of faunal remains must be established. This paper will review the current prospects for developing a fully integrated regional zooarchaeological data set for the Orontes Watershed, and the types of research opportunities such a collaborative effort might ultimately facilitate.

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### Towards a High Resolution Timeframe for the CRANE Project: The North Orontes Region in the later 3<sup>rd</sup> millennium BC and later 2<sup>nd</sup> through early 1<sup>st</sup> millennium BC Sturt MANNING / Brita LORENTZEN

We report on a project focused on building a robust high-resolution archaeological chronology for the Orontes Watershed, based (so far) on samples primarily from Tell Tayinat and Zincirli Höyük. A large set of organic materials – charcoal fragments and various short-lived samples (seeds, twigs) – from archaeological research in the Orontes Watershed has been examined (in conjunction with CRANE collaborators at Toronto, Chicago, UBC and Tübingen) for their potential for dating and palaeoclimate analysis. These samples comprise material from past and current work. A number of samples from good archaeological contexts were selected for examination (ID, characterization) and then 14C dating and stable isotope analysis. Samples studied so far primarily relate to the later 3<sup>rd</sup> millennium BC (later EB) and to the Iron Age (late second millennium BC through early first millennium BC). This paper will report on results avail-

able by April 2016 and will present some detailed Bayesian chronological modeling results, integrating prior archaeological sequences with the 14C data, especially for the Iron Age. The paper will assess the evidence obtained and its implications for the chronology of the region.

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# Local Settlement Trends in the Orontes Watershed: The Intersection of Local Microenvironments and Regional Political and Economic Factors

### Graham PHILIP

This paper reviews the evidence for long-term settlement change in different regions of the Orontes Valley, and adjacent areas, and attempts to set this against an understanding of local affordances in terms of agricultural land, availability of water, and communications routes. It will demonstrate that the Orontes basin was a diverse region, which contained a number of local zones that demonstrate very different settlement trajectories over time. It is argued that the different regional pathways documented in the archaeological record can be usefully understood in terms of the intersection of local material affordances, with specific economic innovations and/or the opportunities provided by specific political configurations.

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# Collaborative Research in a Database Environment: Putting to Rest the Problem of Unlikely Bedfellows

### Sandra R. SCHLOEN / Miller PROSSER

The average annual rainfall of the Holocene landscape units in the Orontes basin of central Syria; the boastful inscription on a basalt stele in southern Turkey; ancient trade routes faintly outlined on a Corona image; a spectrograph illustrating the percentage of chromium in the clay fabric of a decorated potsherd; the wiggle-matched radiocarbon date of burnt timbers from cedars of Lebanon; the butchery markings on the forelimb of a goat; the stone-by-stone traced outlines of a Middle Bronze wall; a 3D virtual tour of a reconstructed temple on the hilltop. Such items of observation are familiar as elements of interest to archaeological excavations. In fact any single expedition may have data points representing any or all items such as these, but as data points these items would make strange bedfellows in any traditional database system. The generic and flexible data model implemented by the Online Cultural and Historical Research Environment (OCHRE) puts to rest the problem of integrating diverse data. This makes OCHRE a key component of the CRANE initiative which draws data from field archaeologists, scientists, and other specialists in its quest to understand the ancient world of the Orontes Watershed region. A review of some key principles and practices used by the collaborating CRANE projects will demonstrate once again how the whole is greater than the sum of its parts.

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# Computers Have Data, People Want Answers: Computerized Approaches to Ceramic Analysis Lynn WELTON

Ceramics are one of the richest sources of data produced by archaeological excavations, frequently numbering in the tens of thousands of sherds for every excavation season. Although this vast amount of data might at first glance appear to be a major windfall, this is only true when full advantage is taken of this rich data set in our analyses. The difficulty of analyzing this data in a meaningful way means that it can take years to fully document and process large ceramic collections, and yet we rely heavily on ceramic development for addressing issues of chronology, craft production, and socio-political organization. The CRANE Project has been collaborating with computer scientists at the University of Toronto and elsewhere to experiment with a variety of possible automated computational solutions to these problems, including automated ceramic illustration, shape recognition, and the three-dimensional appearance modeling of vessels. However, it remains important to recognize that computers are tools that can provide answers only to the questions they are asked, based on the data provided to them. We must still determine the questions that we ask, and gather and provide appropriate data to answer those questions. Our approach has been to examine the life-cycle of ceramic data collection, processing and analysis, and identify places where technology is able to contribute meaningfully to each step in this life-cycle. This paper will walk step by step through this process and discuss some of these approaches, including the importance of 3-dimensional ceramic visualization, the development of typologies based on computer-derived shape parameters, and the potential for incorporating variables that better categorize ceramic fabrics, such as color and texture.

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# Modelling the Interaction of Social and Environmental Processes in the Orontes Watershed: The CRANE Simulation Project

### Lynn WELTON / John H. CHRISTIANSEN

The examination of human-environment interaction through the modeling of both natural systems and social processes, including their interplay and interaction as reflections of emergent social complexity, utilizing archaeological data sets collected from the Orontes Watershed region, represents an important research objective of the CRANE Project. ENKIMDU, developed by John Christiansen, is a modeling framework with the capability to create a virtual world within which to run simulations based on environmental and social parameters. ENKIMDU's approach (holistic, agent-based, "bottom up" modeling) means the simulated historical trajectories of human-settlement landscapes appear as the cumulative outcomes of small-scale activities and interactions, for instance by individual persons, households, crop fields, and domesticated animals. The ultimate goal of this project is to make all of the data available to the broader research community, and to develop a tool that allows researchers to apply agent-based modelling systems to their own research questions and objectives, and to make this technology available more widely within the discipline. The first phase of this project has involved the compilation of geological, hydrological, palaeoenvironmental, faunal and botanical data sets to develop an integrated GIS-based environment for the Orontes Watershed. This paper will examine how the resulting suite of data facilitates the exploration of long-term patterns in settlement dynamics and land use with respect to environmental variables. It will also discuss how ENKIMDU begins to incorporate social processes such as agricultural decision making and resource sharing models.

# Technical Perspectives on Wall Paintings in the Eastern Mediterranean and West Asia



Colourful surface treatments form an integral element of vernacular and élite architecture of ancient societies. The iconography of ancient murals provides modern beholders with information about past realities as well as interconnections between different visual systems.

Beyond this iconographical perspective, wall paintings offer the often forgotten opportunity to study the practical knowledge, inherent in the production of these colourful imageries. Understood in this sense, wall paintings embody a whole range of specific technical choices within the artistic formation process, which are not only related to environmental aspects but also to social behaviour. The bodies of knowledge immanent in the practice of plaster and pigment preparation, the application of paint and the conception and execution of compositions allows us to compare the wall painting corpora of the Eastern Mediterranean on a technical level and to trace differences and similarities in a cross-cultural way.

The scope of the workshop is thus to provide insights into the various technical approaches and underlying bodies of knowledge in the different wall painting traditions of the Eastern Mediterranean and West Asia from a conservational, scientific and archaeological point of view.

