Επιστημονικό Σωματείο,
Έτος Ίδρυσης 1982, έδρα:
Κάνιγγος 27, 106 82 Αθήνα
(Ένωση Ελλήνων Χημικών)
http://archaeometry.org.gr/index.php/en/

Scientific Association, Year of Establishment 1982, Headquarters: Kaniggos 27, 106 82 Athens (Association of Greek Chemists)
http://archaeometry.org.gr/index.php/en/

Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Μάρτιος 2017 -

There is nothing permanent except change (*Heraclitus*)

Newsletter of the Hellenic Society of Archaeometry

- March 2017 -

Nr. 192

ΠΙΝΑΚΑΣ ΠΕΡΙΕΧΟΜΕΝΩΝ – TABLE OF CONTENTS

ΕΙΔΗΣΕΙΣ - NEWS RELEASE

ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

AIA 2018 CONFERENCE, BOSTON, MASSACHUSETTS, THE ARCHAEOLOGY OF FISHING AND MARINE RESOURCE EXPLOITATION IN THE OLD AND NEW WORLDS CALL FOR PAPERS

To continue the tradition of conference sessions on maritime archaeological topics at the Annual Meetings of the Archaeological Institute of America (AIA), the upcoming 2018 conference to be held in Boston, Massachusetts, will have a session on the Archaeology of Fishing and Marine Resource Exploitation in the Old and New Worlds.

The overall goal of this session is to highlight and disseminate quality research investigating and modeling human efforts to use marine resources (fish, shellfish, mammals, plants, minerals, and so on) on a variety of scales from the personal to the industrial, and from a variety of eras. Indeed, as the upcoming 2018 conference is on the eastern seaboard of North America, an area with a rich history of such activities, we hope to bring together topics pertinent to the Old and New Worlds and thus illustrate cross-cultural and diachronic similarities. Although participants should focus on the use of archaeological data to generate their results, cross-disciplinary efforts that combine evidence from a variety of media are encouraged.

The upcoming AIA Annual Meeting in Boston will be held from January 4th to 7th, 2018. A standard session at the Annual Meeting accommodates a short introduction, presentations fifteen to twenty minutes in length (depending on the number of participants), and a short break if necessary. We presently have three participants, so we are searching for a few more to complete our roster. If you are interested in participating, please prepare a paper abstract of approximately 250 words with your name and affiliation, and **submit it to Matthew Harpster (matthewharpster01@gmail.com) by March 13th, 2017**. Please note that to participate in the 2018 Annual Meeting, individuals are required to have a current membership in the Archaeological Institute of America, and to register for the meeting itself.

Aleydis

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Lindsay Young Professor and Head
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Co-director Mitrou Archaeological Project, Greece
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Vice-President East Tennessee Society (AIA)
http://web.utk.edu/~classics/aia/aia.html

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9TH INTERNATIONAL CONGRESS ON THE APPLICATION OF RAMAN SPECTROSCOPY IN ART AND ARCHAEOLOGY, ÉVORA, PORTUGAL, 24-28 OCTOBER 2017

Dear colleagues,

After the last Congress success, we are happy to announce the 9th International Congress on the Application of Raman Spectroscopy in Art and Archaeology, which will take place in Évora (Portugal) in 24-28 October 2017.

The RAA conferences promote Raman spectroscopy and play an important role in the increasing field of its application in Art and Archaeology. This scientific meeting brings together studies from diverse areas and represents dedicated work on the use of Raman spectroscopy technique in connection to the fields of art history, history, archaeology, palaeontology, conservation and restoration, museology, degradation of cultural heritage, archaeometry, etc.

Furthermore, the development of new instrumentation, especially for non-invasive measurements, has received a great attention in the past years. The interdisciplinary nature of the conference presents a unique opportunity for the exchange of information and promotes both collaborative and personal relationships amongst its participants. It provides first-hand opportunities to report advancements and innovations in a highly critical and stimulating environment.

RAA 2017 participants should submit their abstracts via the online registration system (http://raa2017.uevora.pt/abstracts.php) for approval by the Scientific Committee. The deadline to submit the abstracts is Sunday 30th April 2017 (midnight GMT). Those received after this deadline will not be considered.

A non-limitative list of topics includes the application of Raman spectroscopy in the fields of art, art history, history, archaeology, conservation and restoration, museology and others:

- Material characterization and degradation processes (pigments, inks, plastic materials, photographic materials, gemstones, stones, precious stones, glass, ceramics, contemporary materials etc.)

- Conservation issues affecting cultural heritage (decaying, corrosion, etc.)

- Raman spectroscopy of biological and organic materials (resins, fibres, ancient organic compounds, etc.)

- Surface enhanced Raman spectroscopy (dyes, organic pigments, etc.)

- Chemometrics in Raman spectroscopy

- Development of Raman techniques

- New Raman instrumentation and applications in cultural heritage objects investigations

- Raman spectroscopy in paleontology, paleoenvironment and archaeology

- Forensic applications in art and archaeology (e.g. forensic archaeology, authentications procedures)

- Other topics

For further details, please visit out website at http://raa2017.uevora.pt/

We look forward to see you in October!

ΕΦΟΡΕΙΑ ΑΡΧΑΙΟΤΗΤΩΝ ΚΥΚΛΑΔΩΝ

ΣΥΝΕΔΡΙΟ

Περὶ τῶν Κυκλάδων νήσων

Το Αρχαιολογικό Έργο στις Κυκλάδες

1η ΕΓΚΥΚΛΙΟΣ

Αγαπητοί συνάδελφοι,

Η Εφορεία Αρχαιοτήτων Κυκλάδων διοργανώνει σε συνεργασία με τη Γαλλική Αρχαιολογική Σχολή και με τη στήριξη της Αρχαιολογικής Εταιρείας Διεθνές Επιστημονικό Συνέδριο το Φθινόπωρο του 2017 (23-26 Νοεμβρίου) με θέμα «**Το Αρχαιολογικό Έργο στις Κυκλάδες**». Σκοπός του Συνεδρίου είναι να δημοσιοποιηθεί το πολύπλευρο αρχαιολογικό έργο που συντελείται τα τελευταία χρόνια στα νησιά των Κυκλάδων από τους φορείς της Αρχαιολογικής Υπηρεσίας, τα Πανεπιστημιακά και Ερευνητικά Ιδρύματα και τις Ξένες Αρχαιολογικές Σχολές. Στόχος είναι το Συνέδριο να αποτελέσει θεσμό μέσω του οποίου θα παρουσιάζονται στους ειδικούς και το ευρύ κοινό τα πορίσματα της έρευνας στις Κυκλάδες. Το πρώτο Συνέδριο διοργανώνεται προς τιμήν της Φωτεινής Ζαφειροπούλου, Επίτιμης Εφόρου Αρχαιοτήτων Κυκλάδων, και εις μνήμην του Νικόλαου Ζαφειρόπουλου, Εφόρου Αρχαιοτήτων Κυκλάδων (1959-1972), ως συμβολικό αντίδωρο για την προσφορά τους στην προστασία, μελέτη και ανάδειξη των κυκλαδικών αρχαιοτήτων.

Οι θεματικές του Συνεδρίου θα καλύπτουν ενδεικτικά τους παρακάτω τομείς:
α) Ανασκαφικό και ερευνητικό έργο: έρευνες πεδίου (σωστικές και συστηματικές ανασκαφές, επιφανειακές έρευνες), μελέτες υλικού, συνθετικές μελέτες.
β) Ανάδειξη και ανάπλαση αρχαιολογικών χώρων, συντήρηση και αναστήλωση μνημείων.
γ) Δημιουργία Μουσείων και Αρχαιολογικών Συλλογών .

Δεκτές γίνονται, κατόπιν εγκρίσεως από την Επιστημονική Επιτροπή, πρωτότυπες ανακοινώσεις (και ανακοινώσεις τοίχου-“posters”) που δεν έχουν παρουσιασθεί σε άλλα Συνέδρια και δεν έχουν δημοσιευθεί. Οι ανακοινώσεις που θα παρουσιασθούν σε προφορική μορφή δεν θα πρέπει να υπερβαίνουν τα 15΄. Επίσημες γλώσσες του Συνεδρίου ορίζονται η Ελληνική, η Αγγλική και η Γαλλική.

Παρακαλείσθε να συμπληρώσετε το συνημμένο στην εγκύκλιο δελτίο συμμετοχής, το οποίο θα πρέπει να αποστείλετε έως την 28η Φεβρουαρίου 2017 στην ηλεκτρονική διεύθυνση aekyk17@gmail.com.

