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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Αύγουστος 2009 -

Newsletter of the Hellenic Society of Archaeometry

- August 2009 -

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

1ST L.A.I.S. SYMPOSIUM, 9 (WEDNESDAY) – 12 (SATURDAY) SEPTEMBER 2009, DELPHI, GREECE

President's Invitation

Dear colleagues,

Nearly 50 years after the publication of the first Thermoluminescence ages, the field of Luminescence Dating has reached a level of maturity, in both research and applications in archaeology and geology.

L.A.I.S. is a new international initiative that mainly focuses on the use of luminescence dating for materials and questions of archaeological significance; in addition supports archaeological and archaeometrical communities of the World to further develop and expose luminescence issues.

L.A.I.S. Symposia aim at bringing together experts in the fields of luminescence, archaeology and archaeological materials from all around the world. In an exchange of knowledge, the techniques and tools available in luminescence dating and luminescence applications will be introduced to the archaeologists and archaeological problems will be presented for the scientific community.

L.A.I.S. Symposia initiates a series of conferences planned to take place every two to three years; however, the next two symposia are planned for the consecutive years 2011 and 2013 while an initial planning on the next hosting countries has been made.

The 1st L.A.I.S. Symposium will take place in Greece and symbolically be hosted at the European Cultural Centre of Delphi (www.eccd.gr), Greece in September 9-12, 2009.

The papers and posters presented at these conferences will be published in a special edition of a peer-reviewed international journal related with luminescence.

Ioannis Liritzis Ph.D (Edin.)

Professor of Archaeometry
University of the Aegean
President of the International Standing Committee

International Standing Committee

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Please visit the site: <http://kalamata.uop.gr/~lais2009/>

CLIMATE AND ANCIENT SOCIETIES, CAUSES AND HUMAN RESPONSES, THE STINE ROSSEL MEMORIAL CONFERENCE, 21- 23 OCTOBER 2009, COPENHAGEN

We are pleased to announce that the Conference about Climate and Ancient Societies will be held between 21- 23 October 2009 in Copenhagen, organised by the Carsten Niebuhr Section of the Institute for Cross-Cultural and Regional Studies (ToRS).

Climate and Ancient Societies
Causes and human responses
The Stine Rossel Memorial Conference

Climate, and human responses to it, plays an integral part in the formation of society. Thus when climate change occurs, the result of either natural or human causes, societies should react and adapt – but do they? If so, what is the nature of that change, and are the responses positive or negative for the long-term survival of societies and their peoples? Archaeology, steeped in interdisciplinary studies and dealing with a longue durée view of society, offers detailed and verifiable insights into climate changes in the past: causes, responses and consequences. This conference, held under the umbrella of the University of Copenhagen's Climate and Sustainability initiative (<http://climate.ku.dk/>), is held in memory of Stine Rossel, archaeozoologist and member of the Department of Cross Cultural & Regional Studies, who had a keen research interest in climate and past societies.

The four main themes of the conference will be:

1. Holocene Climate Reconstruction
2. Responses of Complex Societies to Climatic Variation
3. Archaeological Evidence for Pollution and its Ecological Implications
4. Stable Isotope Analysis in the Middle East

Keynote speakers are: Richard Meadow, Nanna Noe-Nygaard, Neil Roberts, and Jason Ur.

Invited speakers are: Abdulla Al-Shorman, Mira Bar-Matthews, Fiona Marshall, and Harvey Weiss.

For abstracts of these and ca. 30 other speakers and for further information please visit:
www.climate.ku.dk/CAS

Organising committee:

Pernille Banggaard Jensen, Mette Marie Hald, Susanne Kerner, Marie Lind-Bjerregaard, Alan Walmsley (University of Copenhagen), Richard Meadow, Nanna Noe-Nygaard, Neil Roberts, and Jason Ur (keynote speakers).

Susanne Kerner

Email: kerner@hum.ku.dk

SNEAP 2009, HOSTED BY THE AMS
LABORATORY, DEPARTMENT OF
PHYSICS, UNIVERSITY OF ARIZONA,
OCTOBER 4-9, 2009, MARRIOTT
UNIVERSITY PARK, TUCSON, AZ

Registration is now open for the 2009 Symposium of the Northeastern Accelerator Personnel (SNEAP 2009) conference to be held October 4-9, 2009 in Tucson, Arizona. [Click here](#) for the mailable/faxable registration form.

It is important to note that registration is going to be an all in one registration package that cannot be itemized out. Registration will include the Opening Reception, the Mirror laboratory tour, two excursions and all meals except for Wednesday's dinner. Registration is \$675 per person and Guests may attend for \$500 per person.

Hotel Information

Marriott University Park

880 E. Second Street

Tucson, AZ 85719 USA

Phone: +1 520-792-4100

Fax: + 1 520-882-4100

On-site parking: \$11 USD daily

Valet parking: \$15 USD daily

Transportation Information

Arizona Stagecoach offers shuttle service from the Tucson International Airport to the Marriott University Park Hotel. [Click here](#) for full details.

SNEAP Overview

SNEAP is a community of personnel involved with electrostatic particle accelerators and their use. Founded in 1968, the organization gathers annually to discuss and exchange information to the benefit of all those who attend.

The topics covered include ion sources, electrostatic and rf accelerators, telemetry and control systems, cryogenic systems, safety issues and many other topics relevant to the operation of small to medium sized electrostatic accelerator laboratories. The meeting format includes submitted papers, laboratory reports, contributed papers and open discussions. Space for vendors is made available to permit attendees to speak directly with manufacturers and their representatives and to inspect many new devices and products.

Attendees include representatives from Universities, National Laboratories, and Industrial Research Laboratories from the U.S. and many other countries including Argentina, Australia, Canada, China, France, Germany, India, Italy, Japan, The Netherlands, and others.

Schedule

The tentative schedule will be updated soon, please check back for more information.

Conference Excursions

Old Tucson

Voted "Best Western Movie Set" by True West magazine, and listed among five one-of-a-kind Tucson sites by USA Today.

Just fifteen minutes from Tucson at the base of the Tucson Mountains lays a preserved slice of Americana, Old Tucson Studios. Passing through the gates of an old frontier town, visitors from around the globe are transported back to a time when fearless men with six shooters ruled the Old West. Saunter down the streets of Hollywood's most famous movies; walk in the footsteps of movie legends like John Wayne, Clint Eastwood and hundreds more.

In addition to its historic role as a film location, Old Tucson Studios is Southern Arizona's premier outdoor entertainment venue with a full array of live shows, thrilling stunts, Old West dramas, saloon musicals, and trail rides.

Arizona-Sonora Desert Museum

The Arizona-Sonora Desert Museum is a world-renowned zoo, natural history museum and botanical garden, all in one place! Exhibits re-create the natural landscape of the Sonoran Desert Region so realistically you find yourself eye-to-eye with mountain lions, prairie dogs, Gila monsters, and more. Within the Museum grounds, you will see more than 300 animal species and 1,200 kinds of plants. There are almost 2 miles of paths traversing 21 acres of beautiful desert.

Tourist and Visitor Information

For information on attractions, events, dining, and other Tucson information, please visit the Tucson Convention and Visitors Bureau at www.visittucson.org.

Questions?

Please contact Jena' Pinson at M.Y. Events, Inc. with any questions or concerns.

Phone: + 1 480-557-0263

Email: JPinson@MYEvents.biz

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

ASSISTANT SCIENTIST POSITION
AVAILABLE AT GETTY
CONSERVATION INSTITUTE

The Getty Conservation Institute (GCI), located at the Getty Center in Los Angeles, California and the Getty Villa in Malibu, is one of the operating programs of the J. Paul Getty Trust and works internationally to advance conservation practice in the visual arts. GCI activities include scientific research, education and training, model field projects, and the dissemination of the results of both its own work and the work of others in the field.

The GCI Science department is seeking an **Assistant Scientist** to work within the Collections Research Laboratory (CRL), located at the Getty Center. The mission of the CRL is to conduct scientific research in collaboration with conservators and curators to further the understanding and preservation of the collection of the J. Paul Getty Museum and other institutions with which we collaborate; to disseminate our findings through professional publications and conferences; and to contribute to the advancement of the field of conservation through the organization of seminars, symposia and workshops.

The Assistant Scientist will be expected to conduct scientific analyses and research on works of art using the wide range of chemical and instrumental techniques available at the GCI. He/She will assist in the preparation of reports for publications, may present results at conferences and symposia and may assist with the development and management of research project components.

The GCI Science department is seeking an individual who has experience with the examination of museum objects and who complements and enhances the existing expertise of the CRL. All candidates should have excellent interpersonal skills, the ability to work effectively in small teams, and be versatile and creative problem solvers. An advanced degree in chemistry or other physical science is preferred and a minimum of 2 years experience in conservation science is required. Excellent written and oral communication skills are required.

For further information about the CRL or the position, please contact Karen Trentelman, Ph.D., Senior Scientist, Collections Research Laboratory, 310-440-6262, ktrentelman@getty.edu. Salary will be commensurate with education and experience. An excellent benefits package will also be provided. EOE

To apply, please send curriculum vitae and cover letter to gcistaffing@getty.edu or fax to 1-310-440-6182 by July 16, 2009.



ΧΟΡΗΓΗΣΗ ΥΠΟΤΡΟΦΙΩΝ ΣΕ
ΑΛΛΟΔΑΠΟΥΣ ΦΟΙΤΗΤΕΣ ΑΠΟ ΤΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ ΤΟΥ ΣΙΔΝΕΪ ΓΙΑ
ΔΙΔΑΚΤΟΡΙΚΟ ΠΡΟΓΡΑΜΜΑ ΣΕ
ΔΙΑΦΟΡΟΥΣ ΕΠΙΣΤΗΜΟΝΙΚΟΥΣ ΤΟΜΕΙΣ,
ΑΥΣΤΡΑΛΙΑ, ΣΕΠΤΕΜΒΡΙΟΣ 2009

Το Πανεπιστήμιο του Σίδνεϋ της Αυστραλίας χορηγεί κάθε χρόνο είκοσι (20) υποτροφίες τριετούς διάρκειας σε αλλοδαπούς φοιτητές. Οι εν θέματι υποτροφίες αφορούν την εκπόνηση διδακτορικής διατριβής σε διάφορους επιστημονικούς τομείς και καλύπτουν το συνολικό κόστος των διδάκτρων για τρία έτη.

Για περισσότερες πληροφορίες και αιτήσεις συμμετοχής, οι ενδιαφερόμενοι μπορούν να ανατρέξουν στην ιστοσελίδα του Πανεπιστημίου του Σίδνεϋ :

http://www.usyd.edu.au/future_students/international_postgraduate_research/costs_scholarships/scholarships/index.shtml#world

ή να επικοινωνήσουν με τους υπευθύνους του προγράμματος :

1. Ms Danielle Penn
International Development Manager
dpenn@usyd.edu.au

2. Mr David Boyd
International Development Officer
david.boyd@usyd.edu.au

Οι υποψήφιοι θα πρέπει να υποβάλουν τον φάκελό τους απευθείας στο Πανεπιστήμιο του Σίδνεϋ, έως την **18^η Σεπτεμβρίου 2009**.

Τα υποβληθέντα έγγραφα **δεν** θα επιστραφούν.

ARCHAEOLOGICAL RESEARCH UNIT, **UNIVERSITY OF CYPRUS,** **RESEARCHER VACANCY**

The Archaeological Research Unit (ARU) of the University of Cyprus Institute is seeking to appoint an ambitious young researcher with strong scientific, technical skills to participate in a European program, funded by the FP7, entitled Science and Technology for Archaeology and Cultural Heritage of the Eastern Mediterranean (STACHEM).

The position has duration of 9 months, but may be extended according to needs and quality of the work done. The successful candidate must also have organizational skills as one of the main tasks of the position is to assist in the organization of an international conference which will take place in Cyprus in April, as well as, to contribute actively to the reporting of the project. At the same time they will be able to develop their own research activities in one of the following fields in order of priority: Archaeometallurgy, archaeological ceramics, archaeological Sciences in general.

A doctoral degree in a relevant field or equivalent research experience, and proficiency in spoken and written English are essential. Candidates close to completing their doctoral research will also be considered. The candidate should be able to take up the position by the **15th of September**.

The monthly gross salary for the position is in the range €2.000 – 2.714, depending on qualifications and experience. A 13th salary and a membership in the University of Cyprus medical plan is not provided. The applicants should send:

- Full CV
- Copies of degree certificates and transcripts
- A brief summary of previous research
- List of Publications
- Names and contact details of 2 potential academic referees

All the above have to be sent by email to Assoc. Prof. Vasiliki Kassianidou at v.kassianidou@ucy.ac.cy by the 10th of August 2009.

Informal enquiries to: Vasiliki Kassianidou, Assoc. Prof. Department of History and Archaeology, UCY (tel. +357 22674658 #11. email: v.kassianidou@ucy.ac.cy).

POSITION AT THE RANK OF ASSISTANT PROFESSOR OR LECTURER IN THE FIELD OF STUDY “UNDERWATER ARCHAEOLOGY”, UNIVERSITY OF CYPRUS

ANNOUNCEMENT OF ACADEMIC POSITIONS

The University of Cyprus announces one (1) academic position at the rank of Assistant Professor or Lecturer.

DEPARTMENT OF HISTORY AND ARCHAEOLOGY

One position at the rank of Assistant Professor or Lecturer in the following field of study:

«Underwater Archaeology»

For all academic ranks, an earned Doctorate from a recognized University is required.

Requirements for each academic rank depend on the candidate 's years of academic experience, the research record and scientific contributions, involvement in teaching and in the development of high quality undergraduate and graduate curricula. The minimum requirements for each academic rank can be found at the web page:

<http://www.ucy.ac.cy/goto/hure/el-GR/Odigoi.aspx>

The official languages of the University are Greek and/or Turkish.

Holding a citizenship of the Republic of Cyprus is not a requirement.

