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# Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

**- Ιούλιος 2010 -**

# Newsletter of the Hellenic Society of Archaeometry

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## **ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS**

# **21ST RADIOCARBON CONFERENCE, PARIS, FRANCE, CALL FOR SESSIONS**

Dear all,

The 21st Radiocarbon Conference will be held in Paris, France, during Easter or early July 2012.

We would like to take this opportunity to open the session choices to any <sup>14</sup>C actor. Besides the classical topics (calibration, archaeology, oceanography, paleoclimatology), we would like to create new thematic sessions.

Feel free to outline your wish. Please send an email to [radiocarbon2012\\_orga@cnrsgif.fr](mailto:radiocarbon2012_orga@cnrsgif.fr) with a title, a 10-15 lines paragraph the theme of the session, 2-3 key-words and potential convenors. We will receive your proposal until the end of June 2010. The Radiocarbon 2012 committee will organise the scientific program this summer, based on your contributions.

all the very best,

The Radiocarbon 2012 committee,



\*\*\*\*\*

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<http://dynamos.lsce.ipsl.fr/>

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**FIFTH FORBES SYMPOSIUM ON  
SCIENTIFIC RESEARCH IN THE FIELD  
OF ASIAN ART, DEPARTMENT OF  
CONSERVATION AND SCIENTIFIC  
RESEARCH OF THE FREER AND  
SACKLER GALLERIES, FREER  
GALLERY, OCTOBER 28 AND 29, 2010**

To celebrate the fortieth anniversary of the publication of *The Freer Chinese Bronzes*, by J. Rutherford Gettens, the Fifth Forbes Symposium on Scientific Research in the Field of Asian Art will be dedicated to the discussion of topics in Asian metallurgy. The symposium, organized by the Department of Conservation and Scientific Research of the Freer and Sackler Galleries, will be held at the Freer Gallery on October 28 and 29, 2010.

Program, on-line registration and further information are available at:

<http://www.asia.si.edu/visitor/dcsrSymposium.htm>

Support for the symposium is provided by the Edward W. Forbes Fund.

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## **9TH MATERIALS ISSUES IN ART AND ARCHAEOLOGY SYMPOSIUM, BOSTON, MA FROM NOV 29 TO DEC 3, 2010**

Dear All,

We are now accepting abstracts for the 2010 Fall MRS meeting (held in Boston, MA from Nov 29 to Dec 3). This year will mark the 9th Materials Issues in Art and Archaeology Symposium (designated WW on the MRS website).

The call for papers flyer is available at:

[http://www.mrs.org/s\\_mrs/bin.asp?CID=25914&DID=307677&DOC=FILE.PDF](http://www.mrs.org/s_mrs/bin.asp?CID=25914&DID=307677&DOC=FILE.PDF) .

We are particularly interested in papers that focus on ancient technologies, nondestructive analysis, and cutting edge applications of modern technology to the study of archaeological and artistic materials.

We hope to include at least one session that focuses on technological change and important technological transitions in prehistory, antiquity, and history. Possible paper topics include the relationship between late bronze and early iron smelting, the connection between glazing technology and glass manufacture, or ceramic technology and early copper smelting. However, abstracts addressing all related research are welcome.

The submission deadline is June 22nd.

Please feel free to forward this call for papers as you see fit.

Thank you,  
Lesley Frame

\*\*\*\*\*  
Lesley D. Frame, PhD

Arizona Research in Solar Energy ([www.azrise.org](http://www.azrise.org))  
Heritage Conservation Science  
Department of Materials Science and Engineering  
University of Arizona

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Tucson, AZ 85721

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Aristotle University of Thessaloniki  
Interdepartmental Graduate Program: *Conservation of Cultural Heritage*

**WORKS OF ART AND CONSERVATION**  
**SCIENCE TODAY NOVEMBER 26-28,**  
**2010, THESSALONIKI, GREECE,**  
**INTERNATIONAL SYMPOSIUM**  
**ANNOUNCEMENT**

The Interdepartmental Graduate Program “Conservation of Cultural Heritage” of the Aristotle University of Thessaloniki, in collaboration with the University Ecclesiastical Academy of Thessaloniki, the ATEI of Athens, the Archaeological Museum of Thessaloniki, the Museum of Byzantine Culture, and the *Ormylia* Foundation, organize an International Symposium on “Works of Art and Conservation Science Today” next November in Thessaloniki. The Symposium is sponsored by the Getty Foundation.

**Aim**

The central aim of the Symposium is to bring together renowned scientists and experts from all over the world, who will present the state-of-the-art in conservation science and practice, and exchange views on key issues related to the preservation of our cultural heritage. The Symposium will address major fields of conservation science including modern diagnostic techniques, materials for conservation, paintings, metals and ceramics, pigments and dyes, textiles, wood, paper and manuscripts. Basic theme in one of the main panels will be the Curriculum of Conservation Science Today.

**Confirmed Keynote Speakers:**

D. Cardon (France) – Textiles/Dyes  
J. Delgado Rodrigues (Portugal) – Stone Consolidation  
P. Engel (Austria) – Book/Paper  
I. Kakoulli (UCLA/Getty -USA) – Archaeological Materials  
M. Matteini (Italy) – Wall Paintings  
L. Pharmakalidou (Greece) – Icons  
V. Daniels (UK) – Manuscripts  
P. Pouli (Greece) – Laser Cleaning  
J. Wouters (Belgium) – Dyes/Pigments

**Call for Abstracts:**

The Program includes keynote lectures, panel discussions, regular and short presentations and posters. The deadline for submission of abstracts is September 10th, 2010. Manuscripts of 4 or 6 pages for the proceedings, are due by October 15th, 2010.



## Registration

Registration fee before September 30th is 120 euros (60 euros for students). A number of reasonably priced hotels will be available to host the participants.

**Contact:** [striant@auth.gr](mailto:striant@auth.gr), [koskina@arch.auth.gr](mailto:koskina@arch.auth.gr),

Phone: 30-2310-995559, Fax: 30-2310-995483

## Organizing Committee:

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F. G. Stamkopoulos (Univ. Eccles. Academy of Thessaloniki)  
A. Alexopoulou (ATEI - Athens)  
D. Lazidou (Museum of Byzantine Culture, Thessaloniki)  
J. Nazlis (Archaeological Museum, Thessaloniki)  
A. Zabaniotou (RMEI, AUTH-Greece)  
S. Sotiropoulou (*Ormylia* Foundation)  
E. Kabasakali (University of Thessaloniki)

## International Scientific Committee:

M. Bouchenaki (ICCRUM)  
D. Cardon (CNRS/Lyon, France)  
Y. Chrysoulakis (NTUA, Greece)  
M. Colombini (Univ. Pisa, Italy)  
J. Delgado Rodrigues (LNEC/Lisbon, Portugal)  
M. Doulgeridis (National Gallery, Greece)  
P. Engel (ERC-Book/Paper Conservation, Austria)  
C. Fotakis (FORTH, Greece)  
M. Hubbe (NCSU, USA)  
M. Matteini (Op. Pietre Dure, Conservation Scientist-Consultant, Italy)  
N. Minos (Ministry of Culture, Greece)  
C. Moulherat (C2RMF, France)  
A. Paterakis (Byzantine Museum, Greece)  
S. Stasinopoulos (Benaki Museum, Greece)  
A. Moropoulou (NTUA, Greece)  
E. Siviero (Inst. Architecture Venice, Italy)  
A. Velios (Camberwell College of Arts, UK)  
F. Vestroni (Univ. Rome, Italy)  
L. Vincent (RMEI, France)  
J. Wouters (KIK/IRPA, Conservation Scientist-Consultant, Belgium)  
N. Zacharias (UOP, Greece)

**Note:** In close collaboration with RMEI (the Network of Mediterranean Technical Universities), the Working Group of RMEI on Conservation Science will be established during the Symposium and its first assembly will take place.

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# ICOMOS CONGRESS ON WALL PAINTINGS, FLORENCE, ITALY, JANUARY 2011

Dear colleagues,

Please find herewith the web address concerning a next ICOMOS congress on wall paintings. It will take place in Florence next January.

[http://www.fondazione-delbianco.org/seminari/progetti\\_prof/progview\\_PL.asp?start=1&idprog=196#punto1](http://www.fondazione-delbianco.org/seminari/progetti_prof/progview_PL.asp?start=1&idprog=196#punto1)

May I ask you to forward this information to other colleagues?

Kind regards,

\*\*\*\*\*

Jean-Marc VALLET  
General secretary of ICOMOS-ISCS

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► ► **CICRP**

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tél./phone : +33(0)4 91 08 23 48/ fax : +33(0)4 91 08 88 64  
mobile : +33 (0)6 16 55 19 40  
web : <http://www.cicrp.fr>

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## **ICOMOS GENERAL ASSEMBLY IN 2011**

Note the date in your calendar

The 17<sup>th</sup> General Assembly and Scientific Symposium of ICOMOS will be held from 27 November to 2 December 2011 in Paris (France). The symposium theme will be “Heritage, as an engine for development”.

The Executive Committee is particularly pleased to announce that the event will be held under the patronage of Mrs. Irina Bokova, Director General of UNESCO and that both the General Assembly and Scientific Symposium will be located at UNESCO headquarters.

On behalf of the members, the ICOMOS Executive Committee expresses its thanks to ICOMOS France for organizing this event. This is the first time that the General Assembly will be held in Paris, home of our headquarters.

The members of the Advisory and Executive Committees should note that the meetings prior to the General Assembly will take place on 26 and 27 November for the Advisory Committee, and 25 and 27 November for the Executive Committee.

A more detailed programme will be presented at the Advisory Committee meeting in Dublin (October 2010) but we invite you to block out the date now as we count on your participation.

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### **ICOMOS**

**International Council on Monuments and Sites/  
Conseil International des Monuments et des Sites  
International Secretariat / Secrétariat International  
49-51 rue de la Fédération  
75015 Paris – France  
Tel : +33 (0) 1 45 67 67 70  
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e-mail : [secretariat@icomos.org](mailto:secretariat@icomos.org)**

**To propose any announcements, please contact the editor/ Pour soumettre des annonces, veuillez contacter l'éditeur :  
Gaia Jungeblodt, Director**

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## **10TH EDITION OF POSTGRADUATE CYPRIOTE ARCHAEOLOGY (POCA), CA' FOSCARI UNIVERSITY OF VENICE, 28TH TO 30TH OF OCTOBER 2010**

The Ca' Foscari University of Venice is proud to announce the 10th edition of Postgraduate Cypriote Archaeology (PoCA). This year meeting will be held from 28th to 30th of October 2010 at the conference hall of our university and the prestigious hall of the Ateneo Veneto where the keynote lecture will take place. Beyond the PoCA, in 2010 Venice will celebrate the 500th anniversary of the death of Caterina Cornaro, last queen of Cyprus and the twining with a Cypriote town, Larnaca.

The PoCA symposium offers an excellent opportunity to postgraduate students and new scholars, from various backgrounds and disciplines, who are currently carrying out research on Cypriot Culture, to present their work, exchange ideas and meet people who carry out research in the same field.

We welcome all papers regarding archaeological, historical, anthropological, or rather material culture and art history. There is no chronological limit. This 10th edition's aim is to extend the interest of the colloquium in the drop subjects of the material culture, art history and anthropology and in the chronological periods of the Middle Ages and the Modern Era.

There is no registration fee.

Please send your paper title and a short proposal of no more than 200 words, along with biographical details, to Mia-Gaia Trentin, [trentinmia@libero.it](mailto:trentinmia@libero.it) or to Iosif Hadjikyriakos, [iosifhadji@libero.it](mailto:iosifhadji@libero.it) no later than July 31th , 2010. Papers should be 20 minutes long, as they will be followed by discussion. Please note that we intend to publish the proceedings. All submissions will be subject to editorial review, and therefore acceptance for presentation does not automatically guarantee inclusion in the final publication.

We look forward to see you all in Venice!

Please visit the site: <http://lettere2.unive.it/poca2010/> [Go there for many important inks]

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## **XVIIITH INTERNATIONAL CONGRESS OF ANCIENT BRONZES MAY 21-25, 2011 / IZMIR, TURKEY**

The Art of Bronzes in Anatolia and the Eastern Mediterranean from Protogeometric to Early Byzantine Periods (10th century B.C. to 7th century A.D.)

We are pleased to announce that the XVIIth International Congress of Ancient Bronzes will take place on May 21-25, 2011 in Izmir, Turkey.

This congress encourages dialogue among Turkish, European, and north American scholars in bronze archaeology of the Eastern Mediterranean, and proposes to offer a firm base for future research on bronzes in Turkey. We invite contributions by scholars and graduate students from disciplines related to this subject to discuss issues concerning ancient bronzes in the Mediterranean basin. Proposals may be for 10- to 20-minute papers, as well as for poster presentations.

One goal of this congress is to present the less well-known bronze materials from Anatolia and other neighboring countries in the east. Presentations from the other parts of Classical world are also welcome. We hope to address questions of production, subject matter, function, chronology, and trade. Papers may deal with archaeology, technological history, history of art, philology, cultural anthropology. Of particular interest are reports from excavations in Asia Minor and the rest of the Eastern Mediterranean yielding Greek and Roman bronzes along with other stratified finds that will help to build a more precise chronology for the bronzes.

Papers may be delivered in English, French, German, Italian, Spanish, Greek or Turkish, but English is the preferred language. Please fill out the form below regarding your intention to participate and send it to Dr. Ergun LAFLI. Submit an abstract of no more than 300 words and attached registration form before February 1, 2011 to <[ergun.lafli@deu.edu.tr](mailto:ergun.lafli@deu.edu.tr)>, or by fax to +90.232.453 41 88. Abstracts of the congress will be available at the congress, and proceedings of the congress will be published in 2013.

The three-day congress will be combined with two days of post-congress excursions on May 24 and 25 to three archaeological museums with large bronze collections in Izmir as well as to Ephesus and its museum.

A congress website will soon be established, and participants will be informed.