Για την οργανωτική επιτροπή
Δημήτρης Αθανασούλης
Διευθυντής Εφορείας Αρχαιοτήτων Κυκλάδων

ΕΦΟΡΕΙΑ ΑΡΧΑΙΟΤΗΤΩΝ ΚΥΚΛΑΔΩΝ

ΔΙΕΘΝΕΣ ΕΠΙΣΤΗΜΟΝΙΚΟ ΣΥΝΕΔΡΙΟ

Περὶ τῶν Κυκλάδων νήσων
Το αρχαιολογικό έργο στις Κυκλάδες

Αθήνα, Φθινόπωρο 2017 (23-26 Νοεμβρίου)

ΔΕΛΤΙΟ ΣΥΜΜΕΤΟΧΗΣ

ΟΝΟΜΑΤΕΠΩΝΥΜΟ: _____

ΔΙΕΥΘΥΝΣΗ: _____

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ΗΛΕΚΤΡΟΝΙΚΗ ΔΙΕΥΘΥΝΣΗ: _____

ΤΗΛΕΦΩΝΟ ΕΠΙΚΟΙΝΩΝΙΑΣ: _____

ΣΥΜΜΕΤΟΧΗ ΜΕ ΠΡΟΦΟΡΙΚΗ ΑΝΑΚΟΙΝΩΣΗ: **(ΝΑΙ / ΟΧΙ)** _____

ΣΥΜΜΕΤΟΧΗ ΜΕ ΑΝΑΚΟΙΝΩΣΗ ΤΟΙΧΟΥ **(ΝΑΙ / ΟΧΙ)** _____

ΠΡΟΣΩΡΙΝΟΣ ΤΙΤΛΟΣ ΑΝΑΚΟΙΝΩΣΗΣ _____

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Παρακαλείσθε να αποστείλετε τη συμμετοχή σας ηλεκτρονικά **έως και την 28η Φεβρουαρίου 2017** στη διεύθυνση: **aekyk17@gmail.com.**

CALL FOR PAPERS: WIENER LAB COLLOQUIUM, ARCHAEOLOGICAL INSTITUTE OF AMERICA, BOSTON, MA, U.S.A., JANUARY 4-7, 2018, "AGRICULTURE IN THE PREHISTORIC AEGEAN: DATA VS. SPECULATION, THREE DECADES ON"

Organizers:
Susan Allen (Univ. of Cincinnati) and China Shelton (American Center of Oriental Research)

2018 marks the thirtieth anniversary of the publication of Julie Hansen's *AJA* article, "Agriculture in the Prehistoric Aegean: Data versus Speculation," which highlighted the lack of archaeobotanical evidence to test the proposed models of Bronze Age Agriculture. In addition, Hansen outlined several strategies for moving beyond speculation about Bronze Age agricultural systems. Over the past thirty years, increased attention to 1) systematic, intensive sampling for floral and faunal remains, as proposed by Hansen, 2) greater integration of archaeobotanical, zooarchaeological, bioarchaeological, and geoarchaeological data, 3) increased application of plant and animal microfossil analyses and micromorphology, and 4) the use of more recent techniques, such as stable isotope analysis of plant and animal remains, has resulted in a significantly more robust body of evidence for the reconstruction of Bronze Age agricultural systems. In addition, more explicit framing of agriculture and land use as key factors in the mobilization and deployment of power in the rise of Minoan and Mycenaean states signals a shift toward improved integration of various datasets to reveal the degree to which agricultural and land use practices are embedded in changing socio-economic complexity.

We particularly seek contributions that revisit earlier models in light of new data from the last thirty years and propose new reconstructions of Neolithic and Bronze Age agricultural systems and their relationship to broader environmental and social changes. This juncture seems an appropriate time to take stock of what progress has been made in a comprehensive way across the Aegean.

Guidelines for submissions:
• Abstracts of up to 400 words should be submitted to:
o Susan Allen at susan.allen@uc.edu by **March 1, 2017**
• Please include your contact and affiliation information and whether you are requesting 15 or 20 minutes for your paper.
• The AIA 2018 Call for Papers and associated guidelines for contributors can be accessed here: https://www.archaeological.org/meeting/CFP

Additional information:
• Due to time limits for colloquia, we encourage collaborative, multi-authored contributions.

• The organizers intend to pursue 1) funding to host a workshop in Boston following the AIA meeting to allow time for substantive discussion of this problem and, 2) publication of papers and, if needed, additional invited contributions in an edited volume.
• Notifications of acceptance will be sent by March 5, 2017.
• Accepted participants must be members of the AIA at the time when we submit the abstracts for the colloquium session (March 10, 2017) to the Program Committee.
• Please direct questions to susan.allen@uc.edu

OPTO-CH 2017, WORKSHOP, LASER TECHNOLOGIES IN CULTURAL HERITAGE ANALYSIS, DIAGNOSIS AND CONSERVATION, JUNE 19-24 2017 HERAKLION, CRETE, GREECE

The aim of the POLITEIA thematic workshop is to introduce participants to applications of advanced laser technologies in Cultural Heritage (CH) science, diagnostics and conservation.
Lectures from experts on modern laser diagnostic, analytical techniques and cleaning methodologies are combined with practical demonstrations, hands-on sessions in the laboratory and on-site field tests.

Applications deadline
March 03, 2016

Notice of acceptance
March 10, 2016

For info related to fees & registration please check the workshop's homepage
Certificates of attendance will be given to all participants

What Does it Cover?
OPTO-CH 2017 training workshop combines lectures from experts on modern laser diagnostic and analytical techniques, as well as, laser conservation methodologies, with practical demonstrations and laboratory hands-on sessions. Two days of field tests and experiments on-site at selected monuments in Crete are also foreseen. The topics covered include:
 Materials analysis with Laser Spectroscopy (LIBS, Raman, DR)
 Optical Coherence Metrology for Structural Diagnosis
 Imaging and Mapping; multispectral, multi-photon, photo-acoustic and THz
 Laser Cleaning

What Will You Learn?
 The general concepts & principles of operation for each technique with emphasis on their analytical & diagnostic potential
 How optical and laser technologies can be used in CH conservation on the basis of discussion on selected examples & case studies
 How these techniques have been introduced to the conservation practice at world heritage sites & monuments in Greece
 You will experience the capacities of the technologies presented in the lab (identification & characterization of pigments, salts, rocks, metals, mortars, wall paintings, adhesion cases, etc) through field tests and experiments on-site.

Who Should Attend?
 Graduate students (or Undergraduate Seniors)

 Young Researchers in Cultural Heritage and Conservation Science

Join us for an exciting journey to Crete to become acquainted with the latest developments on non-invasive optical technologies and explore their field applications in Cultural Heritage conservation
IESL-FORTH Heraklion, Crete, Greece, **OPTO-CH 2017 workshop, June 19-24, 2017**

Laser technologies for Cultural Heritage analysis, diagnostics and conservation
Further information at: www.iesl.forth.gr/research/course.aspx

Contact
Dr Paraskevi Pouli
Institute of Electronic
Structure & Laser (IESL)
Foundation for Research &
Technology - Hellas
(FORTH)
PO Box 1385, 71110
Heraklion, Crete, Greece
: +30 2810 391870, 391300
: +30 2810 391318
: laserart@iesl.forth.gr

W O R K S H O P' S O U T L I N E
Days 1-4 Intro, Basics and Lab sessions

DAY 1 Historic, cultural and monument related context. Conservation considerations in Cultural Heritage research. Materials context
Materials and finishes with emphasis in the Eastern Mediterranean Cultural landscape. Chemistry and physics of color and surface morphology.
Participants presentations
Optics and Imaging (the seen and the unseen)
Basic optics and imaging physics, Multi-spectral imaging, Case studies, Practical session on imaging.

DAY 2 Laboratory and Laser Safety
Laser Spectroscopy for material analysis
Elemental Analysis by LIBS and DR, LIBS and DR basics, Case studies, Practical session.
Molecular Analysis by Raman microscopy, Raman basics, Case studies, Practical session.

DAY 3 Holographic interferometry
Holography and interferometry basics, Case studies, Practical session.
Special Lectures
Visit at the Archaeological Museum of Heraklion/ Knossos Archaeological site

DAY 4 Laser conservation
Basics of laser ablation removal of materials, Case studies, Practical session. Demonstration of laser cleaning

Special lectures
Wrap up and conclusions
Overview of site visit
Visit at the Archaeological Museum of Heraklion/ Knossos Archaeological site

Days 5-6 Working on-site

DAY 5 Site context, meaning and values
Campaign planning, Dividing problems based on materials and pathologies. Assembling working groups
Setting up of equipment and documentation workstations.
Working on site and data interpretations.

DAY 6 Working on site and data interpretations,
Interaction with the staff of the Ephorate of Antiquities of Heraklion.
Campaign overview. Conclusions. What we learned.
Return to Heraklion.

Find us as **"Lasers for Arts Sake"**

Contact

Dr Paraskevi Pouli
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23RD EAA ANNUAL MEETING, MAASTRICHT, 30 AUGUST - 3 SEPTEMBER 2017, SESSION: EARLY MEDITERRANEAN METALLURGY: TECHNOLOGICAL INNOVATION AND CROSS-CRAFTSMANSHIP

We would like to invite submissions for papers and posters for the 23rd EAA Annual Meeting in Maastricht, 30 August - 3 September 2017, for the following session:

Early Mediterranean metallurgy: technological innovation and cross-craftsmanship
Andrea Dolfini (Newcastle University, UK); Mercedes Murillo-Barroso (Spanish National Research Council); Florian Klimscha (Excellence Cluster TOPOI / German Archaeological Institute, Eurasia Department)

Abstract
Early European metallurgy has been at the forefront of archaeological research recently, but investigations have often concentrated on the continental landmass, leaving the Mediterranean Sea, its regions, its coasts, and its islands at the margin of the debate. This is a significant change from the priorities of most 20th century prehistorians, who put the Mediterranean centre-stage in their influential models of culture change and technology transfer. As the diffusionist explanations they favoured fell out of fashion, so did the backdrop of their investigations. This is a problem that urgently demands readdressing given the resurgent interest in the study of early metal technology and objects.
The session invites interdisciplinary debate in prehistoric Mediterranean metallurgy from the Neolithic to the Iron Age. Interaction is sought between archaeologists, anthropologists, and scientists working on the dynamics of metal invention, adoption, and transfer. Moreover, the session encourages examinations of the relationship between early metallurgy and other pyrotechnologies including glass and pottery making. Problems to be explored may include: the signification and materiality of metals; the social dynamics of metallurgical innovation including adaptation, rejection, and change (e.g. from bronze to iron); pyrotechnological cross-craftsmanship and the relationship with the broader cultural repertoire; issues of knowledge transfer including gender, agency, skill, and apprenticeship; the social geography of early metals including exchange routes and frontiers; and the social transformations brought about by metalworking and using. Papers cutting across traditional geographic and period boundaries are especially welcome, as well as those engaging with a plurality of time scales.