#### Organizers:

Johannes BECKER Institut für Archäologische Wissenschaften Ruhr-Universität Bochum Am Bergbaumuseum 31 44791 Bochum, Germany Johannes.Becker-i3p@ruhr-uni-bochum.de

Constance VON RÜDEN Institut für Archäologische Wissenschaften Ruhr-Universität Bochum Am Bergbaumuseum 31 44791 Bochum, Germany Constance.vonRueden@rub.de Johannes JUNGFLEISCH Institut für Archäologische Wissenschaften Ruhr-Universität Bochum Am Bergbaumuseum 31 44791 Bochum, Germany Johannes.Jungfleisch@ruhr-uni-bochum.de

#### Participants (in alphabetical order):

Julia BERTSCH
University of Tübingen
julia.bertsch@uni-tuebingen.de
Hariclia BRECOULAKI
Institute of Historical Research – The Hellenic National
Research Foundation, Athens
hbrek@eie.gr
Emily EGAN
University of California Santa Cruz
egan@ucsc.edu
Sharon STOCKER
University of Cincinnati
sharon.stocker@uc.edu
Alessandro DI LUDOVICO
La Sapienza, University of Roma
alediludo@gmail.com

Marco RAMAZZOTTI
La Sapienza, University of Roma
marco.ramazzotti@uniroma1.it
Matthew HAYSOM
British School at Athens
knossos.curator@bsa.ac.uk
Peter LACOVARA
The ancient Egyptian heritage and archaeology fund
lacovara.peter@gmail.com
Bianca MADDEN
Independent Art Conservator – Oxford
bianca@biancamadden.com
Tobias SKOWRONEK
University Bochum
tobias.skowronek@ruhr-uni-bochum.de

#### List of Lectures/Program:

	Lecturer	Title	
9:30	Johannes Becker / Johannes Jungfleisch / Constance von Rüden	Introduction	
Part I: 1	Гhe Aegean		
10:00	Hariclia Brecoulaki / Emily Egan/ Sharon Stocker	Colors and Painters at the Palace of Pylos: A Technological Investigation of Materials and Painting Techniques	
10:30	Matthew Haysom	The Find Contexts of Knossian Palatial Wall-Paintings: Some Ramifications	
11:00	Coffee break		
Part II:	The Levant		
11:30	Julia Bertsch	Preliminary Remarks on the Technical and Iconographical Aspects of the Middle Bronze Age Wall Paintings from Tell el-Burak (Lebanon) in Relation to the Aegean and Egypt	
12:00	Alessandro Di Ludovico / Marco Ramazzotti	Wall Painting Techniques in Early Bronze Syria: Clues of Parallelisms with the Traditions of the Mediterranean and Mesopotamian Regions	
Part III:	Egypt		
12:30	Bianca Madden	Original Painting Techniques: Methods and Materials in 18 <sup>th</sup> Dynasty Tombs in the Valley of the Nobles, Egypt	
13:00	Lunch break		
14:00	Peter Lacovara	The Painted Palace: Wall Decoration and Purpose in Eighteenth Dynasty Royal Residences	
14:30	Constance von Rüden / Tobias Skowronek	Tracing Technical Choices and Knowledge in the Production of Stucco Reliefs from Tell el-Dab'a	
15:00	Johannes Jungfleisch	For Further Information Please See the Back of the Plaster: Real and Imaginary Architecture in the 'Aegean'-style Wall Paintings from Tell el-Dab'a	
15:30	Johannes Becker	How to Paint a Landscape: Technical Perspectives on the 'Aegean'-style Landscape Paintings from Tell el-Dab'a	
16:00	Coffee break		
16:30		Final Discussion	

#### Abstracts (in alphabetical order):

## How to Paint a Landscape: Technical Perspectives on the 'Aegean'-style Landscape Paintings from Tell el-Dab'a

#### Johannes BECKER

Although much has been written about the 'Aegean' style wall paintings from Tell el-Dab'a, the question who executed these paintings still puzzles us and will possibly never be answered with absolute certainty.

As a consequence, we should consider to adjust our focus of inquiry. Rather than asking who decorated the walls of this 18<sup>th</sup> Dynasty palatial precinct in the Eastern Nile Delta, we could examine how the paintings were executed, in other words, study the technical practice of their production. Although this will not solve the question who executed these paintings, it will at least allow us to trace the habitual schemes of action and the practical knowledge of the craftspersons responsible.

Following one chief concern of the Tell el-Dab'a wall painting project, the aim of this paper is, therefore, to present technical details of the large-scale landscape paintings from Tell el-Dab'a. Although the material is highly fragmented, the related pieces give sufficient evidence to reconstruct the various steps

in the production of these wall paintings. By sketching out this *chaîne opératoire*, it will be possible to compare the Tell el-Dab'a paintings with other wall painting traditions in the Eastern Mediterranean on a technical basis.

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#### Preliminary Remarks on the Technical and Iconographical Aspects of the Middle Bronze Age Wall Paintings from Tell el-Burak (Lebanon) in Relation to the Aegean and Egypt Julia BERTSCH

The excavations at the site of Tell el-Burak (Lebanon) carried out by a joint German-Lebanese Team from the University of Tübingen and the American University of Beirut revealed a representational mud brick building dating to the beginning of the Middle Bronze Age (MBA I). In one room of this building the remains of polychrome wall paintings were found which are still preserved on the walls in situ and have been investigated during several seasons since 2005. The depicted figural and ornamental motifs exhibit distinct Egyptianizing elements besides local or so far unknown traits. Examinations of the different pigments and the painting surface comprising several layers of lime plaster show that a preliminary drawing consisting of thin red outlines was applied on the wet plaster. This fact might indicate an early step towards the development of the fresco technique generally associated with the Aegean. Thus, the wall paintings from Tell el-Burak include several different aspects which point towards connections to the neighboring regions in the Eastern Mediterranean.

The lecture will present an overview on the technological and iconographical analyses of the wall paintings from Tell el-Burak and give a preliminary assessment of the various possible cultural interrelations they attest.

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# Colors and Painters at the Palace of Pylos: A Technological Investigation of Materials and Painting Techniques

#### Hariclia BRECOULAKI / Emily EGAN / Sharon STOCKER

The wall paintings discovered in the Palace of Nestor at Pylos at Ano Englianos constitute one of the largest and most varied corpora of Mycenaean artistic representations, offering a unique chance to explore in depth issues that pertain both to ancient technologies and artistic idiosyncrasies. On the basis of a comprehensive technological investigation of the paintings carried out during the past decade, there has come to light significant information regarding the manufacture of the paintings, the nature of the materials employed in them, and how they were applied to walls. Painted fragments from areas inside and outside the palace and from different chronological contexts have been studied. Analytical examination of paint layers has allowed us to document, in addition to the already well-known materials of Aegean painting, a series of unusual pigments: e.g., copper-based greens, mineral blacks, and colors deriving from Murex purple. An extensive study of the organic substances sealed within paint layers has proved with certainty that the colors were applied in the *al secco* technique, using binders of animal and plant origin: e.g., egg, animal glue and plant gums. Interesting issues regarding the choice of specific pigments and their relationship to the style and iconography of the paintings have also been explored and will be discussed in this paper.

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#### Wall Painting Techniques in Early Bronze Syria: Clues of Parallelisms with the Traditions of the Mediterranean and Mesopotamian regions

Alessandro DI LUDOVICO / Marco RAMAZZOTTI

Some recent discoveries have provided new important data related to the tradition of wall paintings in Early Bronze Age Syria. Such tradition still remains quite poorly known and understood, and the way to an interpretation of the relevant features, meanings and developments is thus mostly made of comparisons with findings originating from other regions and periods. The main difficulties are here represented

by the lack of uniform shared approaches in recording and publishing information on this kind of material witnesses, in particular in relation to technical and technological aspects.

This contribution is based on efforts that point at collecting as many clues as possible useful to outline a profile of the Early Syrian wall painting techniques, including proposals for the use of new technologies and quantitative investigation. The main aim is here to find enough evidence that could support a placement of the Early Syrian wall painting relics within the chronological developments and the cultural and geographical systems of the ancient Near East and the ancient Mediterranean regions.

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#### The Find Contexts of Knossian Palatial Wall-paintings: Some Ramifications

#### Matthew HAYSOM

The palace at Knossos hosts one of the largest corpora of Late Bronze Age wall-paintings in the Aegean. It was also the first such corpus to be uncovered. As a result it holds a unique position within the historiography of Aegean wall painting. This paper returns to the original excavation records of the palace's wall paintings to explore what can and cannot be said about their original find contexts. It then goes on to discuss the ramifications of the information and the lacunae for our understanding of the life-cycles of the wall-paintings and their place within the broader history of eastern Mediterranean painting.

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# For Further Information Please See the Back of the Plaster: Real and Imaginary Architecture in the 'Aegean'-Style Wall Paintings from Tell el-Dab'a

Johannes JUNGFLEISCH

The fragmented and dislocated nature of many wall paintings obscure their former architectural context. As an integral part of architecture, painted plaster forms both an aesthetic and protective surface of buildings, by covering brickwork, masonry and other construction materials.

In consequence of this material entanglement, collapsed plaster provides information on once hidden and now bygone architectural features in the form of impressions on their reverse. In addition, an *inverted* perspective on murals allows us to examine the practical knowledge and technical choices underlying the construction process and the practice of plastering.