The annual gross salary for these positions (including the 13th salary) is:

Assistant Professor	(Scale A13-A14)	€55,719.95 - €75,148.19
Lecturer	(Scale A12-A13)	€47,056.23 - €68,916.77

Interested individuals must submit the following items by Monday 24th of August 2009:

- I A letter stating the academic rank or ranks for which the applicant is interested in, the field of study and the date when he/she may be able to assume duties in the event of selection.

- II A Curriculum Vitae (6 copies)

- III A brief summary of previous work and a statement of plans for future research (up to 1500 words – 6 copies).
- IV A list of publications (6 copies)
- V Copies of the three most representative publications (6 copies)
- VI Certified copies of degree certificates.

In addition, the applicants must ask three academic referees to send letters of recommendation directly to the University. The names and addresses of these referees must be submitted with the application. Additional confidential information may be sought. The letters of recommendation must reach the University by Monday 24th of August 2009.

The Curriculum Vitae and the statement of previous work and plans should be written in Greek and/or in Turkish and in one international language, preferably English.

Applications, other documents and reference letters submitted in the past **will not be considered and must be re-submitted.**

Incomplete applications will not be considered.

Applications, other documents and reference letters have to be delivered by hand to the Human Resource Service of the University of Cyprus at the Council/Senate Anastasios G Leventis Building until Monday 24th of August 2009 the latest or to be sent by post (stamped by the post office by the 24th of August 2009 the latest), will be considered valid provided they are received by the Human Resource Service, PO Box 20537, 1678 Nicosia by the 31st of August 2009 the latest). The sole responsibility will be upon the interested applicant.

For more information the Human Recourse Service (tel. 00357 22894155/4158) or the Department of History and Archaeology may be contacted.

22nd of May 2009

INTERNET SITES

WEBSITE OF THE ACROPOLIS RESTORATION SERVICE

The works on the Acropolis are carried out by the **YSMA** under the scholarly supervision of the Committee for Conservation of the Acropolis Monuments.

Visit the pages of our website by following the links in the menus at the top and the left of the page.

Please visit the site: <http://www.ysma.gr/En/>

OPEN ACCESS JOURNAL: ADORANTEN, **ISSN 0349-8808**

ADORANTEN, an international magazine mainly concerned with rock carvings - recent research, interpretations, the history of religion, descriptions of rock carving localities around the world and literary reviews - but it also contains articles on any prehistoric subject which can be related to the field of rock carvings.

The articles are in various languages, mainly English, German, Norwegian, Swedish and Danish.

Articles from Adoranten 2008 [Go there for earlier publications]
<http://www.ssfpa.se/uk/artiklar2008.html>

The Diversity of California Rock Art
Carolyn Toner

Rock Art of Valcomonica
Emmanuel Anati

UNESCO World Heritage List
Jean Clottes

Digging the Past
Alberto Marretta

Rock art in Northern Fennoscandia and Eurasia Reidun L. Andreassen

The World Heritage Rock Art in Alta

Please visit the site: <http://ancientworldonline.blogspot.com/2009/07/open-access-journal-adoranten.html>

MUSÉE DU LOUVRE LAUNCHES **ONLINE DATABASE IN ENGLISH, BY** **STAN PARCHIN**

Paris' Musée du Louvre announced today the launch of its first-ever English-language version of Atlas, its free-of-charge online collections database. Supported by €300,000 in grants raised by American Friends of the Louvre, it goes live tomorrow morning. [Go to <Musée du Louvre Launches Online Database in English>].

Some 22, 000 works of art, accompanied by high-resolution images and information about their specific locations within the museum, are now described in English on the Louvre's Web site. Since its debut in 2003, Atlas has served as an interactive catalogue for 26,000 of the museum's 35,000 works created by some 5,500 artists in a variety of media. The detailed entries of this important research tool's translated version represent 80% of Atlas' original database.

The Musée du Louvre's eight curatorial departments have a presence on Atlas: Near Eastern; Egyptian; Greek, Etruscan and Roman Antiquities; Islamic Art; Sculptures; Decorative Arts; Paintings; and Prints and Drawings.

Please visit the site: http://artmuseumjournal.com/academic_resources.aspx

AWOL - THE ANCIENT WORLD ONLINE

Open Access Digital Library: ArchNet <http://archnet.org/lobby/>

ArchNet

ArchNet is an exciting project being developed at the MIT School of Architecture and Planning in close cooperation with, and with the full support of The Aga Khan Trust for Culture, an agency of the Aga Khan Development Network. The Aga Khan Trust for Culture is a private, non-denominational, international development agency with programmes dedicated to the improvement of built environments in societies where Muslims have a significant presence.

The goal of ArchNet is to create a community of architects, planners, educators, and students. The community can help each other by sharing expertise, local experience, resources, and dialogue. Members are urged to take on a pro-active role in the community. Imagine the wealth of knowledge and history created in the various schools of architecture around the world. ArchNet hopes to tap that knowledge and provide a mechanism by which these valuable tools can be disseminated.

ArchNet will provide an extensive, high-quality, globally accessible, intellectual resource focused on architecture and planning issues and includes restoration, conservation, housing, landscape, and related concerns. It is to be achieved by providing on an accessible server, images, Geographic Information System and Computer-Aided Design databases, a searchable text library, bibliographical reference databases, online lectures, curricular materials, papers, essays, and reviews, discussion forums and statistical information. The structure will be designed to offer each user a personal workspace tailored to his or her individual needs. From this space, they will be able to contribute their own findings and research to the larger site. The website will aim to foster close ties between institutions and between users. Through the use of online forums, chat rooms, and debates, it is hoped that the site can encourage and promote discussions amongst participants. ArchNet will be accessible to anyone with an Internet connection. It will be a bottom-up system, in which information will eventually flow directly from the user to a continually expanding database which can be shared by all. The system will be designed to promote ready intercommunication and maintenance of an international scholarly community of ArchNet members.

ArchNet is envisaged as a borderless network of institutions contributing to, and learning from each other, which would have considerable influence in the way that architects and planners are educated and practice. New computer and telecommunication technologies have great potential for supporting communication and collaboration among architectural and planning students, faculty, scholars, and practitioners throughout the world. ArchNet will provide opportunities for realising that potential. Membership is free and your personal information will be kept confidential. Registration only takes a few moments and is necessary for those who would like the ability to be able to contribute to ArchNet.

Members can contribute by adding their individual image collections and files in their personal workspace; they can add events to the Digital Calander; post a topic or a

response in the Discussion Forum; create a Group Workspace with other members from around the globe; work with their institution to create an Institution Workspace to make student work and faculty research available to the larger community; and, add to the academic directory or link to web resources in the Reference Section of the Digital Library. To find out more how you can contribute please go to the Help Module.

All of ArchNet's resources are worthy of serious exploration, but note in particular the following digital publications

Alam al-Bina

The Center of Planning and Architectural Studies [CPAS] established in Cairo in 1980 is considered to be the first integrated center of its kind in the Arab world. The CPAS works along two parallel lines: the first is in the field of architecture and planning, with consultation services in Egypt and other Arab countries. The second is in the field of training, research and publication, as exemplified by Alam al-Bina (or Alam al-Bena'a), a monthly architectural magazine.

Alam al-Bina is accessible online for the first time on ArchNet, through the generous contribution of CPAS. The ArchNet Digital Library offers selected articles in .pdf format from volumes 198 through 216, published in 1998 and 1999.

ArchNet-IJAR

Archnet-IJAR International Journal of Architectural Research is an interdisciplinary, fully-refereed scholarly online journal of architecture, planning, and built environment studies. ArchNet-IJAR is edited by Ashraf Salama.

Two international boards (advisory and editorial) ensure the quality of scholarly papers and allow for a comprehensive academic review of contributions spanning a wide spectrum of issues, methods, theoretical approaches and architectural and development practices.

ArchNet-IJAR provides a comprehensive academic review of a wide spectrum of issues, methods, and theoretical approaches. It aims to bridge theory and practice in the fields of architectural/design research and urban planning/built environment studies, reporting on the latest research findings and innovative approaches for creating responsive environments. Articles are listed individually and can be sorted by author, title or year.

Ars Orientalis

Ars Orientalis is sponsored by the University of Michigan Department of the History of Art and the Freer Gallery of Art of the Smithsonian Institution. This journal is an annual volume of scholarly articles and book reviews on the art and archaeology of Asia, including the ancient Near East and the Islamic world. It fosters a broad range of themes and approaches, targeting scholars in diverse fields. Occasional thematic volumes are published.

Oleg Grabar, Constructing the Study of Islamic Art

"Constructing the Study of Islamic Art is a set of four volumes of studies by Oleg Grabar. Between them they bring together more than eighty articles, studies and essays, work spanning half a century.

Each volume takes a particular section of the topic, the four volumes being entitled: Early Islamic Art, 650-1100; Islamic Visual Culture, 1100-1800; Islamic Art and Beyond; and Jerusalem. Reflecting the many incidents of a long academic life, they illustrate one scholar's attempt at making order and sense of 1400 years of artistic growth.

They deal with architecture, painting, objects, iconography, theories of art, aesthetics and ornament, and they seek to integrate our knowledge of Islamic art with Islamic culture and history as well as with the global concerns of the History of Art. In addition to the articles selected, each volume contains an introduction which describes, often in highly personal ways, the context in which Grabar's scholarship developed and the people who directed and mentored his efforts." (Ashgate)

Mimar: Architecture in Development

Mimar: Architecture in Development was first published in 1981 and had a print run of 43 issues. At the time of Mimar's inception, it was the only international architecture magazine focusing on architecture in the developing world and related issues of concern. It aimed at exchanging ideas and images between countries which are developing new directions for their built environment. ArchNet is pleased to offer the complete set of Mimar: Architecture in Development, in the ArchNet Digital Library.

Muqarnas: An Annual on the Visual Culture of the Islamic World

The Aga Khan Program for Islamic Architecture at Harvard University and at the Massachusetts Institute of Technology sponsors scholarly works on the history of Islamic art and architecture. Its major publication is Muqarnas: An Annual on the Visual Culture of the Islamic World.

Muqarnas is a lively forum of discussion among scholars and students in the West and in the Islamic world. Subjects covered in its pages include the history of Islamic art and architecture up to the present, with attention devoted as well to aspects of Islamic culture, history, and learning. It is widely regarded as the foremost scholarly journal for historians of art and architecture who focus on the Islamic world.

Annual volumes of Muqarnas are periodically accompanied by special research supplements. To date, twenty volumes of have been published.

ArchNet is pleased to offer Muqarnas volumes one through sixteen in the ArchNet Digital Library, with special permission from E.J. Brill and Yale University Publications (volumes one and two). Clicking on the 'year' column heading below will sort articles by volume. Volumes one through twelve are entitled Muqarnas: An Annual on Islamic Art and Architecture.

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

**OXFORD JOURNAL OF
ARCHAEOLOGY, CURRENT ISSUE,
VOLUME 28 ISSUE 3 (AUGUST 2009)**

RADIOCARBON-DATED DESTRUCTION LAYERS: A SKELETON FOR IRON AGE CHRONOLOGY IN THE LEVANT (p 255-274) ISRAEL FINKELSTEIN, ELI PIASETZKY Published Online: Jul 14 2009 8:13AM

DOI: 10.1111/j.1468-0092.2009.00328.x

POST-COLLAPSE: THE RE-EMERGENCE OF POLITY IN IRON AGE BOĞAZKÖY, CENTRAL ANATOLIA (p 275-300) L. KEALHOFER, P. GRAVE, H. GENZ, B. MARSH Published Online: Jul 14 2009 8:13AM

DOI: 10.1111/j.1468-0092.2009.00329.x

Please visit the site:

<http://www3.interscience.wiley.com/journal/117987344/home?CRETRY=1&SRETRY=0> Go there for links to abstracts and for (on pay) downloads

FORCES OF TRANSFORMATION: THE END OF THE BRONZE AGE IN THE MEDITERRANEAN

Forces of Transformation: The End of the Bronze Age in the Mediterranean Proceedings of an international symposium held at St. John's College, University of Oxford, 25–6th March 2006 Themes from the Ancient Near East BANEA Publication Series, Vol. 1 Edited by Christoph Bachhuber and R. Gareth Roberts

<http://www.oxbowbooks.com/>

The volume brings a wide range of expertise to bear on a compelling and enduring problem in the archaeology and history of the Mediterranean and Western Asia. It presents new interpretive approaches to the transitional (or transformational) period crossing the Bronze to Iron Ages, and includes re-assessments of a range of well known archaeological, textual and iconographic evidence. Data and implications for climate change are also considered. This topic is too vast and complex for any one scholar or interpretive approach and requires a diverse, global, flexible and open minded strategy for its interpretation. The volume is broad enough to address many of the major concerns of this period and encapsulates the current position of research as it relates to the end of the Bronze Age in the Mediterranean.