The participation fee of 40 euro (=60 \$US; 80 TL), to be paid on site, will include coffee and refreshments at breaks, and post-congress excursions, but not abstracts, publication of the proceedings, or your accommodation and travel expenses. Hotels available for the congress participants will be announced in a future Circular.

The organizers encourage colleagues from all parts of the world to attend. Please alert your research community either by forwarding our e-mail, or by printing this circular and displaying it in your institution.

We hope that you will be able to join us at the Sabanci Cultural Center, and we look forward to seeing you in Izmir!

Contact Addresses for the Congress

XVIIth International Bronze Congress  
c/o Doc. Dr. Ergun LAFLI  
Dokuz Eylul Universitesi  
Fen-Edebiyat Fakultesi  
Arkeoloji Bolumu  
Tinaztepe/Kaynaklar Yerleskesi  
Buca

TR-35160 Izmir, TURKEY.  
Fax: +90.232.453 41 88.  
E-mail: <[ergun.lafli@deu.edu.tr](mailto:ergun.lafli@deu.edu.tr)>.

Scientific Organizing Committee: Doc. Dr. Ergun LAFLI (DEU), Prof. Ilter UZEL (Cukurova University, Adana) and Dr. Maurizio BUORA (Udine).

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**INVITATION TO THE INTERNATIONAL**  
**ÖGUF-CONFERENCE 2010 AT THE**  
**NATURHISTORISCHES MUSEUM IN**  
**VIENNA ÖSTERREICHISCHE**  
**GESELLSCHAFT FÜR UR- UND**  
**FRÜHGESCHICHTE**

This year's International ÖGUF Conference will take place from 27th ? 30th October 2010 at the Naturhistorisches Museum in Vienna with the theme

Experimental Archaeology  
Theory ? Practice ? Science ? Education

The reconstruction and description of the genesis of finds and features is one of the core lines of approach in archaeological research. Experimental archaeology enables us to prove or disprove archaeological research findings. In raising targeted questions, new possibilities of interpretation can be suggested by mounting reproducible practical trials and experiments.

The focus of this conference will not only be placed on the various categories of material (metal, wood, bone, textiles, glass, pottery etc.), technological processes, craftsmanship and work sequences but a special emphasis will also be placed on socioarchaeological subjects such as the management of resources, organisational structures and societal interactions, which can only be explored by mounting long-term experiments. Another main topic will be the advancement achieved in ongoing experiments (?work in progress?).

The museum educational implementation of these results will also be discussed at the conference, since experimental archaeology and archaeotechnology can, like no other method of research, make archaeological research results easy to understand and accessible to the wider public.

Two excursions to visit the open-air museums in Asparn an der Zaya and in Schwarzenbach will be on offer for participants during the four-day event.

On behalf of the organisers I would like to invite you to give a presentation at this year's International ÖGUF Conference!

Please complete the form attached and return it (by email) no later than 30th June 2010.

We would be delighted to welcome you to our International ÖGUF Conference in Vienna!

Yours sincerely



Mathias Mehofer  
[mathias.mehofer@univie.ac.at](mailto:mathias.mehofer@univie.ac.at)

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Please address your enquiries and registrations to:  
Ass.-Prof. Mag. Dr. Alexandra Krenn-Leeb Österreichische Gesellschaft für Ur- und  
Frühgeschichte Franz-Klein-Gasse 1, A-1190 Wien  
Tel.: (+43) 01/4277 40473  
Fax: (+43) 01/4277 9404  
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**ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –**  
**JOB VACANCIES/FELLOWSHIPS**

<http://phd.hum.ku.dk/Blivph.d./stipendieopslag/textilterminologi/>

The Danish National Research Foundation's Centre for Textile Research (CTR) and the Faculty of Humanities, University of Copenhagen invite applications for a 3-years PhD scholarship on the topic of textile terminologies of Greece in the 2nd and 1st mill. BC with possible outlook to developments in Hellenistic Egypt and into Roman times. The candidate is expected to possess strong qualifications within the fields of linguistics, ancient Greek and ancient Greek dialectology.

The PhD grant is an integral part of the new CTR research plan 2010-2015 and its research programme TEXTILE ECONOMIES IN THE MEDITERRANEAN AREA (TEMA). See <http://ctr.hum.ku.dk/>

The successful applicant will be enrolled at the Graduate School at the Faculty of Humanities from 1 February 2011 or later. The PhD program is a three-year study program. The daily work place will be at the Centre for Textile Research. The PhD student will be affiliated to the PhD Programme in Archaeology, Ethnology, Greek & Latin, and History, see for more information: <http://phd.hum.ku.dk/saxocph/>

For further information contact director Marie-Louise Nosch, CTR, Njalsgade 80, DK-2300 Copenhagen S, Denmark tel. +45 35 32 96 91, [nosch@hum.ku.dk](mailto:nosch@hum.ku.dk).

**Application deadline: 17 August 2010**

\*\*\*\*\*

Professor mso Marie-Louise Nosch, PhD  
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<http://ctr.hum.ku.dk/>

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## POSTDOCS: IN THE HISTORY OF MATHEMATICS (PARIS)

The research center SPHERE (UMR 7219, CNRS and universit  Paris-Diderot) advertises a postdoctoral position in the history of mathematics for the academic year 2010-2011 (1 September 2010-31 August 2011). This holder of this position is expected to take part in the pluri-annual research program “History of Numerical Tables” sponsored by a grant from the French Agence Nationale de la Recherche (ANR). More information about this program can be found on the following web site:

<http://www.rehseis.univ-paris-diderot.fr/spip.php?article594>.

The applicant will have a good training in mathematics and will have a Ph.D. thesis (or equivalent) in the history of science defended since less than three years. A good knowledge of English is necessary. Knowledge of one or more other ancient or modern languages will be strongly appreciated. The applicant will moreover be able to use computer programs helpful for the development of data bases and web platforms.

The postdoctoral fellow will devote most of his or her time to the study of an original corpus of numerical tables corresponding to his or her field of specialty: data collection in museums, archives and/or libraries, analysis of these sources, publication of original research.

The postdoctoral fellow is expected to publish his or her own results in internationally recognized journals, while taking part to the collective work of the team (collected volumes in preparation). He or she may also be called to assist other researchers in the organization of seminars, working group meetings, and international workshops, in the development of data bases and web platforms.

To apply, the candidate should send before June 25, 2010:

- A detailed CV including description of training in mathematics and history of science;
- Thesis defense reports;
- A sample of publications since the thesis has been defended;
- A research project to be carried out while in tenure of the fellowship (one- to two-page long).

\*\*\*\*\*

For more information, one may contact M. Dominique Tourn s.

[dominique.tournes@univ-reunion.fr](mailto:dominique.tournes@univ-reunion.fr)

Projet ANR « Histoire des tables num riques » <http://www.rehseis.univ-paris-diderot.fr/spip.php?rubrique148>.

Laboratoire SPHERE-REHSEIS (UMR 7219, CNRS et universit  Paris-Diderot)  
<http://www.rehseis.univ-paris-diderot.fr/>.

\*\*\*\*\*

From Christine Proust [christine.proust@wanadoo.fr](mailto:christine.proust@wanadoo.fr):

***INTERNET SITES***

**ΚΡΗΤΙΚΑ ΧΡΟΝΙΚΑ - ΚΡΕΤΙΚΑ**  
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is now accessible online at:

[http://ancientworldonline.blogspot.com/2010/06/open-access-journal\\_02.html](http://ancientworldonline.blogspot.com/2010/06/open-access-journal_02.html)

or

<http://tinyurl.com/2ugc7mv>

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Chuck Jones

ISAW - NYU

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## **INTERVIEW OF DR. ELISABETTA BOARETTO OF THE WEIZMANN INSTITUTE**

LandMinds interviews Dr. Elisabetta Boaretto of the Weizmann Institute, Bar Ilan and the Kimmel Center, regarding a conference on new advances in scientific dating methods. Elisabetta's particular expertise is in C-14 dating, and she is in the field in Tel Kabara in Israel and throughout the world.

161. Interview with Elisabetta Boaretto - Part I (June 23, 2010) at <http://www.foundationstone.org/LandMinds10/files/June23Landminds1-lr.mp3>.

162. Interview with Elisabetta Boaretto - Part II (June 23, 2010) at <http://www.foundationstone.org/LandMinds10/files/June23Landminds2-lr.mp3>.

From Barnea Levi Selavan [barnea@foundationstone.org](mailto:barnea@foundationstone.org)

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# THE GLOBAL EGYPTIAN MUSEUM

<http://www.globalegyptianmuseum.org/>

Directed by  
Dirk van der Plas & Mohamed Saleh

Supported by  
Comité Internal pour l'Egyptologie (CIPEG) Committee of the International Council of Museums (ICOM-UNESCO)

Hosted by  
Center for Documentation of Cultural and Natural Heritage (CULTNAT)

Preface  
Preface to the first Edition  
Credits  
Rules, Conditions & Copyright  
Participating collections

At a rough estimate, over 2 million objects from ancient Egypt are kept in about 850 public collections, dispersed over 69 countries around the world. This website aims to collect them into a global virtual museum, which can be visited at any time, from any place. The Global Egyptian Museum is a long-term project, carried out under the aegis of the International Committee for Egyptology (CIPEG).

The Basic Mode, currently showcasing 1340 highlights, is geared to the interested public. A glossary of more than 400 items explains Egyptian terms and themes. Many objects are provided with audio comments and 3D-movies.

The Advanced Mode, equipped with a powerful search and data entry engine, opens up the full database - presently 14975 objects - to professionals and amateurs.

Kids! offers information for children at the age of 8-12 years in an interactive way.

Please visit the site: [http://ancientworldonline.blogspot.com/2010/06/global-egyptian-museum.html?utm\\_source=feedburner&utm\\_medium=email&utm\\_campaign=Feed%3A+Awol-TheAncientWorldOnline+\(AWOL+-+The+Ancient+World+Online\)](http://ancientworldonline.blogspot.com/2010/06/global-egyptian-museum.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+Awol-TheAncientWorldOnline+(AWOL+-+The+Ancient+World+Online))  
[Go there for live links]

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## NEW DATES FOR EGYPTIAN PHARAOHS

The following series of articles concern the publication in the June 18, 2010 Science magazine of a report article, "Radiocarbon-Based Chronology for Dynastic Egypt", and a Perspective article, "Dating Pharaonic Egypt", details of which follow immediately below.

Also following the articles is a Ben-Gurion University press release concerning the Perspective article.

A. The Science magazine article "Radiocarbon-Based Chronology for Dynastic Egypt" is available by subscription or by payment. See <http://www.sciencemag.org/cgi/content/full/328/5985/1554> or <http://www.sciencemag.org/cgi/reprint/328/5985/1554.pdf>

The figures for the article are available online at <http://www.sciencemag.org/cgi/content/figonly/328/5985/1554> (However, the enlarged diagrams are only available by subscription while the captions may be read online.)

The 27-page "Supporting Online Material" may be accessed at <http://www.sciencemag.org/cgi/content/full/sci:328/5985/1554/DC1> and downloaded as a PDF from

<http://www.sciencemag.org/cgi/data/328/5985/1554/DC1/1> ("This supplement contains: Materials and Methods, SOM Text, Figs. S1 to S5, Tables S1 to S7, References")

The following free abstract is available at

<http://www.sciencemag.org/cgi/content/abstract/328/5985/1554>

Science 18 June 2010: Vol. 328. no. 5985, pp. 1554 - 1557

DOI: 10.1126/science.1189395

### Reports

#### Radiocarbon-Based Chronology for Dynastic Egypt

Christopher Bronk Ramsey,\* Michael W. Dee, Joanne M. Rowland, Thomas F. G. Higham, Stephen A. Harris, Fiona Brock, Anita Quiles, Eva M. Wild, Ezra S. Marcus, Andrew J. Shortland

The historical chronologies for dynastic Egypt are based on reign lengths inferred from written and archaeological evidence. These floating chronologies are linked to the absolute calendar by a few ancient astronomical observations, which remain a source of debate. We used 211 radiocarbon measurements made on samples from short-lived plants, together with a Bayesian model incorporating historical information on reign lengths, to produce a chronology for dynastic Egypt. A small offset (19 radiocarbon years older) in radiocarbon levels in the Nile Valley is probably a growing-season effect. Our radiocarbon data indicate that the New Kingdom started between 1570 and 1544 B.C.E., and the reign of Djoser in the Old Kingdom started between 2691 and 2625 B.C.E.; both cases are earlier than some previous historical estimates. \* To whom correspondence should be addressed. E-mail: [christopher.ramsey@rlaha.ox.ac.uk](mailto:christopher.ramsey@rlaha.ox.ac.uk)

B. The Science magazine Perspective article "Dating Pharaonic Egypt" is available by subscription or by payment. See

<http://www.sciencemag.org/cgi/content/full/328/5985/1489> or  
<http://www.sciencemag.org/cgi/reprint/328/5985/1489.pdf>

The following free summary is available at  
<http://www.sciencemag.org/cgi/content/short/328/5985/1489>

Science 18 June 2010: Vol. 328. no. 5985, pp. 1489 - 1490  
DOI: 10.1126/science.1191410

Perspectives

Anthropology:

Dating Pharaonic Egypt

Hendrik J. Bruins

Ancient literary sources of Pharaonic Egypt constitute the historical cornerstone of time in the eastern Mediterranean region during the Bronze and Iron Ages (the third to first millennia B.C.E.). Historical chronologies for ancient Egypt are based on abundant but fragmentary written sources, and various chronological interpretations exist (1–5). Radiocarbon dating has the potential to verify those interpretations (6). On page 1554 of this issue, Bronk Ramsey et al.

(7) present a comprehensive and sophisticated radiocarbon dating study on the chronology of Pharaonic Egypt, involving 211 samples. The short-lived plant samples for <sup>14</sup>C dating were selected from individual funerary contexts in various museum collections. Each sample could be associated with the reign of a particular Pharaoh or with a specific section of the historical chronology.