In this sense, the analysis of reverse sides opens new perspectives on buildings, showing influences from different architectural traditions as attested for the palatial complex of the  $18^{th}$  dynasty in Tell el-Dab<sup>c</sup>a / Egypt. The use of an ,Aegean'-style plaster technique within local style élite buildings represents in and of itself a new architectural creation. In order to specify this unique mixture, this paper discusses the reverses of the lime plaster fragments with reference to the local mudbrick architecture. Furthermore, the methodological value of this approach for the reconstruction of large-scale murals will be evaluated and demonstrated here in regard to the painted architectural *simulations* from ,Palace G'.

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### The Painted Palace: Wall Decoration and Purpose in Eighteenth Dynasty Royal Residences Peter LACOVARA

While it is difficult to discern much from the few surviving palaces we have from ancient Egypt, aspects of their decoration can aid us in interpretation. The New Kingdom gives us the best-preserved and largest sample of palace structures and comparisons between them can give us a better understanding what were conventionalized as opposed to unique features. In particular, the painted wall decoration can provide us with some idea as to the purpose and function of some of the rooms within these complexes.

The Palace complex at Malqata, and specifically Amenhotep III's Main Palace or the 'Palace of the King,' as it is also known, gives us the most extensively preserved sections of wall painting in their approximate original position. As in Assyrian palaces, where the relief scenes were fitted to the function of each room, the decoration of Egyptian palaces may mirror the use of the rooms they decorate. This paper will try

to suggest some possibilities for the Palace of the King at Malqata based on the Metropolitan and Tytus Expeditions and attempt to extrapolate that to other royal residences.

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# Original Painting Techniques: Methods and Materials in 18<sup>th</sup> Dynasty Tombs in the Valley of the Nobles, Egypt

#### Bianca MADDEN

This talk will address the findings relating to traditional painting techniques, methods and materials, based on research and discoveries found as part of the conservation projects at the tombs of Menna and Neferrenpet (ARCE project director Dr Melinda Hartwig) and at the Tombs of Sennefer and Amenemope (Université libre de Bruxelles's Archaeological Mission to the Theban Necropolis project director Dr Laurent Bavay).

The projects used different methods of study and analysis, each of which helps to build up a more complete picture of the original painting methods and techniques of tomb painters in the Valley of the Nobles in the 18th dynasty. Research at the Menna project included the use of a wide range of non-invasive analytical technologies to analyze pigments and to look at the composition of binding media and glazes. Due to its largely unfinished condition Neferrenpet was particularly helpful in terms of observing and understanding the painting process. The long term study at the MANT projects has revealed many details about original construction of the paintings, the painting process and the reality of painting for a 18th dynasty tomb painter. The research included close observation of the painting method and materials, in some cases backed up by research through practical experiments and reconstructions undertaken by my colleague, and senior conservator on the project, Hugues Travier.

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#### Tracing Technical Choices and Knowledge in the Production of Stucco Reliefs from Tell el-Dab'a Constance VON RÜDEN / Tobias SKOWRONEK

In the course of the 20<sup>th</sup> century stucco reliefs have been brought to light nearly exclusively at sites in the Aegean with the palace of Knossos as the most important example in regard of its quantities and iconographic spectrum. Beyond the Aegean the palatial district of Helmi/Tell el-Dab'a in the eastern Nile delta is up to now the only site which produced such a kind of three dimensional artistic expression within its élite architecture. It hence seems to be not too far-fetched to assume an interrelation in the way this complex craft has been executed in both regions. Through an analysis of the involved raw materials and a reconstruction of the craft's *chaîne opératoire* the paper aims therefore to understand the characteristic technical choices taken by the craftsperson in the Nile delta, to approach his or her habitualized processes and embodied knowledge involved and to compare these with practices in the Aegean.

#### After Mesopotamia



After the fall of Neo-Assyrian Empire the entire region of Mesopotamia experienced a transitional period, whose archaeological and historical record is only barely known. The coming of Alexander the Great in the area changed the political and social balance, paving the way for the transformation of the region in the next following centuries. Multiple colonies were founded in Mesopotamia, which became cultural centers and nodes in long-distance networks running from the Greek world to Central Asia. Mesopotamia, from the turn of our era onwards, formed the core of the West- East confrontation and interactions with Romans, Parthians, Sasanians. It was, thus, a region of political, economic, and cultural importance for several Empires. In this framework one should also consider the impact of nomadic tribes. Yet, the archaeology of this region is ignored. Too often it has been put aside in favor of older phases. Relatively recent investigations both in North Mesopotamia (Syria; Turkey; Iraqi Kurdistan) and in South Mesopotamia (Iraq) highlighted the importance of the later phases for the comprehension of the historical continuum in the whole area. This workshop aims to propose new research trajectories by facing the issue of the later periods with modern approaches, re-visiting traditional investigations, and analyzing newly discovered data. A particular focus will be given to the relationship between man and environment, the transformation of the cultural and physical landscape, and the evidence of extra-regional contacts as reflected by the material culture. Aspects of continuity and change with previous and following chronological phases will be also discussed. The workshop will be divided in two sessions: the first discusses the results of the past and recent fieldwork, whereas the second session centres on future trajectories and the question of how to put this period on the map of the research within the larger context of the Ancient Near East. From Fragmentation to Social Integration, what enabled the persistence of large empires in the Near East after the Neo-Assyrian period.

#### Organizers:

Lidewijde DE JONG Institute of Archaeology University of Groningen Poststraat 6 9712 ER Groningen, The Netherlands lidewijde.de.jong@rug.nl

#### Participants (in alphabetical order):

ALTAWEEL Mark
UCL, London
m.altaweel@ucl.ac.uk
CABRAL Ricardo
University of Coimbra, Portugal
rdfcabral@uc.pt
CALINI Ilaria
EPHE, Paris/UMR 8167 Orient et Méditerranée; Unive
sity of Padua
ilariacalini@hotmail.it
COQUEUGNIOT Gaëlle
Université de Lyon 2, France
gaelle.coqueugniot@mom.fr
COSTA Tiago
University of Coimbra, Portugal
EDWELL Peter
Macquaire University, Sydney, Australia
peter.edwell@mq.edu.au

Rocco PALERMO Department of Humanities Università degli Studi di Napoli Federico II Via Marina, 33 80133 Naples, Italy roccopIrm@gmail.com

FOIETTA Enrico	
University of Turin, Italy	
foietta@alice.it	
FUSARO Agnese	
La Sapienza University, Rome	
agnese.fusaro@gmail.com	
GALLUPPI Marco	
University of Kiel	
mgaluppi@gshdl.uni-kiel.de	
KATZY Elisabeth	
VAM Berlin	
E.Katzy@smb.spk-berlin.de	
MANCINI Serenella	
La Sapienza University, Rome	
serenella.mancini@gmail.com	
MASETTI ROUAULT Maria Grazia	
EPHE, Paris	
masetti.rouault@wanadoo.fr	

PUSCHNIGG Gabrielle UCL, London g.puschnigg@ucl.ac.uk RÖMER-STREHL Christiane University of Bonn christiane.roemer-strehl@gmx.net SQUITIERI Andrea LMU, Munich a.squitieri@Imu.de

#### List of Lectures/Program:

	Lecturer	Title
	Lidewijde de Jong / Rocco Palermo	Introduction
Part I	Pottery / Case Studies	
1	Ilaria Calini / Maria Grazia Masetti Rouault	Post-Assyrian Material from Qasr Shemamok (Iraki Kurdistan)
2	Serenella Mancini / Agnese Fusaro / Marco Galluppi	New Research in the Kurdistan Region: some preliminary remarks on the pottery of the Parthian, Sasanian and Early Islamic periods
3	Bisabeth Katzy The hellenistic settlement at Tell Halaf – Between continuity ar change	
4	Ricardo Cabral / Tiago Costa	Tell Beydar in the Seleucid-Parthian period: New data from the latest seasons of excavations
5	Gabrielle Puschnigg	From The Shahrizor Plain to Merv: Sasanian identity from a fringe perspective
Part I	I: Landscape(s) / Larger Questions	
6	Rocco Palermo	A view from the Countryside. Rural Landscape and Imperial Impact in Seleucid Mesopotamia
7	Christiane Römer-Strehl	Between the hemispheres: Palmyra and the adjoined Mesopotamia ( $3^{rd}$ C. BC – $3^{rd}$ C AD) Mesopotamian Traditions in a global world
8	Enrico Foietta	Hatra and its Landscape
9	Peter Edwell	Coins and conflict in northern Mesopotamia in the second century AD
10	Gaëlle Coqueugniot	Places of government, places of commerce: the impact of empires in public architecture and urbanism in Hellenistic and Parthian Meso- potamia
11	Mark Altaweel / Andrea Squitieri	From Fragmentation to Social-Integration. What enabled the per- sistence of large empires in the Near East after the Neo-Assyrian empire