Part 1: Considerations of climate

1 Holocene Climate Variability in the Eastern Mediterranean, and the End of the Bronze Age Eelco J. Rohling, Angela Hayes, Paul A. Mayewski and Michal Kucera

2 Changes in Vernacular Architecture and Climate at the End of the Aegean Bronze Age Jennifer Moody

Part 2: Exchange and interregional dynamics

3 Just What Collapsed? A network perspective on 'palatial' and 'private' trade at Ugarit
Bruce Routledge and Kevin McGeough

4 Continuity and Change: the divergent destinies of Late Bronze Age ports in Syria and Lebanon across the LBA/Iron Age transition Carol Bell

5 Cultural Identity and Social Interaction in Crete at the End of the Bronze Age (LM IIC) Katia Perna

6 Late Bronze Age Exchange Networks in the Western Mediterranean Andrea Vianello

7 Sicily at the End of the Bronze Age: 'catching the echo'
Davide Tanasi

Part 3: Iconography and perception

8 Identity, Choice, and the Year 8 Reliefs of Ramesses III at Medinet Habu R. Gareth Roberts

9 Warriors, Hunters and Ships in the Late Helladic III C Aegean: changes in the iconography of warfare?
Angelos Papadopoulos

Part 4: Built environment – cemeteries, citadels, and landscapes

10 Forces of Transformation in Death: the cemetery at Tel es-Sa'idiyeh, Jordan
John D. M. Green

11 The South-Eastern Aegean in the LH III C Period: what do the tombs tell us?
Mercourios Georgiadis

12 The Last Days of a Canaanite Kingdom: a view from Hazor Sharon Zuckerman

13 The Significance of Changes in Spatial Usage at Mycenae Elizabeth French

14 From DA-MO to '916;'919;'924;'927;'931: survival of a Mycenaean land allocation tradition in the Classical period?
Michael Franklin Lane

15 Landscapes of Power and Proto-Urban Developments toward Urbanization in Bronze Age and Early Iron Age Latium vetus Francesca Fulminante

16 The Iron Age Transition at Troy
Maureen Basedow

Part 5: Social implications for the production and consumption of pottery

17 End or Beginning? The Late Bronze Age to Iron Age transformation at Troia Carolyn Chabot Aslan

18 Handmade and Burnished Pottery in the Eastern Mediterranean at the End of the Bronze Age: towards an explanation for its diversity and geographical distribution
Bartłomiej Lis

19 The Change of Pottery's Social Meaning at the End of the Bronze Age: new evidence from Tiryns Philipp Stockhammer

20 A Note on the Material from the Late Bronze and Early Iron Age Cemeteries of Tel el-Farah South Sabine Laemmel

21 The Organization of Ceramic Production during the Transition from the Late Bronze to the Early Iron Ages: Tel Batash as a test case Nava Panitz-Cohen

Christoph Bachhuber

Email: christoph.bachhuber@arch.ox.ac.uk

TRADE, TRADITION, AND TRANSFORMATION IN THE EASTERN MEDITERRANEAN CA.1350–1175 BCE

The Ugarit-Verlag would like to announce the publication of Christopher Mountfort Monroe

Trade, Tradition, and Transformation in the Eastern Mediterranean ca.1350–1175 BCE.

AOAT 357

Münster 2009

ISBN 978-3-86835-015-9

xviii + 362 pp.

€ 74,-

"The aim is to clarify and problematize the socioeconomic roles of entrepreneurs (including merchants, traders, creditors, and financiers) in Late Bronze Age societies of the Eastern Mediterranean world. The region is bounded by kingdoms of the 14th to early 12th century BCE as represented in archives of clay tablets written in cuneiform and linear scripts. This encompasses an area stretching from the Aegean to Assyria and from Hatti to Egypt at a time of unprecedented sophistication in international relations. I focus on long-distance commerce in particular since it was, where trade is documented, the most lucrative, and arguably most influential socioeconomically, form of exchange. (...) By closely examining the practices and organization of entrepreneurs and their role in social and economic relationships, I empirically and theoretically orient the analysis toward exchange relations. In broadest terms this analysis reveals that professional traders constituted a highly dynamic, even destabilizing, force in society that was checked by more traditional institutions. Even as traditionalism balanced the entrepreneurial elements of society, trade activities brought about material and ideological changes that transformed culture and the lives of those living within it."

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For a more complete list of contents: <http://www.ugarit-verlag.de/aoat-357.htm>.

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EΙΔΗΣΕΙΣ - NEWS RELEASE

GRID MAKES A SPLASH IN UNDERWATER ARCHAEOLOGY

Up to 3.2 million square kilometers of the European continental shelf (about 40 per cent of Europe's land mass) was exposed as dry land during the periods of lower sea level that persisted throughout the Ice Ages. These now-submerged coastal regions probably played a key role in the survival and dispersal of Europe's earliest Stone Age inhabitants, the extinction of the last Neanderthals, their replacement by modern humans originating from Africa, and the initial dispersal of agriculture from the Near East. Submerged beneath the waves lies a large part of human history.

For our ancestors, the ancient coastlines were attractive places to settle and experiment with what became the foundations of civilization. As the major glaciers melted between sixteen and six thousand years ago, these sites - where people first began to make fishing equipment, build boats and create permanent settlements - became engulfed by the rising seas.

But rather than destroying these ancient landscapes, the rising sea level instead preserved many of them, and with them many details in the story of our past.

"We have a lot to learn by looking under-water. There are many sites to discover and examine, and preservation is in fact often better than on land," says Geoff Bailey, at the Department of Archaeology, University of York, UK. "There are large gaps in our general knowledge of early history."

Working in places as distant as the Southern Red Sea, the shores near Gibraltar and off of the coast of England, Bailey and his colleagues look for sites containing well-preserved ancient remains that are rare in inland sites: wood, woven fibers, beetles and other insects, plant material, pottery - sometimes with the remains of food inside - bones (human, mammoth and other) and organic material with DNA traces.

To aid in the collection and sharing of this information, Bailey and colleagues have started a new European research network, SPLASH, standing for "Submerged Prehistoric Landscapes and Archaeology of the continental Shelf." The project - whose first phase of work will last four years - was recently awarded funding by the European Union under the Cooperation in Science and Technology (COST) Action framework. "Over the past 20-30 years enormous amounts of submarine data have been gathered on the seas," says Nic Flemming, project member and research fellow at the National Oceanographic Center in Southampton, England. "No one has previously thought of systematically using this data for archaeology, but in fact we can use it to reconstruct past - once dry - landscapes. What we need is a system to tap in to these archives all over Europe."

First steps first

The project's first task, or 'work package,' will be to weave together large sets of seabed physical and geochemical data collected and archived by national governments, academic

and commercial researchers; and to construct a frontend through which researchers can access, browse and manipulate this data.

"I suddenly realized the potential importance of this work when, sitting in the National Oceanographic Center in Southampton with Nic," says Bob Jones, Director of the grid computing project Enabling Grids for E-science, "he pointed outside the window to the site of a prehistoric village lying under 12 meters of water."

Please visit the site: <http://www.isgtw.org/?pid=1001892>

COMPUTER REVEALS STONE TABLET 'HANDWRITING' IN A FLASH BY EWEN CALLAWAY

You might call it "CSI Ancient Greece". A computer technique can tell the difference between ancient inscriptions created by different artisans, a feat that ordinarily consumes years of human scholarship.

"This is the first time anything like this had been done on a computer," says Stephen Tracy, a Greek scholar and epigrapher at the Institute for Advanced Study in Princeton, New Jersey, who challenged a team of computer scientists to attribute 24 ancient Greek inscriptions to their rightful maker. "They knew nothing about inscriptions," he says.

Tracy has spent his career making such attributions, which help scholars attach firmer dates to the tens of thousands of ancient Athenian and Attican stone inscriptions that have been found.

"Most inscriptions we find are very fragmentary," Tracy says. "They are very difficult to date and, as is true of all archaeological artefacts, the better the date you can give to an artefact, the more it can tell you."

Just as English handwriting morphed from ornate script filled with curvy flourishes to the utilitarian penmanship practiced today, Greek marble inscriptions evolved over the course of the civilisation.

"Lettering of the fifth century BC and lettering of the first century BC don't look very much alike, and even a novice can tell them apart,"

Tracy says.

Eye for detail

But narrowing inscriptions to a window smaller than 100 years requires a better trained eye, not to mention far more time and effort; Tracy spent 15 years on his first book.

"One iota [a letter of the Greek alphabet] is pretty much like another, but I know one inscriber who makes an iota with a small little stroke at the top of the letter. I don't know another cutter who does. That becomes, for him, like a signature," says Tracy, who relies principally on the shape of individual letters to attribute authorship.

However, these signatures aren't always apparent even after painstaking analysis, and attributions can vary among scholars, says Michail Panagopoulos, a computer scientist at the National Technical University of Athens, who led the project along with colleague Constantin Papaodysseus.

"I could show you two 'A's that look exactly the same, and I can tell you they are from different writers," Panagopoulos says.

Average letter

Panagopoulos' team determined what different cutters meant each letter to look like by overlaying digital scans of the same letter in each individual inscription. They call this average a letter's "platonian realisation".

After performing this calculation for six Greek letters selected for their distinctness - Α, Ρ, Μ, Ν, Ο and Σ - across all 24 inscriptions, Panagopoulos' team compared all the scripts that Tracy provided.

The researchers correctly attributed the inscriptions to six different cutters, who worked between 334 BC and 134 BC - a 100-per-cent success rate. "I was both surprised and encouraged," Tracy says of their success.

"This is a very difficult problem," agrees Lambert Schomaker, a researcher at University of Groningen, Netherlands, who has developed computational methods to identify the handwriting of mediaeval monks, which is much easier to link to a writer compared with chisel marks on stone.

Database plan

Although Panagopoulos' team correctly attributed all the inscriptions to their rightful chiseller, Schomaker worries that shadows could distort the digital photographs used in the analysis.

Three-dimensional lasers scans of the inscriptions may offer more precision, he says.

Panagopoulos says his team is looking to use 3D images in the future.

The Greek computer scientists would also like to build a comprehensive database of digital inscriptions and attributions, so any newly discovered or analysed inscription could be quickly attributed and dated.

Please visit the site: <http://www.newscientist.com/article/dn17405-computer-reveals-stone-tablet-handwriting-in-a-flash.html>

RACE TO PRESERVE THE WORLD'S OLDEST SUBMERGED TOWN: PAVLOPETRI, GREECE

The oldest submerged town in the world is about to give up its secrets — with the help of equipment that could revolutionise underwater archaeology.

The ancient town of Pavlopetri lies in three to four metres of water just off the coast of southern Laconia in Greece. The ruins date from at least 2800 BC through to intact buildings, courtyards, streets, chamber tombs and some thirty-seven cist graves which are thought to belong to the Mycenaean period (c.1680-1180 BC). This Bronze Age phase of Greece provides the historical setting for much Ancient Greek literature and myth, including Homer's Age of Heroes.

Underwater archaeologist Dr Jon Henderson, from The University of Nottingham, will be the first archaeologist to have official access to the site in 40 years. Despite its potential international importance no work has been carried out at the site since it was first mapped in 1968 and Dr Henderson has had to get special permission from the Greek government to examine the submerged town.

Although Mycenaean power was largely based on their control of the sea, little is known about the workings of the harbour towns of the period as archaeology to date has focused on the better known inland palaces and citadels. Pavlopetri was presumably once a thriving harbour town where the inhabitants conducted local and long distance trade throughout the Mediterranean — its sandy and well-protected bay would have been ideal for beaching Bronze Age ships. As such the site offers major new insights into the workings of Mycenaean society.

The aim of Dr Henderson's project is to discover the history and development of Pavlopetri, find out when it was occupied, what it was used for and through a systematic study of the geomorphology of the area establish why the town disappeared under the sea.

Dr Henderson, from the Underwater Archaeology Research Centre (UARC) in the Department of Archaeology, said: "This site is of rare international archaeological importance. It is imperative that the fragile remains of this town are accurately recorded and preserved before they are lost forever. A fundamental aim of the project is to raise awareness of the importance of the site and ensure that it is ethically managed and presented to the public in a way which is sustainable and of benefit to both the development of tourism and the local community."

The submerged buildings, courtyards, streets, tombs and graves, lie just off a sandy stretch of beach close to an area popular with holiday makers and campers. Under threat from tourism and industry the remains are being damaged by boats dragging their anchors, inquisitive snorkelers on the hunt for souvenirs and the growth of marine organisms which are also taking their toll degrading the fragile 3,500 year old walls.

The survey, in collaboration with Mr Elias Spondylis of the Ephorate of Underwater Antiquities of the Hellenic Ministry of Culture, will be carried out using equipment originally developed for the military and offshore oilfield market but looks set to transform underwater archaeological survey and recording.

Dr Henderson and his team will carry out a detailed millimeter accurate digital underwater survey of the site using an acoustic scanner developed by a major North American offshore engineering company. The equipment can produce photo-realistic, three dimensional digital surveys of seabed features and underwater structures to sub-millimetre accuracy in a matter of minutes.

Dr Henderson said: “The ability to survey submerged structures, from shipwrecks to sunken cities, quickly, accurately and more importantly, cost effectively, is a major obstacle to the future development of underwater archaeology. I believe we now have a technique which effectively solves this problem.”

Joining the team will be Dr Nicholas Flemming who discovered the site in 1967. The following year he led a team from the University of Cambridge who surveyed the area with hand tapes. The archaeological material — pottery, figurines, obsidian and small finds — they collected belong to the Early Helladic, Middle Helladic and Late Helladic period (c. 2800–1180 BC). A systematic assessment of the finds recovered at the time is currently being undertaken by Dr Chrysanthi Gallou at The University of Nottingham.

The project has received funding from the Institute of Aegean Prehistory (INSTAP), The University of Nottingham and the British School of Archaeology at Athens but it is still £10,000 short of the amount needed to carry out the main archaeological survey.

Four annual fieldwork seasons are planned. This May and June the team will carry out a full underwater survey. Between 2010 and 2012 there will be three seasons of underwater excavations. After a study season in 2013 the findings of Dr Henderson’s research will be published in 2014.

Please visit the site:

<http://www.sciencedaily.com/releases/2009/05/090512093635.htm> [Go there for pict]

UN NUCLEAR AGENCY HELPS UNLOCK SECRETS BURIED WITH EGYPTIAN MUMMIES

The United Nations nuclear agency is using its expertise to help archaeologists unearth millennia-old secrets, from the supposed murder of King Tutankhamun to the mysterious death of Great Pharaoh Ramesses II, from Egyptian mummies.

Paleoradiology is a type of science using nuclear technologies – including x-rays and neutron activation analysis – to study artifacts, skeletons, mummies and fossils.

Rethy Chhem, Director of the Division of Human Health at the UN International Atomic Energy Agency (IAEA), is an expert in that field and said that science allows radiologists to uncover details about mummies, such as their sex, age of death and illnesses.

X-rays found that Pharaoh Ramesses II did not, contrary to popular belief, have arthritis of the spine, which Mr. Chhem said is in line with his depiction as a great warrior.

The IAEA is helping countries apply nuclear technologies to archaeological study and cultural preservation.

The technologies can also be applied to monitoring pesticides in milk and finding answers to a series of sudden deaths of males in north-eastern Thailand, the IAEA said in a press release.