Deadline for submissions: 15th March. Please register for the conference and submit your abstract at: https://www.klinkhamergroup.com/eaa2017/

Best wishes,

Andrea

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Dr Andrea Dolfini
Senior Lecturer in Later Prehistory
Director of the Cluster for Interdisciplinary Artefact Studies

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andrea.dolfini@ncl.ac.uk
+44 (0)191 20 83402
http://newcastle.academia.edu/AndreaDolfini
Bronze Age Combat: an experimental approach
Case Bastione Archaeological Project

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RADIOCARBON & DIET 2, AARHUS AMS CENTRE, AARHUS UNIVERSITY, DENMARK, JUNE 20-23, 2017

The second Radiocarbon and Diet symposium will be organised by the Aarhus AMS Centre, Aarhus University, Denmark. It will take place at Aarhus University on June 20-23, 2017 - a time when Aarhus' status as European Capital of Culture coincides with the white nights.

The research focus of this workshop will be on the utility of stable isotopes (hydrogen, carbon, nitrogen, oxygen and sulphur) to infer past dietary histories of prehistoric humans. Because the diet of choice may influence the radiocarbon age of a prehistoric human, stable isotope analysis and dietary reconstructions are essential to infer correct chronologies of prehistoric humans.

The symposium will cover topics such as “Human reservoir effects in archaeology”, “Pottery and aquatic foods: radiocarbon and isotopic signatures”, Compound specific isotopic analysis” and “Detecting, quantifying, and modelling dietary reservoir effects”.

Keynote speakers
Julia Lee-Thorp (University of Oxford), Matthew Collins (University of York), Nicki Whitehouse (Plymouth University), Rick Schulting (University of Oxford)
http://conferences.au.dk/radiocarbonanddiet2017
radiocarbonDiet17@phys.au.dk

Organising committee
Marie Kanstrup, Jesper Olsen
Bente Philippsen & Mette Alstrup Lie, Department of Physics and Astronomy, Aarhus University

Important dates
March 15, 2017 Call for abstract closes
April 15, 2017 Abstract acceptances
May 15, 2017 Early bird registration closes
June 15, 2017 Registration closes

NEW CULTTECH SUMMER SCHOOL ON CULTURAL HERITAGE MATERIALS AND TECHNOLOGIES, 9-22 JULY 2017, UNIVERSITY OF THE PELOPONNESE, KALAMATA, GREECE

Dear Colleague

This is to inform you about our NEW ***CultTech Summer School*** on *Cultural Heritage Materials and Technologies* hosted by the University of the Peloponnese which is to take place in **Kalamata, Greece**.

The program operates within the Peloponnese, an advanced natural and cultural environment that hosts a plethora of historical and archaeological sites and monuments. Studies on the interdisciplinary field of Cultural Heritage and Science/Technology offer the great potential of a modern and balanced educational syllabus; they also produce an ideal platform for holistic approaches that are guaranteed by the creative mixing of up-to-date methodologies through archaeological science, archaeometry and Cultural Heritage technologies.

CultTech Summer School is oriented from the *Department of History, Archaeology and Cultural Resources Management*, *University of the Peloponnese* and operates in collaboration with the *Demokritos National Center for Scientific Research*, the *National Observatory of Athens* and key lecturers from other academic institutes in Greece. The official language of the program is English and the duration is 2 full weeks from **9 - 22 of July 2017**, consisting of lectures, a 3 days field-trip practice to Pylos and guided educational tours to historical sites, museums and monuments.

Students or graduates from all related fields, e.g. archaeology, cultural heritage management, conservation, materials science and engineering are welcome to apply!

Applications will open on March 1, 2017.

For more information regarding the curriculum, fees and procedures, please visit www.culttech.uop.gr or contact at culttech@uop.gr

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ – JOB VACANCIES/FELLOWSHIPS

THE FLOW OF ARCHAEOLOGICAL MATERIALS (5+3) - PHD FELLOWSHIP IN THE FIELD OF THE FLOW OF ARCHAEOLOGICAL MATERIALS (5+3), GRADUATE SCHOOL AT ARTS, FACULTY OF ARTS, AARHUS UNIVERSITY, IN COLLABORATION WITH CENTRE FOR URBAN NETWORK EVOLUTION (URBNET)

The Graduate School at Arts, Faculty of Arts, Aarhus University, in collaboration with Centre for Urban Network Evolution (UrbNet), invites applications for a fully-funded PhD fellowship in *the flow of archaeological materials* provided the necessary funding is available. This PhD fellowship is available as of 1 September 2017 for a period of up to three years (5+3). The candidate who is awarded the fellowship must commence his/her PhD degree programme on 1 September 2017.

The PhD fellowship will be financed by the 2 parties.

PhD project focusing on the flow of archaeological materials, and how these may contribute to chart the evolution and dynamics of urban networks in Antiquity and the Middle Ages. Materials may include glass, metals, ceramics or organic materials.

The work should preferably involve materials from one or more sites currently targeted by UrbNet fieldwork projects in Northern Europe, the Eastern Mediterranean and/or East Africa, but it may also include further sites and regions. Please consult our webpage and contact core-group members for more information on current field projects in the centre. We are seeking projects which involve contextual “High Definition” archaeological studies in combination with scientific investigations, preferably in collaboration with the UrbNet centre team. Furthermore, we are interested in projects which may span several regions and/or periods in order to push methodological and theoretical considerations within the UrbNet framework forward.

Applications should be discussed and developed in collaboration with one or more potential supervisors in the UrbNet core group. Please contact us as soon as possible for further information.

The PhD student must complete the studies in accordance with the valid regulations for the PhD degree programme, currently the Ministerial Order of 27 August 2013 on the PhD degree programme at the universities: http://talent.au.dk/phd/arts/rulesandforms/thephddegreeprogramme/

Description of the graduate school's PhD degree programme: http://talent.au.dk/phd/arts/phdstudystructure/

Rules and regulations for the PhD degree programme at the Graduate School at Arts: http://talent.au.dk/phd/arts/rulesandforms/thephddegreeprogramme/

The PhD fellow will be enrolled as a PhD student at the Graduate School at Arts, Faculty of Arts, Aarhus University, with the aim of completing a PhD degree at the School of Communication and Culture, Aarhus University.

The PhD student will be affiliated with the PhD programme *History, Archaeology and Classical Studies*.

The PhD student's place of work will be the School of Communication and Culture, Aarhus University. In general, the student is expected to be present at the school on an everyday basis.

The PhD degree program is expected to include a lengthy research stay at a foreign institution, cf. Description of the graduate school's PhD degree programme.

School of Communication and Culture's research programme: http://cc.au.dk/en/research/research-programmes/

5+3 programme
When you apply for a 3-year PhD fellowship (5+3), you must enclose documentation stating that you have submitted your Master's thesis for assessment by the deadline for application, and you must have completed your two year Master's degree (120 ECTS) no later than 31 August 2017.

The PhD fellow will be employed as a PhD student at the Faculty of Arts, Aarhus University. The terms of employment are in accordance with the agreement between the Danish Ministry of Finance and the Danish Confederation of Professional Associations (see section 6.1.4), as well as with the protocol to the agreement covering staff with university degrees in the state sector (see enclosure 5). The agreement and the protocol including amendments are available online: http://talent.au.dk/phd/arts/rulesandforms/thephddegreeprogramme/

Salary: http://talent.au.dk/phd/arts/rulesandforms/salary-and-employment/salary-5-3-programme-and-part-b-of-the-4-4-programme/

Application
If you require professional guidance regarding your application for the PhD fellowship please contact the PhD programme director at *History, Archaeology and Classical Studies:* http://talent.au.dk/phd/arts/contacts/

For further information, please contact Professor Rubina Raja, School of Communication and Culture, Rubina.raja@cas.au.dk, Phone + 45 8716 2047 / +45 4087 8423.

Applications for the PhD fellowship and enrolment in the PhD degree programme can only be submitted via Aarhus University's web-based facility.

Guidelines for the application facility: http://talent.au.dk/phd/arts/application/application-guide/

Deadline for applications: 15 March 2017 at 23.59 CET
Reference number: 2017-5
During the assessments, AU can conduct interviews with selected applicants.

MUSEUM OF CULTURAL HISTORY - POSTDOCTORAL FELLOW IN CONSERVATION SCIENCE

The Museum of Cultural History (KHM) invites applications for a postdoctoral fellow (SKO 1352) in the research project Saving Oseberg

The project period is 3 years and starting date is as soon as possible.

The museum houses the extensive and highly valued Oseberg collection, which represents one of the most comprehensive collections of Viking Age wooden objects in the world. Many of these wooden artefacts are severely threatened by a slow but ongoing deterioration process caused by conservation treatment (alum treatment) applied one hundred years ago. In addition, restoration involved reassembly of fragments, which cannot be undone without causing irreversible damage to the artefacts. In order to develop a preservation strategy for these highly complex and degraded artefacts, the museum launched the research project Saving Oseberg phase I, which ended December 31st 2016.