#### Abstracts:

### Post-Assyrian Material from Qasr Shemamok (Iraki Kurdistan)

Ilaria CALINI / Maria Grazia MASETTI ROUAULT

Due to established chronological boundaries, we have often been trained to consider history as articulated in a series of subsequent and juxtaposed phases. In this chronological framework, the fall of the Assyrian capital Nineveh has been traditionally identified as the final point of the whole history of Assyria itself, as if Assyrian people and their culture had just disappeared overnight. Nevertheless, many gaps remain. The period after the 'official end' of the Assyrian empire is particularly difficult to assess, having been often considered as an undefined phase of in-between. Since its first excavation in Qasr Shemamok (Erbil region, Iraqi Kurdistan) in 2011, the French Archaeological Mission has discovered that the site displays a strong continuity of occupation, particularly since the Assyrian periods until the Sasanian, marked by Hellenistic and Parthian phases. This is clearly attested by pottery and other material remains, and may provide useful inputs to a better understanding of the so-called Post-Assyrian period in northeastern Mesopotamia. The study of the characteristics of the ceramic material, in connection with its stratigraphic contexts, especially the interfaces between Assyrian and Hellenistic levels, may suggest a more continuous and fluid pattern of change and chronological framework.

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## New Research in the Kurdistan Region: some preliminary remarks on the pottery of the Parthian, Sasanian and Early Islamic periods

#### Serenella MANCINI / Agnese FUSARO / Marco GALLUPPI

The Italian Archaeological Mission in Iraqi Kurdistan (MAIKI – Sapienza University of Rome) has focused its activities on the study of the historical, linguistic and cultural development of the Iraqi Kurdish region, in collaboration with local institutions, such as the Department of Antiquities of Sulaimaniyah and the High Commission for the Erbil Citadel Revitalization (HCECR). Among the field activities a survey was carried out in the area of Sulaimaniyah, during which a heterogeneous corpus of materials was collected. The study has specifically focused on ceramics, related to a wide range of productions and a wide time span, from the Uruk-Jemdet-Nasr period up to the Ottoman period. Since the scarcity of updated and specific research studies on pottery manufactured between Achaemenid and Early Islamic periods of the Kurdish region, this work mostly focuses on the ceramic productions of these periods in order to characterize them and understand their relationship with the surrounding areas. The pottery study, also supported by archaeometry, has particularly concentrated on technological aspects in order to outline a general frame of local pottery productions and imports. Moreover, thanks to an agreement with HCECR, we will have the possibility to analyse pottery material from the recent excavations on the Erbil citadel which will add further information on regional ceramic manufactures and distribution networks.

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#### The hellenistic settlement at Tell Halaf – Between continuity and change

Elisabeth KATZY

Der Tell Halaf gehörte zu den seit der altorientalischen Zeit bekanntesten Ruinenhügeln Nordsyriens, die seit Neolithikum bis in die hellenistische Epoche immer noch besiedelt waren. Die Hauptbesiedlungszeit konzentriert sich auf eisenzeitliche Epoche. Eine diachrone Untersuchung der materiellen Kultur bis in die hellenistische Zeit zeigt sehr starkes Festhalten an lokalen mesopotamischen Traditionen. Insbesondere während der hellenistischen Zeit wird die Fortsetzung der lokalen Traditionen innerhalb der einzelnen Fundgruppen sichtbar. Eine gezielte Untersuchung einzelner Fallbeispielen u.a. Keramik, Terrakotten etc. zeigt mehr Parallelen zu den vergangenen Epochen insbesondere der Eisenzeit in Tell Halaf als zu den hellenistisch-griechischen Vorbildern. Somit wird sichtbar, dass die hellenistischen Einflüsse auf materielle Kultur aus Tell Halaf sehr gering sind und der erhoffte Wandel nicht als gezielte Hellenisierung angesprochen werden kann, sondern als »Modeerscheinungen« der Zeit bezeichnet werden muss.

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#### **Tell Beydar in the Seleucid-Parthian period: New data from the latest seasons of excavations** Ricardo CABRAL / Tiago COSTA

Tell Beydar, mostly known for its III Millennium settlement, was also the site where a significant community settled during Classical Antiquity. Since 2009, within the scope of the Euro-Syrian Archaeological Mission at Tell Beydar, the University of Coimbra (Portugal) launched a project to research the occupation of the site during the often neglected Seleucid-Parthian period.

Excavations conducted in 2009 and 2010 revealed a great variety of architectural structures, strongly reminiscent of the ancient mesopotamian tradition, and well preserved pottery contexts dated to the Seleucid-Parthian period. By performing an integrated analysis of the data from seventeen seasons of excavations in different areas of the site, we are now able to have a broad picture of the nature of the settlement and its different phases of occupation and abandonment. Thus this paper will present an updated analysis of the material culture, focusing on the structure of the settlement, the chronology and the evidences of regional connections.

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## From The Shahrizor Plain to Merv: Sasanian identity from a fringe perspective Gabrielle PUSCHNIGG

Recent work by the Shahrizor Survey Project (Iraqi Kurdistan) has shed new light on the development of settlement structures and land use in the area from the Neolithic up to the Islamic period. Numerous finds of surface ceramics attributable to the Sasanian period bear witness to an extensive network of communications and activities in the area at this time. The aim of this paper is to juxtapose these assemblages with contemporary ceramic material from the Merv oasis (Turkmenistan), including surface collections as well as excavated pottery. This enables us to compare and contrast material from small settlements or potentially temporary structures with pottery from long-term urban occupation. What are the structural differences in the assemblages and how does variation in settlement size and function affect the repertoire? Ceramics from the Sasanian period are commonly regarded as everyday wares. Still, can we discern any social aspects in these assemblages? Both areas, the Shahrizor plain to the west and the Merv oasis to the East, represent the opposite fringes of the Sasanian Empire. Some ceramic types are clearly consistent with regional traditions, while others show common features across the geographical divide. What prompts us to identify these vessels as Sasanian? This analysis will touch again on the question of 'Sasanian' identity in an everyday context.

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#### A view from the Countryside. Rural Landscape and Imperial Impact in Seleucid Mesopotamia Rocco PALERMO

The control of the rural landscape was decisive for the formation of the Hellenistic kingdoms and, specifically, for the Seleucid Empire, which stretched from Turkey to the Indus. In this vast land ruled by the heirs of Alexander the Great, Mesopotamia was a central political and economic zone. It housed the capital Seleucia-on-the-Tigris, older cities and new colonial foundations. The construction of extensive hydraulic structures and road networks indicates that the land between the Euphrates and Tigris was a key area for political control and resource exploitation. It was a region as dependent on urban development as it was on rural development. Yet this countryside remains a blank slate in current scholarship, which concentrates on urban centres and other regions. Survey projects carried out in the alluvial plains of southern Mesopotamia already underlined the importance of this phase in relation to the comprehension of the Seleucid imperial impact on the countryside. Current projects operating in the Kurdistan region of Iraq are now dealing with new datasets, which can provide the scientific community with relevant tools to break up the history of the Hellenistic period in this part of the world. This paper aims to define major features of Seleucid Mesopotamia: settlement patterns, resources exploitation and ceramics horizons will be investigated with a particular attention to regional features that shaped the Mesopotamian region between the Gaugamela battle and the very late 2<sup>nd</sup> c. BCE. Central questions are: How did the colonial displacement and the sites location affect the regional landscape? How did the imperial power contribute to the formation and development of a rural landscape? How did the daily use objects fit into the newly formed societies? The answers might point at the recognition of the Seleucid period in Mesopotamia as a crucial historical moment significantly marked by the conjunction of local features and globalizing tendencies.