Please visit the site:

<http://www.un.org/apps/news/story.asp?NewsID=31376&Cr=iaea&Cr1=>

JEWELRY OF THE PARION PRINCESS **UNEARTHED**

ÇANAKKALE - Archaeologists in the Turkish Aegean town of Çanakkale are celebrating the new discovery of a 2,200-year-old sarcophagus in the ancient city of Parion, one of the most important centers of the Hellenistic era.

Golden earrings, rings and crown pieces have been found in the sarcophagus, which is believed to have belonged to a princess. An archeological team headed by Prof. Cevat Başaran unearthed the sarcophagus three days ago during excavations conducted in the village of Kemer near Biga, northeast of Çanakkale.

"We have discovered an important finding at the necropolis, which is the cemetery of the ancient city," Başaran said. "This grave is most likely 2,200 years old. The golden jewelry shows this is the grave of a rich woman. We may call her the 'Princess of Parion.'"

Başaran pointed out that the sarcophagus contained a golden crown adorned with many gems, two golden earrings bearing the symbol of Eros and two golden rings. One of the rings was still on the finger bone of the skeleton, the professor added, noting that most of the bones were ruined due to moisture caused by the grave's proximity to the sea.

Approximately 200 graves have been excavated at the ancient city of Parion. Other unearthed findings include "gifts for the dead," such as teardrop bottles, oil lamps and toys.

Based on the findings, Başaran said he believes Parion was a glorious city ruled by the rich elite of the Hellenistic age. Excavations have been going on there for the past four years and have also unearthed jewelry believed to belong to the king and queen.

Please visit the site:

<http://www.hurriyet.com.tr/english/domestic/12047968.asp?scr=1>

ANCIENT ETRUSCAN OINTMENT **DISCOVERED IN ITALY**

Italian archaeologists have discovered lotion that is over 2000 years old, left almost intact in the cosmetic case of an aristocratic Etruscan woman.

The discovery, which occurred four years ago in a necropolis near the Tuscan town of Chiusi, has just been made public, following chemical analysis which identified the original compounds of the ancient ointment. The team reports their findings in the July issue of the Journal of Archaeological Science.

Dating to the second half of the second century B.C., the intact tomb was found sealed by a large terracotta tile. The site featured a red-purple painted inscription with the name of the deceased: Thana Presnti Plecunia Umranalisa.

"From the formula of the name, we learn that Thana Plecunia was the daughter of a lady named Umranei, a member of one of the most important aristocratic families of Chiusi," the researchers wrote.

Indeed, the wide rectangular niche tomb certainly represents the noble origins of the deceased.

The ashes of Thana rested in a small travertine urn, decorated with luxuriant foliate elements and the head of a female goddess, most likely the Etruscan Earth goddess Cel Ati.

Please visit the site:

<http://dsc.discovery.com/news/2009/07/10/ancient-ointment.html> [Go there for pict]

SIDON EXCAVATION AIMS TO UNCOVER MORE ANCIENT RUINS, BY MOHAMMED ZAATARI

SIDON: The Directorate-General of Antiquities disclosed on Thursday that it will resume excavation at the Frères' archaeological site in the old city of Sidon in collaboration with a delegation of the British museum. Earlier excavation procedures at the site led to the discovery of several of the city's underground layers, which dated back to 1,000-4,000 B.C.

The head of the British museum delegation, Claude Doumit Serhal, told The Daily Star that archaeological teams would also conduct excavation works at the neighboring site of Sandaqli in order to conduct comparative research among the two sites' layers. Electricite du Liban's Sidon facility was formerly located at the Sandaqli site.

According to Serhal, the ruins that have been discovered in recent years have highlighted Sidon's role as the host of multiple civilizations throughout history. Excavation works are expected to kick off prior to the establishment of Sidon's historical museum in the same area, which would boost the city's status as a center for tourism and antiquities.

In June 2009, the cornerstone for Sidon's first archaeological museum was laid at the coastal city's Frères archeological site.

The project will be executed and supervised by Lebanon's Culture Ministry and funded by the Kuwait Fund for Arab Economic Development, which has allocated around \$5 million for the construction of the museum.

The laying of the cornerstone took place at the same excavation site where the British Museum delegation has been active in revealing the city's past.

According to Serhal, excavation at the old Frères site disclosed the presence of six old layers that dated back to 3,000 B.C., eight others to 2,000 B.C. and five to 1000 B.C.

Serhal stressed that the discovery of historical sites in Sidon will promote the city's status among other worldwide archaeological locations.

Serhal added that the British Museum delegation, in collaboration with the Lebanon's DGA, have resumed work at the Frères location for the eleventh consecutive year and was recently granted permission to start digging at the Sandaqli site as well.

The work team in charge of restoration works and comparative research will include 90 individuals, according to Serhal, who expressed her hope that the excavations would result in the discovery of new layers and important findings.

Sidon is one of the most important Phoenician cities, and boasts the Phoenician temple site of Eshmoun just to its north.

Please visit the site:

http://www.dailystar.com.lb/article.asp?edition_id=1&categ_id=1&article_id=104030

LYON'S SUMPTUOUS TEXTILE MUSEUM IS A FEAST FOR THE EYES SPECIAL, BY MICHAEL COSGROVE

This wonderful museum owns over 2 million examples of fine textiles, from silk to synthetics, and from 25 centuries Before Christ until today. They come from all over the world and represent one of the two biggest textile collections in existence.

The City of Lyon has long been associated with textile production, and its silk industry became a part of the city's life-blood at the beginning of the 1800's with the introduction of newer and faster methods of production invented during the industrial revolution.

The Textile Museum was opened to the public in 1864, and its administration was later taken over by Lyon's Chamber of Commerce and Industry, who moved it to its present location in 1946. The building used to be the Governor of Lyon's residence.

There is every kind of textile possible to be seen in its exhibitions, silk, of course, but also Pharaonic Egyptian, Oriental, Coptic, Persian and Byzantine to mention just a few.

The museum is also heavily implicated in research into textiles and their history and has a library and document department containing over 30 000 works.

Many people assimilate the word 'museum' with words like old, dusty, boring and highbrow, and I go to meet Mme Maria-Anne Privat-Savigny, the Museum's Curator and Head Director wondering what kind of atmosphere I'll be experiencing.

I didn't have to wait long to find out.

She arrives and whisks me into her office, where we have a very amusing discussion about one of her preferred historical periods and political cultures, that of the Tudors and Henry VIII. "Yes, he may have chopped off Boleyn's head," she says "but he did it with the kind of sophistication and subtlety that I appreciate in English intellectual and political society. The country houses there are wonderful too."

I realise that this petite, unassuming and simply dressed lady is going to be a lot of fun to spend time with.

So after a few minutes ironising with humour upon the differences between French and English culture and society, she tells me how she ended up at the Museum.

"I studied Commerce at one of the country's top universities and subsequently joined the National Museum. Once there I was literally dragooned by my superiors into accepting a job involving the textile section. From there I went on to the Louvre in Paris as a curator and finally came back here to Lyon, my home town, to work here in the museum, in 2004."

We discuss the fact that there is an incredible archive of textiles in the Museum.

“This is an advantage in that we don’t have to ask to borrow textiles for new exhibitions. We have to change exhibitions often, given the zapping society in which we live, where if things don’t change, they quickly become irrelevant. This means that we try to find new ways of approaching the lighting and presentation we use. One day someone came to the museum and, upon entering one of the rooms, he said ‘You’ve changed the exhibition.’ But we hadn’t. It was all done with lighting, essentially. We are even considering using 18th century music in an upcoming exhibition that deals with textiles from that period.”

She goes on to explain how the Museum is financed. Although it is a publicly owned museum it still has to finance itself, notably via sponsorships, donations and Patronage. This means that an innovative approach, both in marketing strategy and in terms of exhibitions, is crucial.

“But that doesn’t mean that we cut corners on quality. The challenge I set myself here is based on two fundamental ideas. Firstly, I don’t mind doing events like hosting fashion houses or other events because it brings in revenue. However they must not interfere with the general standards of scientific and cultural work we do. Also, any new idea is considered as long as it contributes to the upkeep of the Museum’s reputation for quality exhibitions and historical accuracy.”

I mention purists and how they may react to her approach. “Oh, sure they don’t appreciate it. But I think that the challenge for museums is to appeal to people in new ways and to stop being a boring pain in the butt.”

“Pain in the butt”? Did I hear right? Yes, I did. No pompous stuffiness here, decidedly.

Off we go to take a walk around the Museum.

On the way we stop for a photo in the gardens.

Please visit the site: <http://www.digitaljournal.com/article/275518>

EXCAVATION IN LEBANON AIMS TO UNCOVER ANCIENT RUINS

Beirut (Lebanon), July 12 - ANI: The Directorate-General of Antiquities, Lebanon, has said that it plans to resume excavation at the Freres archaeological site in the old city of Sidon in collaboration with a delegation of the British museum, in order to uncover more ancient ruins.

Earlier excavation procedures at the site led to the discovery of several of the city's underground layers, which dated back to 1,000-4,000 B.C.

Claude Doumit Serhal, the head of the British museum delegation, told The Daily Star that archaeological teams would also conduct excavation works at the neighboring site of Sandaqli in order to conduct comparative research among the two sites' layers.

According to Serhal, the ruins that have been discovered in recent years have highlighted Sidon's role as the host of multiple civilizations throughout history.

Excavation works are expected to kick off prior to the establishment of Sidon's historical museum in the same area, which would boost the city's status as a center for tourism and antiquities.

Serhal said that the excavation at the old Freres site disclosed the presence of six old layers that dated back to 3,000 B.C., eight others to 2,000 B.C. and five to 1000 B.C.

She stressed that the discovery of historical sites in Sidon will promote the city's status among other worldwide archaeological locations.

Serhal added that the British Museum delegation, in collaboration with the Lebanon's DGA, have resumed work at the Freres location for the eleventh consecutive year and was recently granted permission to start digging at the Sandaqli site as well.

The work team in charge of restoration works and comparative research will include 90 individuals, according to Serhal, who expressed her hope that the excavations would result in the discovery of new layers and important findings.

Sidon is one of the most important Phoenician cities, and boasts the Phoenician temple site of Eshmoun just to its north. - ANI

Please visit the site: <http://www.littleabout.com/news/23094,excavation-lebanon-aims-uncover-ancient-ruins.html>

THE SCIENTIST.COM, VOLUME 23, **ISSUE 7, PAGE 20, SAMPLE, DON'T** **TRAMPLE, BY BOB GRANT**

Historical, archaeological, and paleontological artifacts are precious. And often preciously small: a 500-millimeter fossil fragment, 2 milligrams of charcoal from a prehistoric fire. Decoding the chemical composition of a material—especially things like bone, shell and teeth—can yield a wealth of information about the organism and time to which it belonged. But often studying something means dismantling it, and the thought of grinding some part of these tiny treasures into a fine powder for analysis makes museum curators cringe.

In a lab at the Smithsonian Institution's Museum Conservation Institute in early spring, scientist Odile Madden fingers tortoise shell hair combs and samples of elephant tusks. She explains that one technique can differentiate between an object made out of ivory from an engendered elephant species and one made from cow horn, for example.

Raman spectroscopy can peer into the molecular interstices of many materials, fingerprinting their composition and the nature of their chemical bonds in great detail without harming the object it's probing. Other nondestructive techniques, such as infrared spectroscopy, analyze molecular structure with less resolution. "Infrared spectroscopy can tell you that you have a protein. It can't tell you if you have keratin, which is the protein of horns and hair and turtle shells," Madden says.

Raman spectroscopy entails shooting a beam of laser light at an object, then collecting and analyzing the light that bounces back. By calculating tiny amounts of energy lost or gained by the electron cloud or vibrating chemical bonds of the sample—a phenomenon known as the Raman effect, discovered and demonstrated with a crude spectrometer in 1928 by Nobel Prize-winning physicist Sir C.V. Raman—researchers can characterize the chemical nature of the material without disassembling it.

Though it was invented more than 70 years ago, Raman historically played second fiddle to other chemical analysis techniques, such as nuclear magnetic resonance and fluorescence spectroscopy. Then in the mid 1990s, Raman spectrometers incorporated newer lasers as their light sources, and featured more sensitive detectors and optics.

Though it is not cheaper than other technologies, Raman spectroscopy has recently become extremely lightweight and portable. Madden proudly displays her six-pound, lunchbox-size, portable Raman unit—"The iPod" of Raman, she calls it—that can take the analysis directly to the artifact. Most museums have Raman, and use is slowly catching on elsewhere.

Madden, who works at the Smithsonian's sprawling storage facility in Suitland, Md., can often be found hunkered over one of the institute's 137 million artifacts, using Raman spectroscopy to determine its composition and thus the best way to preserve it in a museum setting.

Madden tumbles a nondescript flake from a small vial into her hand. "This is a piece of mammoth bone," she says. The fragment chipped off of a near-complete, 13,000-year-old mammoth skeleton residing at the Arizona State Museum in Tucson. Madden used her Raman spectrometer on the fragment and found that the bone chip lacks intact collagen, a protein that lends bone flexibility and strength. "So if you were going to do, say, some proteomics work, or look for DNA, this would probably not be the sample to do it on."

Nancy Odegaard, a University of Arizona conservator and anthropologist, studies the mammoth skeleton and says that Raman spectroscopy could open new doors into exploring the fossil. "[Raman spectroscopy] looks really promising as a way to go in and identify some of the things we haven't been able to identify previously," she says. "I think we're kind of forging some new territory here."

Already, it seems that biologists are starting to use Raman spectroscopy in biological contexts. In 2008, Purdue University biological engineer Joseph Irudayaraj used Raman to detect gold nanoparticles (which Raman picks up particularly well) hooked to DNA strands complementary to BRCA1 gene variants (*Anal Chem*, 80:3342–49, 2008). "We can detect very very low quantities of DNA that other techniques may or may not be able to track," he says. Irudayaraj adds that one of his labs' goals is to make Raman a feasible and more widespread technology that could be used to track biological phenomena, such as monitoring the influx and efflux of specific proteins, in living cells.