Saving Oseberg required a continuation to develop successful preservation strategies. In this current, second phase of Saving Oseberg, the activities are organized in two research groups. The first group will apply and compare different impregnation methods, addressing the three main problems: high acidity, presence of harmful metal ions and extreme frailty of the wood. This work will include the development of a testing protocol, chemical analyses before and after treatment, and studies of behaviour of the impregnation agents in the highly degraded archaeological wood. The second group will work on improvement of the materials for consolidation, neutralization and inactivation of metal ions. Attempts will be continued to develop a multifunctional, bio-inspired material which is chemically functionalized in a way that all three tasks can be fulfilled by one material. The two groups will collaborate closely with each other, as well as with relevant projects associated with the development of new museum facilities for the Oseberg collection and, not least, a national and international network of research institutions.

Postdoctoral fellow in conservation science – in the development of deacidification methods for the treatment of alum-treated wood

High acidity of the wood is assumed to be a main reason for the decay of the wooden artefacts. Following results of project phase I, calcium hydroxide nanoparticles seem to be a promising material to raise the pH of wood. However, a range of application studies on penetration behaviour, suitable solvents and interactions with other applied materials (alum, other consolidants, and chelating agents) needs to be conducted. Phase II research will also look at crosslinking the nanoparticles into a 3-dimensional network with flexible silanes. This would allow for neutralization and consolidation to occur in one step rather than two, thus reducing the risk to the objects during retreatment.

Requirements

- PhD in Chemistry or Conservation Science
- Experience with nanoparticles
- Experience with silane systems

Preferred qualifications

- Candidates with experience in working with cultural heritage objects/materials, and in particular deacidification of archaeological wood, will be preferred
- Previous working experience in cross-disciplinary projects and basic knowledge of conservation practices is an advantage

The application is to be submitted electronically and must include

- Application letter
- CV summarizing education, previous positions, teaching experience, public engagement and other qualifying activities
- Copies of educational certificates, transcript of records
- Names and contact details of 2 or 3 references (name, relation to candidate, e-mail and telephone number)
- A complete list of publications and up to 3 academic works that the applicant wishes to be considered by the evaluation committee

Please note that all documents should be in English or Norwegian, Danish or Swedish.

Foreign applicants are advised to attach an explanation of their University's grading system.

We offer

- A challenging task in one of Europe's most important projects in archaeological wood research and conservation
- An inspiring and friendly working atmosphere in a cross-disciplinary, international team
- Salary level 57-62 (NOK 486.100 to 535.900 per year), depending on qualifications and seniority
- Favourable pension arrangement
- Workout during working hours, 1.5 hours per week

The University of Oslo has an Acquisition of Rights Agreement for all employees for the purpose of securing intellectual property rights to research results, etc.

Pursuant to section 25, paragraph 2 of the Norwegian Freedom of Information Act, information about the applicant may be included when the applicant list is made public, even when an applicant has requested non-disclosure.

The University of Oslo has a goal of recruiting more women in academic positions. Women are encouraged to apply. The University of Oslo also aims to recruit more individuals with an immigrant background for academic positions. Candidates with an immigrant background are encouraged to apply.

- Region: Oslo

- Job type: Contract
- Working hours: Full-time

- Working days: Day
- Application deadline: 20/03/2017
- Reference number: 2017/2477
- Company homepage: http://www.khm.uio.no
- Contacts:
  Project Manager Louis Boumans
  Telephone: +47 22859425
  Mobile: +47 45692408
  Researcher Caitlin McQueen
  Telephone: +47 22135284

Please visit the site: http://uio.easycruit.com/vacancy/1793517/71569?iso=gb

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

MA SCHOLARSHIPS - MASTER OF MARITIME AND COASTAL ARCHAEOLOGY (MOMARCH), AIX-MARSEILLE UNIVERSITY, DEPARTMENT OF ARCHAEOLOGY

The Master MoMArch (Master of Maritime and Coastal Archaeology) with the support of the Honor Frost Foundation, that promotes Maritime Archaeology in the eastern Mediterranean,is pleased to offer one scholarship for its Masters programme to candidates with Lebanese or Syrian nationality applying for September 2017. The Master of Maritime and Coastal Archaeology (MoMArch), it is a two-year full-time course, aimed at training international specialists in underwater and coastal archaeology. The programme is afull member of the UNESCO/UNITWIN Network for Underwater Archaeology, has been awarded the Academy of Excellence Call for projects (A*Midex University Foundation). In 2017, the Aix-Marseille University obtained the UNESCO Chair in Maritime and Coastal Archaeology, with the Master MoMArch in the core of its educational project.Courses are taught in French and in English. The purpose of this two-year Masters program is to train top-level international specialists in all fields ofmaritime archaeology. More specifically, its aim is to prepare professional archaeologistsin the research, protection and management ofthe maritime cultural heritage by offering them a solid methodological grounding andfieldwork training. The academic courseis coordinated by the two pioneer institutions in underwater archaeology in France: the academic team of the Centre Camille Jullian (Aix-Marseille University, CNRS, French Ministry of Culture and the National Institute for Preventive Archaeological Research) in cooperation with the Department of Underwater Archaeological Research (DRASSM) of the French Ministry of Culture. The Centre Camille Jullian (Aix-Marseille University, CNRS, MCC, INRAP) is recognised for its research excellence in Mediterranean maritime archaeology, while the DRASSM is a leading institution for underwater research in Europe.

The scholarship covers administration fees, a stipend for living expenses per month (for the two academic years), as well as for limited travel expenses. There are no tuition fees in Aix- Marseille University, being a public educational institution. The Masters will also cover full participation of the successful candidate to the fieldschool underwater operationsorganisedexclusivelyper year for the MoMArch students, as well as full training costs for obtaining the professional diving certificates in France (in cooperation with the INPP - Institut National de Plongée Professionelle). For the Masters, there is a *numerus clausus* of 8 students per year, 50% of the positions are reserved for international students. The HFFscholarshipopportunity will be offered every year until two excellent candidates are approved by the scientific committee held jointly with the Honor Frost Foundation. For the 2017-2019 Master course, the closing date for applications is the **15th of April 2017**. For further details of the Master programme (including eligibility and application information), please visit: https://momarch.hypotheses.org/

http://honorfrostfoundation.org/
http://ccj.cnrs.fr/spip.php?rubrique324

UNDERSTANDING ZOOARCHAEOLOGY II AND EXPLORING PALAEOENVIRONMENTS SHORT COURSES, UNIVERSITY OF SHEFFIELD

Dear colleagues,

The Zooarchaeology Team of the University of Sheffield is glad to announce that the **Understanding Zooarchaeology II** and **Exploring Palaeoenvironments** short courses are now open for booking.

Understanding Zooarchaeology II short course (11th-13th September 2017) will be ideal for those who already have a basic knowledge of Zooarchaeology and want to learn more. The aim of this advanced course is to give participants direct experience in analysing and recording faunal assemblages from archaeological sites. It will also provide participants with experience in practising with the most specialized issues of the discipline such as identification of sheep from goat and deer from cattle. Sessions include brief theoretical lessons, followed by dedicated practical activity. At the end of the three days, participants are encouraged to write a zooarchaeological report based on the material analysed during the course, which will receive a feedback from an expert zooarchaeologist.

The Exploring Palaeoenvironments short course (14th-15th September 2017) runs for the second time this year and is the result of the joint efforts of zooarchaeologists, archaeobotanists and geoarchaeologists from our department. The course will introduce participants to the different approaches and types of analyses employed by specialists of these related sub-disciplines. Each session will include theoretical lectures and case-studies; in addition, practical classes will provide direct experience of handling, analysing and interpreting the material evidence that archaeologists usually deal with. The Exploring Palaeoenvironments short course is directed to students, professionals and enthusiasts alike and does not require any previous knowledge of the disciplines covered.

Prices are as follows:
Understanding Zooarchaeology II:
£200 (standard rate)/£140 (student/unwaged rate)
Exploring Palaeoenvironments:
£180 (standard rate)/£120 (student/unwaged rate)
Understanding Zooarchaeology II + Exploring Palaeoenvironments:
£350 (standard rate)/£240 (student/unwaged rate)

You can contact us at: zooarch-shortcourse@sheffield.ac.uk

For further information please see:
https://www.shef.ac.uk/archaeology/research/zooarchaeology-lab/short-course
Follow us on Facebook at:
https://www.facebook.com/Sheffield-Zooarchaeology-Short-Course-100619023380021/?ref=hl

and on Twitter at:

https://twitter.com/ZooarchLabSheff

Although this course is not aimed at professional and/or experienced zooarchaeologists we would be grateful if you could spread the news, as you may know of people who may be interested. Apologies for cross-posting.