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#### Between the hemispheres: Palmyra and the adjoined Mesopotamia (3<sup>rd</sup> C. BC–3<sup>rd</sup> C. AD) Mesopotamian Traditions in a global world Christiane RÖMER-STREHI

For centuries Palmyra was a crucial intermediary between East and West in a global trading network. But was it only the City of Palmyra? What happened in the area between Palmyra and Hatra? Was that only a remote region without any global contact? In recent years some ambitious papers on pottery from this region have been published, which invite new thoughts. These new results on Palmyranian ceramics combined with older publications on material from this area allows us to reconstruct a nearly complete picture between the 3<sup>rd</sup> C. BC and the 3<sup>rd</sup> C. AD. The new results on chronology and typology, the identification of the cultural context either as local imitations or as imports from remote places as well as the description of a specific function or use of pottery and special pots show how much information is hidden in ceramic material. When combining older works on ceramic material from Dura-Europos and the Habur-Valley, which focus on chronological and typological aspects, with the recent work, which deals also with classifications in specific cultural contexts, research on networks, distribution and usage of specific pots, the importance of the ceramic findings becomes more apparent. This paper wants to demonstrate, how ceramics can be used as a source of information for a given time and area, which has been neglected up to now. It wants to illustrate explicitly how fascinating pottery findings can be and how they can be 'read' and interpreted between the hemispheres.

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#### Hatra and its Landscape

#### Enrico FOIETTA

The ancient city of Hatra is located 60 km away from the ancient site of Assur and the river Tigris. The city, whose splendour and importance grew during the 2<sup>nd</sup> and 3<sup>rd</sup> century, was attacked three times by the Roman troops: the first one by Trajan and twice by Septimius Severus. However, according to the Cologne Mani Codex, it was the Sasanian army of Shapur I that achieved the result of destroying the city. The city of Hatra is located in the Jazirah, which in Arabic means the "island", and it is the space between the rivers Tigris and Euphrates. This vast region is characterised by a steppe environment with hot summers and usually cold winters. The rainfall at Hatra is less than 200 mm/year, which is concentrated in winter and spring, creating a constant hydric deficit. Furthermore, the only river (wadi Tarthar) which features some slightly salty water also in the summertime flows 3 km far away from the city and cannot supply the hydric needs of the city. Despite these apparently unfavourable characteristics, a village was here found in the post-Assyrian period and it flourished as an important city during the 2<sup>nd</sup> and 3<sup>rd</sup> century AD, covering with its sub-circular main curtain wall an area of 300 ha. The purpose of the paper is firstly to detect the reason of this particular emplacement for the first village and secondly to analyse the successive exploitation of natural resources for the requirements of a big city like Hatra during the 2<sup>nd</sup> and 3<sup>rd</sup> cent. AD. The study mainly regards ground morphology, environmental resources and archaeological occurrences in an area with a range of 30 km from the city centre. The methodology employed crosses information coming from the bibliographic sources, the unpublished Archive of the Italian Archaeological Expedition and the analysis of satellite images and aerial photographs. In conclusion, some further suggestions will be proposed about the regional territory of Hatra when the city ruled a buffer state between the Parthian and Roman Empires. For this part, the most important source has been the survey made by J. Ibrahim in 1980s, which has been digitalised and verified thanks to the Corona images published and ortho-rectified by the Corona Atlas project (University of Arkansas).

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## Coins and conflict in northern Mesopotamia in the second century AD Peter EDWELL

This paper examines the imperial and civic coinage of the cities of northern Mesopotamia in the second century AD to further analyse competition between Rome and Parthia in the wake of Trajan's invasions up to the campaigns of Septimius Severus. Numismatic evidence from the cities of northern Mesopotamia has generally not been analysed in sufficient detail as a source for understanding this territorial competition. The cities of Edessa and Carrhae are the main focus of analysis in this paper, however some consideration of the numismatic evidence from Dura Europos is also included. A series of largely unpublished imperial silver coins likely minted at Edessa under Marcus Aurelius and Lucius Verus will form an important part of this analysis. The paper will provide a more in-depth consideration of the second

century. It also aims to illuminate our understanding of the dynamics of imperial and local politics in northern Mesopotamia during the second century AD.

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#### Places of government, places of commerce: the impact of empires in public architecture and urbanism in Hellenistic and Parthian Mesopotamia Gaëlle COQUEUGNIOT

Under the rule of Hellenistic and Parthian kings, Mesopotamia was at a cultural and economic crossroad between East and West, attracting populations of various origins and cultures. Both centuries-old urban centres and new foundations structured the region, acting as administrative centres and places of commerce. In this paper, I will focus on the public spaces of these settlements, where people met, exchanged, and governed. Although less investigated than the settlements' religious and domestic structures, these spaces give us a glimpse at the functioning of the settlements, both locally and in a wider scale. Of special interest is the creation of Greek-style agoras and theatres in settlements that received the status of polis and their co-existence or competition with other centres of powers such as the old traditional temples or the governors' palaces. The compared study of local and "imported" traditions in the urbanism and the ornamentation of public spaces (as opposed to the private spaces reserved to the familial circle) allows us to replace the Hellenistic and Parthian periods within a global history of Mesopotamia.

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# From Fragmentation to Social-Integration. What enabled the persistence of large empires in the Near East after the Neo-Assyrian empire

Mark ALTAWEEL

In the ancient Near East, there is a pattern in the Bronze and early Iron Ages whereby city-states and small states were the political norm, with punctuated periods of larger territorial states and empires. The nature of political organization, however, started to change with the late Neo-Assyrian Empire. From this period, and into eras beyond the rise of Islam in the 7<sup>th</sup> centuries CE, large territorial empires became common or even the political norm throughout the Near East. A fundamental question, therefore, is that, why did large empires persist in the Near East for such a long time? Covering a period stretching from the late Neo-Assyrian empire through the Sasanian era, we will argue that the primary process that enabled this persistence of large empires in the Near East was large-scale and long-distance movements or migrations of people, that enabled the concentration of people and ultimately wealth and power into fewer large cities or regions. We will discuss how population movement both enabled but also perpetuated socio-political integration that permitted the persistence of long-lasting empires. Our methodology will focus on settlement patterns, which capture population shifts and movements, and material culture, which shows prevalent commodities and styles across different regions



Scholars are still struggling for a good explanation why the rather poor heartland of Assyria generated the first World Empire – or rather the first Superpower – in the history of mankind in the 7<sup>th</sup> cent. BC. Assyria is not considered a hydraulic civilization – rather it has been maintained that irrigation was not an economic essential of her heartland and Assyria has been called "illiterate" in irrigation technology. This applies also for her "home provinces" constituting "... the country known as *māt Aššur* before the reign of Tiglath-pileser III." (Postgate 1995), i.e. Upper Mesopotamia. Situated mostly between the 100 and 300 mm isohyets the agricultural landscape needed irrigation to unfold its full potential. The natural water supply derived from the Zagros and draining towards the heartland was sufficient to serve irrigation purposes in the heartland. In the "home provinces" a grand canal system along the Habur secured the water supply for irrigation. More recently it has been demonstrated that Assyria did have a long tradition of irrigation technology and improving agriculture conditions in the regions of its application (Bagg 2000a&b, Altaweel 2008, Reculeau 2011; Mühl 2013). Ongoing fieldwork in NW-Iraq (Kurdistan) has generated new data contributing heavily to the topic.

Assyria / Upper Mesopotamia is to be understood as a cultural landscape alterable by anthropogenic impact that existed long before the Assyrians entered the scene and went on existing after the superpower collapsed in 612 BC. It is relevant therefore to investigate the ecological and hydro-agricultural conditions prior and after the Assyrian polity. However, the focus of this workshop will be on Assyria between 1300 and 600 BC seeking to raise and discuss these points:

- analyzing and reconstructing the environmental setting of the "home provinces" in the first millennium BC,
- calculating the overall water availability, the water demand and the irrigable space reached by gravity
  of given areas,
- reporting the application of modern methods of reconnaissance and the implications of most recent discoveries of irrigation works in NW-Iraq (Kurdistan),
- analyzing the systemic interrelation between irrigation and settlement patterns (or systems),
- quantifying the economic surplus to be achieved by irrigation,
- · discussing technological issues of waterworks in cuneiform sources and in the archaeological record,
- irrigation and urbanization,
- · water management and administration,
- · development of demography in irrigated areas.