<http://images.the-scientist.com/content/images/articles/55788/20-1.jpg>

Raman spectroscopy could help curators—like Christina Bisulca— more thoroughly explore ancient artifacts, such as this mammoth skull at the Arizona State Museum Conservation Lab.

Courtesy of Gina Watkinson

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Please visit the site: <http://www.the-scientist.com/article/display/55788/> [For video demonstration, go to <http://www.youtube.com/watch?v=6lxluxsJhlU>

200,000-YEAR-OLD FLINT TOOLS **FOUND IN SYRIAN DESERT, MIDDLE** **EAST NEWS**

Damascus - A Swiss archeological mission has found pre- historic flints and skeletons dating back 200,000 years in the desert of Palmyra in Syria, local media reported Sunday.

The joint Swiss-Syrian team, which has now finished its dig at Al Koum, near Palmyra, said it had found a series of items dating back between 100-200,000 years, including peculiarly-moulded flints, which prove the ability of the Transitional Age Homo sapien to properly use flint tools , al Thawra Daily reported.

The paper quoted the Director of Antiquities in Palmyra as saying that the most important findings was the remains of a giant camel, double the size of a modern-day camel, and which suggests that this kind of camel was native to the region and not imported.

Please visit the site:

[http://www.monstersandcritics.com/news/middleeast/news/article_1489195.php/20000-year-old flint tools found in Syrian desert](http://www.monstersandcritics.com/news/middleeast/news/article_1489195.php/20000-year-old_flint_tools_found_in_Syrian_desert)

KYBELE EMBARKS ON HISTORIC VOYAGE, ANATOLIA NEWS AGENCY

İZMİR - The Kybele, a bireme from circa 600 B.C., reconstructed based on archaeological data, embarks on a trip from Foça in İzmir to Marseille in France to promote cultural interaction between the people of Turkey and France

A historic bireme ship reconstructed by an association has completed a journey from Turkey to France to re-enact the voyages undertaken in the period circa 600 B.C.

The 360 Degree Historical Research Association of Turkey re-built the "Kybele" based on archaeological data, and the ship set sail from the shores of the Aegean holiday resort of Foça for Marseille, France to once again make this historic trip.

One of 12 Ionian cities

A bireme is a ship with two banks of oars. In 600 B.C., Phokaia, or Foça, was one of the 12 Ionian cities in western Anatolia that had many colonies along the Mediterranean coast, including Marseille.

The reconstructed ship set sail from the town of Urla in the Aegean province of İzmir with 20 rowers, three yardmen, and 25 crew members on June 8, within the scope of the association's "Izmir-Foça-Marseille/ A Journey into History" project.

The "Kybele" left behind the territorial waters of Greece and reached Italy a month after it set sail from Turkey.

The crew will attend more than 400 cultural, economic and social activities and several events to mark the "Turkey Season" in France.

The aim of the project is to shed light on the sources of the shared culture of Anatolia and Europe. It also hopes to awaken historical awareness, to emphasize the influence of Ionian colonial migration from the Aegean on the historical basis of today's European identity, to contribute to peace and fraternity around the Mediterranean Sea, to explain that the Mediterranean is a continent of waters, to contribute to Turkey and France's image in each other's country and to the historically friendly relations between the two peoples.

The "Kybele" is expected to return to Istanbul after the activities in France by sailing down the Danube and participating in the "2010 Istanbul European Capital of Culture."

Sailing the Danube

On the return trip from France, the ship will pass through Germany, Austria, Slovakia, Hungary, Croatia, Serbia and Bulgaria and arrive at the port of Constanta, Romania, cross the Black Sea, and eventually reach Istanbul.

The "Kybele" has a 12-meter-tall mast and a 7-by-12-meter rectangular canvas sail. The ship has 20 oars and two rudders, one on each side.

Please visit the site: <http://www.hurriyet.com.tr/english/domestic/12048006.asp> [Go there for pict.]

EGYPTIAN BUST IN BERLIN MUSEUM **MAY BE FAKE**

Berlin - An Egyptian bust acquired at vast expense by a Berlin museum more than two decades ago may be a forgery.

The bust in brown granite of female Pharaoh Hatshepsut, who ruled Egypt for 22 years, is one of the draws at the German capital's Egyptian Museum and is only outshone by the limestone bust of exquisite Queen Nefertiti.

Scientists at the Technical University of Berlin have discovered the Hatshepsut stone is rich in the minerals magnesite and siderite.

No other bust from the Nile region is made of such rock, suggesting that the 16.5cm figure might be a modern fake.

Asked for comment, Dieter Wildung, the recently retired director of the museum, said he had not been aware of the scientific study.

The museum reportedly paid 1 million marks (R5.9 million) to buy the statue in 1986 from Robin Symes of Britain but Wildung declined to confirm its price.

"The purchase was long before my time," said Wildung, who became head of the museum in 1989 and retired two weeks ago. He criticised the media for "sneakily" going public with the report without clearance from the museum.

Hatshepsut died in 1458 BC. The Berlin museum has been criticised by Cairo officials for refusing to give Nefertiti's bust, regarded as a national treasure, back to Egypt. - Sapa-DPA

Please visit the site:

http://www.int.iol.co.za/index.php?set_id=1&click_id=29&art_id=nw20090719153652309C386397

DOCK 1 MADE FROM ANCIENT RUINS? **CYNTHIA BUSUTTIL**

Research by oncologist Stephen Brincat shows that remains of the Mausoleum of Halicarnassus were used to build Dock No. 1.

The murky water in Dock No.1 in Cospicua has witnessed much history over the years. Nobody ever imagined, however, that lying underneath could be the remains of an ancient Turkish wonder - the Mausoleum of Halicarnassus.

No one, that is, but oncologist Stephen Brincat, who came across this precious piece of information while reading an article about the excavations of the site by the British in the 19th century in the Turkish magazine Cornucopia.

"There was one sentence which said that the wall of the mausoleum was dismantled to build a dock in Malta," Dr Brincat said.

Blocks of marble that made up a wall of the mausoleum, built more than 300 years BC, are believed to be submerged in the dock, which is expected to be soon embellished in a €10 to €12 million project.

Armed with this piece of information, Dr Brincat, a history lover, started studying local archives to find out more. He struck gold when he found that what is today known as Dock No. 1 was built at the time when British archaeologist Charles Newton excavated the site in Bodrum, Turkey, and shipped crates of sculptures and other antiquities to London's British Museum, which had commissioned the excavations.

According to Dr Brincat's research, the Royal Navy ship HMS Supply, laden with crates of antique treasures, entered Grand Harbour in 1858, a year after the foundation stone of the dock was laid.

Mr Newton had justified the dismantling of the mausoleum wall by saying that it would have been broken up and used by natives of Bodrum anyway. He therefore removed it to be used in a "public object", which Dr Brincat traced as being the Cospicua dock that had taken some six years to build.

When contacted, Prof. Anthony Bonanno, the head of University's Department of Classics and Archaeology, was unaware of Dr Brincat's lead but said he was "not terribly surprised".

Prof. Bonanno said Malta had been used in the past for the loading and unloading of antiquities. In fact, the Elgin Marbles, a collection of classical Greek marble sculptures found at the British Museum, had passed through Malta, lying in the docks for several years on the way from Greece to England.

Emmanuel Magro Conti, senior curator at Heritage Malta's Maritime and Military Collections, was also unaware of the use of the antique blocks in the building of the Cospicua dock.

"The plans of the dock show building blocks, but do not mention details of what materials were used or from where the blocks originated," he said.

The mystery remains hidden under water which is so murky that it is impossible to see the bottom.

Dr Brincat had to paddle in a canoe to get to the area and admits that there is probably little to see.

After all, they are nothing more than blocks of stone. The only difference is that centuries ago, they were part of one of the seven wonders of the Ancient World.

Please visit the site:

<http://www.timesofmalta.com/articles/view/20090726/local/dock-1-made-from-ancient-ruins>

ARCHAEOLOGISTS DISCOVER MIDEAST'S "LARGEST ROMAN GARRISON" IN SYRIA, BY DPA

Damascus - Archaeologists in Syria have found what they believe was the largest Roman garrison in the Middle East, the country's official news agency reported Saturday.

German archaeologists discovered the site, which spreads over 3 hectares (30,000 square metres), at al-Rifniah, in the northern Syrian province of Hama, Syria's SANA news agency said.

Experts described the fort as the largest Roman military outpost in the region. It was discovered, following mentions of the outpost in documentary evidence and engravings, SANA said.

Please visit the site:

http://www.monstersandcritics.com/news/middleeast/news/article_1491831.php/Archaeologists_discover_Mideasts_%26quotlargest_Roman_garrison%26quot_in_Syria

ANGEL'S FACE UNCOVERED AT ISTANBUL'S HAGHIA SOPHIA, BY SUZAN FRASER

ANKARA, Turkey – Restoration workers have uncovered a well-preserved, long-hidden mosaic face of an angel at the former Byzantine cathedral of Haghia Sophia in Istanbul, an official said Friday.

The seraphim figure — one of two located on the side of a dome — had been covered up along with the building's other Christian mosaics shortly after Constantinople — the former name for Istanbul — fell to the Ottomans in 1453 and the cathedral was turned into a mosque.

The mosaics were plastered over according to Muslim custom that prohibits the representation of humans.

Some of the mosaics were revealed when the domed complex was turned into a museum in 1935, but the seraphim had largely remained covered, Ahmet Emre Bilgili, who heads culture and tourism affairs in Istanbul, told The Associated Press.

Two Swiss architects saw the two seraphim during restoration work ordered by the Sultan in the mid-19th century but the figures were covered up again, Bilgili said.

"It is the first time that the angel is being revealed," he said, adding that the figure had been covered with metal and plaster. "It is very well preserved."

Experts would now work to uncover the second seraphim, which was also plastered over and covered by metal, Bilgili said.

The newly uncovered image was hidden behind scaffolding and is not currently visible to visitors.

Haghia Sophia, also called the Church of Holy Wisdom, was built in 537 B.C. and remained a symbol of Byzantine grandeur until Istanbul was conquered by Muslim armies.

The structure was then turned into a mosque — minarets were added and crosses and other Christian symbols were defaced. It became one of the most renowned mosques of the expanding Ottoman Empire.

The site was later converted to a museum under the secular reforms of modern Turkey's founder, Mustafa Kemal Ataturk, attracting thousands of visitors each year.

President Barack Obama toured Haghia Sophia when he visited Turkey in April, as did former U.S. President Bill Clinton in 1999. Pope Benedict XVI also strolled the site in 2006 of his pilgrimage of landmarks of Christianity's ancient roots in Turkey.

Please visit the sites:

http://news.yahoo.com/s/ap/20090724/ap_on_re_eu/eu_turkey_byzantine_mosaic

<http://www.20dk.com.tr/n.php?n=hagia-sofia8217s-angel-uncovered-2009-07-24>

UNWRAPPING BROOKLYN'S MUMMIES

On June 23, 2009, a team from the Brooklyn Museum supervised by Edward Bleiberg, curator of Egyptian, Classical, and Ancient Middle Eastern Art, and Lisa Burno, Head Objects Conservator, transported four mummies from Brooklyn to North Shore University Hospital for CT scans. Drs. Jessie Chusid, Amgad Makaryus, and Karen Lisk of North Shore volunteered their time and services to scan four of the oldest patients they had ever encountered. The mummies on board were from various periods dating from the Third Intermediate Period (1064-656 B.C.) to the Roman Period (30 B.C.-A.D. 395). The trip was smooth and the CT scans went without trouble. The scans produced vast amounts of data to be sorted and analyzed, but even immediate, preliminary readings of the scans revealed some very unusual discoveries. Pasebakhaemipet, a Theban "prince" of the 21st dynasty, had a reed in his throat (1070-945 B.C.). "Lady" Hor of the 22nd Dynasty was identified as a man after 70 years of misidentification (712-664 B.C.). Thothirdes also of the 22nd Dynasty had also been misidentified as a woman, while the fourth, an unnamed first-century Roman period mummy still had some brain left in him. Bleiberg discussed the Brooklyn Museum's fascinating mummies and their CT scans with ARCHAEOLGY's Morgan Moroney. He described what's been learned so far and the future plans for the scans, while emphasizing the importance of non-intrusive mummy unwrappings, the open exchange of scholars, excavating in museum storerooms, and public outreach.

Why did you choose to scan these four mummies out of the Brooklyn Museum's 11 human mummies?

Six of our 11 mummies are complete, the rest are parts, significant parts, but parts. We scanned one of these six, Demetris, a first-century Roman period mummy, in 2007. This summer we had enough funding to scan four mummies and so we chose Pasebakhaemipet of the 21st Dynasty, Hor and Thothirdes of the 22nd Dynasty, and an unnamed Roman period mummy.

What is the purpose and significance of scanning these mummies?

We are basically looking for confirmation of sex, age at death, and cause of death, if we can find it. We are also looking at the history of any disease that we might be able to see, but then also history of mummification because different periods and people of different social status received different methods of mummification.

What are some differences in mummification techniques between the periods of the mummies you scanned?

With the four we certainly did see differences in mummification, even in very close time periods. Dynasty 21 has the best coffins and they have relatively high quality mummifications, which we see with Pasebakhaemipet. He's probably the highest status individual in the group of four, and he still had his heart which is exactly what Herodotus, who is much later, tells you is available in the most expensive method of mummification.

[Herodotus was a Greek historian who lived from about 480-425 BC. His Histories has one of the only first-hand accounts of mummification, as the Egyptians never wrote down the process.]

Neither Thothirdes nor Hor, who were 22nd Dynasty, immediately in the next period, had a heart, which is an indication that they would have had the cheaper method of mummification. They both seem to have canopic packets, which Pasebakhaemipet doesn't have. Canopic packets are when they mummify the organs and then they put them back in the body, rather than removing them completely and placing them in canopic jars.