With best wishes,

The Sheffield Zooarchaeology Team

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http://scholar.google.co.uk/citations?user=etZUCgQAAAAJ

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ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

PALEOANTHROPOLOGY OF THE BALKANS AND ANATOLIA - HUMAN EVOLUTION AND ITS CONTEXT

Edited by Katerina Harvati and Mirjana Roksandic, Springer

Chapter 8
The Acheulian Site at Rodafnidia, Lisvori, on Lesbos, Greece: 2010–2012
Nena Galanidou, Constantin Athanassas , James Cole, Giorgos Iliopoulos, Athanasios Katerinopoulos, Andreas Magganas, and John McNabb

Abstract Rodafnidia is an Acheulian site on Lesbos Island, in the north-east Aegean Sea. This chapter presents the model that guided Paleolithic investigations on the island, the history of research, and the results of the 2012 expedition of systematic work in the field, which consisted of surface survey and excavation. The typology and technology of lithic artifacts from the surface and the uppermost Unit 1, as well as the first cluster of luminescence dates, firmly place the early component of the site in the Middle Pleistocene. The Acheulian industry derives from fluvio-lacustrine deposits at a locale with abundant fresh-water and lithic resources. Situated in the north-east Mediterranean Basin, an area where research on early hominin prehistory is intensifying, Rodafnidia holds the potential to contribute to Eurasian Lower Paleolithic archaeology and fill the gap in our understanding of early hominin presence and activity where Asia meets Europe.

Keywords Lower Paleolithic • Large cutting tools • Middle Pleistocene • West Asia • pIRIR dating

ΕΙΔΗΣΕΙΣ - NEWS RELEASE

ARCHAEOLOGICAL EXCAVATIONS CAST NEW LIGHT ON ABU DHABI'S EARLIEST INHABITANTS, BY WAM

Remarkable discoveries by archaeologists from Abu Dhabi Tourism and Culture Authority, TCA Abu Dhabi, at ancient sites on the island of Marawah and in Baynunah, have revealed new information on Abu Dhabi's earliest inhabitants, evidencing a rich history stretching back over 7,000 years.

Artefacts excavated from a village on the island of Marawah and in Baynunah indicate that during this time, a sophisticated and highly skilled population were able to trade and thrive in challenging conditions and adapt to the changing environment around them.

Commenting on the latest discoveries, Mohamed Khalifa Al Mubarak, Chairman of TCA Abu Dhabi, said, "These important discoveries signify Abu Dhabi's advanced construction methods from the Neolithic era and the influential role it had in early long-distance maritime trade. The expertise of our team of archaeologists allows us to build a narrative of the emirate's development and history, piecing together an intriguing and intricate story of the earliest known inhabitants of the Emirate of Abu Dhabi. We are encouraged to assign more excavation works, and our aim is to conduct extensive studies to further understand our ancestors and our land, and our mission is to share these findings with the world."

On the island of Marawah, just off the coast of Abu Dhabi, excavations have revealed one of the earliest stone-built villages in the Arabian Gulf.

The new excavations, completed in October last year, focused on one of seven mounds in the village, and revealed a structure with three joining stone-built rooms.

TCA Abu Dhabi Coastal Heritage archaeologist Abdulla Khalfan Al Kaabi said, "Radiocarbon dating of the deposits show that the village dates back more than 7,500 years to the Neolithic period. This style of architecture is unique for this period and has never been found before in the region."

"These sites can reveal so much information about the very early history of our land and I am proud to be working on both of them," added Al Kaabi.

"These discoveries and findings will provide crucial information in the future for research and documentation, allowing everyone access, from scholars and students to the general public, to a precious part of our history, and gives us opportunities to publish all this information in all mediums available for future generations. These valuable findings can only be obtained through the careful study and excavation work of such archaeological sites," he added.

Hundreds of artefacts have also allowed TCA Abu Dhabi archaeologists to piece together what life was like for these villagers and inhabitants 7,500 years ago.

The ancient people herded sheep and goats, and used stone tools to hunt and butcher other animals, like gazelles.

The large amounts of fish, dugong, turtle and dolphin bones show how people had come to understand the sea and use its resources for food and sustenance.

The excavation also found very fine, small beads made from shell and a small shark's tooth, which had been very carefully drilled, which archaeologists believe were probably worn as adornments.

During previous excavations at the site, archaeologists and experts also found a complete and highly decorated ceramic jar, made in Iraq, which gives evidence to the fact that the inhabitants of Marawah also used the sea for trade.

This jar was transported more than a thousand kilometres and is early evidence for the beginnings of long-distance maritime trade in the Arabian Gulf.

Marawah inhabitants enjoyed a climate that had more rainfall than exists today. Around 6,000 years ago, however, the situation changed and the area became very arid.

Following the abandonment of the village, some of the rooms were used for burial purposes.

Two skeletons were found, each in a crouched position with the head facing towards the east. Ahmed Abdalla Elhag Elfaki, archaeologist at TCA Abu Dhabi, said, "This form of burial is typical of other known Late Stone Age burials, such as those known from Jebel Buhais in Sharjah."

Efforts to examine the skeletal remains by experts are underway to determine more information about their age and health.

The new excavations at Baynunah, about 130 kilometers south-west of Abu Dhabi, revealed a different side of ancient life in the Emirate.

The desert surface of this site is littered with white fragments of ancient wild camel bones. These are the remains of wild camels that were hunted and killed 6,500 years ago.

Research has shown that people lured the animals into the soft, wet ground at Baynunah, where the camels would lose their footing and eventually become trapped.

"Hunting these large wild animals must have been a serious challenge, so slowing them down gave the hunters their best opportunity to kill and harvest more camels," added Elfaki.

"The discovery of a flint arrowhead inside the rib cage of one of the wild camels shows the tools used for hunting the animals and how they were hunted."

Baynunah has provided the earliest evidence from anywhere in the Middle East for the mass killing of wild camels.

By hunting these animals, people would have also understood more about the wild camel's natural habits. This information was important for domesticating camels much later.

It is no coincidence, perhaps, that evidence from other scientific research is now pointing to southeastern Arabia as the location of initial camel domestication.

The meat from these camels was an important source of food for people at a time when other resources were becoming scarce.

A major hunt would have produced enough food for a community, and sharing this meat would have strengthened social bonds.

Other sites, such as Al Sufouh in Dubai, have revealed evidence for the continuation of this style of camel hunting into the Bronze Age.

Experts working at Baynunah are now conducting research that will allow them to discover more about the biology of wild camels, now that near-complete skeletons have been found on the site.

This is particularly significant since wild camels became extinct hundreds, if not thousands, of years ago and very little documentation and research is available about them today. Archaeologists at TCA Abu Dhabi are also planning to continue working at both sites in the future.

Please visit the site: http://www.emirates247.com/news/emirates/archaeological-excavations-cast-new-light-on-abu-dhabi-s-earliest-inhabitants-2017-02-01-1.647488#pt0-61504

NEW FINDS AT OLDEST ISLAND MYSTERY SANCTUARY ON GREECE'S KEROS CONFIRM ITS IMPORTANT ROLE IN ANTIQUITY

One of ancient Greece's most mysterious sites, the oldest island sanctuary in the world on the remote and uninhabited island of Keros, has revealed new, advanced levels of complexity after a decade of investigation by British archaeologist Sir Colin Renfrew.

The sanctuary dates back to about 3000 BC, in the Bronze Age, and Sir Renfrew describes it as "the world's earliest maritime sanctuary".

The latest finding is a staircase that connected the Kavos mount with Daskalio, a rocky islet just offshore, before the strip of land that connects the two spots sank in the water.The island is located between the Greek islands of Naxos and Santorini that also played an important role during the Bronze Age, and according to a Times article, the new findings are as old as the Pyramids.

Thousands of fragmented parts of cycladic figurines as well as marble basins and unusual pottery for drinking wine, all used as ritual offerings, were also located in this stony, scrub-covered hillside.

Archaelogists were most impressed discovering that no whole figurine has been found or parts that 'fit' together, meaning that the parts arrived to Kavos already fragmented. Furthermore, none of the over 500 figurine parts or of the 2,500 strange parts of marble basins have not found its other part in any cycladic object found elsewhere."

It appears that there was a kind of obligation to bring a piece of the broken figurine and deposit it on the sacred island of Keros, possibly by staying a few days in Dhaskalio during the completion of the ceremony," Professor Renfrew revealed to The Times back in 2011.In 2008, the remnants of a 16m-long stone sanctuary dated between 2,500 and 2,400 BC were unearthed while there are also indications that the sanctuary was abandoned around 2000 BC. Sir Renfrew described it as the largest known building of Early-Cycladic Period which has the most spectacular public architecture in Cyclades to be found nowhere else in the wider region of the Aegean Sea According to him, the site was the most important ritual center in the Cyclades in the middle of the Aegean ince the beginning of the 3rd millennium BC, undoubtedly 500 years earlier that any other ceremonial center in the prehistoric Aegean.

The style of the pottery indicates that the ritual offerings were mainly between 2750 and 2550 BC, with a gradual decrease in the next half century while the recently discovered staircase also indicates ritual activity. "The importance of the Keros sanctuary as the first important religious center in the Aegean Bronze Age is reinforced by new findings in the structure on Dhaskalio," the British Professor noted adding that "the main ritual offerings of broken marble figurines and vases and ceramic drinking vessels were on the mount Kavos on Keros, without being accompanied by impressive structures or a large building

complex...the design and monumental characteristics are now beginning to be understood."

Please visit the site: http://www.tornosnews.gr/en/greek-news/culture/22608-new-finds-at-oldest-island-mystery-sanctuary-on-greece%E2%80%99s-keros-confirm-its-important-role-in-antiquity.html

ARCHAEOLOGISTS GET SET TO DIG AT MASADA, AFTER 11-YEAR HIATUS

Tel Aviv University Team will excavate rebel dwellings, Herod's gardens in month-long expedition at UNESCO heritage site BY ILAN BEN ZION

For the first time in over a decade, archaeologists are commencing new excavations atop Masada, studying previously untouched areas of the legendary desert mountain fortress, including the residences of Jewish rebels who met their doom in 74 CE.