#### Organizer:

Hartmut W. KUEHNE Freie Universitaet Berlin Institut für Vorderasiatische Archäologie Malteserstr. 74-100 12249 Berlin, Germany hartmut.kuehne@fu-berlin.de

Participants (in alphabetical order):

CANCIK-KIRSCHBAUM Eva	MASETTI-ROUAULT Maria Grazia	
Freie Universität Berlin	EPHE	
eva.cancik-kirschbaum@fu-berlin.de	masetti.rouault@wanadoo.fr	
IAMONI Marco	MACGINNIS John	
Università degli Studi di Udine	University of Cambridge	
marco.iamoni@uniud.it	johnmacginnis@aol.com	
KUEHNE Hartmut W.	MORANDI BONACOSSI Daniele	
Freie Universität Berlin	University of Udine	
hartmut.kuehne@fu-berlin.de	daniele.morandi@uniud.it	

MUEHL Simone
Ludwig-Maximilians-Universität München Simone.
Muehl@vaa.fak12.uni-muenchen.de
RÖTTCHER Klaus

Ostfalia Hochschule für Angewandte Wissenschaften

UR Jason Harvard University jasonur@fas.harvard.edu

#### List of Lectures/Program:

k.roettcher@ostfalia.de

	Lecturer	Title
1	Hartmut W. Kuehne	Water for Dur-Katlimmu – the case of the Lower Habur canals, Syria
2	Klaus Röttcher	Water management – an option for a better understanding of the Assyrian settlements along the Lower Habur River, Syria
3	Daniele Morandi Bonacossi	Water for Nineveh. A Geoarchaeological Investigation of the Nineveh Irriga- tion System (Northern Iraqi Kurdistan)
4	Marco lamoni	Water for Assyria: a perspective from pre and proto-historic periods
5	5 Maria Grazia Masetti-Rouault The King and the Canal: Development of a Literary Image	
6	Simone Muehl	Irrigation in the Shahrizor Plain
7	Jason Ur	Water for Arbail and Nimrud
8	John MacGinnis	Changing channels: construction and operation of canals in Neo-Assyrian and Neo-Babylonian sources
9	Eva Cancik-Kirschbaum	Water: resource, means, thread. Gleanings from textual sources

#### Abstracts:

#### Water for Dur-Katlimmu - the case of the Lower Habur canals, Syria

#### Hartmut W. KUEHNE

A Middle Assyrian letter from Dur-Katlimmu proves that a long distance canal extending over five back areas, that is roughly 150 kilometers, existed along the east bank of the Lower Habur from an undefined starting point to the provincial capital of Dur-Katlimmu during the 13<sup>th</sup> century BC confirming geo-archaeological observations. In this paper this remarkable evidence will be elaborated in terms of geo-physical evidence, technical as well as geo-archaeological data, historical development (13<sup>th</sup> to 7<sup>th</sup> century BC), and environmental implications. Its significance for the history and socio-economy of the Assyrian State and Empire will then be evaluated. It will be argued that the Habur canals were a major factor for regional agricultural and economic improvement, settlement increase and population growth, warranting thus prosperity and stable political conditions for both the region as well as the crown.

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# Water management – an option for a better understanding of the Assyrian settlements along the Lower Habur River, Syria

#### Klaus RÖTTCHER / Jürgen HOPPE

In arid and semi-arid regions water was often one of the most limited factors and so the amount of available water for people, animals and agriculture could set the maximum means of subsistence for the population. The most important factor was the amount of water for agriculture; with less than 300 mm rainfall per annum rain fed agriculture was risky. Other important factors are the yearly variations of the total and the available amount of water during the growing season. If this was not satisfactory additional sources were needed and a temporary or local water transfer became necessary. This paper will deal with a case study of the eastern canal of the Lower Habur during the Assyrian empire period (8<sup>th</sup>-7<sup>th</sup> century BC). For the preserved hydraulic structures of the Lower Habur the hydraulic function and the capacity can be calculated. A flow chart will be presented to compare the water demand and water supply. It will be discussed how the water demand and the water supply may have been balanced by water management.

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## Water for Nineveh: A Geoarchaeological Investigation of the Nineveh Irrigation System (Northern Iraqi Kurdistan)

#### Daniele MORANDI BONACOSSI

The paper will present the new evidence resulting from survey and geoarchaeological fieldwork conducted since 2012 in the northern region of Iraqi Kurdistan by the Land of Nineveh Archaeological Project (LoNAP) of the Udine University. One of the main aims of the project is to bring into focus the crucial region located in the hinterlands of Dur-Sharrukin and Nineveh, which has never been systematically surveyed before, during the Middle Assyrian and Neo-Assyrian periods. During Sennacherib's reign, the land behind Nineveh was involved in the construction of one of the most ambitious hydraulic engineering projects in the history of Assyria that led to the creation of extensive waterscapes in the core region of the empire and permitted intensified irrigation and agricultural production in the hinterland of the Assyrian capital city. This massive, centrally-planned hydraulic system has been explored to date somewhat anecdotally, or on the basis of cuneiform inscriptions or remotely sensed images, but never by means of a comprehensive field project. The presentation will discuss the preliminary results of the geoarchaeological investigation of this grandiose canal network, focusing on its construction techniques, geometry and flow, its relation with the Neo-Assyrian settlement pattern, its impact on the region's agricultural production system, extent, chronology, and abandonment processes.

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#### Water for Assyria. A perspective from the pre and protohistoric periods

#### Marco IAMONI

Water has been always a crucial element for the subsistence of ancient human communities. This was of course true for the large cities of the  $3^{rd} - 1^{st}$  millennium BC, but even more so for the first stable settlements of the pre and protohistoric periods. The selection of specific locations for the foundation of permanent habitation sites was indeed driven by the location of water sources in the neighbourhood. Yet the real importance of a nearby water supply, and the consequent strategy adopted to establish new settlements – also in relation to changing conditions (e.g. settlement growth, climatic variation, changes in watercourses) are matters that, with careful analysis, may offer unexpected hints for the study of the pre and protohistoric periods, and also for understanding the later success of  $3^{rd}$  millennium sites.

In this paper, I focus on Upper Mesopotamia (in particular on the Upper Tigris region) and present an analysis of the settlement pattern of pre and protohistoric sites based on an approach that combines old data with fresh evidence from recent archaeological investigations in Iraqi Kurdistan. This yields a novel appreciation of the relationship between water sources and human settlements and suggests an alternative key for interpreting pre and protohistoric settlement patterns in the region.

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#### The King and the Canal: Development of a Literary Image

#### Maria Grazia MASETTI-ROUAULT

The extension and the complexity of canals systems discovered in the land of Assur and in the imperial provinces, requiring specific competences, huge investments and a real control of the territory, are considered as one of the most evident and objective manifestations of the Crown's intervention in the State management since Middle Assyrian period. This view is supported by royal inscriptions, which, according to ancient traditions, describe the opening of canals as a part of the king's building activities. However, literary representations of the king carrying out this task, as well as their evolution in time, also show some problems, or different trends, in the integration of this image in the ideological discourse of the State. They possibly offer a way to glimpse at the changing limits of the Palace's agency in the economic and production structure of the Assyrian society, and of the Empire.

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#### Irrigation in the Shahrizor Plain

#### Simone MUEHL

The Shahrizor Plain is a mountain valley of the western Zagros range in southern Iraqi Kurdistan. Nowadays the plain lies within the limits of rain-fed agriculture but the annual average precipitation can vary significantly. As a result of increased water consumption due to fast urban growth, intensified agriculture and river impoundments by dams, dry years (330mm annual rainfall) have great effects on agriculture and ecosystems in the region. These effects are met by intensified machine dug wells and water that is pumped up from deeper ground levels. In prehistoric and historical periods regional settlers were more dependent on environmental conditions than today and developed different strategies to stabilize and optimize the availability of water for agriculture. Irrigation is one of them. The lecture will focus on the role irrigation played in the Shahrizor Plain over time and how it can be traced by data from excavations, site surveys, as well as geo-archaeological approaches.