[Canopic jars are four containers used in embalming to store the mummified stomach, lungs, liver, and intestines of the mummy. Their design changed over time, but they are known for representing the four sons of the god Horus, who protected the organs. The jars were placed in the tomb with the mummy in a canopic chest.]

Are there other ways to test and compare mummification techniques?

There is a study going on now at Bristol University that is looking at the history of mummification. They are taking samples of as many mummies as they can, including Brooklyn's mummies, and are testing the chemical compositions of the resins that were used in mummification. In general, what they are finding is that the resins that are used for both disinfecting and dehydrating the interior. The recipe changes over time as if there is a conscious effort on the part of the embalmers to improve the process. In fact, it does improve over time, although at the end it seems to fall apart, mostly because they are much less interested [in Greco-Roman Egypt]. Most of the mummies you get in the end are not even Egyptians, like our Demetris. Those who are mummified are the wealthier people and they do participate in Egyptian culture to a certain extent. They were more concerned with their portrait than with mummification. Our two Roman Period mummies have no hearts, in spite of one having a fine mummy portrait, which was apparently an expensive thing to have. Demetris has a very nice portrait that even sort of looks like him, but the mummification process itself is not as high quality. The other, which is 3rd century, and who we scanned this time around, we don't know his name, but he does have a Greek hairstyle and wears a beard, which is a pretty Greek and un-Egyptian thing to do. Egyptians show the braided beard of Osiris but typically Egyptians shave and Romans shave too. These two guys, who were probably Greek, were more interested in the portrait. They wanted to make it the best thing in their whole assemblage of things.

About how much data was collected for each mummy?

Approximately 2,845 images are generated from about a two-minute scan. It takes data from 64 different points and that data can be manipulated in a computer program that allows them to make 3D reconstructions.

How long might it take to sort through and analyze the scans for each of the mummies?

Sorting the data is the longest part of the process, and Dr. Chusid and Dr. Makaryus are doing this as volunteers and they do it in their spare time. They have been wonderful about volunteering their time, but they do have full time jobs as cardiac radiologists and

that's what they have to do during the day. I hear from them on weekends and late at night--the emails always come then--because they're both so interested. One thing Dr. Chusid said was that these patients stay still, and since he's used to scanning hearts, which don't stand still under any circumstances he said it was very interesting to see what goes on when it's perfectly still, and the images are very clear. He's the one who discovered the interior amulets [in Pasebakhaemipet] which was really a big shock. I thought only royalty had that. Although Pasebakhaemipet has been identified as royalty, he doesn't have a completely royal title. He was mayor of Thebes so that may be the reason why he had these interior amulets.

You scanned one of the museum's Greco-Roman mummies, Demetrios, in 2007. Have you seen a vast improvement in technology even in the past two years?

I am not certain if it's a new machine since the scans in 2007. The doctors certainly spoke this time about the increase in quality of the resolution that they're getting right now. But what I'm most struck by is the fact that I did a project similar to this in 1986 in Memphis, [University of Memphis] and what was really noticeable to me was the speed. It took four hours in 1986 to scan one body, and then days to construct the images from all the data generated. Whereas the scan now, as I said, takes two minutes to do an entire body and the images themselves are generated instantly. The doctors' complaint, I gathered, was that their computers were not able to process fast enough to display the images, although you do get something right away, and that's how we found out about Hor. I could see immediately what he was talking about when he told me that we had misidentified. It's very very clear, and when they do the 3D reconstructions, which are done separately on a computer program, it is really like taking a photograph of the interior. It's just amazing stuff. They [Dr. Chusid and Dr. Makaryus] are really experts. In Brooklyn we x-rayed our mummies for the first time in the 1930s with film, which is now very deteriorated. It is almost impossible to read, and there's barely anything on the film. They made prints, which are sometimes useful. This new technology is just so miraculous to me and they're very experienced.

What questions have you been able to answer so far with the data available?

To answer questions like age of death the doctors look at the thighs and at the spine. Those are areas where they can make determinations like that. Especially after adulthood, the condition of the spine is the key thing they look at. Because we right away saw that Hor was not the right sex as far as we knew, then we asked them to look at everybody's pelvic areas and, actually one of the others was actually misidentified as a woman. So on the spot that became one of our important questions, and I now realized, of the five mummies we scanned [including Demetris, scanned in 2007], they're all men, but three of them were previously identified as women, through a variety of mistakes. The mistakes are very interesting; mostly they were made a long time ago. Demetris, was first identified as a woman in 1911, Thothirdes and Hor were misidentified as women in the '20s, or probably even in the teens. We have inventory cards, but people didn't always date their cards and comments so we're not exactly sure. That was when Thothirdes and Hor still belonged to the New-York Historical Society. Finding out the sexes, that kind of thing, we identified very quickly because we know where to look. Things like cause of death, they have to take a much wider look for trauma, because the organs aren't there any longer. They can't say 'oh he had a heart attack', or kidney failure or something like that. They can look for diseases of the bone.

[Do you have any further thoughts or conclusions about the tube-like reed found in Pasebakhaemipet's esophagus?

I'd never seen anything like it, and I'm looking at other 21st Dynasty mummies, particularly their x-rays and CAT scans. I have no idea what it is. It's not something that Herodotus talks about. The guesses are that it has something to do with supporting the neck, although why you need something to support the neck is not clear. One thing that I thought of was that it's purposefully keeping the esophagus open, but I don't know why you would need to do that either, unless it's something to do with the opening of the mouth ceremony and the need for breath, with the idea that the mummy was going to breathe in the next world.

[The opening of the mouth ceremony was a ritual performed on a mummy to magically open the mouth, allowing the deceased to use his senses in the afterlife.]

The reed was inserted from below according to the radiologists, which means it was clearly post-mortem and it wasn't the cause of death. He didn't choke on something. The doctor was fairly certain that the embalmers had inserted it via the chest cavity, so he was dead. But we're not even clear what it is. The doctors said it was some kind of tube and it looked to me to be some type of reed, at least that's what you'd expect for it to be, something like a papyrus reed. [In the images] you can't really see color; the doctors can find the general degree of hardness but they can't even distinguish between glass or stone, for example. They can see it, but they can't tell you exactly what the material is.

Why were so many of the Brooklyn Museum mummies' sexes mis-identified?

I think it has something to do, in the case of our three, with imperfect knowledge. Demetris was excavated in 1911 and identified as a woman because in classical Greek the "is", like Doris is a woman's name ending. It should be Demetrios if it's a man. What they didn't know yet was in Hellenistic Greek dialect in Egypt, many men's name were just ending in "is." But we have a whole series of notes on what a homely woman Demetris must have been as we have a very fine mummy portrait of her. People were very interested in how she wasn't idealized. In fact, she's a 59 year old man who was idealized. And so bad grammar is one reason for mistakes. Then Thothirdes who had a beard of Osiris on his coffin, who had a red face, which is associated with being a man, was x-rayed either in the teens or in the 20s and despite the fact that x-rays do not show soft tissue, they say this is a woman. They don't say why. They say undoubtedly it's a woman, and it may be because of the pelvic shape, which of course is a notoriously bad gender marker. They always tell you in the introduction to physical anthropology that statistically women will have wider hips and men will have narrower hips. In individual cases it is very hard sometimes to decide. So either it was because of pelvic shape or because of a bad x-ray. And we were forced to explain why she had a man's coffin. We thought she was being identified as Osiris, like many women were.

And what about "Lady" Hor?

With Hor it is as on the basis of the face [on the coffins] as it has no beard. It is very delicate and aesthetically a very high quality face, without a beard, and in the '20s it was identified as a woman. Hor, by the way, makes a much better man's name. It's short for

the god Horus. We contrasted it with this male with a beard. When I got back from the hospital I looked at a picture of the museum's mummy cartonnage of Nespanetjerenpere and put my hand in front of the beard and said--oh you know it's pretty much the same face. It's just bad judgment. Of course it's easy to say this looking back 70 years. We just know so much more now than we did then. Those sort of subjective art historical arguments, we probably would not make them today, and if we did, we have the ability to check. This is the whole reason it's worthwhile to continue research on objects that have been studied for the last 100 years. We still learn new things about them, especially with the new techniques available.

Could Lady Hor's coffin have been made for a woman and then used by a man?

No. The cartonnage has no inscription at all, and cartonnages are inner coffins. The outer coffin is in storage because it's never been conserved and it's very dirty. The name was identified in the 20s based on the coffin and when I went to look at the coffin and I could only see one side. I have to get our handlers to take it off the shelf because the back is against a wall. I could see the htp di nsw formula but I could not find the name.

[htp di nsw= A common inscription found on coffins which means "A gift which the king gives..." and is followed by a list of offerings to the gods.]

I had to get down on the ground because that was the only way I could see it. The coffin is in a plexiglass box because we have a microclimate inside. What we have to do is get enough art handlers to move it, to open the box, and then to see. I think I know where the name is. The title would be nbt-pr, that's how lady is usually translated, if it's a woman. I would be greatly surprised if the outer coffin actually said nbt-pr. They decided it was a lady in the 20s and so they started calling it that. When we found out Hor's true sex, we did the quickest label change in the history of the Brooklyn Museum. We actually managed in three days to change the label to say it was a man. Usually that's a six-month process. But we had people asking the guards on June 30th: where's the woman who turned into a man? It was very nice to have been able to change our label. We haven't changed the label on Thothirdes yet because there had been no publicity about that. The doctors sent me scans without looking at them and I figured it out, which was pretty surprising, and I sent it to the radiologists for confirmation, and they said yes.

What are some more unusual discoveries made about the mummies?

Some of the mummies still have brain matter, as if they have their entire brain. If you use the hook that Herodotus describes [to remove the brain via the nostrils] it breaks a bone in the skull [a thin honeycombed bone behind the eyes]. Some of the mummies don't have a break in that bone and have what appears to be organic matter in the cranium instead. In the ones with the broken bones, there are resin pools and that really has a different consistency because the resin is almost glassy and smooth whereas the brain matter is bumpy and organic looking. This probably has to do with status and Herodotus actually talks about three different methods of mummification based on ability to pay, and so I think what we're seeing is something related to that. This gives us the opportunity then to associate the mummies' titles, if we can find them, with social status and socio-economic status.

With the two Roman period mummies they mostly cleared out the interior of the body, although Demetris had his gall bladder still. We're not exactly sure why that was left, but that was the cause of death. The fact that there were gallstones trapped in the gall duct when he died is evidence that that may have been the cause of death. He's inscribed, although the inscription is broken, with what we used to read as "89," and we now understand it has to be 59. His age was also determined by looking at the spine. The difference between an 89 and a 59 year olds spine is so clear that they were able to show me and even I was able to recognize it. They have templates that they compare, and it all has to do with the thickness of the pads [between the vertebrates] that are in your spine. And when you're young you have these very thick pads and I know myself, I'm not quite 59, they get smaller, but by the time you're 89 they are really shrunken and the bone is rubbing up against each other and that's why you have back aches all the time at that age. Demetris was right there, his spine looks just like the 59 model they have. It was a question of whether you restore the two lines as pi or as nu. And nu is 5 and pi is 8 and it was clear that we had been restoring it incorrectly. It was a good guess. The science actually told us how to move on the inscription, which I thought was incredibly cool. It was only the science that told us the right answer, the paleographic answer became absolutely clear and it made perfect sense too, although it was a choice that had been made in 1911 and we had pretty much stuck with it until then.

Have you been able to make any definite conclusions about cause or age of death of the four mummies?

We haven't. Pasebakhaemipet has some sort of wound in his head, but we're not certain it was cause of death or if it happened during embalming.

They had scientific reasons for seeing what the equipment could do. For them what was most interesting, although they both turned out to be interested in archaeology, was what they could do with the equipment that they hadn't done before, and how to improve their skills as radiologists. But we were asked at the press conference at the time about curses and I can say I don't believe in the curse. The doctors didn't seem to be too concerned about it either.

Have any of these four mummies been previously unwrapped?

Hor is sealed in his cartonnage, and Thothirdes is sealed in his bandages. Pasebakhaemipet was unwrapped in the 60s in a poorly documented research project, unfortunately. The anonymous man who was unwrapped came here in 1952. He was unwrapped purposefully in a search for artifacts and in fact, in those days, because we are an art museum, the curators didn't even see the value of keeping the body. The curator at that time told the technician to put the mummy in the incinerator, and the technician actually consulted with his priest and a nun and asked if he would be in danger of mortal sin if he did that.

They told him yes, so he refused to do it. This was actually the subject of a 1958 television program. We're still trying to get a hold of the tape. We've now discovered that the tape does still exist. In the 50s there were weekly live TV dramas and this one actually identifies the people who were involved by name, and says its taken place at the Brooklyn Museum.

Wow! What does this story mean for the Brooklyn Museum?

In the museum's standpoint it's interesting how things have changed over the past 50 years. We would never think of doing that today, but 50 years ago people might not have been surprised. The curatorial staff might not have been surprised. It's very interesting because it's due to an individual's own private moral objection that this object was saved for us. It also brings you to the whole problem of how to deal with display of mummies. We are looking to rewrap [the unidentified man] as we have all the linen, and we are looking at ways of rewrapping him that would allow us to display him with the wrappings but that would also be legitimate so that when people look at it they would see something close to the original wrappings. We have good photographs of the 1952 unwrapping. In the 60s luckily it was not complete, and it was stopped after the head and the chest. I only found out about this recently and we only found out that Pasebakhaemipet had jewelry very recently and we found it stored separately. We are also going to try and rewrap him [Pasebakhaemipet], and we'll be able to show the jewelry now.

Has re-wrapping been done elsewhere?

We think it's been done in England. Our conservator is trying to track down if anyone has done it before. With our Roman Period man who was unwrapped in the 50s, they pretty much just made a cut down the center and then peeled it back and also they removed two large shrouds, which we have still, and they were able to remove them without any damage to the shrouds. It's conceivable that we could put the bandages back and then the two shrouds. We have photographs of what they look like, so we could reapply the shrouds. He was wearing a cartonnage mummy mask, which we would like to put back so that we could display it as he really looked. It is really up to us if we can get it to look like the photograph, and then inside we would have to leave a message for the future [laughs]: this was unwrapped in 1952, this was re-wrapped in 2009, so that nobody gets the wrong idea of what we were doing.