A Tel Aviv University team, headed by Roman-period archaeologist Guy Stiebel, will conduct a month-long excavation at the UNESCO World Heritage Site starting on February 5. It will be the university's first expedition at the site, and the first expedition overall there since 2006.

Masada is a rugged crag in the Judean Desert overlooking the Dead Sea. Herod, the first-century BCE king of Judea - perhaps best known for building Jerusalem's Temple Mount complex - constructed a fortress and palace on the mountain. The elaborate waterworks channeling seasonal rainfall allowed the royal redoubt to have a more plentiful supply than Jerusalem, according to ancient accounts.

During the Jewish Revolt against Rome a century later, from 66 to 70 CE, Jewish rebels entrenched themselves at Masada. Nearly four years after the fall of Jerusalem, a Roman army besieged the last holdouts. According to Josephus Flavius, the sole historical source for the battle, the Jewish rebels committed mass suicide before Roman troops stormed the battlements. Archaeologists have challenged the historicity of that account, however.

With the emergence of Zionism in the modern era, Masada transformed into a national icon of Jewish independence.

Archaeologists estimate that a substantial portion of the mountaintop's historical material has yet to be excavated, and the former Roman army encampments ringing the fortress peak remain largely unstudied as well.

After the first large-scale excavations in 1963-65 under former IDF chief of staff and archaeologist Yigal Yadin, archaeologists refrained from digging up the entire site for the sake of leaving some exploration for the generations to come.

The dry desert climate allowed the preservation of elegant frescoes and organic remains belonging to the Jewish rebels who holed up on the mountaintop.

"This is the next generation," Stiebel, the Tel Aviv University archaeologist, told The Times of Israel in the lead-up to the dig. He was reluctant, however, to discuss the dig in detail while the final preparations were being completed.

Stiebel's team said the plans for its first season at Masada will involve the excavation of new sections of the Jewish rebel dwellings, as well as a garden constructed by Herod.

"Our intention is to further explore a mysterious underground structure that was detected in the earliest aerial photographs of the site" in 1924, Stiebel said in a statement. "The building has remained hitherto unexplored."

Masada's impressive ruins are one of the most visited tourist sites in Israel. The UN's cultural body, UNESCO, registered Masada in its list of world heritage sites in 2001, citing its "majestic beauty" and its importance as a "symbol of the ancient kingdom of Israel, its violent destruction and the last stand of Jewish patriots in the face of the Roman army."

Please visit the site: http://www.timesofisrael.com/archaeologists-get-set-to-dig-at-masada-after-11-year-hiatus/

TO DYE FOR: SNAIL SHELL FOUND ON TEMPLE MOUNT COLORS RESEARCHERS' INTEREST

In sign there may have been dyeing facility on Temple Mount, shell is found of sea snail that provided blue dye for ancient ritual garments • Archaeologists also find threshold of stone gate at Beit Shearim, previously thought not to have been walled.
Yori Yalon, Daniel Siryoti, Dan Lavie, and Israel Hayom Staff

An ancient sea snail shell discovered on the Temple Mount in Jerusalem has created tremendous interest among researchers, who believe the find ties in with the particular shade of vibrant blue dye ("tchelet" in Hebrew) used in ancient times to color the fringes of religious garments.

The shell of the branded dye-murex (Hexaplex trunculus) snail was recently discovered as part of the Temple Mount Sifting Project underway in the Emek Tzurim National Park. The project is funded by the Ir David Foundation and directed by archaeologists from Bar-Ilan University.

Archaeologist Zachi Dvira noted that finding the shell of an ancient sea snail far inland on the Temple Mount raises questions, as such snails are generally excavated in coastal archaeological digs.

"These snails were used in the luxury dye industry of ancient times," Dvira said. "They were used to produce the colors purple and tchelet [blue]. Dye industry equipment and fragments of snail shells have been discovered at Phoenician sites along the Mediterranean coast. In Israel, these facilities are known mainly from Tel Dor."

Dvira said the snail's mucus secretions produced the unique shade of blue used to dye the ritual fringed garments, cloths for use in the Temple, and the clothing of the ancient priests, and the rabbinical sages had deemed the species kosher (snails in general are not) so the dye could be used. Modern research generally agrees that the branded dye-murex was the snail approved by the sages.

"We find conical shells and seashells during sifting. Some were apparently used for food, which was a favorite of Byzantine monks. Certain seashells were used as beads or pendants, and others were used to cover walls or floors in the time of the First Temple. In the case of the branded dye-murex, we still haven't conducted a thorough study of the distribution of this kind of find around the Mount, but it seems that dyeing facilities and shells of this type have been found at other sites in the center of Israel, too," Dvira said.

Following the discovery of the shell, archaeologists have begun planning research into whether there was a dyeing facility on the Temple Mount.

In other surprising archaeological news, the threshold of a large gate constructed out of hewn stone has been uncovered at a University of Haifa excavation at Beit Shearim, the

site of the Sanhedrin court in the second century C.E. and the burial place of Rabbi Yehuda Hanassi, compiler of the Mishneh.

Although the Hebrew name "Beit Shearim" means "House of Gates," the discovery came as a surprise, as small communities of this type in the Roman period -- especially small Jewish communities -- were generally not walled or gated. The find by the University of Haifa team marks the first time that any evidence of an actual wall or gate was found at the site.

"As far as we know, a community like this shouldn't have been walled, so it was almost obvious that the name 'Beit Shearim' had nothing to with the word 'gate.' Now, we have to rethink everything," said Dr. Adi Erlich, of the university's Zinman Institute of Archaeology, who is leading the dig.

Erlich said that if the community was in fact walled or gated, it might have been because it was home to wealthy and prominent leaders.

"It might be that the fact that it was an unusually wealthy city, where luxurious public facilities have been found, explains the unusual gate. Another possibility is that this was an important fort built on the site during the Roman period and we have just unearthed its gate," Erlich said.

Meanwhile, across the Mediterranean, another archaeological puzzle can be viewed by the public. The National Archaeological Museum in Athens has put a 7,000-year-old stone statue of a bird on display that researchers have dated to the tail end of the Stone Age, prior to the advent of metal tools that could have been used to sculpt the hard stone.

The bird, sculpted by an unknown hand using unknown tools, is part of the "invisible museum," a collection of some 200,000 ancient artifacts that are generally kept in storage.

The bird statue is made of granite and stands 36 centimeters (14 inches) high. The archaeological and artistic enigma will be on display until March 26.

Please visit the site:
http://www.israelhayom.com/site/newsletter_article.php?id=40403

HISTORY OF EARTH'S MAGNETIC FIELD EXPOSED IN JUDEAN POTTERY

Don't worry, it's not the end of the world yet, an international team of researchers says our geomagnetic field has been fluctuating for thousands of years.

New evidence found in ancient Judean clay jars shows Earth's geomagnetic field has been fluctuating for thousands of years and that there is no reason to be worried about its current welfare, even though it is diminishing and some scientists suspect it is about to flip.

In a new study published in Proceedings of the National Academy of Sciences (PNAS), researchers from Tel Aviv University, Hebrew University of Jerusalem and University of California-San Diego cite data obtained from the analysis of 67 well-dated Judean jar handles.

These heat-impacted ceramic pots, which bear royal stamp impressions from the eighth to second centuries BCE, show evidence of changes in the strength of the geomagnetic field over the years.

"The period spanned by the jars allowed us to procure data on the Earth's magnetic field during that time — the Iron Age through the Hellenistic Period in Judea," said Erez Ben-Yosef of TAU's Institute of Archaeology, the study's lead investigator.

Scientists don't entirely understand the function of the geomagnetic field, but some suspect there's a correlation between magnetic pole flips, which leave the planet vulnerable to cosmic radiation, and mass extinctions.

"This new finding puts the recent decline in the field's strength into context. Apparently, this is not a unique phenomenon – the field has often weakened and recovered over the last millennia," said Ben-Yosef.

67 ancient, heat-impacted Judean ceramic storage jar handles. Photo courtesy67 ancient, heat-impacted Judean ceramic storage jar handles. Photo courtesy "The typology of the stamp impressions, which correspond to changes in the political entities ruling this area, provides excellent age estimates for the firing of these artifacts."

The field was shown to peak during the eighth century BCE, which Ben-Yosef said "corroborates previous observations of our group, first published in 2009, of an unusually strong field in the early Iron Age. We call it the 'Iron Age Spike,' and it is the strongest field recorded in the last 100,000 years."

Natural clay measurement

To accurately measure geomagnetic intensity, the researchers – Ben-Yosef, Oded Lipschits and Michael Millman of TAU, Ron Shaar of Hebrew University and Lisa Tauxe of UC-San Diego — conducted experiments at the Paleomagnetic Laboratory of

Scripps Institution of Oceanography at UC-San Diego, using laboratory-built paleomagnetic ovens and a superconducting magnetometer.

"Ceramics, baked clay, burned mud bricks, copper slag — almost anything that was heated and then cooled can become a recorder of the components of the magnetic field at the time of the event," said Ben-Yosef.

"Ceramics have tiny minerals – magnetic 'recorders' – that save information about the magnetic field of the time the clay was in the kiln. The behavior of the magnetic field in the past can be studied by examining archaeological artifacts or geological material that were heated then cooled, such as lava."

Advanced dating method for archaeological artifacts

The researchers say their new findings will benefit both the fields of archaeology and earth science.

They show, in their study, how changes in the geomagnetic field can be used as an advanced dating method complementary to radiocarbon dating.