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#### Water for Arbail and Nimrud

#### Jason UR

The imperial and provincial capitals of the Neo-Assyrian empire held populations far beyond the limits of the Bronze Age cities that preceded them. This accomplishment came in part from intensifying agricultural production on the lands adjacent to the cities. The irrigation systems of Nimrud and Nineveh have over a century of exploration, but there are still many details to be revealed, especially through remote sensing and field exploration. This paper analyses the irrigation systems between Nimrud and Arbail (modern Erbil) using two sources. The first are remote sensing datasets from a variety of declassified American intelligence missions: aerial photographs from the U2 spy plane, and satellite photographs from the CORONA (1960-1972) and HEXAGON (1971-1984) programs, many of which have not been used for non-intelligence research before. The second source are field observations of the Erbil Plain Archaeological Survey (EPAS) in the regions of Gwer, Shemamok, Erbil, Kawr Gosk, and Qala Mortka, between the Upper Zab and the Chai Bastora. These observations have revealed a complex palimpsest of both massive irrigation systems and small scale *karez/qanat* systems that can be difficult to untangle. It is certain, however, that the river terraces and plains surrounding Nimrud and Arbail were abundantly irrigated. It is possible that some of these canal features were also being used for downstream shipment of bulky agricultural products, which would further extend the sustaining areas of these great cities.

## Changing channels: construction and operation of canals in Neo-Assyrian and Neo-Babylonian sources John MACGINNIS

The data available from royal inscriptions, letters and administrative texts is central to our understanding of hydrological systems in the Assyrian empire from both an administrative and an ideological perspective. While taking this as its starting point, this paper will move on to the evidence for the creation and operation of canals in Babylonia during the Neo-Babylonian empire. After first reviewing the evidence from the Neo-Babylonian royal inscriptions, we will go on to discuss the information available from the extensive body of data on the running of the canal systems and the dependent agricultural systems dealing with such matters as maintenance, taxation, sources of labour and so on. Drawing the threads from north and south together we will consider an area where the two sets of data may be expected to interact, Assyrian canal works in Babylonia. Finally we will consider one or two case studies relating to projects in Assyria specifically.

#### Water: ressource, infrastructure, threat. Gleanings from Middle Assyrian Sources Eva CANCIK-KIRSCHBAUM

The paper will investigate the information regarding the various aspects of water-managment in Middle Assyrian texts. Information from ongoing projects on the historical geography of late bronze age Assyria and water resource studies will be presented.

### Formation, Organization and Development of Iron Age Societies: A Comparative View



Several new discoveries necessitate a reassessment of our understanding of early Iron Age societies. New inscriptions, the publication of full corpora of Iron Age Luwian and Semitic texts and – above all – renewed excavations at many Iron Age sites provide new insights on the development of Iron Age states.

Despite new languages, scripts and ethnonyms, archaeological evidence provides ample evidence for continuity or shifts in settlement patterns as opposed to the cultural breaks or a historic hiatus. The cultural dominance of recently migrated peoples – whether Aramaean, Luwian or Aegean – is an assumption in dire need of critical reevaluation. The aim of this workshop is a comparison of the formation of autonomous Iron Age states, their subsequent development and the changes taking place during Assyrian rule.

Each presentation in this workshop will review the chronology of key sites, analyze how the associated society developed, and reconstruct the historical context. During the final panel discussion – led by Prof. Marina Pucci – we will take the opportunity to formulate a more nuanced synthesis of the early Iron Age that takes the regional differences and similarities into account.

#### Organizers:

Alexander SOLLEE Institut für Archäologische Wissenschaften Universität Bern Länggass-Strasse 10 3012 Bern, Switzerland alexander.sollee@iaw.unibe.ch

### Participants (in alphabetical order):

· · · F · · · · · · · · · · · · · · · ·
D'AGOSTINO Anacleto
Università degli Studi di Firenze
analecto.dagostini@unifi.it
JAMIESON Andrew
University of Melbourne
asj@unimelb.edu.au
MANUELLI Federico
Freie Universität Berlin
fademannu@inwind.it
MASTER Daniel
Wheaton College
Daniel.Master@wheaton.edu

Vincent VAN EXEL Institut für Vorderasiatische Archäologie Ludwig-Maximilians-Universität München Geschwister-Scholl-Platz 1 80539 München, Germany vivanexe@gmail.com

OSBORN	E James	
Universit	y of Chicago	
jamesosl	oorne@uchicago.edu	
PUCCI N	arina	
Universit	à degli Studi di Firenze	
marina.p	ucci@ unifi.it	
VENTUR	I Fabrizio	
Universit	à di Bologna	
PORTER	Benjamin W.	
Phoebe /	A. Hearst Museum of Anthropology, Berkele	ey
bwporte	@berkeley.edu	

#### List of Lectures/Program:

	Lecturer	Title
1	Vincent van Exel / Alexander Sollee	Introduction
2	Anacleto d'Agostino	Patterns of villages and cities in Northern Mesopotamia: a view from a marginal land
3	Alexander E. Sollee	The emergence of Guzana and its development through the Iron Age
4	Andrew Jamieson	Tell Ahmar: An important Iron Age city in the Euphrates River Valley
5	Federico Manuelli	The regeneration of the Late Bronze Age tradition and the formation of the King- dom of Malizi
6	Vincent J. van Exel	Between Luwians and Aramaeans: The historical and cultural development of the kingdom of Sam'al

7	James Osborne	The Formation of the Syro-Anatolian City-States: New Evidence from Patina and Beyond
8	Fabrizio Venturi	Tradition and innovation in Tell Afis material culture at the beginning of the Iron Age
9	Daniel Master	The Development of Ashkelon in the Iron Age, the Role of Soft Power
10	Benjamin W. Porter	The Archaeology of Institutional Resilience in Iron Age Jordan
11	Marina Pucci	Panel Discussion

Abstracts (in alphabetical order):

#### Patterns of villages and cities in Northern Mesopotamia: a view from a marginal land Anacleto D'AGOSTINO

Changes in the archaeological remains of ancient societies can provide a valuable means of observing the impact of empires upon the social, political and ideological development of a region. In particular, the material evidence, when read in conjunction with the written record, can reveal much about the interaction between local and external components of that society as well as the way in which the economic profile of a region responded to the needs and demands of newcomers.

The purpose of my paper is to explore how the archaeological record can contribute to our knowledge of the economic organization of the northern regions at the time of Neo-Assyrian Empire. In doing so particular attention will be given to the rural settlement pattern and evidence for wheel- and hand-shaped techniques in pottery production as well as the presence of certain types of vessel distributed over the region. Focusing on the Upper Tigris valley (SE Turkey), a border region inhabited by various populations with distinct identities and traditions, we can observe an expansion of Assyrian control over the economic activities of both Assyrian and local settlements dependent – but probably to different degrees – on the main town and subordinate to the Assyrian administration.

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#### Tell Ahmar: An important Iron Age city in the Euphrates River Valley

#### Andrew JAMIESON

In considering the Formation, Organization and Development of Iron Age Societies the findings from Tell Ahmar are of interest primarily for illustrating the end, rather than the beginning of this process. Known from the Neo-Assyrian inscriptions of Shalmaneser III, Til Barsib was one of the main cities of the Aramaean tribal state of Bit Adini. In 856 BC the site was conquered by Shalmaneser III, converted into an Assyrian provincial capital and renamed Kar Shalmaneser. Neo-Hittite (Luwian) inscriptions indicate the site was also called Masuwari. The first excavations were undertaken by a French expedition in 1928 and from 1929 to 1931. From 1988 to 1999 Melbourne University undertook salvage excavations at the site. Since 2000 Liège University have directed investigations.

On the acropolis, below the Assyrian palace level, the Belgium mission found modest evidence for the pre-palatial Iron Age, as well as for a Middle-Assyrian presence. It is surprising that virtually no remains from the pre-Assyrian Iron Age were found in the middle and lower city, either by the French or the Australian expeditions. This paper discusses the Iron Age findings, with a particular focus on the ceramics from the Australian excavations in the middle and lower city areas.