Is there more that can be learned from doing these re-wrapping?

We would try to duplicate the process. There have been a number of unwrapping projects that are fully documented. There was one in the British Museum, there was one in the Royal Ontario Museum where, under controlled conditions, unwrappings were done. They were fully recorded, and so they learned a lot. John Taylor has a lot about it in his book on mummification, he even has a diagram of how a 21st dynasty mummy was wrapped.

[John Taylor is Assistant Keeper of Ancient Egypt and Funerary Archaeology at the British Museum. Bleiberg is referring to his book Mummy: the Inside Story, which details his x-rays and 3D visualization of mummies.]

This is extremely useful because our collection is so old and people have always been active. Teti [Brooklyn Museum mummy] was unwrapped in the 1860s. (He belonged to the New-York Historical Society then) They sold tickets and we suspect they sold linen as souvenirs because we don't know where the linen is from Teti. In New York, there were several 19th-century unwrappings that are known to have taken place and it was like a show. And it was long. It took like three or four hours. But they were able to sell tickets.

Do you have any plans for displaying CT scans?

We are scheduled to open a new gallery for our mummies in May of 2010 and we'd like to present as much information as we have. We haven't figured out how to do it. Some of it will be done in an audio-visual way. We know we will have at least one screen for video. The question in the Egyptian gallery is always how do you present material without totally demanding the attention of your visitor. We're looking for ways of positioning the screen so people can look at the CT scans themselves so that we can have video and moving images, but we still want the objects to be the people's main focus so that when you come here you're looking at ancient Egyptian objects, not at a video. We can put a video on our website, you don't need to come here to see a video. Also we want to focus on how we know what we know, because the public is very interested in that. Like, how do we know Demetris was 59? We're still thinking of ways to present how we know Hor is a man and not a woman because it's very clear that when you're dealing with the public you need a certain amount of tact. We have a very clear photograph of male genitals, but can you show that in our gallery, even if they're 3,000 years old? That's a discussion we still haven't had. We still have problems with what and how to present to the public, but we want to present as much as we can.

Will the data be accessible to outside scholars and scientists?

We're very anxious to share with other institutions because that's the only way to move forward. These things only make sense in a much wider context, so I've been going through Harris's X-ray Atlas [An X-ray Atlas of Royal Mummies edited by JE Harris and E.F. Wente] which is where I found other 21st Dynasty x-rayed mummies and their interior amulets. There isn't a good compendium. Lots of museums are doing this now. Lots of museums and curators are in touch. We started this because the Getty did it. The Getty x-rayed their Roman period mummy, and they knew its closest parallel was Demetris. They told us there was an ibis mummy inside their 1st century A.D. red shroud mummy which is just like our Roman red shroud mummy, and they asked if we knew if we have an ibis mummy inside ours. We said no, but we would really love to know!

[A red shroud mummy is a Grec-Roman style mummy dating to the first and second century A.D. These mummies are named for the red pigment on the linen wrappings and include a realistic portrait of the deceased.]

They actually came out and helped us. They did other testing by a process that's called XRF where you can do a chemical analysis of the surface of the mummy. They were able to tell us that just like their red shroud mummy, the red pigment came from the Rio Ocho, which is in Spain. It's first century and you know they're both Roman provinces, so it's not entirely surprising that the pigment of the paint is being imported from Spain. On the other hand it tells you something important about the cost of a red shroud mummy because you have to use this imported paint to make one. That's why we initiated scanning and why we did Demetris first, we wanted to compare. We don't have an animal mummy inside of ours but the Getty had a wonderful program in 2006. They gathered together everyone that had red shroud mummies and we talked about it and everybody made plans to scan. It's great that one institution began this process in the past few years. Other institutions have seen the value of it and have done it and we're just beginning to have the opportunity to make comparisons. It's only by building up a number of cases

that you can begin to build up generalizations that actually mean something. The sample is still really small, but we are in touch with people. We're part of the Bristol University project that's looking at resin. We sent them 25 resin samples and they've gathered up resin samples from all over the world. So in conjunction with C14 dating we're able to put the resins at least in order, and they had begun to construct a history of the mummification process and how the recipe of resins changes. They've realized that although it's called bitumen, which is a kind of coal, the ancient resins have nothing to do with what we call bitumen. That term was first applied in the 1880s and it's significant because it was applied in French and the French meaning of the word is even slightly different compared to the English word. Everything seems to be tree resin, not the gooey deposits found with certain kinds of coal. Together we're getting names sorted out once again. It's a great example of institutions sharing information.

Why else is it important to re-examine artifacts and search in storerooms?

I'm from the generation, as a graduate student, when they began to say we should be excavating in museum storerooms as well as conducting new excavations. New excavations, of course, are very exciting but the fact is that there is tons of unanalyzed information in major collections, and in minor collections too. I'm going to be consulting next week at the Bass Museum [Miami] to examine a 26th Dynasty mummy that's never been studied. It came to them from a private collection.

It has never received any scientific attention at all, and because of our scanning project and some publicity we've been getting, I've been invited to come and look at their mummy. Emily Teeter of the Oriental Institute [at the University of Chicago] was able to find new things out about a very old object in the OI [the mummy Meresamun] and the British Museum hasn't collected a mummy in I don't know how long, and John Taylor has done fabulous work looking at coffins of mummies.

There's a complete study in Leiden, the first to publish their whole collection of x-rays of their human and animal mummies, and although the book was published in 2005 it's full of question marks.

Nevertheless, just by their getting it out there I've been able to say well, we have one like that, we have another like that, and in some cases I might know a little more since we've been doing Carbon-14 dating. C14 is much more accurate than it was 35 years ago, it really can narrow the date range down. We are talking plus or minus 100 years, sometimes plus or minus 25 years. We were able to get Demetris down to a 50-year range. What was really great was that it was the same range that the art historians had put the mummy portrait into.

Both approaches yielded the same result and sort of verified each other.

Do you plan on scanning any more Brooklyn mummies?

We have one sealed cartonnage that we think is a woman. Its name is Gautseshenu, which means something like "Bouquet of Lillies." Seshen is actually the origin for the name Susan; it comes to English from Hebrew. It has been an Egyptian name since the 6th dynasty. A woman's name in the 6th dynasty (2282-2117 B.C.). Also the deceased is portrayed as a woman wearing a woman's dress in cartonnage so we're almost certain that it's got to be a woman in there, but now we feel like we don't want to say until we have a look. She's also sealed, and we hope that next year we'll have enough funding to go forward with that.

Please visit the site:

http://www.archaeology.org/online/interviews/brooklyn_mummies/ [Go there for
pix]

ARCHAEOLOGISTS FIND GRAVEYARD OF SUNKEN ROMAN SHIPS

ROME (Reuters) - A team of archaeologists using sonar technology to scan the seabed have discovered a "graveyard" of five pristine ancient Roman shipwrecks off the small Italian island of Ventotene.

The trading vessels, dating from the first century BC to the fifth century AD, lie more than 100 meters underwater and are amongst the deepest wrecks discovered in the Mediterranean in recent years, the researchers said on Thursday.

Part of an archipelago situated halfway between Rome and Naples on Italy's west coast, Ventotene historically served as a place of shelter during rough weather in the Tyrrhenian Sea.

"The ships appear to have been heading for safe anchorage, but they never made it," said Timmy Gambin, head of archaeology for the Aurora Trust (www.auroratrust.com). "So in a relatively small area we have five wrecks...a graveyard of ships."

The vessels were transporting wine from Italy, prized fish sauce from Spain and north Africa, and a mysterious cargo of metal ingots from Italy, possibly to be used in the construction of statues or weaponry.

Gambin said the wrecks revealed a pattern of trade in the empire: at first Rome exported its produce to its expanding provinces, but gradually it began to import from them more and more of the things it once produced.

In Roman times Ventotene, known as Pandataria, was used to exile disgraced Roman noblewomen. The Emperor Augustus sent his daughter Julia there because of her adultery. During the 20th century, Italian dictator Benito Mussolini used the remote island as a prison for political opponents.

Images of the wrecks show their crustacean-clad cargoes spilling onto the seafloor, after marine worms ate away the wooden hull of the vessels.

Due to their depth, the ships have lain untouched for hundreds of years but Gambin said the increasing popularity of deep water diving posed a threat to the Mediterranean's archaeological treasures.

"There is a race against time," he said. "In the next 10 years, there will be an explosion in mixed-gas diving and these sites will be accessible to ordinary treasure hunters."

Please visit the site:

<http://www.reuters.com/article/scienceNews/idUSTRE56M3IW20090723>

CYPRUS DIGS REVEAL FIRST SETTLEMENTS MAY BE OLDER THAN THOUGHT, BY PAUL TUGWELL

Archaeologists in Cyprus found evidence that inhabitants of the Mediterranean island may have abandoned a nomadic lifestyle for agriculture-based settlements earlier than previously believed.

The excavations at the Politiko-Troullia site, near the capital Nicosia, unearthed a series of households around a communal courtyard, and proof of intensive animal husbandry and crop-processing, according to a statement today on the Web site of the Cypriot Interior Ministry's Public Information Office.

The dig revealed copper metallurgy and sophisticated ceramic technology during the middle part of the Bronze Age, or between 4,000 and 3,500 years ago, the statement said. Archaeologists had previously believed that such settlements, which went on to evolve into cities, only began developing toward the end of the middle Bronze Age.

Cyprus, the third-largest island in the Mediterranean, is thought to have been first settled around 8,800 B.C., according to the British Museum. The findings of the digs, led by professors from Arizona State University and involving students from Cyprus, the U.S. and Canada, "open an archaeological window on the communities that provided the foundation for urbanized civilization on Cyprus" in the late Bronze Age, the statement said.

The fieldwork reveals extensive evidence of the Bronze Age community that was the predecessor to the ancient city of Tamassos, founded in the subsequent Iron Age, according to the statement. In contrast with other city-states in Cyprus, there were previously no precise details about the foundation of Tamassos as an important trade city.

To contact the reporter on this story: Paul Tugwell in Athens at: ptugwell1@bloomberg.net

Please visit the site:

<http://www.bloomberg.com/apps/news?pid=20601088&sid=acPPTPmfqVBE>

ROMAN HOSPITAL EXCAVATED IN SOUTH MORAVIA

Unique ancient Roman hospital excavated in South Moravia Pasohlavky - Czech archaeologists are excavating the foundations of an ancient Roman lazaretto (hospital) in Pasohlavky, which is the largest facility of its kind from this period preserved north of the Danube River, archaeologist Balazs Komoroczy told CTK today.

The hospital was part of an extensive fortified complex that the 10th Roman legion built on Hradisko hill at the Amber Road in the 2nd century AD, under the reign of Emperor Marcus Aurelius.

Hradisko was the northernmost outpost of the Roman Empire in Central Europe under Marcus Aurelius. The 10th legion was stationed there to take Germanic tribes in control.

Only foundation remains are preserved from the original hospital today because of the construction works 30 years ago when the huge Nove Mlyny dam was built at the site.

The 60-metre-long and 45-metre-wide hospital served for the treatment and relaxation of hundreds of Romans.

Archaeologists have known about its existence for years. However, they started excavating it only recently in connection with the planned construction of a thermal spa in Pasohlavky near Brno.

The new recreational facility should remind of Roman history as well. The remains of the ancient hospital can be marked by a pavement or bushes in the complex, Komoroczy said.

An exhibition mapping the ancient Roman settlement in the area was opened in the Mikulov chateau two years ago. It offers coins with the portrait of Marcus Aurelius, period bricks and roof tiles with the 10th legion's emblem as well as tools and weapons.

Author: ČTK

www.ctk.cz

Please visit the site:

<http://www.ceskenoviny.cz/news/zpravy/unique-ancient-roman-hospital-excavated-in-south-moravia/389954>

NEW LIFE FOR ANCIENT SYRIAN SCULPTURES, BY MARTIN BAILEY

Conservators in Berlin piece together the Tell Halaf fragments over 60 years after they were damaged by Allied bombs

BERLIN. A group of 30 monumental sculptures from Tell Halaf, in Syria, have been reconstructed after being pulverised into 25,000 fragments in a bombing raid in World War II. Dating from soon after 1000 BC, the basalt statues were on display in Berlin until a combination of fire and water caused devastating damage.

Following the war, there were legal and political problems in even considering restoration. Although the reunification of Germany in 1990 eased the difficulties, conservators initially feared that reconstruction of the sculptures would be impossible. However, the painstaking work eventually began in 2002 and is finally nearing completion.

Tell Halaf lies in north-east Syria, close to the Turkish border and is now a Kurdish region. The site's origins date back to 6000 BC, in late Neolithic times, but arguably the most important remains are those of the Aramaean civilisation, in the tenth century BC.

In 1899 Tell Halaf was discovered by Baron Max von Oppenheim, a German diplomat based in Cairo. He later sought permission from the Ottoman authorities to excavate the site between 1911 and 1913. Work was interrupted by World War I, and his final dig took place in 1927. The greatest finds were the remains of the palace of Prince Kapara, which included a five-metre high ensemble of three gods standing on animals and a twice life-size figure of a seated woman (or goddess, as Oppenheim believed). The excavated finds were divided between the national museum in Aleppo and Oppenheim, who took his share back to Berlin.

In 1930 Oppenheim opened his own museum in Berlin, in a disused iron foundry in Charlottenburg. Among pre-war visitors were Agatha Christie and her husband, archaeologist Max Mallowan. She later recalled being shown around by Oppenheim for a gruelling five-hour visit, during which he “stopped his eager dissertation to say lovingly: ‘Ah, my beautiful Venus’ and stroke the figure affectionately.” This was the enthroned woman.