Ben-Gurion University of the Negev, Jacob Blaustein Institutes for Desert Research and Department of Bible, Archaeology and Ancient Near Eastern Studies, Sede Boker Campus, 84990, Israel.

E-mail: [hjbruins@bgu.ac.il](mailto:hjbruins@bgu.ac.il)

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<http://news.sciencemag.org/sciencenow/2010/06/new-dates-for-egypts-pharaohs.html>

Science Now

New Dates for Egypt's Pharaohs

by Michael Balter on June 17, 2010 2:02 PM

Just when did Egyptian pharaohs such as King Tut and Rameses II rule? Historians have heatedly debated the exact dates. Now a radiocarbon study concludes that much of the assumed chronology was right, though it corrects some controversial dates and may overturn a few pet theories.



"This is an extremely important piece of research that shows clearly that historical dating methods and radiocarbon dates are compatible for ancient Egypt," says Kate Spence, an archaeologist at the University of Cambridge in the United Kingdom.

Egyptian records, such as the writings of the 3rd century B.C.E. historian Manetho and inscriptions found at key sites such as Saqqara and Karnak, provide what are called "floating chronologies" because they are internally consistent but not anchored to absolute dates. On the other hand, they sometimes refer to astronomical events whose dates can be calculated today. Thus, scholars are confident that they are not wildly off the mark. But it's difficult to be precise. For example, the first known pyramid, the Step Pyramid at Saqqara, was built as a tomb for King Djoser, and historians usually put the beginning of his reign between 2667 and 2592 B.C.E. But one recent paper by Spence, based on astronomical calculations, put it as much as 75 years later. Radiocarbon dating has been too imprecise to resolve these contradictions because in this period it usually has error ranges of between 100 and 200 years.

A team led by Christopher Bronk Ramsey of the University of Oxford in the United Kingdom adopted a two-pronged strategy to get around radiocarbon's limitations. First, researchers searched museum collections around the world for plant remains directly associated with the reigns of particular kings or periods, often using offerings from pyramids where the kings were buried. The 211 plant samples were radiocarbon dated.

Second, the team used a mathematical modeling approach called Bayesian statistics to compare the patterns in the radiocarbon and historical dates and come up with the most likely correlation between them. The researchers constructed a separate model for each of the three main Egyptian periods: Old Kingdom, Middle Kingdom, and New Kingdom. This allowed them to increase the precision of radiocarbon dating of each period to 76, 53, and 24 years, respectively.

As the researchers will report in tomorrow's issue of *Science*, they found that the Old Kingdom, which kicked off with Djoser's reign, began between 2691 and 2625 B.C.E. The New Kingdom, which starts with the reign of Ahmose, began between about 1570 and 1544 B.C.E. New Kingdom pharaoh Rameses II, considered the greatest of the Egyptian kings by historians, clocks in between 1297 and 1273 B.C.E., and King Tut between 1353 to 1331 B.C.E. The dating ranges are earlier than some historians had previously proposed. For example, in a 2000 *Nature* paper, Spence argued, based on the astronomical alignments of Egyptian pyramids, that Djoser's reign was somewhat later. "I am more than happy to accept" the new results, Spence says, adding that the Old Kingdom dating is "particularly important" because "this is the first time there has been anything firm to which to pin our historical relative chronologies."

Yet the new study does not resolve all of the outstanding issues. In a Perspective accompanying the paper, archaeologist Hendrik Bruins of Ben-Gurion University of the Negev in Israel points out that one major controversy remains unresolved: the timing of the massive eruption of the volcanic island of Thera in the Aegean Sea, which transformed the history of the eastern Mediterranean and has important implications for understanding the relationship between Egypt and the Minoans, another powerful culture of the time. Previous radiocarbon dating suggests that the eruption took place at least 100 years before the New Kingdom began, which the new dating puts at no earlier than 1570 B.C.E. But radiocarbon and historical dating by University of Vienna archaeologist

Manfred Bietak's team at Tell el-Dab'a in Egypt has concluded that the Thera eruption took place during the New Kingdom era.

Bietak says that although the new study is a "serious and innovative approach," the team's need to use Bayesian statistics to narrow its radiocarbon date ranges "expose[s] the weakness of radiocarbon chronology." But Sturt Manning, an archaeologist at Cornell University, says that the field must now accept that "there is something wrong" with the stratigraphy and dating of the site of Tell el-Dab'a rather than the chronology as a whole.

Enlargeable picture at

[http://news.sciencemag.org/sciencenow/assets\\_c/2010/06/sn-egyptian-thumb-200xauto-3539.jpg](http://news.sciencemag.org/sciencenow/assets_c/2010/06/sn-egyptian-thumb-200xauto-3539.jpg)

Date with destiny. Papyrus records (lower left) and radiocarbon analysis of plant remains (upper left) give similar dates for the reigns of Egyptian kings such as Djoser, buried in the Step Pyramid at Saqqara (main photo).

Credit: (pyramid) Anita Quiles; (papyrus and bowl insets) Ezra Marcus

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<http://www.nature.com/news/2010/100617/full/news.2010.304.html>

NatureNews

Published online 17 June 2010

Nature - doi:10.1038/news.2010.304

News

Egyptian kingdoms dated

Radioactive isotopes nail the timeline of Egyptian dynasties.

Richard Lovett

A three-year study of hundreds of artefacts looks set to settle several long-standing debates about Egypt's ancient dynasties.

The study, which appears in today's issue of Science1, is the first to use high-precision measurements of radioactive carbon isotopes to produce a detailed timeline for the reigns of Egyptian pharaohs from about 2650 BC to 1100 BC.

"It is a very, very important finding," says Hendrik Bruins, an archaeologist and geoscientist at Ben-Gurion University of the Negev, Israel, who was not associated with the work. "For the first time, radiocarbon dating more or less corroborates the essence of the Egyptian historical chronology."

Led by Christopher Bronk Ramsey, a physicist and mathematician at the University of Oxford, UK, the researchers use the well-established technique of measuring the amount of radioactive carbon-14 in ancient artefacts. Plants absorb carbon-14 as they grow, and

the radioisotope decays naturally over time after they die. Measuring carbon-14 levels in artefacts made of organic material allows archaeologists to determine their age.

Archaeologists throughout the world use radiocarbon dating, but surprisingly, no high-precision dating work had been done on Egyptian artefacts before. Egypt has strict bans on the export of archaeological items, and the equipment needed for a high-quality study did not exist in Egypt, says Bronk Ramsey.

To circumvent this problem, Bronk Ramsey and his team collected 211 samples from museums in Europe and the United States. To ensure that the samples were made from organic material that grew at the same time that the artefact was made, they avoided artefacts made of wood and bone, relying instead on baskets, textiles and foods.

#### Aligning the pharaohs

Most of the samples were taken from tombs known to be associated with the reign of specific pharaohs. Because the order in which these pharaohs had ruled — and the approximate lengths of their reigns — was already known, the samples could be examined as a group. Measuring many samples at once improved the precision of some dates to within just two decades, far better than individual samples would allow.

The findings are likely to settle some long-standing disputes among Egyptologists. One debate involves the start of the New Kingdom, which included famous pharaohs such as Amenhotep, Tutankhamen and Ramses. Historians had disagreed on precisely when this era started, with one group favouring 1539 BC, and another placing the date at about 1550 BC. The findings of Bronk Ramsey and his team favour the earlier date — and possibly even a decade earlier than that.

Similarly, there has also been some debate about the starting date for the Middle Kingdom, which preceded the New Kingdom. Traditionally, the beginning of that era has been tied to an astronomical bearing on the star Sirius. But it wasn't clear where the sighting had been taken, and that led to date estimates ranging from 2055 BC to 2009 BC. Again, the latest study by Bronk Ramsey and his colleagues supports the earlier date. "This is really a very important data set," says Bruins.

The data might also help archaeologists and historians to determine where the explosion of the volcano Thera figures in the history of Egypt. The eruption destroyed much of the Greek isle of Santorini and sent shock waves through Mediterranean civilization. The precise date of the eruption is of some contention, but by comparing previous results with the latest data, it is possible to conclude that the explosion took place before the beginning of the New Kingdom, says Bruins.

Furthermore, the same methods can be used to correlate Egyptian history with that of the rest of the Mediterranean. "We can finally compare apples with apples," Bruins says.

#### References

- Bronk Ramsey, C. et al. *Science* 328, 1554-1557 (2010).  
Bruins, H. J. *Science* 328, 1489-1490 (2010).

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<http://news.discovery.com/archaeology/ancient-egypt-radiocarbon-dating.html>

Discovery News

Thu Jun 17, 2010 04:45 PM ET

Content provided by AFP

## Ancient Egypt's Pharaohs Dated Using Plants

Archaeologists finally have a clear timeline for the ruling dynasties of ancient Egypt thanks to carbon dating.

### THE GIST

Carbon dating plant remains has helped archaeologists determine a clear timeline for the rulers of ancient Egypt.

Dates for Egypt's Old, Middle and New Kingdoms had been based on historical documents or archaeological findings.

Radiocarbon dating is a technique that can accurately determine the age of organic material.

Scientists have established for the first time clear dates for the ruling dynasties of ancient Egypt after carbon dating plant remains, according to research published Thursday.

The results will force historians to revise their records for the two millennia when ancient Egypt dominated the Mediterranean world and hopefully end debate once and for all between rival Egyptologists.

Led by Professor Christopher Ramsey of Britain's Oxford University, an international team tested seeds, baskets, textiles, plant stems and fruit obtained from museums in the United States and Europe for the landmark study.

"For the first time, radiocarbon dating has become precise enough to constrain the history of ancient Egypt to very specific dates," said Ramsey. "I think scholars and scientists will be glad to hear that our small team of researchers has independently corroborated a century of scholarship in just three years."

Dates for Egypt's Old, Middle and New Kingdoms had been based on historical documents or archaeological findings, but estimates were notoriously uncertain as each dynasty would reset the clock.

The new data showed the reign of Djoser, the best known pharaoh in the Old Kingdom, was between 2691 and 2625 B.C., some 50 to 100 years earlier than the established wisdom.

The study, published in Friday's issue of the journal Science, also concluded that the New Kingdom started slightly earlier than thought, between 1570 and 1544 B.C.

The research team included experts from the universities of Oxford and Cranfield in Britain, the National Center for Scientific Research (CNRS) in France, and experts from Austria and Israel.

Radiocarbon dating, also known as carbon-14 dating, is a technique that can accurately determine the age of organic material.

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The following BGU press release is available at additional sites under the same title.

[http://www.eurekalert.org/pub\\_releases/2010-06/aabu-nao061710.php](http://www.eurekalert.org/pub_releases/2010-06/aabu-nao061710.php)

EurekaAlert!

Public release date: 17-Jun-2010

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516-944-4486

American Associates, Ben-Gurion University of the Negev

New analysis on problems between archaeology and pharaonic chronology, based on radiocarbon dating

Article by Ben-Gurion University of the Negev professor published in Science magazine

BEER-SHEVA, ISRAEL June 17, 2010 -- In a just published article in Science magazine (June 18, 2010), Prof. Hendrik J. Bruins of Ben-Gurion University of the Negev presents novel implications related to new developments in the radiocarbon dating of Pharaonic Egypt.

The article reports that, for the first time, it is possible to relate the Minoan Santorini eruption with Egyptian Historical Chronology solely on the basis of radiocarbon dates. Thus, it appears that the eruption preceded the 18th Dynasty and occurred during the Hyksos Period. Moreover, conventional association of Egyptian history with archaeological phases at Tell el-Dab'a, the ancient capital of the Hyksos, located in the northeastern region of the Nile delta, do not fit in terms of radiocarbon dating.

Bruins is a researcher in the University's Department of Man in the Desert at the Jacob Blaustein Institutes for Desert Research and is affiliated with the Department of Bible, Archaeology and Ancient Near Eastern Studies. His research focuses on the 2nd millennium B.C.

"Major problems exist here in relation to the Santorini eruption between archaeological dating, radiocarbon dating and association between archaeological strata in the field and Egyptian Historical Chronology," said Bruins.

In 2006, Bruins received the Dutch Royal Award – Officer in the Order of Orange-Nassau – in the name of Her Majesty Queen Beatrix for achievements in policy-oriented studies on drought, hazard assessment and contingency planning in drylands, geo-archaeological desert research and innovative chronological studies about the ancient Near East.

He first came to Ben-Gurion University in 1976 as an instructor in the Department of Geography, then worked in the early 1980s for the Israel Antiquities Authority in the framework of the Negev Emergency Archaeological Survey. Bruins developed novel geo-archaeological research techniques, pioneered excavations in ancient agricultural terraces in the Negev highlands and discovered extensive tsunami deposits in Crete (Palaikastro), related to the Minoan Santorini eruption.

He also carried out research at the Ein el-Qudeirat oasis of northeastern Sinai, associated by some scholars with biblical Kadesh-Barnea. There, he became aware of the vital need to measure time in both archaeological and environmental studies with the same methodology: radiocarbon dating. This was the beginning of innovative research in cooperation with one of the best radiocarbon labs in the world situated at the University of Groningen in the Netherlands.

Several major archaeological sites in Israel are currently under investigation, as well as rural desert sites in the Negev.