"The improved Levantine archaeomagnetic record can be used to date pottery and other heat-impacted archaeological materials whose date is unknown," said Ben-Yosef.

A deeper understanding of "proxies like the magnetic field, which reaches more than 1,800 miles deep into the liquid part of the Earth's outer core," say the researchers, will give "a clearer picture of the planet and its inner structure."

The researchers are currently working on enhancing the archaeomagnetic database for the Levant, one of the most archaeologically rich regions on the planet, to better understand the geomagnetic field and establish a strong dating reference.

Please visit the site: http://www.israel21c.org/history-of-earths-magnetic-field-exposed-in-judean-pottery/

MODAL TRIGGER HIGH-TECH TOMB RAIDERS TO INVESTIGATE KING TUT'S TOMB

Researchers will continue their search for secret chambers in King Tutankhamun's tomb this year, harnessing sophisticated radar technology to find out if another burial is hidden at the famous site.

Experts from the Polytechnic University of Turin will use radar to investigate the Egyptian tomb and its surrounding area, Seeker reports.

Franco Porcelli, the project's director and a professor of physics at the Polytechnic University of Turin, told Seeker that the research could take weeks. "Three radar systems will be used and frequencies from 200 Mhz to 2GHz will be covered," he said.

The research is part of a broader study to perform geophysical mapping of the Valley of the Kings, where the tomb is located. In addition to ground-penetrating radar, the Polytechnic University of Turin team will harness electric resistance and magnetic induction data to scan depths of up to 32 feet.

The possibility that King Tut's tomb contains hidden chambers has been a contentious topic for archaeologists in recent years.

Modal Trigger
The tomb of King Tut is displayed in a glass case at the Valley of the Kings in Luxor, Egypt.AP
In 2015 British archaeologist Nicholas Reeves put forward the theory that Tutankhamun's tomb contains two hidden doorways. The "ghosts" of the hitherto unrecognized doorways could lead to an unexplored western storage chamber and Queen Nefertiti's final resting place behind the chamber's northern wall, he said.

Scans conducted in 2015 suggested the tomb contains two open spaces, although a radar scan organized by National Geographic last year failed to replicate the results.

Some archaeologists also believe the mummy of Nefertiti, fabled for her beauty, has already been found in a different tomb.

Famed Egyptologist Zahi Hawass has rejected the theory that undiscovered chambers lie behind the tomb and likely contain the tomb of Queen Nefertiti. Speaking at a conference last year Hawass also questioned the effectiveness of radar scanning. "In all my career … I have never come across any discovery in Egypt due to radar scans," he said, suggesting the technology would be better used to examine existing tombs that are known to contain sealed-off chambers.

Porcelli told Seeker that the latest probe will reveal whether secret chambers are present in King Tut's tomb. "This will be the final investigation," he said. "We will provide an answer which is 99 percent definitive."

The Polytechnic University of Turin team plans to conduct the first preliminary survey of the tomb by the end of February.

Please visit the site: http://nypost.com/2017/02/14/high-tech-tomb-raiders-to-investigate-king-tuts-tomb/

EXCAVATIONS IN TURKEY'S SOUTHWEST REVEAL ANATOLIAN FOOD CULTURE

Roman-era cooks used double baskets and pressure steam cookers to prepare their food, according to findings from the ancient city of Tlos in southwestern Turkey, an academic leading the excavations has said.

“Starting from the Roman era, we saw that double basket and pressure steam cookers were used to cook dishes. These cookers, called kerotakis, were first used in the first and second centuries,”Akdeniz University Archaeology Department academic and Tlos excavation head Professor Taner Korkut said, adding that their work had revealed ceramic saucepans, pans, plates, glasses, pitchers and serving dishes.

Korkut said guests were served dishes on different plates during the Hellenistic age and that the plates were more luxurious than those used in daily life.

The professor, who specializes in research on eating habits since ancient times, said the gastronomical culture of Anatolia dates back 12,000 years ago.

He said they initiated the Tlos excavations 10 years ago and learned that cereal-like barley and wheat were used 10,500 years ago in Anatolia, as were a variety of plant species that are also currently in use.

Korkut said they had observed that many people, particularly residents of mountainous places in the western province of Muğla’s Seydikemer district, still maintained the traditions in their eating habits.

He said they had found 130 species of edible plants during interviews with people living in 61 neighborhoods.
Korkut said settlement layers that had been uncovered in the mound in front of Seydikemer’s Girmeler cave was very important, adding that there were many cookers in the mound’s lowest layer, which dates back to the early Neolithic Age 10,500 years ago.

He said the remains of food in the cookers revealed that people mostly ate animals like rabbit, chevrotain, deer and wild boar. “But in later times, they started choosing agricultural products.”

Varied diet in ancient times

Korkut said foods like phyllo dough, onion, garlic and cheese were generally eaten in the ancient ages.

“Mostly cereal-based foods and plants were eaten. Maza, which is a kind of phyllo dough made up of barley meal, was always on the table. Also, einkorn flour was used to make phyllo bread in the Roman era and it was called puls. They ate onion, garlic and cheese along with puls. A bread type that was called ortos was first made with barley and then with wheat. It is known that vegetables like cabbage, spinach, chard, hibiscus, asparagus, leeks, onions, beans, sweet peas, lentils and fava beans were used during this age. These

vegetables were eaten raw or boiled and mash-like foods were made with legumes. Olive oil was used in almost all Mediterranean dishes. It still continues as a characteristic of the Mediterranean cuisine. The favorite fruits were apple, grape and fig. Grapes were used both in dishes and in wine. Fish dishes prepared with sauces as well as various meat dishes were also eaten," Korkut said.

The professor also said the findings about the eating habits of the era would be published in a book once the research is completed.

Please visit the site: http://www.hurriyetdailynews.com/excavations-in-turkeys-southwest-reveal-anatolian-food-culture-.aspx?pageID=238&nid=109377&NewsCatID=375

ARE ARCHAEOLOGISTS ABOUT TO FIND NEFERTITI'S TOMB? BY CANDIDA MOSS

A fresh attempt to discover more secrets in Egypt's Valley of the Kings offers a tantalizing reward—the tomb of one of history's most beguiling female monarch.

The hunt has begun on for the "discovery of the century."

A team of Italian archeologists announced this week that they have started work on documenting the mysterious Valley of the Kings. Next month the team plans to enter the tomb of the boy-king Tutankhamun and scan the tomb for secret chambers. Their ultimate goal is to find the legendary final resting place of Queen Nefertiti, the Egyptian Queen who helped lead a religious revolution 3,300 years ago.

Franco Porcelli, the director of the Polytechnic University of Turin project, said, "It will be a rigorous scientific work and will last several days, if not weeks… Who knows what we might find as we scan the ground"

The Italian team plans to use radar capable of penetrating up to 32 feet of solid rock to search for the tomb. This is not the first time that scientists have tried to use state of the art equipment to locate Egypt's lost queen. In 2015, Nicholas Reeves, a British archeologist based at the University of Arizona, published a detailed study of Tutankhamen in which he argued that the king's burial chamber contained two hidden doorways that had been sealed and plastered over. Reeves used infrared thermography to identify changes in temperature that were suggestive of hidden chambers behind the walls. A subsequent scan conducted by the National Geographic Society, failed to reveal any hidden chambers.

But Nefertiti was surely buried somewhere and now Porcelli and his team are on a quest to map the entire Valley of the Kings and settle the question once and for all.

The discovery of any royal tomb is of tremendous historical significance, but Nefertiti's burial place would be especially remarkable. Nefertiti (ca. 1370-1330 BCE) was the Queen and Chief Consort of Tutankhamun's father, Akhenaten. Together with her husband she is believed to have initiated a set of religious reforms that, for a period, turned Egypt monotheistic. Not everyone viewed these reforms favorably and now we have the opportunity to learn more about this extraordinary historical moment. George Washington University archeologist Eric Cline, author of Three Stones Make a Wall: The Story of Archeology told The Daily Beast that this discovery would "surely shed a tremendous amount of additional light on the period, because she was so integral to the reign of her husband Akhenaten, the so-called heretic Pharaoh."

The tomb has the potential to settle important questions about the extent of Nefertiti's influence and the transmission of power in the 18th dynasty. Scholars currently believe that Nefertiti was not Tutankhamen's mother, but his stepmother. Some also think that for a brief period after Akhenaten's death she ruled Egypt alone. Dr. Caroline Schroeder, professor of religious studies at the University of the Pacific said that the discovery "might tell us more about whether she, a woman, ruled Egypt in her own right." If she

did, it would have made her one of the most powerful rulers of her era, to say nothing of one of the most powerful women in human history.

Even if additional rooms tell us absolutely nothing about Nefertiti and the succession of power, they could still be vitally important for our understanding of ancient Egypt. Cline pointed out that when Howard Carter opened the tomb of Tutankhamen in 1922 we did not have the technology to analyze organic matter or DNA that was discovered inside.

"I am personally hopeful," he added "that more texts, tablets, or other inscriptions will be found, which might give us more details and insight into the amazing years when the Great Powers of the ancient Near East were so interconnected, from the Hittites in what is now Turkey to the Assyrians and Babylonians in Mesopotamia and even across the Aegean to the Mycenaeans of mainland Greece and the Minoans of Crete." Her tomb could shed light not only on the history of ancient Egypt, but also on ancient political history in general.