War brought disaster. On 22-24 November 1943 the museum was bombed by the British, and fire broke out, with temperatures exceeding 1,000 degrees centigrade. This completely destroyed the wood and limestone artefacts from Tell Halaf, and the basalt sculptures were split by sudden temperature changes resulting from hosed water. Despite logistical difficulties during wartime, the director of Berlin's Museum of the Ancient Near East managed to get the fragments crated up on behalf of Oppenheim. In August 1944 nine truckloads of rubble were brought to that museum's deep cellar, which forms part of the Pergamon Museum.

After the war, the Pergamon Museum was in Soviet-occupied East Berlin, while the burnt-out museum in Charlottenburg was in West Berlin, with the Oppenheim family

settled in Cologne, in West Germany. Initially there was nothing that could be done with the Tell Halaf fragments in war-devastated Germany, and even when the economic situation improved there were difficulties: the rubble was owned by a West German foundation, but housed in an East German museum.

It was only after reunification in 1990 that attention once again focused on the Tell Halaf fragments. Archaeologists recalled what Oppenheim had written in 1944, in the depths of war: “How wonderful it would be if all the fragments into which the sculptures have been shattered could be gathered up and taken to the state museums of Berlin and there, eventually, reassembled. But what a horrendous task that would be, given that this collection has been smashed to smithereens. What I want most of all, of course, is to save the great enthroned goddess.” Oppenheim died in 1946, and it was to be over 60 years later before his dream was realised.

The reconstruction project began in 2002, in two huge halls in a former materials testing workshop in Friedrichshagen, in the eastern suburbs of Berlin. Eighty cubic metres of rubble were laid out on 200 wooden pallets, and the painstaking work of reassembling the pieces began. Initially, it was thought that computers could be used to scan images of the fragments, and match them, but this did not prove to be practical. “Humans turned out to be superior to computers,” explained project leader Dr Lutz Martin.

A minute examination of the basalt revealed very minor differences in colour, grain size and crystal intrusions in the stone used for each of the 30 sculptures and relief slabs. When it came to reconstructing the individual statues, carved exterior pieces with surface dirt were identified, and then the interior elements. It was like assembling an exceedingly complex three-dimensional jigsaw puzzle. Fortunately, however, there were good pre-war photographs to assist.

In the end, 95% of the material (by volume) has been reused, although a considerable amount of nearly pulverised sand remains.

Fragments were initially reassembled with temporary glue and later more permanently attached with reversible epoxy resin. No metal framework or pins were used.

Break marks remain very visible, and no attempt has been made to disguise them. Where large pieces are missing (some since antiquity), roughly shaped inserts have been added, using a mixture of ground basalt, sand and resin, in a slightly lighter shade of grey than the original stone. Some fragments of molten glass and bitumen from the Charlottenburg museum roof have been left on surfaces which will not be visible on display, since they are now part of the history of the sculptures. Conservation work is due to be concluded in October.

Legally, ownership of the sculptures rests with the Cologne-based Oppenheim foundation, although they are on long-term loan to Berlin Museums. The lengthy conservation process was funded jointly by the Oppenheims and the government’s German Research Foundation.

An exhibition on “The Tell Halaf Adventure” is being planned for Berlin’s Museum of the Ancient Near East, from July to November 2010.

Discussions are underway about other venues, possibly in Oppenheim's hometown of Cologne, or international museums that hold smaller quantities of Tell Halaf material.

After this, the Tell Halaf sculptures will be integrated into the displays in the Museum of the Ancient Near East, within the Pergamon Museum. When the Pergamon Museum is fully renovated, the figures of the three gods standing on animals will serve as an impressive entrance to the Ancient Near East collection, but this is not scheduled for completion until 2028.

Recent finds at Tell Halaf

Once again, German curators, conservators and archaeologists have been strengthening ties with Syria. A large basalt bull from Tell Halaf belonging to the national museum in Aleppo has been restored in Berlin by the conservators who were working on the reconstruction of the war-damaged fragments.

German and Syrian archaeologists have, since 2006, been working on further excavations at Tell Halaf. Three campaigns have taken place, leading to the discovery of a tenth century BC grave of a girl, together with jewellery and textile fragments. Rounded buildings from the earliest settlement, in the sixth millennium BC, were also found. A fourth excavation campaign is scheduled for September.

Please visit the site: <http://www.theartnewspaper.com/articles/New-life-for-ancient-Syrian-sculptures/18551>

GIANT PENCIL TRACES
ARCHAEOLOGICAL FINDS FAST BY JO
MARCHANT, NEW SCIENTIST, MAGAZINE
ISSUE 2719, 29 JULY 2009

EVERY object unearthed by an archaeological dig must have its exact position recorded. This is normally a painstaking process involving measuring rods and string, but a device that uses technology originally developed to guide robots could speed up the process.

Gran Dolina in central Spain is a Palaeolithic site that contains important hominin remains which date from between 780,000 and 300,000 years ago. Thousands of fossils are discovered there every year, but registering them all by hand makes progress frustratingly slow. So archaeologists working on the site contacted Angélica de Antonio Jiménez and Fernando Seco at the Institute of Industrial Automation in Madrid, to see if they could come up with a better way.

Antonio Jiménez and Seco were working on an ultrasound system to help blind people and robots navigate, in which a mobile transmitter sends signals to a network of fixed nodes. The time taken for the signal to arrive at each node determines the precise location of the transmitter. To adapt the system for archaeological sites, Antonio Jiménez developed a 2-metre-long pointer, like a big pencil, to act as the transmitter. To prevent the user's body blocking the signals, it has two transmitters, one at the top and one 70 centimetres below it.

When a researcher finds an object, they trace its outline with the pointer, transmitting ultrasound data to a network of nodes above the site.

Software then reconstructs not only the position of the object, but also its size, shape and orientation, to an accuracy of about 5 millimetres (Journal of Archaeological Science, DOI: 10.1016/j.jas.2009.06.027).

While some found the prototype pointers unwieldy, "the younger people on site are ready to work with it", says Seco. Antonio Jiménez is confident that the system will help speed up the pace of discoveries.

John McNabb at the Centre for the Archaeology of Human Origins in Southampton, UK, says that the technology still needs to be tested in a range of situations, but agrees it could speed up archaeology. He is particularly impressed by the ability to record the orientation of objects in the ground, which could allow researchers to determine quickly whether the layers of sediments containing the objects have been disturbed over time.

Please visit the site: <http://www.newscientist.com/article/mg20327195.900-giant-pencil-sketches-archaeological-finds-fast.html>

HAIFU U. UNDERWATER EXCAVATIONS RANKED ONE OF WORLD'S IMPORTANT, BY BARUCH GORDON

Underwater archaeological excavations in the Turkish port town of Urla have been chosen by the Archaeological Institute of America as one of the ten most important nautical excavations in the world.

Findings at the Turkish site have included the oldest wooden anchor in the world, the remains of an ancient port that collapsed in an earthquake, and sunken remains of the town itself.

The Urla excavations are being carried out by Haifa University's Institute for Maritime Studies in cooperation with scientists from Ankara University.

The research team, headed by Haifa University's Prof. Michal Artzi, began in 2000 when the Turkish researches invited their Haifa colleagues to assist in the underwater excavations. Over the years, many Turkish divers were trained by experts from Haifa's Institute for Maritime Studies, and Ankara University has recently established its own marine institute under the guidance of the Israeli team.

This unique cooperation has also led the local inhabitants to uncover their Jewish roots: two ancient Jewish cemeteries that had been neglected for years have been renovated and have been added to the region's maps.

Please visit the site: <http://www.israelnationalnews.com/News/News.aspx/132523>

CAN COMPUTERS DECIPHER A 5,000-YEAR- OLD LANGUAGE? A COMPUTER SCIENTIST IS HELPING TO UNCOVER THE SECRETS OF THE INSCRIBED SYMBOLS OF THE INDUS, BY DAVID ZAX

The Indus civilization, which flourished throughout much of the third millennium B.C., was the most extensive society of its time. At its height, it encompassed an area of more than half a million square miles centered on what is today the India-Pakistan border. Remnants of the Indus have been found as far north as the Himalayas and as far south as Mumbai. It was the earliest known urban culture of the subcontinent and it boasted two large cities, one at Harappa and one at Mohenjo-daro. Yet despite its size and longevity, and despite nearly a century of archaeological investigations, much about the Indus remains shrouded in mystery.

What little we do know has come from archaeological digs that began in the 1920s and continue today. Over the decades, archaeologists have turned up a great many artifacts, including stamp sealings, amulets and small tablets. Many of these artifacts bear what appear to be specimens of writing—engraved figures resembling, among other things, winged horseshoes, spoked wheels, and upright fish. What exactly those symbols might mean, though, remains one of the most famous unsolved riddles in the scholarship of ancient civilizations.

There have been other tough codes to crack in history. Stumped Egyptologists caught a lucky break with the discovery of the famed Rosetta stone in 1799, which contained text in both Egyptian and Greek. The study of Mayan hieroglyphics languished until a Russian linguist named Yuri Knorozov made clever use of contemporary spoken Mayan in the 1950s. But there is no Rosetta stone of the Indus, and scholars don't know which, if any, languages may have descended from that spoken by the Indus people.

About 22 years ago, in Hyderabad, India, an eighth-grade student named Rajesh Rao turned the page of a history textbook and first learned about this fascinating civilization and its mysterious script. In the years that followed, Rao's schooling and profession took him in a different direction—he wound up pursuing computer science, which he teaches today at the University of Washington in Seattle—but he monitored Indus scholarship carefully, keeping tabs on the dozens of failed attempts at making sense of the script. Even as he studied artificial intelligence and robotics, Rao amassed a small library of books and monographs on the Indus script, about 30 of them. On a nearby bookshelf, he also kept the cherished eighth-grade history textbook that introduced him to the Indus.

“It was just amazing to see the number of different ideas people suggested,” he says. Some scholars claimed the writing was a sort of Sumerian script; others situated it in the Dravidian family; still others thought it was related to a language of Easter Island. Rao came to appreciate that this was “probably one of the most challenging problems in terms of ancient history.”

As attempt after attempt failed at deciphering the script, some experts began to lose hope that it could be decoded. In 2004, three scholars argued in a controversial paper that the Indus symbols didn't have linguistic content at all. Instead, the symbols may have been little more than pictograms representing political or religious figures. The authors went so far as to suggest that the Indus was not a literate civilization at all. For some in the field, the whole quest of trying to find language behind those Indus etchings began to resemble an exercise in futility.

A few years later, Rao entered the fray. Until then, people studying the script were archaeologists, historians, linguists or cryptologists. But Rao decided to coax out the secrets of the Indus script using the tool he knew best—computer science.

On a summer day in Seattle, Rao welcomed me into his office to show me how he and his colleagues approached the problem. He set out a collection of replicas of clay seal impressions that archaeologists have turned up from Indus sites. They are small—like little square chocolates—and most of them feature an image of an animal beneath a series of Indus symbols. Most samples of the Indus script are miniatures like these, bearing only a few characters; no grand monoliths have been discovered. Scholars are uncertain of the function of the small seals, Rao told me, but one theory is that they may have been used to certify the quality of traded goods. Another suggests that the seals might have been a way of ensuring that traders paid taxes upon entering or leaving a city—many seals have been found among the ruins of gate houses, which might have functioned like ancient toll booths.

Rao and his colleagues didn't seek to work miracles—they knew that they didn't have enough information to decipher the ancient script—but they hypothesized that by using computational methods, they could at least begin to establish what sort of writing the Indus script was:

did it encode language, or not? They did this using a concept called “conditional entropy.”

Despite the imposing name, conditional entropy is a fairly simple concept: it is a measure of the amount of randomness in a sequence.

Consider our alphabet. If you were to take Scrabble tiles and toss them in the air, you might find any old letter turning up after any other. But in actual English words, certain letters are more likely to occur after others. A q in English is almost always followed by a u. A t may be followed by an r or e, but is less likely to be followed by an n or a b.

Rao and his collaborators—an international group including computer scientists, astrophysicists and a mathematician—used a computer program to measure the conditional entropy of the Indus script. Then they measured the conditional entropy of other types of systems—natural languages (Sumerian, Tamil, Sanskrit, and English), an artificial language (the computer programming language Fortran) and non-linguistic systems (human DNA sequences, bacterial protein sequences, and two artificial datasets representing high and low extremes of conditional entropy). When they compared the amount of randomness in the Indus script with that of the other systems, they found that it most closely resembled the rates found in the natural languages. They published their findings in May in the journal *Science*.

If it looks like a language, and it acts like a language, then it probably is a language, their paper suggests. The findings don't decipher the script, of course, but they do sharpen our understanding of it, and have lent reassurance to those archaeologists who had been working under the assumption that the Indus script encodes language.

After publishing the paper, Rao got a surprise. The question of which language family the script belongs to, it turns out, is a sensitive one: because of the Indus civilization's age and significance, many contemporary groups in India would like to claim it as a direct ancestor. For instance, the Tamil-speaking Indians of the south would prefer to learn that the Indus script was a kind of proto-Dravidian, since Tamil is descended from proto-Dravidian. Hindi speakers in the north would rather it be an old form of Sanskrit, an ancestor of Hindi. Rao's paper doesn't conclude which language family the script belongs to, though it does note that the conditional entropy is similar to Old Tamil—causing some critics to summarily “accuse us of being Dravidian nationalists,” says Rao. “The ferocity of the accusations and attacks was completely unexpected.”

Rao sometimes takes relief in returning to the less ferociously contested world of neuroscience and robotics. But the call of the Indus script remains alluring, and “what used to be a hobby is now monopolizing more than a third of my time,” he says. Rao and his colleagues are now looking at longer strings of characters than they analyzed in the Science paper. “If there are patterns,” says Rao, “we could come up with grammatical rules. That would in turn give constraints to what kinds of language families” the script might belong to.

He hopes that his future findings will speak for themselves, inciting less rancor from opponents rooting for one region of India versus another. For his part, when Rao talks about what the Indus script means to him, he tends to speak in terms of India as a whole. “The heritage of India would be considerably enriched if we were able to understand the Indus civilization,” he says. Rao and his collaborators are working on it, one line of source code at a time.

Please visit the site: <http://www.smithsonianmag.com/history-archaeology/51140197.html>