For more information, contact Prof. Hendrik Bruins, [hjbruins@bgu.ac.il](mailto:hjbruins@bgu.ac.il); office: 972-8-6596863; cell: 972-52-3930392

**From Joseph I. Lauer [josephlauer@hotmail.com](mailto:josephlauer@hotmail.com)**

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***ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS***

**JOURNAL OF ARCHAEOLOGICAL  
SCIENCE 37 (2010) 1042–1052, KEEPING  
AN EYE ON YOUR POTS: THE  
PROVENANCE OF NEOLITHIC  
CERAMICS FROM THE CAVE OF THE  
CYCLOPS, YOURA, GREECE**

Patrick Quinn **a,\***, Peter Day **a**, Vassilis Kilikoglou **b**, Edward Faber **c**, Stella Katsarou-Tzeveleki **d**, Adamantios Sampson **e**

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**Abstract**

Combined petrographic and chemical analysis of MN and LN ceramics from the Cave of the Cyclops on the island of Youra, Greece, has revealed a compositionally diverse assemblage with a range of different local and off-island sources. Ceramics deposited in Neolithic times on this barren, rocky outpost of the Sporades chain may have originated from a surprising number of possible origins, including from the Plain of Thessaly, Euboea and the volcanic northeast Aegean islands. This picture challenges traditional assumptions about Neolithic pottery production and indicates that significant movement of ceramics was already taking place within the northern Aegean as early as the beginning of the sixth millennium BC. The discovery of a persistent local pottery tradition, that is also found on the neighbouring island of Kyra-Panagia, indicates significant continuity in ceramic technology over some 1500 years.

[doi:10.1016/j.jas.2009.12.005](https://doi.org/10.1016/j.jas.2009.12.005)



## **EΙΔΗΣΕΙΣ - NEWS RELEASE**

# **CAMBRIDGE UNIVERSITY TO DIGITALISE FAITH AND SCIENCE LIBRARY COLLECTIONS**

Fragments of the Dead Sea Scrolls are among the jewels in the Cambridge University library that may soon be made available digitally.

Cambridge University Library has announced plans to become a digital library for the world.

The library is home to more than seven million books and some of the greatest collections in existence, including those of Newton and Darwin.

The first collections to be digitised will be entitled The Foundations of Faith and The Foundations of Science. The goal for both is that they become ‘living libraries’ with the capacity to grow and evolve.

The library’s faith collections include some of the oldest and most significant Qur’ans ever to be uncovered, as well as an eighth century copy of Surat al-Anfal.

The library also holds the world’s largest and most important collection of Jewish Genizah materials, including the Taylor-Schechter Genizah Collection – 193,000 fragments of manuscripts as significant as the Dead Sea Scrolls.

Its Christian holdings include the Codex Bezae Cantabrigiensis, one of the most important Greek New Testament manuscripts, the Book of Deer and the Book of Cerne.

University librarian Anne Jarvis said: “Our library contains evidence of some of the greatest ideas and discoveries over two millennia.

“We want to make it accessible to anyone, anywhere in the world with an internet connection and a thirst for knowledge. This will not only make our collections available to the world; it will also initiate a global conversation about them.

“At the click of a mouse, students or scholars of divinity or politics, history, physics, medieval languages or the history of medicine, will be able to plunge into the worlds of Mediterranean Jewish, Muslim and Christian communities of the 11th century, or into the minds of Isaac Newton and his contemporaries.”

The digitalisation of the library has been made possible by a £1.5 million donation from Dr Leonard Polonsky, a major benefactor to Cambridge University.

The library also holds some of the world’s most important records of the development of modern science, including the most comprehensive collection of Newton’s papers, and



those of John Flamsteed and Edmond Halley, contemporaries of Newton with whom he corresponded.

If the project proves successful, the collections of scientific giants such as Charles Darwin, James Clerk Maxwell, and Stephen Hawking could also be digitised, along with other major collections in the fields of humanities and social sciences.

Jarvis added: “Faith and science will be the two cornerstones of the project, both of fundamental importance in our quest to understand the world and our place in it.

“Thanks to Dr Polonsky, we are at the start of what we believe will be an incredible journey into the digital future. Hopefully his generosity will encourage others to follow his lead so we can make one of the world’s great libraries available, literally, to anyone around the world.”

Dr Polonsky said: “As reading and research become increasingly electronic, my hope is that this grant will serve as a catalyst for the digitisation and linking of the great libraries of the world so that their riches can be enjoyed by a global public.”

**Article from Christian Today:**

<http://www.christiantoday.com/article/cambridge.university.to.digitalise.faith.and.science.library.collections/26030.htm>

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## **ANCIENT TOWN FOUND** **UNDERGROUND IN KYPARISSIA,** **GREECE, BY KATERINA NIKOLAS**

A Greek mans home is not necessarily his castle. Land can be owned, houses and businesses can be built, but only the land above ground belongs to the owner. Whatever is beneath the ground belongs to Greece. The law is very strict concerning ancient sites and artefacts.

If something is discovered below ground it must be turned over to the Greek government and the owner will not become rich from his find as those who own oil land do, but is more likely to lose it.

Kyparissia is an ancient town on the Western Pelopennese coast of Greece. It is a place of great charm and beauty, dominated by the Castle of Kyparissia, or Arkadia, as the town was once known. The castle, which was originally built as a defence against marauding pirates, looks down on the Ionian Sea. It is floodlit at night standing proudly on guard above the town.

The town is divided into two parts, the higher ground being Ano Poli and the lower Kato Poli. The preserved settlement of Ano Poli is rich with traditional stone houses, Byzantine churches and narrow paved streets. Below is Kato Poli, the modern part of the attractive town which nestles against the sea and the old port. The long sandy beach of Ai Laoudis provides a welcome respite from the heat.

Kyparissia and its coast line is a well guarded secret which is slowly being discovered by tourists, particularly Greek ones. An enterprising businessman built a water park, complete with a large swimming pool and water slides, to attract both the locals and the tourists.

Recently some local road works were carried out near to the swimming pool and something was found causing all work to stop immediately. It appeared that an ancient underground town had been discovered on the site, which archaeologists are now excavating.

Interestingly some of the ancient town is higher than the depths of the swimming pool nearby, meaning that when the land was purchased and the swimming pool built, the owner must have been aware of the ruins, but stood to lose his investment to the Government if he cancelled his plans. Thus the pool was built and the owner kept quiet. It is possible he may well go to prison for this in addition to losing his water park.

The area is now completely sealed off to the public as excavations begin. Already it is apparent that this is an important find, with outlines of buildings being discovered and ancient tiling remarkably preserved. Unique chambers are revealed preserved in perfection. The find could well be of great significance to a town which still believes that the ships which were launched for Troy were really sent from Kyparissia. Meanwhile the landmark water park is closed and will have to give up its summer pleasures to the rights of the ancient past.

It will be interesting to see how far the ancient ruins extend and what else may have to give way to the excavations. It could possibly be a site worth preserving on site, rather than a place where artefacts are dug up and then whisked away to the coffers of Greek storage.

Please visit the site: <http://www.helium.com/items/1874163-a-ancient-town-is-discovered-beneath-the-water-park-in-kyparissia-greece>

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## **ARCHAEOLOGISTS: TEMPLE DATING BACK TO HELLENISTIC AND ROMAN ERAS UNEARTHED IN SYRIA**

Syria (Damascus) - Archaeologists have unearthed an archaeological temple dating back to the Hellenistic and Roman eras /150 B.C/ in addition to a stone-made bridge dating back to the Roman era.

The findings were uncovered in the village of al-Bared River, 20 kms to the west north of Apamea, central Syrian Province of Hama.

Director of Hama Antiquities Department Jamal Ramadan said that the temple was built near a spring with a distinguished architectural style and a very huge size, adding that it was built of 210-centimeters long and 170-centimeters wide stones inscribed from their internal side.

The square-shaped temple includes a single hall. Studies showed that the temple was built over two different historical phases, the oldest of which is the Hellenistic Era as the temple was built according to the Hellenistic architectural style while the second stage is the Roman Era where many huge buildings were built.

The unearthed stone-made bridge dates back to the Roman Era. It consists of stone pieces. The rock bridge is 10-meter long and 3-meter wide. The bridge has three asymmetric arches. (SANA)

**Please visit the site:**

**<http://www.english.globalarabnetwork.com/201006296398/Related-news-from-Syria/syria-archaeologists-unearthed-a-temple-dating-back-to-hellenistic-and-roman-eras.html>**

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## **HISTORIAN CRACKS THE 'PLATO CODE'**

Plato was the Einstein of Greece's Golden Age and his work founded Western culture and science. Dr Jay Kennedy's findings are set to revolutionise the history of the origins of Western thought.

Dr Kennedy, whose findings are published in the leading US journal *Apeiron*, reveals that Plato used a regular pattern of symbols, inherited from the ancient followers of Pythagoras, to give his books a musical structure. A century earlier, Pythagoras had declared that the planets and stars made an inaudible music, a 'harmony of the spheres'. Plato imitated this hidden music in his books.

The hidden codes show that Plato anticipated the Scientific Revolution 2,000 years before Isaac Newton, discovering its most important idea -- the book of nature is written in the language of mathematics. The decoded messages also open up a surprising way to unite science and religion. The awe and beauty we feel in nature, Plato says, shows that it is divine; discovering the scientific order of nature is getting closer to God. This could transform today's culture wars between science and religion.

"Plato's books played a major role in founding Western culture but they are mysterious and end in riddles," Dr Kennedy, at Manchester's Faculty of Life Sciences explains.

"In antiquity, many of his followers said the books contained hidden layers of meaning and secret codes, but this was rejected by modern scholars.

"It is a long and exciting story, but basically I cracked the code. I have shown rigorously that the books do contain codes and symbols and that unraveling them reveals the hidden philosophy of Plato.

"This is a true discovery, not simply reinterpretation."

This will transform the early history of Western thought, and especially the histories of ancient science, mathematics, music, and philosophy.

Dr Kennedy spent five years studying Plato's writing and found that in his best-known work the *Republic* he placed clusters of words related to music after each twelfth of the text -- at one-twelfth, two-twelfths, etc. This regular pattern represented the twelve notes of a Greek musical scale. Some notes were harmonic, others dissonant. At the locations of the harmonic notes he described sounds associated with love or laughter, while the locations of dissonant notes were marked with screeching sounds or war or death. This musical code was key to cracking Plato's entire symbolic system.

Dr Kennedy, a researcher in the Centre for the History of Science, Technology and Medicine, says: "As we read his books, our emotions follow the ups and downs of a musical scale. Plato plays his readers like musical instruments."

However Plato did not design his secret patterns purely for pleasure -- it was for his own safety. Plato's ideas were a dangerous threat to Greek religion. He said that mathematical laws and not the gods controlled the universe. Plato's own teacher had been executed for heresy. Secrecy was normal in ancient times, especially for esoteric and religious knowledge, but for Plato it was a matter of life and death. Encoding his ideas in secret patterns was the only way to be safe.

Plato led a dramatic and fascinating life. Born four centuries before Christ, when Sparta defeated plague-ravaged Athens, he wrote 30 books and founded the world's first university, called the Academy. He was a feminist, allowing women to study at the Academy, the first great defender of romantic love (as opposed to marriages arranged for political or financial reasons) and defended homosexuality in his books. In addition, he was captured by pirates and sold into slavery before being ransomed by friends.

Dr Kennedy explains: "Plato's importance cannot be overstated. He shifted humanity from a warrior society to a wisdom society. Today our heroes are Einstein and Shakespeare -- and not knights in shining armour -- because of him."

Over the years Dr Kennedy carefully peeled back layer after symbolic layer, sharing each step in lectures in Manchester and with experts in the UK and US.

He recalls: "There was no Rosetta Stone. To announce a result like this I needed rigorous, independent proofs based on crystal-clear evidence.

"The result was amazing -- it was like opening a tomb and finding new set of gospels written by Jesus Christ himself.

"Plato is smiling. He sent us a time capsule."

Dr Kennedy's findings are not only surprising and important; they overthrow conventional wisdom on Plato. Modern historians have always denied that there were codes; now Dr Kennedy has proved otherwise.

He adds: "This is the beginning of something big. It will take a generation to work out the implications. All 2,000 pages contain undetected symbols."

**Please visit the site:**

<http://www.sciencedaily.com/releases/2010/06/100628111846.htm>

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## **PREHISTORIC MAN WENT TO THE MOVIES, SAY RESEARCHERS**

Prehistoric man enjoyed a primitive version of cinema, according to Austrian and British researchers, who are currently seeking to recreate these ancient visual displays.

Rock engravings from the Copper Age found all over Europe in remote, hidden locations, indicate the artwork was more than mere images, researchers from Cambridge University and Sankt Poelten's university of applied sciences (FH) in Austria believe.

"The cliff engravings... in our opinion are not just pictures but are part of an audiovisual performance," Frederick Baker of Cambridge University's Museum of Archaeology and Anthropology said in a statement Tuesday.

"There was still no moving image but (the pictures) created sequences like in animation... this was not just a treat for the eyes but also for the ears, as these rock engravings are especially found in locations with particular echoes.

"In this sense, the rock engravings are not just static images but pictures that created a story in the mind of the viewer -- just like at the cinema," said Baker.

Cambridge University and FH Sankt Poelten have now launched a "Prehistoric Picture Project" with Weimar's Bauhaus university in Germany to recreate these films, using computer technology to establish the sequence of images and animate them like in a cartoon.

The "movies," dating back to 4000 to 1000 BC, often depict fights, dances or hunts, but interestingly never show death and rarely portray women, the project's coordinators said.

The project is being conducted in Valcamonica, in Italy's northern Lombardy region, where the highest concentration of such engravings -- some 100,000 pictures -- can be found.

**Please visit the site:**

**[http://news.yahoo.com/s/afp/20100629/lf\\_afp/austriabritainitalyarchaeologyfilm\\_20100629160342;\\_ylt=AmL3RT3tQDUwpRdm5DxH2SPOSpZ4](http://news.yahoo.com/s/afp/20100629/lf_afp/austriabritainitalyarchaeologyfilm_20100629160342;_ylt=AmL3RT3tQDUwpRdm5DxH2SPOSpZ4)**

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# **ANCIENT MEDICAL TEXTS AND COBRA** **EXPERTS REFUTE OLD STORY** **CLEOPATRA DID NOT DIE OF SNAKE** **BITE: STUDY, LONDON (KAMAL** **QUBEISSI)**

A recent German study ruled out the classical story that last Egyptian pharaoh Cleopatra the seventh died of a snake bite and found it more likely the queen committed suicide with a lethal drug cocktail.

German historian Christoph Schäfer and other experts travelled to Alexandria, where they consulted ancient medical texts and met with cobra experts. Death by a cobra bite, experts argue, could take days and causes a disfigurement of the body particularly through the appearance of spots.