Beyond its academic interest, as the Washington Post has noted, a significant archeological discovery has the potential to revivify Egypt's flagging tourist industry. Terrorist attacks in 2015 deeply impacted the number of visitors to the country, and this find, coupled with relaxed travel guidelines, could bring the crowds back to Egypt.

Given that this is the third attempt to use modern technology to find the tomb of the famous Queen you might wonder if archeologists are on a fool's errand. But bear in mind that it took Howard Carter and his sponsor Lord Carnarvon a number of years to find the tomb of Tutankhamen. Perhaps, as Cline says, when it comes to Nefertiti, "third time's a charm."

Please visit the site: http://www.thedailybeast.com/articles/2017/02/19/are-archaeologists-about-to-find-nefertiti-s-tomb.html

ARCHAEOLOGISTS TO BREAK GROUND AT BIBLICAL SITE WHERE ARK OF THE COVENANT STOOD, BY ILAN BEN ZION

Israeli and French researchers to excavate ancient site of Kiryat Ye'arim, outside Jerusalem, one of the few unstudied biblical tells

One of the few remaining unstudied major biblical sites, where according to the Bible the Ark of the Covenant was kept for two decades, will be excavated by archaeologists this summer for the first time.

Organizers hope the anticipated study of Kiryat Ye'arim (also transliterated as Kiriath Jearim) will shed light on the site's significance during the Iron Age, the period associated with the biblical account of King David.

Kiryat Ye'arim is mentioned over a dozen times in the Bible as a Judahite town situated near Jerusalem during the period of the judges and King David — the Iron Age, in archaeological terms.

The biblical town is associated with the hill where the Deir El-Azar monastery is situated, next to modern Arab town of Abu Ghosh, 12 kilometers (7 miles) west of Jerusalem's Old City. A modern Jewish town founded nearby is named after the ancient site.

The Shmunis Family Excavations at Kiriath Jearim's first season kicks off in August under the aegis of Tel Aviv University's Israel Finkelstein and Christophe Nicolle and Thomas Römer of College de France.

"The place is important for several reasons," Finkelstein told The Times of Israel. "It's a large, central site in the Jerusalem hills that hasn't been studied until now. It may be the only key site in Judah that hasn't undergone a systematic archaeological excavation."

The crown of the tel is largely bare, save for a 20th century monastery dedicated to Our Lady of the Ark of the Covenant, which sits atop the ruins of an earlier Byzantine edifice at the summit. The dig will focus on the area around the monastery. Much of the site, Finkelstein said, is believed to be relatively undisturbed.

One of the tantalizing aspects of Kiryat Ye'arim is the likelihood of there having been an ancient temple at the site, remains of which may lie buried. Such a discovery could help scholars better understand cultic practices in Judah during the Iron Age.

In several parts of the biblical narrative, Kiryat Ye'arim is alluded to as a site of religious worship. It's referred to variously as Kiryat Ba'al, Ba'alah and Ba'ale Judah in the Book of Joshua, suggesting the site was at some point affiliated with worship of Ba'al, storm god of the Canaanite pantheon.

According to the Book of Samuel, the Ark of the Covenant was stored at Kiryat Ye'arim for 20 years after it was returned to the Israelites by the Philistines, who had captured it in battle and to their dismay were smitten with disease. The text says the ark was stored "in the house of Avinadab in the hill" and tended by the priest Elazar before King David conveyed it to his capital in Jerusalem.

Whether or not the story of the ark being kept at Kiryat Ye'arim can be taken as historical fact, Finkelstein argues, the fact that it's mentioned in that context suggests the town was of great significance, "and it's reasonable to assume there was a temple there."

"To follow the story, the place where they took the Ark of the Covenant wasn't, of course, just some field or under a tree, they refer to an important cult place," he said.

The exact nature of that shrine, however, is unclear. The Book of Joshua was assembled centuries after the events described in the text. Does the book's association of Kiryat Ye'arim with a pagan deity indicate contemporary Ba'al worship, or allude to a bygone era?

The major questions concerning the manner of worship conducted at Kiryat Ye'arim are difficult to resolve through excavating the site, Finkelstein said. "You need a lot of luck for archaeology to provide answers to such complex questions," he said.

Nonetheless, Finkelstein said he hopes the dig will yield vital information about the history of the site's inhabitation, its rise and fall, from which scholars may be able to reflect on the larger picture of life in Iron Age Judah, including nearby Jerusalem.

Please visit the site: http://www.timesofisrael.com/archaeologists-to-break-ground-at-biblical-site-where-ark-of-the-covenant-stood/

FLINT SICKLES PROVE GRAIN CULTIVATION IN GALILEE 23,000 YEARS AGO, BY RUTH SCHUSTER

Remains of miraculously preserved camp by the Sea of Galilee included brush huts, grains and stone tools that show farming began far earlier than thought.

Agriculture is believed to have dawned around 12,000 years ago, in the Levant or southern Turkey. Now remains of a 23,000-year-old camp, including flint sickle blades and extraordinarily preserved botanical remains, found on the shore of the Sea of Galilee throws back the start of cereal cultivation by thousands of years.

Analysis of the sheen on the flint blades, and of the seeds proves that the Paleolithic inhabitants of the site called "Ohalo II" lived a chiefly hunting-gathering-fishing lifestyle, but were indeed growing wheat and barley.

Remains of food grains had been found previously at the site, as had a grinding stone. Now the tools to harvest the grains have been found.

So cereal growing clearly goes back at least 23,000 years, but Prof. Dani Nadel of the Zinman Institute of Archaeology at the University of Haifa declines to state that "agriculture" does.

Asked for the distinction, he explains, "Most people feel that agriculture is much more complex, that it is central to the economy, that everybody was geared into it. Here we have evidence for small-scale auxiliary cereal growing."

The Ohalo inhabitants clearly collected a lot from nature, both plants and animals, he elaborates. "These grains they grew would have augmented their hunter-gatherer diet, which consisted mainly of fish from the lake, animals they hunted or scavenged, birds,especially water fowl, and plants," says Nadel. "Cereal cultivation was just one of many strategies they had. Their eggs were not all in one basket. They would have tried all sorts of things."

Cutting grasses with stone sickles

The prehistoric camp was discovered by archaeologists when the water level in the Sea of Galilee fell to a low point in modern times, thanks to drought and over-exploitation of the lake and rivers feeding it by Israel and Syria.

Immersion in the lakewater and protection by silt preserved the oldest-known remains of brush huts and grass bedding known in the world (discovered in 1989), wooden tools (eight, of uncertain use, reported in 2005), food remains, and beads made of shells from the Mediterranean Sea.

The excavators also found a lot of stone tools, including sickle blades that were used to harvest grain. It is the carbon-14 dating of the charred grains and plant remains that led to the date of around 23,000 years.

The five sickle blades found at Ohalo II have a sheen created by their use to cut grasses, and from the hands holding them, says Dr. Iris Groman-Yaroslavski of the Zinman Institute of Archaeology at the University of Haifa. Use-wear analysis of the veneer indicates that while they were used, they were not used much, she explains: That supports the thesis that cultivated, harvested grain was a supplement to their main diet of hunted and gathered foods and fish.

We do know though that their cultivation of grain was not a one-off event.

While the morphology of the grains hardly changed, a high percentage of the dispersal units composing the grain ears were well beyond the standards of wild cereal stands.
There were also numerous species, and large numbers, of what would come to be called typical pest weeds in cereal fields, explain Bar-Ilan University botany archaeologists Ehud Weiss and Ainit Snir.

Oldest known brush huts in the world

In 1999, Nadel and the botanist Ella Werker published a paper on the discovery of brush huts at Ohalo II. Ultimately the remains of six such huts were found at the site, with hearths outside. (The proximity of brush huts and control of fire probably explains why the huts burned down, evidently more than once.)

Architectural perishable remains from the Upper Paleolithic (45,000 to 20,000 B.C.E.) are beyond rare, and are usually identified by concentrations of bones, tools and waste, and sometimes the remains of hearths. At Ohalo II, the archaeologists found the remains of the huts, the fireplaces, a shallow grave with the complete body of a disabled man, who had to have been cared for, and what seems to be a garbage dump.

The huts had burned down before the camp was submerged, but their charred remains remain. Reconstruction based on the identified botanical remains, ethnographic precedent and horse sense shows hut-building hasn't changed in 23,000 years.

They were not small - one was oval in shape and almost 15 feet long; some were kidney-shaped. The base of the hut floors were some 20 to 40 centimeters below ground level: analysis of the charred wall remains shows they were made of grasses and branches, including salt cedar, oak and willow.

The archaeologists found no evidence of post-holes in or near the huts. They seem to have been constructed by sticking long branches into holes in the ground, a technique still used by hut-builders today.

Lastly on the huts, perhaps brooms hadn't been invented yet. Their floors were littered with bones, mainly of fish and gazelle but of birds too, ground stone tools and fragments, and thousands of flint flakes, blades and well-shaped tools, indicating that knapping happened there.

Happily, among the litter on the floor were remains of seeds and fruits - and in one case a large basalt stone that had been used to grind wild grasses, based on starch-grain analysis and the seeds found around it. Among other things, the ancients around the Sea of Galilee were eating pre-domesticated barley, wheat, goat grass, and oats, among others.

So did cereal cultivation begin at least 23,000 years ago, not more recently as thought? Was the Galilee aswarm with early -farmers? We cannot know, but we can say that hunter-gatherers living on the shores of the Sea of Galilee occupied their camp on a year-round basis, and cultivated cereals.

Please visit the site: http://www.haaretz.com/archaeology/1.772111 [Go there for pix]