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#### The regeneration of the Late Bronze Age tradition and the formation of the Kingdom of Malizi. Federico MANUELLI

In recent years, excavations and studies on the Late Bronze and Iron Age phases at Arslantepe (Malatya, SE Turkey) resumed. Arslantepe is known to be the ancient city of Malitiya from Hittite texts and the capital of the independent kingdom of Malizi from Iron Age inscriptions The formation of the Kingdom of Malizi at the beginning of the 12<sup>th</sup> century and its Hittite heritage have been so far evaluated exclusively

on the basis of the iconographic and stylistic aspects of the bas-reliefs and the epigraphic and paleographic analysis of the Luwian Hieroglyphic inscriptions found at Arslantepe and the surrounding region.

The fundamental outcomes, concerning the continuity of the sculptural cycles and king genealogies from the Anatolian and north-Syrian Late Bronze Age traditions, that were so far based on the above-mentioned aspects can be nowadays cross-examined with information stemming from the newly excavated Early Iron Age records at the site. This paper aims at reviewing the chronology, formation and historical development of the Kingdom of Malizi, setting the archaeological sequence and related remains unearthed at Arslantepe in the context of the political evolution of the Euphrates region during the last centuries of the 2<sup>nd</sup> millennium BCE.

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## The Development of Ashkelon in the Iron Age, the Role of Soft Power

#### Daniel MASTER

After the Canaanite city of Ashkelon was conquered by Egypt at the end of the 13th century, the city was re-founded as a Philistine port in the early 12th century. For the next six hundred years, the city occupied a key node between the Egypt and the Phoenician trading cities of the north. The research of the Leon Levy Expedition is revealing that this city was persistently influenced by larger networks to the north and south, changing all aspects of cultural and political life. While many have focused on the influence of military conquests of terrestrial empires, Ashkelon's history is the story of the transforming effects of soft power in the Iron Age.

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#### The Formation of the Syro-Anatolian City-States: New Evidence from Patina and Beyond. James OSBORNE

For several decades during the 20th century the Syro-Anatolian kingdoms were generally neglected in Near Eastern scholarship. This has changed dramatically in the past twenty years or so, as several of their important capital cities have seen large-scale excavations for the first time since the late 19th and early 20th century. These projects and other discoveries have generated a wealth of new data and fresh perspectives, and in some cases have led to new archaeological models. One of the most prominent of these is the growing consensus that the Syro-Anatolian city-states represent a substantially greater degree of cultural continuity from the preceding Bronze Age than was previously assumed, and the realization that the so-called "Dark Age" from roughly 1200-900 BCE has long been misnamed. But despite our justified haste to elaborate all the ways that the Iron Age in fact continues many Bronze Age traditions, it is important not to lose sight of cultural patterns that really did change, sometimes quite dramatically. This paper evaluates current scholarly discourse on the Bronze-Iron Age transition, and uses results from the Tayinat Archaeological Project to assess the nature of the transition as change or continuity.

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#### The Archaeology of Institutional Resilience in Iron Age Jordan

#### Benjamin PORTER

The development of Iron Age societies in western Jordan was not a straightforward matter of rise and collapse. From what is currently known from archaeological and written evidence, Jordan's four kingdoms – Gilead, Ammon, Moab, and Edom – followed trajectories of growth that were distinct from each other in terms of timing and intensity. A host of contingencies shaped these different paths, from natural resource accessibility to historical experiences with neighboring Levantine societies and the interventions of the Assyrian and Babylonian empires. Jordan's Iron Age societies developed institutions to mitigate these contingencies, beginning with well-scaled autonomous agro-pastoralist communities that were eventually integrated into ethno-territorial polities. The elites who led these polities traded their autonomy to the Mesopotamian empires for the privilege to continue ruling their disparately organized societies.

This talk examines the current evidence for these societies' developments, with particular attention to evidence recently excavated at Dhiban and Busayra, the political capitals of Moab and Edom. The evi-

dence will be examined in light of recent research on institutional resilience that considers how societies develop the capacities to organize themselves in the face of limited resources and political and economic uncertainties. Outstanding questions and opportunities for future research will be discussed.

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#### The emergence of Guzana and its development through the Iron Age

Alexander E. SOLLEE

It has long been established that the site of Tell Halaf was known as Guzana during the Iron Age. The settlement emerged during the Early Iron Age, when various peoples seem to have settled in the Upper Khabur area. During the time when it represented the capital of the independent Aramaean principality Bit Bahiani, Guzana was a flourishing city, as illustrated by the construction of Kapara's palace. Even though it eventually lost its independence and became part of the Neo-Assyrian Empire, it remained an important urban and administrative center which contained monumental buildings, including the palace of the governor of the province Guzana.

The proposed paper will review the results that the old and new excavations have provided on the development of Guzana from its Early Iron Age beginnings to the time when it was an essential part of the Neo-Assyrian Empire. Especially the results of the latest excavations have a major impact on the way how the urban landscape of this site can be reconstructed and thus offer additional information on the question of how the town's society adapted to changing political realities.

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# Between Luwians and Aramaeans: The historical and cultural development of the kingdom of Sam'al Vincent J. VAN EXEL

The monumental architecture of the Iron Age city Sam'al has long been known through excavations at Zincirli Höyük. Several palaces, decorated gates and the associated fortifications were uncovered during German excavations in the late 19th century. These discoveries are complemented by a series of important Semitic inscriptions. The recent American excavations have expanded our knowledge of the chronology and the development of the kingdom by investigating the unexplored lower town and new excavations on the citadel.

The location of Sam'al reflects its the complicated ethnicity and history. Although surrounded by Neo-Hittite kingdoms the inscriptions of Sam'al were all written in Semitic languages: Phoenician, Sam'alian and Aramaic. However, members of the dynasty carried Luwian names and used some characteristically Neo-Hittite material culture. The results of our new excavations allow me to reevaluate the previously known evidence. Firstly, the archaeological evidence reveals the long-term development of the kingdom of Sam'al from simple beginnings to a prosperous kingdom and finally a province of the Assyrian empire. Secondly, the archaeological evidence forces a critical reevaluation of the way modern scholarship employs notions of ethnicity and its role in Iron Age historiography.

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#### Tradition and innovation in Tell Afis material culture at the beginning of the Iron Age Fabrizio VENTURI

The transition from LBA to Iron Age in the Levant, more than any other "transitional period", has been the focus of intensive studies and debates which, however, still leave many questions unresolved. Among the different aspects which characterized this transition, the migration factor linked to the incoming "Sea People" is undoubtedly the one which has drawn most attention from archaeologists and philologists. The recent discovery in Cilicia and Aleppo of inscriptions which may be related to these events has renewed the interest in such topics in the Northern Levant. Tell Afis, situated in the Syrian inner plateau had yielded a continuous stratigraphic sequence covering the period 13th-10th century BC.A diachronic analysis of its pottery production will verify the impact that Iron Age I events had on its cultural development.

#### Addenda



POSTER

#### Moulding, carving and incising: techniques of stucco production in Christian communities in Mesopotamia and the Gulf, 7<sup>th</sup>-9<sup>th</sup> centuries

Agnieszka LIC, University of Oxford, School of Archaeology, St Cross College

Christian production of stucco thrived in the early Islamic era and collections of decorative stuccoes are known from a number of sites in Mesopotamia and the Gulf. Even though different parts of the region shared common tradition of stucco production with its roots in Sasanian Persia as well as ecclesiastical affiliation to the Church of the East, there are clear differences in techniques of production employed in particular parts of this vast region. Probably the most distinctive method was developed in Mesopotamia (sites of Al-Hira, Ain Sha'ia, Bazyan and Nineveh) where plaques decorated with incised drawings filled with paint were extremely common. An isolated case of Al-Qusur site on Failaka island (Kuwait), from which the only examples of monumental, carved stucco panels are known indicates that there were certain limitations to free circulation of styles and techniques and that activity of the Al-Qusur workshop was limited to this one site. Moulding was certainly employed in decoration of the church on Sir Bani Yas (UAE) but peculiar shape of friezes decorating external walls of the building rises a difficult question on what exactly was the technique behind it.

By investigating those and similar problems it is possible to understand better the artistic landscape of Mesopotamia and the Gulf in the Late Antique and the Early Islamic period. It also allows to determine the nature of artistic relationships between Christian sites in the region (circulation of objects rather than workshops) and sheds light on the issue of exporting and importing decorative stuccoes (evidence for exchange of plaques between Southern Mesopotamia and Failaka and between Sir Bani Yas and Failaka).