Schäfer, who is also professor at the University of Trier, finds it unlikely Cleopatra had chosen to suffer such a long and painful death besides the fact that she must have wanted to die beautiful in order to make her myth eternal.

## Lethal cocktail

A lethal drug blend was the more likely method Cleopatra used when she decided to commit suicide. The queen, according to Schäfer, was very knowledgeable about the various types of poison and how much time it takes each of them to start affecting the body.

The cocktail Cleopatra took, Schäfer claims, was made of opium, hemlock, and aconitum. The mixture of the three substances, he added, was known at the time to cause a rather painless death within a few hours.

Hemlock, a poisonous herb native to the Mediterranean and southern Africa, was a common ingredient in toxic potions the Greeks used as a means of executing prisoners. The classical Greek philosopher Socrates was given a mixture that contained hemlock after he was tried and sentenced to death.

Dietrich Mebs, one of the poison specialists taking part in the study, said Cleopatra must have drunk the potion since there was no way to inject it into her body at the time.

In addition to the agonizing death the snake bite would have caused, Mebs argued that the cobra was a very uncertain way to die. That is why, he adds, the queen would not have risked going through all that pain and deformation without certainty of death.

Evidence that disproves that 2,000-year-old legend is to be presented Wednesday night by Schäfer and Mebs in the educational show Adventure Science, broadcast on ZDF, a



public-service channel on German T.V., in a special episode entitled “Cleopatra's Death: How did the last female Pharaoh really die?”

According to the classical account, Cleopatra committed suicide in 30 BC, following the example of her lover the Roman leader Marc Antony who killed himself after losing the Battle of Actium.

The legacy of Cleopatra survives in countless works of art and literature, the most popular of which is William Shakespeare’s Antony and Cleopatra, Jules Massenet's opera Cléopâtre, and Elizabeth Taylor’s epic movie Cleopatra.

(Translated from Arabic by Sonia Farid).

**Please visit the site: <http://www.alarabiya.net/articles/2010/06/30/112681.html>**

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# **TALES FROM THE CRYPT, THE MYSTERY OF GERMANY'S ARISTOCRATIC MUMMIES, BY FRANK THADEUSZ**

When they died, Germany noble families of the 18th century did what the Egyptians had done before them: They had themselves mummified. As an increasing number of such well-preserved corpses are found, scientists are trying to find out why.

Baron von Holz had a difficult lot. During the Thirty Years' War, von Holz fought in the Swedish army as a mercenary, but he was not granted a hero's death on the battlefield. He was cut down, rather less heroically, at the age of 35 by either the flu or blood poisoning. And it was only in death, that his situation really improved.

His family dressed his mortal remains in precious calf-leather boots with nailed soles. The warrior was then laid out in a kind of luxury crypt under the castle of Sommersdorf near Ansbach, in modern-day Bavaria. In those vaults von Holz's corpse was privileged with an honor previously reserved primarily for Egyptian pharaohs: His body did not decompose.

More than 370 years after his untimely death, the nobleman still lies in his casket, well preserved. Von Holz was a giant of a man, standing 1.80 meters (around 5'10"), at a time when most humans were far shorter. To this day, his feet are still shod in those smart leather boots that his clan had made for him almost four centuries ago.

## Secrets of Mummification

The corpse recently left its burial place in the castle cellar for the very first time so that archeologists from the Reiss Engelhorn Museums in Mannheim could take a close look at the mummy. It quickly became clear that the boot-clad baron had no external injuries and he seems to have been in excellent health when he contracted his fatal infection. What remains unclear is why the aristocratic soldier's body was mummified in the first place.

Only a handful of scientists take an active interest in the leathery corpses that are recovered from boggy moorlands or cellar vaults in Germany. Every few months, a baron, or a priest, turns up at archeologist Wilfried Rosendahl's door to report that he has found a corpse under his castle or in his parish church.

Confronted with the ever-increasing number of new discoveries, Rosendahl concedes that: "We are more familiar with the history of the Egyptian mummies than with the bodies slumbering in our tombs."

Only a few weeks ago, the researcher discovered the superbly preserved bodies of 12 members of an aristocratic family in the district of Illereichen in southern Germany.

Why did German Nobility Dabble in Mummification?

Rosendahl's colleague Andreas Ströbl is currently examining the remains of an 18th-century nobleman's clan that was laid to rest in a cellar grave under the 18th century Church of St. John the Baptist in Hannover. "We've known that these aristocrats' crypts existed, but for a long time we didn't know why," Ströbl admits.

About 1,000 mummified bodies in German noblemen's graves have been discovered and cataloged so far. The vaults contain children as well as adults, their clothes are sometimes still in remarkably good condition. Often the tombs also contain burial objects: Combs, spices, coins, and in one case, a shaving brush.

The surprising number of tombs containing mummified remains leads researchers to the conclusion that it was not random. "For a long time, I believed that mummification was more of an accidental corollary of the way people were buried in those days," Ströbl says. New evidence suggests something different: In this early modern period did many of the rich and aristocratic deliberately have themselves buried in this way so that their remains would be preserved?

#### A Mausoleum with Ancient Air Conditioning

There is scant source material -- but Ströbl did find a "smoking gun": In a letter, written in 1710, to the board of the parish church of Berlin, a woman called Catharina Steinkoppen made a request for her deceased granddaughter. Namely, that "the aforementioned corpse should not decay in the vaults below the church." The girl's father -- a courtier by the name of von Schütz -- offered the stately sum of 10 Reichsthalers, the equivalent of a year's wages for a coachman, for the service.

A total of 140 mummified bodies lie in a crypt below a church near Alexanderplatz in central Berlin. It has been known for some time that this was the exclusive domain of deceased members of rich or highly respected families. But the fact that church leaders in Berlin deliberately set up the biggest mausoleum in Germany is a more recent discovery.

After the discovery of the grandmother's petition, researchers examined the nobleman's crypt in the historic center of Berlin. What they found was an extremely effective ventilation system running through the tomb. All the burial chambers were connected to each other by a series of small shafts. As such this underground graveyard was always well ventilated.

Indeed Rosendahl and Ströbl found cleverly conceived ventilation systems in even the smallest of these basement graves. But that wasn't the only trick that promoted mummification. The undertakers lined the coffins of the departed with sawdust which then soaked up any fluids that leaked out of the body.

#### Embalming in Time For Judgment day

Over the course of time though, many of the carefully created burial sites were destroyed by careless construction work. On more than one occasion, unsuspecting builders bricked up important ventilation shafts. In addition, to deter plunderers and grave robbers many churches bolted shut the windows of their crypts. Often enough, that sealed the fate of

these historic tombs. Once the cross ventilation was cut off, the mummies began to rot within weeks.

But archeologists are still at a loss to explain why Germany's rich had themselves mummified in the first place. There is, however, one potential clue: Up to 99 percent of the crypt mummies have been found in areas of the country that were Protestant. The finds so far have been in Franconia, Saxony, Thuringia, Brandenburg, northern Germany, and Berlin.

Reiner Sörries, the head of the Museum of Sepulchral Culture in Kassel, is making the first attempts to explain the mystery. Sörries is one of the few archeologists in Germany who studies burial culture. He suspects that religious reformer Martin Luther may have triggered the trend for mummification in the modern age. By way of proof, Sörries cites a passage in the Book of Job that Luther translated into common German: "I know that my Redeemer lives, and that in the end he will stand upon the earth. And after my skin has been destroyed, yet in my flesh, I will see God."

Maybe wealthy protestants chose this method of mummification out of fear that they might not rise up and go to heaven if their mortal remains rotted away? "There are still many gaps that we can't fill in," Sörries admits. "It is conceivable that people simply wanted to play it safe and preserve their bodies until Judgment Day."

#### Computer Reconstructions of Dead Nobility

Whatever the answer, superstition undoubtedly played a role. Bereaved families often sealed the coffins of their departed loved ones to prevent the dead rising up. There was fear that zombies could climb out of their crypts and attack the living.

The group of scientists working with Sörries, Rosendahl and Ströbl now wants to look closer at the bizarre burial rite. This involves researching how the mummified dead actually lived. Using computer tomography, the researchers constructed an image of the late Baron von Holz' face. From this, one sees that the tall warrior must have cut quite a formidable figure. He had the angular skull of a rugby player and remarkably healthy teeth for the period.

Ströbl hopes to be able to come up with similar insights into a potentially criminal case he unearthed in a family tomb in the Wettbergen neighborhood in Hannover, which mainly contains members of two aristocratic families, von Hansing and von Grone. Strangely, four daughters in one of the families died in four consecutive years. Had the daughters of this household fallen victim to a virus in their youth? Or was it a case of murder? An analysis of the four girls' internal organs should provide information that could answer this question.

#### Mummies in Perfectly Preserved Period Costume

Another fascinating insight into the bygone era is provided by 29 very well preserved mummies found in a vault under the church of the Benedictine abbey in the town of Riesa, in the eastern German state of Saxony. Experts consider the church's crypt a unique historical testament to mummification in Germany. Construction work last fall drew the researchers' attention to the aristocratic tomb.

While the region was still part of what was formerly communist East Germany, the bare minimum of preservation work was done on the site. Now, however, the local church council is embroiled in a dispute about what to do with this cultural monument. Some want the crypt, which is only accessible down a narrow stairway, opened up to tourists. But the majority of councilors want to put tight restrictions on public entry.

The site is unique for the look it provides at the authentic period costumes worn by wealthy citizens in past centuries. One girl, for instance, is wearing a perfectly preserved silk dress and has a bonnet on her head. Other bodies were adorned with nightcaps, pointed caps, and long robes.

The identity of the 29 corpses is relatively certain. Uncertainty surrounds only the most famous of the crypt's inhabitants, who may or may not be Ernst Otto Innocenz, Baron von Odeleben, a Saxon officer with close ties to Napoleon.

In 1812, Odeleben supported the French general's ill-fated Russian campaign, which ended in a fiasco. Subsequently, Odeleben also witnessed the routing of the French army near Leipzig.

Genetic analysis is being used to help clear up this mystery. But in contrast to Baron von Holz, the researchers won't be looking for battle scars that may have led to his death. The war veteran spent the last decades of his life working as a land surveyor, and he passed away at his desk.

Translated from the German by Jan Liebelt

**Please visit the site:**

<http://www.spiegel.de/international/germany/0,1518,701198,00.html>

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## **A SPECTACULARLY BEAUTIFUL WALL PAINTING OF THE 12TH CENTURY THAT WAS DISCOVERED BY CHANCE IN THE GETHSEMANE COURTYARD IN JERUSALEM WILL BE DISPLAYED FOR THE FIRST TIME IN THE RENEWED ISRAEL MUSEUM**

Israel Antiquities Authority: This is the largest painting ever to come out of an archaeological excavation in the country

An enormous impressive wall painting (fresco) that was discovered in excavations by the Israel Antiquities Authority in the Monastery of Miriam in the Gethsemane courtyard in Jerusalem will be displayed for the first time when the renewed Israel Museum opens its doors to the public on July 26, 2010.

In 1999 the Israel Antiquities Authority conducted salvage excavations in Nahal Kidron, next to the Garden of Gethsemane, under the direction of Jon Seligman, the Jerusalem region archaeologist. The excavations uncovered several buildings dating to the twelfth century that were part of the “Abbey of St. Mary of the Valley of Jehoshaphat”, most of which had been destroyed by Saladin. But to the excavators’ surprise a nine meter long wall that was decorated with a painting of breathtaking beauty was exposed in one of the rooms.

Thanks to a generous contribution by the Friends of the Israel Museum, the painting has been restored by a team of art conservators of the Conservation Department of the Israel Antiquities Authority, headed by Jacques Nagar, and will be placed on exhibit in the museum’s new Crusader period gallery.

According to Seligman, the subject of this wall painting – only the bottom part of which survived and which originally rose to a height of about nine meters – is apparently a scene of deesis (meaning supplication in Greek). This is a known iconographic formula whereby Mary and John the Baptist beseech Jesus for forgiveness, for the sake of humanity. Only the bottom parts of the figures are visible in the main picture: Jesus sitting in the center, with Mary to his right and John the Baptist to his left. Two other pairs of legs, probably those of angels, can be seen next to Mary and John. In the middle of the painting are colorful floral tendrils on either side of which is a Latin inscription of a saying by Saint Augustine: “Who injures the name of an absent friend, may not at this table as guest attend”. We can conclude from this that the painting adorned the wall of a dining room– the refectory – in the monastery. The prohibition to gossip is surprising since the monks there were Benedictines who refrained from unnecessary conversation. According to the researchers, the maxim was apparently intended for visitors who arrived at the monastery and were invited to dine there.

According to Nagar, “This is one of the most important paintings that have been preserved from the Crusader period in Israel. The painting is the largest to come out of an archaeological excavation in the country and the treatment the painting underwent in the laboratories of the Israel Antiquities Authority was, from a conservation standpoint, among the most complicated ever done here. This wall painting is special because of its size and quality. It measures 9 meters long and 2.7 m high, and is extremely rare because very few wall paintings have survived from the Crusader churches that were built in Jerusalem during the Crusader period. The excellent quality of the painting was in all likelihood the workmanship of master artists and the vibrant colors reflect the importance of the abbey in the twelfth century, which was under the patronage of the Crusader queen Melisende”.

“We are proud to include this unique wall painting in our new gallery of Crusader art”, said Na’ama Brosh, curator of Islamic art in the Israel Museum and who was responsible for placing it on exhibit in the new gallery. “We wish to thank the Israel Antiquities Authority for their cooperation that has resulted in the presentation of this important exhibit to the public”.

Photographic credit Niki Davidov, courtesy of the Israel Antiquities Authority:

1. The complete fresco on the wall of the Israel Museum.
- 2-6. The fresco during the conservation work that was carried out by the Israel Antiquities Authority.

For further information, kindly contact the press office of the Israel Museum, 02-6708935 or Yoli Shwartz, Israel Antiquities Authority spokesperson, 052-5991888, [dovrut@israntique.org.il](mailto:dovrut@israntique.org.il)

**Please visit the site: [http://www.antiquities.org.il/about\\_eng.asp?Modul\\_id=14](http://www.antiquities.org.il/about_eng.asp?Modul_id=14) [Go there to download high resolution pix]**

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## **EGYPTE ANCIENNE: ETABLISSEMENT DE LA PREMIÈRE CHRONOLOGIE ABSOLUE DE L'EGYPTE DYNASTIQUE**

Une équipe internationale de chercheurs(1) vient d'établir, pour la première fois, grâce à la datation par le carbone 14, une chronologie absolue de l'Égypte dynastique (environ 1100-2700 ans avant J.-C.). L'analyse d'échantillons organiques, de courte durée de vie et archéologiquement attribués à un règne ou à une période égyptienne précise, permet de confirmer certaines estimations chronologiques mais impose aussi quelques révisions historiques. Ces résultats sont publiés dans la revue Science du 18 juin 2010.

Depuis plus de 150 ans, explorateurs et chercheurs s'organisent à travers le monde pour essayer de mieux comprendre l'une des civilisations les plus fascinantes : l'Égypte Ancienne. Une chronologie relative des rois qui se sont succédé sur le trône d'Égypte a alors été progressivement mise en place par l'étude de documents épigraphiques, historiques ou archéologiques. En revanche, la réalisation d'une chronologie absolue est beaucoup plus délicate à concevoir puisqu'à chaque nouveau règne, le décompte des années était remis à zéro. Quelques informations astrophysiques avaient déjà permis d'envisager des points d'ancrage temporels mais celles-ci ne sont pas suffisantes pour situer précisément chacune des dynasties égyptiennes.

Dans le but de mettre au point la chronologie absolue de cette période de l'Histoire, des chercheurs de laboratoires internationaux dont le Laboratoire de Mesure du Carbone 14 (CEA, CNRS, IRD, IRSN, Ministère de la Culture et de la Communication) ont collecté auprès de nombreux musées européens et américains, 211 échantillons d'objets égyptiens. Des graines, des paniers, des textiles, des plantes et des fruits, archéologiquement attribués à un règne ou une période égyptienne précise, ont été datés au carbone 14. « Le département des Antiquités Égyptiennes du Louvre nous a fourni des échantillons de vanneries, attribuées au règne de Thoutmosis III, l'un des règnes les plus importants de l'Égypte Ancienne », précise Anita Quiles, doctorante au Laboratoire de Mesure du Carbone 14. Une partie des datations a, en effet, été réalisée sur l'installation ARTEMIS(2) de ce laboratoire, unique spectromètre de masse par accélérateur en France.

Ces analyses, combinées à la durée connue ou supposée de chacun des règnes et leur succession, ont permis d'établir la première chronologie complète et précise des dynasties de l'Égypte ancienne.

La chronologie obtenue est en accord avec la plupart des travaux déjà menés. Cependant, elle impose quelques révisions historiques. Par exemple, l'Ancien Empire serait en réalité plus vieux que les estimations chronologiques jusqu'alors proposées. Elle suggère également que le règne de Djoser durant l'Ancien Empire, a commencé entre 2691 et 2625 avant J.-C. et que le Nouvel Empire a débuté entre 1570 et 1544 avant J.-C. Véritable source d'informations pour les égyptologues, cette chronologie va aussi contribuer au cadrage temporel plus précis des civilisations environnantes, telles la Nubie ou le Proche-Orient.



A propos de la datation par le carbone 14 :

Le carbone 14 est un isotope radioactif du carbone. La période radioactive du  $^{14}\text{C}$ , qui correspond au temps au bout duquel le nombre d'atomes est divisé par 2, est de 5730 ans. Le  $^{14}\text{C}$  est formé dans la haute atmosphère soumise au bombardement des rayons cosmiques. Dans l'environnement, un équilibre s'établit entre la production du  $^{14}\text{C}$  et sa disparition par désintégration. La valeur d'équilibre est d'un atome radioactif de  $^{14}\text{C}$  pour 1 000 milliards d'atomes de  $^{12}\text{C}$  non radioactif. Ce rapport se retrouve dans les organismes vivants, par la photosynthèse pour les plantes et par la chaîne alimentaire chez les animaux. A la mort de l'organisme, l'incorporation de  $^{14}\text{C}$  de l'environnement cesse et la quantité d'atomes de  $^{14}\text{C}$  diminue par décroissance radioactive tandis que celle de  $^{12}\text{C}$  reste constante. La datation repose sur la comparaison du rapport  $^{14}\text{C}/^{12}\text{C}$  de l'échantillon avec celui d'un échantillon standard de référence. On peut ainsi en déduire l'âge de l'échantillon et remonter jusqu'à 50 000 ans environ.

Notes :

(1) Laboratoire de Mesure du Carbone 14 (CEA / CNRS / IRD / IRSN / Ministère de la Culture et de la Communication), Université Paris Diderot, Research Laboratory for Archaeology and the History of Art (Université d'Oxford), Labor, Fakultät für Physik, Isotopenforschung (Université de Vienne), The Recanati Institute for Maritime Studies (Université d'Haifa, Israël), Centre for Archaeological and Forensic Analysis, Department of Materials and Applied Sciences (Université de Cranfield).

(2) ARTEMIS : Accélérateur pour la Recherche en sciences de la Terre, Environnement, Muséologie Installé à Saclay.

Références :

Radiocarbon - Based Chronology for Dynastic Egypt, Christopher Bronk Ramsey, Michael W. Dee, Joanne M. Rowland, Thomas F. G. Higham, Stephen A. Harris, Fiona Brock, Anita Quiles, Eva M. Wild, Ezra S. Marcus, Andrew J. Shortland, Science, 17 juin 2010

Please visit the site: <http://www2.cnrs.fr/presse/communiqu/1922.htm>

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## **SERBIAN SITE MAY HAVE HOSTED FIRST COPPER MAKERS FINDS INTENSIFY DEBATE OVER OLD WORLD ORIGINS OF METAL PRODUCTION, BY BRUCE BOWER**

An archaeological site in southeastern Europe has shown its metal. This ancient settlement contains the oldest securely dated evidence of copper making, from 7,000 years ago, and suggests that copper smelting may have been invented in separate parts of Asia and Europe at that time rather than spreading from a single source.

The find extends the known record of copper smelting by about 500 years, an archaeological team headed by Miljana Radivojević and Thilo Rehren of University College London reports in an upcoming *Journal of Archaeological Science*. The pair were joined by Serbian researchers, led by Dušan Šljivar of the National Museum Belgrade, and German scientists directed by Ernst Pernicka of the University of Tübingen.

Chemical and microscopic analyses of previously unearthed material from Serbia's Belovode site have identified pieces of copper slag, the residue of an intense heating process used to separate copper from other ore elements. The raw material came from nearby copper-ore deposits in Serbia or Bulgaria, they add.

"Our finds provide the earliest secure dates for copper smelting and indicate the existence of different, possibly independent centers of invention of metallurgy," Rehren says. Metallurgy is the process of extracting metals from ore in order to create useful objects.

Large numbers of copper artifacts have been found at southeastern European sites dating to more than 6,000 years ago, Rehren notes.

His proposal challenges a longstanding view that copper smelting spread to Europe after originating in or near the Fertile Crescent region of what's now southern Iran. Archaeologists have dated copper smelting in the Middle East to about 6,500 years ago.

Although Belovode now stands as the world's oldest known copper-smelting site, that status probably won't last, remarks archaeologist Benjamin Roberts of the British Museum in London. "It's likely we'll see copper-smelting evidence at least contemporary with Belovode from the Fertile Crescent once research programs are in place at well-excavated sites," he predicts.

Copper smelting may have originated in what's now Turkey, comments archaeologist Christopher Thornton of the University of Pennsylvania in Philadelphia. By 10,000 years ago, people living there were making beads and other ornaments from copper ore and heating the ore at low temperatures to make it more pliable, he says. Scattered evidence of early smelting in that region has yet to be thoroughly studied.

Roberts and Thornton agree that copper making was probably invented in one spot, either in Turkey or the Middle East.

Rehren's group is now examining possible copper slag from sites in Turkey and Iran that date to 7,000 years ago or more.

Radiocarbon dates for animal bones excavated at Belovode indicate that the site was occupied from 7,350 to 6,650 years ago. Jewelry and other Belovode finds come from southeastern Europe's ancient Vinča culture, known for having used copper vessels and other metal items.

Chemical analyses of metallic-looking bits from Belovode identified five pieces of copper slag. Large amounts of iron, manganese, zinc and cobalt in this material likely derived from smelted copper ores, Rehren's team says. Differences in the concentration of elements across samples indicate that each was produced in a separate smelting event. Slag pieces were laced with ash from wood that presumably had been burned to create smelting temperatures of about 1,100° Celsius.

Microscopic studies of slag pieces revealed glassy areas and crystallized metal oxides that had formed during a process of heating the material until it liquefied, followed by cooling.

A drop of once-molten metal found in a Belovode house contains pure copper, the researchers add.

Lead-isotope ratios of the Belovode slag and the copper drop link them to ore deposits in Serbia and Bulgaria.

No smelting chambers, such as elongated ceramic cylinders recovered at later Copper Age sites in southwestern Asia, have been found at Belovode. Vinca residents may have dug pits for copper smelting, the scientists speculate.

**Please visit the site:**

[http://www.sciencenews.org/view/generic/id/60563/title/Serbian\\_site\\_may\\_have\\_housed\\_first\\_copper\\_makers](http://www.sciencenews.org/view/generic/id/60563/title/Serbian_site_may_have_housed_first_copper_makers)

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## **SECRETS OF TURKEY'S ÇATALHÖYÜK TO BE REVEALED THIS SUMMER**

The latest findings uncovered during the ongoing excavations at Çatalhöyük, one of the oldest settlement areas in human history, will be revealed to the world at the end of the summer. A member of the international archaeological team says the results will be published and discussed in a scientific environment

Archaeological findings unearthed at Çatalhöyük, one of the oldest known settlement areas in human history, will be shared with the public at the end of the summer, according to a member of the international excavation team.

“This information will enable us to learn more details about human beings’ unknown journey in the world. These results do not only concern archaeologists but also scientists in many fields, from medicine to engineering,” archaeologist Gülay Sert said, announcing that scientific publications will be prepared as a result of the excavations and shared with the world this summer.

“The publications are already making all archaeologists who are interested in the Neolithic age excited,” Sert said, adding that the findings will be discussed in a scientific environment by the excavation team members. “The main goal of the work at Çatalhöyük is to gain information about diseases and plants and their effects on people during that period.”

Located in the Çumra district of the Central Anatolian city of Konya, Çatalhöyük is one of the most important archaeological centers in the world. It is thought to be where sheep and goats were initially domesticated and previously nomadic human beings first led a settled life. The wall paintings in the ancient city are regarded as some of humanity’s earliest artworks.

This year’s ongoing excavation work was started by a Trakya University team in western Çatalhöyük, which is the second settlement area of the Chalcolithic age. A large part of the team will start excavations in eastern Çatalhöyük, the settlement area of the Neolithic age, after July 15.

### Educational focus

Archaeologists on the excavation team, including team leader Professor Ian Hodder from Stanford University in the United States, have come to Çatalhöyük from all over Turkey and from around the world. As most of the archaeological findings regarding life 9,000 years ago have already been uncovered during the excavations to date, the next phase of work will proceed at a slow tempo and mostly focus on education.

The Çatalhöyük research area is not only limited to the ruins where excavation work continues. In recent years, laboratories have been built on the campus established near the ancient city under the sponsorship of Boeing and Yapı Kredi Bank.

Professor Hodder, who has created a new “Hodder School” in world archaeological literature, helps the young archaeologists on his team get experience in this ancient city.

#### About Çatalhöyük

The first excavation work in Çatalhöyük was carried out in the 1960s by British archaeologist James Mellaart and his team. Professor Ian Hodder took over the excavation work at the ancient site in 1993.

Currently an international excavation team of more than 100 people is working in Çatalhöyük, which is visited by some 13,000 people each year. They are trying to find out about diseases, genetic features and plants and animals in the area.

A number of historical artworks have been found during the excavations. Among the findings there is a female figure known as the “Goddess Kybele,” which is on display at the Anatolian Civilizations Museum in Ankara.

**Please visit the site:**

<http://www.hurriyetdailynews.com/n.php?n=secrets-of-catalhoyuk-to-be-revealed-this-summer-2010-06-24>

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## **WELL-PRESERVED ROMAN ROAD FOUND IN SOUTHERN SERBIA**

Archaeologists have discovered the well-preserved remains of a Roman road dating back to the first century in south-eastern Serbia, Belgrade media reported Thursday.

The Roman military road, or Via militaris, near the town of Dimitrovgrad used to connect the western parts of the Roman empire with the eastern parts, archaeologists said.

'This road was one of the main roads of the Roman empire,' archaeologist Miroslav Lazic told the Novosti daily.

'We are working on preservation of the site and preparing a presentation for European academic circles,' he said, adding that the road 'was built in the mid-first century and was used for several more centuries, most likely until the seventh century.'

The eight-metre wide road was constructed from large blocks of stone and had two lanes.

The excavations also unearthed numerous artifacts, including horseshoes and metal parts of carts.

NIN weekly quoted Lazic as saying that the numerous artifacts 'show that the road was an important route.'

The historic road was discovered during the building of a modern highway near Dimitrovgrad. The highway is on the same course as the ancient road, archaeologists said.

Investors in the new highway said they will secure the site, and experts plan to open an archaeological park where they will present all the artifacts found.

**Please visit the site:**

**[http://www.monstersandcritics.com/news/europe/news/article\\_1565975.php/Well-preserved-Roman-road-found-in-southern-Serbia](http://www.monstersandcritics.com/news/europe/news/article_1565975.php/Well-preserved-Roman-road-found-in-southern-Serbia)**

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## **UNIQUE ARCHAEOLOGICAL DISCOVERY IN ADJARA**

Archaeologists have made unique discovery in Adjara. The scientists have found the sepulchres, which date back to the epoch of ancient Rome. The archaeologists found the dishes made of glass and clay, coins made of bronze and silver in the village of Makho. The discovery is unique because this is the eldest sepulchre, where the glass dish was found. Arguably, the dishes date back to the third century AD.

According to the preliminary examination, the scientists conclude that it was an imported product, because no glass dish was made in Georgia in that epoch. The discovery confirms the presumptions about close ties with the Roman Empire in that period. The archaeologists also presume that the left bank of the river Chorokhi, where the ancient sepulchres were discovered, was the residence of Roman authorities, who stayed in the Gonio Afsaroni castle then. This is the second unique discovery in the village Makho during the past few months. Earlier, the scientists found ancient clay containers for wine there.

**Please visit the site: <http://www.geotimes.ge/index.php?m=home&newsid=21977>**

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## **THE EXCAVATIONS OF THE DEPARTMENT OF ANTIQUITIES AT ANCIENT IDALION, 2010**

The Ministry of Communications and Works (Department of Antiquities) announces the completion of the twentieth excavation season of the Department of Antiquities' systematic excavations at the site of ancient Idalion. Excavations at the site began in 1991 and continue until today under the direction of the Director of the Department of Antiquities Dr. Maria Hadjicosti who is assisted by Senior Technicians S. Lagos and K. Kapitanis. Five young archaeologists from Greek Universities and the University of Cyprus also took part in the excavation this year.

Throughout the twenty-year investigations a total area of two thousand square meters has been investigated on the foothills of Ampileri hill, which was the west acropolis of ancient Idalion.

In this area, a large-scale fortified building complex has been excavated, which could be interpreted as the Palace of ancient Idalion or its Administrative Center. This building complex contains a triple olive-press (unique in its kind throughout the eastern Mediterranean), roads that lead to the complexes' courtyards from the external gate, towers and impressive storage buildings, houses and military installations.

The Idalion fort is considered to be the largest palace or administrative center identified so far in Cyprus. It is strictly defensive in character with interior towers that control the interior streets and the large rectangular courtyards. Wings with two-storey rooms surrounded the courtyards. The ground floor rooms had storage areas where large storage vessels (pithoi) were kept for the storage of wine and olive oil, the area's main products. Inscriptions that record tax collecting in kind from the ancient city's inhabitants have been found in many of these storage rooms.

The abovementioned inscriptions (more than three hundred have so far been found) are part of the Phoenician Archive and indicate the methods used for the collection of taxes by the Phoenicians, who governed the ancient city of Idalion for 150 years, from the middle of the 5th century until the end of the 4th century B.C. The inscriptions are written in ink on marble slabs and pottery sherds.

During this year's excavations, the investigations extended higher up the hill, where two new building complexes were discovered. These complexes are attached to the eastern and western side of a large interior tower. The complex situated to the east of the tower constitutes the south wing of the storage rooms' large courtyard. The rooms' walls survive to a maximum height of three meters. Inside the rooms, pithoi were found as well as other large vessels, inscriptions and pieces of a bronze shield along with other metal weapons that had fallen from the second floor when it collapsed. The second building complex was found to the west of the large tower and it is also comprised of six rooms which are linked up to each other and that also communicate with the two large roads to the north and the west. The complex may have been used by the soldiers who guarded the tower.



With the completion of this year's investigations, the archaeological site has extended to such an extent that it is now ready to be open to the public. The necessary plans are being prepared in cooperation with the Municipality of Idalion. The archaeological site will thus be joined with the Local Museum of ancient Idalion, which opened to the public in 2008. The footpath that links the museum to the site as well as the parking space near the museum have both been completed. All the above works were realized in close cooperation with the Municipality of Idalion, which has performed exemplary work as far as the promotion of the area's cultural heritage is concerned.

Please visit the site: [http://www.isria.com/pages/18 June 2010 161.php](http://www.isria.com/pages/18_June_2010_161.php) [Also at <http://www.famagusta-gazette.com/default.asp?sourceid=&smenu=69&twindow=Default&mad=No&sdetail=10650&wpage=&skeyword=&sidate=&ccat=&ccatm=&restate=&restatus=&reoption=&retype=&repmin=&repmax=&rebed=&rebath=&subname=&pform=&sc=2350&hn=famagusta-gazette&he=.com>]

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## **DIGS IN CYPRUS UNCOVER MORE OF PHOENICIAN FORT, BY MENELAOS HADJICOSTIS**

Digs in Cyprus have uncovered what may be soldiers' barracks belonging to a sprawling Phoenician fortress that was the island's largest ancient administrative hub dating back at least 2,500 years, the Cypriot Antiquities Department director said Monday.

Maria Hadjicosti said the discovery this year of the two building complexes in the ancient kingdom of Idalion, some 10 miles (16 kilometers) south of the modern-day capital Nicosia, offers more proof of the site's significance.

"The discoveries further reinforce Idalion's role as the island's largest center of administration in ancient times," Hadjicosti said.

She said Cypriot and Greek archaeologists found two separate building complexes attached to a large tower overlooking the entire fortress. Pieces of a bronze shield and other metal weapons were found in some of the complexes' rooms, suggesting they were used as barracks by soldiers assigned to guard duty on the tower.

The Phoenician kings of Kition, a southern coastal town about 14 miles (23 kilometers) southeast of Idalion — now known as Larnaca — had conquered the Greek-ruled city in the middle of the 5th century B.C. and governed it for around 150 years.

Ink inscriptions on 300 marble slabs and pottery shards found at the site over nearly two decades of digs in the 2-square kilometer (square-mile) site indicate how Phoenicians collected taxes from Idalion's residents.

Excavations on Cyprus have uncovered settlements dating back to around 9000 B.C. Cyprus then saw successive waves of colonization, including Mycenaean Greeks, Phoenicians, Romans and, in the Middle Ages, Franks and Venetians. The island was conquered by Ottoman Turks in 1571 and became part of the British Empire in 1878 before winning independence in 1960.

Other discoveries in earlier digs at the site include a triple olive press — a unique find in the eastern Mediterranean — and large clay vessels used to store wine and olive oil, which were the area's main products.

Hadjicosti said that, although archaeologists have yet to unearth definitive proof, "it would be reasonable to assume" that the fort overlaid an older palace used by the Greek kings of the city that according to legend was founded by the ancient Greek Trojan war hero Chalcantor.

Idalion was first mentioned in Assyrian written sources of the 7th century B.C. Its name survives in the modern village of Dali.

**Please visit the site:**

<http://www.google.com/hostednews/ap/article/ALeqM5iAJ8NxDIsVPVriXWg9MBbkjPnEIgD9GFPI0G0>

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## **4TH CENTURY ICONS OF PETER AND PAUL FOUND IN ROME**

The earliest known icons of the Apostles Peter and Paul have been discovered in a catacomb located under a modern office building in a residential neighborhood of Rome.

Restorers said Tuesday they had unearthed the 4th-century images using a new laser technique that allowed them to burn off centuries of white calcium deposits without damaging the dark colors of the original paintings underneath.

The paintings adorn what is believed to be the tomb of a Roman noblewoman and represent some of the earliest evidence of devotion to the apostles in early Christianity.

**Please visit the site:**

**<http://www.google.com/hostednews/ap/article/ALeqM5hk4sGIZ2iaZdOMcOUf4P9gbMvwRgD9GGADOG0>**

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## **RADAR REVEALS EXTENT OF BURIED ANCIENT EGYPT CITY**

An Austrian archaeological team has used radar imaging to find the extent of size of the 3,500-year-old capital of Egypt's foreign occupiers, said the antiquities department Sunday.

Egypt was ruled for a century from 1664-1569 B.C. by the Hyksos, a warrior people from Asia, possibly Semitic in origin, whose summer capital was in the northern Delta area.

Irene Mueller, the head of the Austrian team, said the main purpose of the project is to determine how far the underground city extends.

The radar imaging showed the outlines of streets, houses and temples underneath the green farm fields and modern town of Tel al-Dabaa.

Archaeology chief Zahi Hawass said in a statement that such noninvasive techniques are the best way define the extent of the site.

Egypt's Delta is densely populated and heavily farmed, making extensive excavation, unlike the more famous desert tombs and temples found in southern Egypt.

The Austrian team of archaeologists has been working on the site since 1975.

**Please visit the site:**

**[http://news.yahoo.com/s/ap/20100620/ap\\_on\\_re\\_mi\\_ea/ml\\_egypt\\_antiquities](http://news.yahoo.com/s/ap/20100620/ap_on_re_mi_ea/ml_egypt_antiquities)>:**

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## PALACE OF THRACIAN KING SEUTHES?

Mount in Southern Bulgaria might hold Thracian king Seuthes residence: archaeologist Starosel. Ivan Hristov, deputy director of the National Museum of History, suggests the residence of the Thracian king Seuthes might have been at the mount of Kozi Gramadi, close to the southern village of Starosel. The exploration of the site resumes on July 1.

Speaking in an interview with FOCUS News Agency, the archaeologist says:

“It has unique architecture in terms of decoration and location. All this resembles a lot the description of Seuthes’s residence. He was the ruler of the coastal regions of Thrace. Xenophon, a Greek historian, soldier, mercenary, says Seuthes resided in a reinforced tower. Perhaps it is a little bit more different. This is not just one reinforced tower. This is a castle with ideal planning, parallel walls, entries, internal towers. This is a Thracian palace situated high in the mountain range – at the height of 1,100 meters above the sea level. The peak is at a height of 1,300 meters, in a very beautiful place. The palace faces southeast and has a wonderful view to entire Thrace in the direction of Philippopolis. This is not an ordinary complex; it is a king’s place,” he says.

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Please visit the site: <http://www.focus-fen.net/index.php?id=n223177>

## A NEW LOOK AT PREHISTORY OF EGYPT

Among Zahi Hawass's ambitious plans to introduce specialised museums across the country is a proposed predynastic museum at Qena. This is good news, says Jill Kamil

Anyone interested in the antecedents of the Egyptian civilisation and the cultures that predated the unification of the country under one king may soon have many of their questions answered. Items showing evidence of the activities of the early peoples of the Nile Valley, from the predynastic cultures of Upper and Lower Egypt, Fayoum and the oases of Siwa and Kharga selected from storehouses around the country, plus pieces from various museums, will soon be on display in a new predynastic museum at Qena.

The museum is currently being built at an ideal location -- a prominent five-feddan site overlooking the Nile. Mahmoud Mabrouk, head of the museums sector of the Supreme Council of Antiquities (SCA), which is overseeing the work, says it will represent a long period of history covering about 10,000 years. He adds that a plan has already been worked out to start surveying and registering predynastic items in order to prepare a database of antiquities.

As were other parts of the world, Egypt was occupied by Stone Age hunting, fishing and food-gathering communities in the Late Paleolithic. In about 5000 BC, Neolithic or New Stone Age people wandered along the river terraces of the Nile Valley, and traces of their agricultural, hunting and animal domestication activities have been found on numerous sites. Interestingly, from very early times many of the artefacts produced had a peculiarly "Egyptian" character, and their styles continued through various development phases well into the early historical period.

The work on predynastic sites, discovered independently by Britain's Flinders Petrie and France's Jacques de Morgan in the late 19th century have now been expanded. Literature has become specialised and scattered, and the sources and types of material, in the absence of a written language, remain wide-ranging and complex. Take pottery for example. It was used for vessels which served a wide variety of functions long before the first Pharaohs -- for everyday cooking and domestic purposes, storage of cosmetics and oils, for the transportation of food and drink, and funerary rituals. There were also fancy vessels in the form of humans, animals and birds, decorated vessels, and mother- goddess figures. The historical development of Egyptian pottery alone, and its role in Egyptology, is extremely complex.

What do predynastic objects tell us about the inception of Egyptian culture? What do flint tools, stone mace heads, chisels and adzes, metal jewellery, slate cosmetic palettes, leather and textile clothes and containers tell us about society? Were small objects in ivory, stone, shell and faience depicting zoomorphic figures actually representations of deities? Were they devices to ward off evil? And to what extent do they reveal a complex and developing community, its class structure, its organisation? Were goods created for trade? Were luxury items and minerals unobtainable locally and therefore imported into the country?

These are but a few of the questions raised by scholars of various specialisations, and the predynastic sites so far excavated -- both settlement sites and cemeteries -- reveal a truly remarkable picture. Since the early days of study, radiocarbon dating has been refined and the methods used today are more sensitive and accurate. Hair, skin, shell and wood samples can now be tested with accuracy. It is no longer necessary to identify foreign imports on stylistic grounds alone when analysis can prove or disprove an argument. Remnants of clothing in some predynastic sites show that the people wore kilts, sometimes with decorative girdles, and feathered headgear. Strings of blue-glazed beads, anklets of shells and bracelets of ivory attest to the standard of personal decoration, as do oval slate palettes which bear traces of red ochre or green malachite probably used to grind body or face paint.

The earliest known "seasonal settlements" in Egypt are in Fayoum, the depression in the Western Desert that was filled by the Nile in about 8000 BC to create a considerable lake with a much higher water level than it has today. Mud huts were built on mounds along its north and north-east shores when the level of the lake gradually fell and where the land was fertile, and by about 5000 BC emmer, wheat, barley and flax were being cultivated and harvested using sickle-flints set in wooden handles. Traces of cloth reveal that the people wove linen, which they probably wore beneath an outer garment of leather. Stone beads and pendants show that they also developed drilling techniques. Pottery was made of coarse clay and fashioned in a variety of shapes. This seasonal, semi-nomadic existence where, despite an increase in animal husbandry, expeditions into the desert to hunt large mammals continued. Such an existence can also be traced at many sites in Upper Egypt south of Assiut where, although the actual settlements built on levees along the banks of the river have long disappeared, burial grounds provide evidence of early society. Ivory spoons, figurines, and small copper objects -- hammered, not cast -- were among the grave goods.

The earliest evidence of fully sedentary village life can be found at Merimda, a sandy rise in the Western Desert on the edge of the Delta near the Rosetta branch of the Nile. Radiocarbon readings reveal evidence of occupation from 4440 to 4145 BC, and some scholars suggest an even earlier date. Groups of small, flimsy huts made of wicker were built on spurs, and it is thought that they may have been used for much the same purpose as in rural communities in Egypt until today for storing food and tools rather than for habitation. Such lightly-constructed shelters may have also provided shade for workshops and cooking areas.

The predynastic period is an exciting field of study. Early Egyptologists tended to discard fragments of pottery, ostrich shells and bones. Today we know their importance in revealing different stages of settlement, dietary habits and social patterns of the earliest people who settled in the Nile Valley, whether farmers or stock-breeders who raised cattle, sheep, goats and pigs, and who, over the passage of time developed trading centres in major settlement areas. One such predynastic settlement area shows that the inhabitants were indeed traders. I refer particularly to the contents of the delightful and little-known and long-neglected dig-house, known as the Maadi Museum, the contents of which will take prime place in the new predynastic Qena Museum.

Maadi's strategic position in pre-history is not widely known, yet it is unique. It was first excavated in 1918 and the results were made public in a report to the International Congress of Geography in 1925. Three years later, the famed Egyptologist J Lucas



visited the site and identified three specific areas of the settlement. His observations ignited further interest and, in 1929, he decided to initiate a project for its investigation. Eleven archaeological missions were carried out there under the directorship of various Egyptian and foreign pre- historians, but unfortunately the mission came abruptly to an end with the outbreak of World War II -- although luckily not before the research resulted in the publication of four volumes of detailed studies carried out by specialists in the fields of natural sciences, pottery, lithic industries, non-lithic objects and cemeteries. It is, so far, the most comprehensive and well-documented pre-dynastic objects in the whole of Egypt.

Little remains of the actual site today. It continues to be seriously threatened by further urban expansion, visibly creeping up on the ancient dig-house and its valuable collection which, fortunately, will be transferred to the Qena Museum in due course. I remember visiting the site 10 years ago, in late November 2000, when the late Ibrahim Rizkana was custodian. He told me about the excavations and the fact that Maadi was ideally located for contacts with Upper and Lower Egypt, as well as with western Asia through a wadi leading to the Isthmus of Suez. He explained how the "Maadians" benefited from trade, being well placed with plenty of drinking water and situated as it was on a terrace at the fringe of the desert safe from high floods. The number of graves found in the cemeteries suggested a large community, believed to be traders who lived in a "real town", and produced a number of innovations in around 4000 BC. It was not, according to Rizkana, a simple trading post, but a settled community where the people practised agriculture, bred animals, wove fabrics, used teeth and shells for ornaments, made bread and manufactured stone vases and pottery jars for storage. The excavation of distinctive imported Palestinian pottery aroused the interest of scholars as soon as the preliminary reports appeared.

It is now pretty certain that Maadi's pre- dynastic site, which is a more elaborate and complex settlement than the pre-dynastic sites of Lower Egypt, will feature strongly in the new museum. It will be revealed that the people had a variety of rectangular houses, oval huts, subterranean shelters, storage pits and sunken storage jars. Interestingly, the houses and huts were concentrated in the centre of the settlement, while the storage facilities were around its edge. Burials, except for infants, were in cemeteries away from the settlement.

The subterranean "houses" proved to be the most interesting of all. The three that were found were dug about two metres deep and in various shapes. Some appear to have been domed and covered with matting, a practice not common in Egypt but found at several sites in southern Palestine. This suggested to some of the archaeologists who excavated the site that they were actually the houses of foreigners in Maadi. Rizkana, however, thought that idea "rather farfetched", and said they were more likely to have been for common use, perhaps for administrative purposes. His thoughts about the settlement were, I recall, somewhat contradictory. He admitted that the Maadi settlement might have been a sort of shantytown, a trade station for various goods, but then on other occasions he said that it could have been a real town occupied by people with innovative ideas. Why, he postulated, was there an absence of threshing and harvesting implements, while grinding stones could be counted in their hundreds? And why, of the nearly 100,000 stone implements discovered were there only a dozen stickles and a handful of axes?

Mysteries always pique interest and although, as mentioned above, very little remains of the pre-dynastic site for further excavation, a new study of the objects -- once they are placed in a new setting and considered alongside the already published literature -- might enable modern scholars to answer some old scholarly questions.

The new museum at Qena, devoted to predynastic objects of all periods, will be a valuable source of information covering a field that is rapidly expanding and increasingly capturing the interest of travellers and the lay public as well as scholars.

Please visit the site: <http://weekly.ahram.org.eg/2010/1003/heritage.htm>

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## **FRENCH ENGINEER SAVES DAMASCUS TREASURES, BY KHALED YACOUB OWEIS**

DAMASCUS (Reuters Life!) - When French engineer Jacques Montlucon bought one of the famed, centuries-old courtyard houses of Old Damascus six years ago he had no idea it contained an architectural marvel.

But Montlucon, who has restored artifacts from the Titanic and helped rescue goods from a sunken Napoleonic merchant ship, has a knack for uncovering the unexpected.

"I was removing the heavy varnish covering the wood-paneled walls in the iwan (reception room) when figures of painted strange birds, monsters and castles started to emerge," he said, pointing to the fine drawing between the carved wood.

"The paintings are dated 1789, the year of the French Revolution. But who knows how long it had taken for the news to travel from Paris to Syria," he said.

An imaginary black bird pulls a boat. A man points a rifle from the top of a castle on a sea and monsters fly over the water. The wood ceiling resembles an intricate Persian carpet.

"It's a fairytale, but no one yet has been able to explain it," said Montlucon, who first came to Syria in 1965 in a tiny French car and worked in the Middle East over a 30-year career with Electricite de France.

The small house, which has an elegant fountain and a magnificent rooftop view of the Umayyad mosque, is one of the best kept secrets of Old Damascus. Montlucon believes it dates from the middle of the 18th century.

The once walled city, a United Nations world heritage site, is attracting tourists in increasing numbers as Syria, which has been ruled by the Baath Party since 1963, has relaxed entry restrictions and lifted bans on private enterprise.

### UNIQUE PAINTINGS

The carved wood, stone and elaborate high ceilings were signs of status at Damascene homes, which later incorporated paintings as the cosmopolitan city interacted more with Europe and Western artists and 19th century adventurers visited Syria.

While paintings of buildings and landscapes can be found at the courtyard houses that have survived neglect and destruction in modern Damascus, the mythically themed paintings at Montlucon's home are unique.

Together with a friend he used cotton buds immersed in basic solvents and simple water colors to restore the room. It took six months -- time-consuming, he said, but not difficult.

"The most important principle in restoration is for it to be reversible, in case you find a better way," said Montlucon, who has restored artifacts from the Titanic using electrolysis techniques and helped rescue items from Le Patriot, a merchant ship from Napoleon's fleet which sank off Egypt.

Behind plain 20th century tiles in the same room, Montlucon also uncovered carved stone walls with mosaic-like Arab patterns, a technique pioneered by the Mamluks, one of the many rulers of Damascus.

Syrian craftsmen had a reputation for carving stone as if they were cutting paper. They flourished during Ottoman rule from the 16th to early 20th century, and incorporated Persian and Western influences, such as baroque into their work.

"The owners of the house wanted to probably hide from the taxman how opulent their property was, or simply tastes had changed," Montlucon said.

Adding his own touch, Montlucon furnished the house with antique Syrian mother of pearl and art deco furniture from the nearby "Thieves Market."

Passing by a pile of rubble thrown out by workers in a nearby house once, he found prized white and blue Islamic tiles. They now grace a wall.

Beit (house of) Jacques was part of a bigger aristocratic house next door that was bought by Noura Jumblatt, the Syrian wife of Lebanese Druze leader Walid Jumblatt, an enigmatic former warlord during Lebanon's civil war who has had uneasy relations with Syria.

Noura's restoration is immaculate, but many of the ancient properties that are being turned into restaurants and hotels in the old city have been restored in a way that experts say may have done irrevocable damage.

Artists who moved to the old Jewish quarter of the city have done a better job at conserving the original work.

Montlucon remembers coming to Damascus to study Arabic 10 years ago and wanting to find out the secrets of the old aristocratic houses whose simple facades of stone and mud hide their magnificence and serenity inside.

The neglect has driven Montlucon, who is in his 60s, to try and save more of the old city. He plans to turn another house, which he just finished restoring, into a center for the preservation of craftsmanship and heritage techniques.

The house, which has mirror work ceilings, belonged to Syrian Bedouin prince Trad al-Milhem, who lived there in the early 20th century. It is probably built on the ruins of an Umayyad palace.

Montlucon said modern development and pollution were two of the main threats to preserving Syria's legacy.

"Syria's heritage without a doubt is one of the richest and most diverse," he said. "It's based on intangible technical elements which at best may irrevocably change or at worst disappear."

(Editing by Dominic Evans and Paul Casciato)

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**Please visit the site:**

<http://www.washingtonpost.com/wp-dyn/content/article/2010/06/17/AR2010061701820.html>

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## **CARBON DATING THE SANTORINI EXPLOSION**

New analysis on problems between archaeology and pharaonic chronology, based on radiocarbon dating Article by Ben-Gurion University of the Negev professor published in Science magazine

BEER-SHEVA, ISRAEL June 17, 2010 -- In a just published article in Science magazine (June 18, 2020), Prof. Hendrik J. Bruins of Ben-Gurion University of the Negev presents novel implications related to new developments in the radiocarbon dating of Pharaonic Egypt.

The article reports that, for the first time, it is possible to relate the Minoan Santorini eruption with Egyptian Historical Chronology solely on the basis of radiocarbon dates. Thus, it appears that the eruption preceded the 18th Dynasty and occurred during the Hyksos Period. Moreover, conventional association of Egyptian history with archaeological phases at Tell el-Dab'a, the ancient capital of the Hyksos, located in the northeastern region of the Nile delta, do not fit in terms of radiocarbon dating.

Bruins is a researcher in the University's Department of Man in the Desert at the Jacob Blaustein Institutes for Desert Research and is affiliated with the Department of Bible, Archaeology and Ancient Near Eastern Studies. His research focuses on the 2nd millennium B.C.

"Major problems exist here in relation to the Santorini eruption between archaeological dating, radiocarbon dating and association between archaeological strata in the field and Egyptian Historical Chronology," said Bruins.

In 2006, Bruins received the Dutch Royal Award – Officer in the Order of Orange-Nassau – in the name of Her Majesty Queen Beatrix for achievements in policy-oriented studies on drought, hazard assessment and contingency planning in drylands, geo-archaeological desert research and innovative chronological studies about the ancient Near East.

He first came to Ben-Gurion University in 1976 as an instructor in the Department of Geography, then worked in the early 1980s for the Israel Antiquities Authority in the framework of the Negev Emergency Archaeological Survey. Bruins developed novel geo-archaeological research techniques, pioneered excavations in ancient agricultural terraces in the Negev highlands and discovered extensive tsunami deposits in Crete (Palaikastro), related to the Minoan Santorini eruption.

He also carried out research at the Ein el-Qudeirat oasis of northeastern Sinai, associated by some scholars with biblical Kadesh-Barnea. There, he became aware of the vital need to measure time in both archaeological and environmental studies with the same methodology: radiocarbon dating. This was the beginning of innovative research in cooperation with one of the best radiocarbon labs in the world situated at the University of Groningen in the Netherlands. Several major archaeological sites in Israel are currently under investigation, as well as rural desert sites in the Negev.

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For more information, contact Prof. Hendrik Bruins, [hjbruins@bgu.ac.il](mailto:hjbruins@bgu.ac.il); office: 972-8-6596863; cell: 972-52-3930392

About American Associates, Ben-Gurion University of the Negev

American Associates, Ben-Gurion University of the Negev (AABGU) plays a vital role in sustaining David Ben-Gurion's vision, creating a world-class institution of education and research in the Israeli desert, nurturing the Negev community and sharing the University's expertise locally and around the globe. With some 20,000 students on campuses in Beer-Sheva, Sede Boqer and Eilat in Israel's southern desert, BGU is a university with a conscience, where the highest academic standards are integrated with community involvement, committed to sustainable development of the Negev. For more information, please visit <[www.aabgu.org](http://www.aabgu.org)>.

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American Associates,

Ben-Gurion University of the Negev

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**Please visit the site: [http://www.eurekaalert.org/pub\\_releases/2010-06/aabu-nao061710.php](http://www.eurekaalert.org/pub_releases/2010-06/aabu-nao061710.php)**

## ANCIENT FIGURINE ‘FACTORY’ UNCOVERED

A BRITISH archaeology team has located evidence for the production of cruciform figurines such as the Idol of Pomos, which is depicted on the Cypriot one and two euro coins, the Antiquities Department said yesterday.

The evidence comes from a settlement of 3000 BC located at Souskiou near Palaepaphos. The Pomos sculpture represents a woman with her arms spread. It was probably used as a fertility symbol.

“This is the first time that such detailed information on this subject has come to light in Cyprus,” a statement from the Department said.

“Among the remnants of a house lay the tools for making the figurines together with abundant fragments or chippings from the initial stages of production. These come from pebbles and blocks of raw material which the sculptors obtained, ultimately from the Troodos Mountains. A further production stage is evident from roughouts in which the figures begin to emerge from the parent rock. Also present were nearly finished figurines that were discarded because of imperfections.”

This unique evidence will allow archaeologists to reconstruct the techniques used by the prehistoric artisans and to see how the craft was organised within the Chalcolithic community. They said it was already clear that the workshop functioned in a building where domestic tasks were also carried out.

“There were many such houses at Souskiou which must have been a vibrant centre for the production of these iconic images. Eventually it may be possible to establish the characteristics of the Souskiou style and so to source some of the many figurines in museums,” the announcement added.

In another part of the settlement, the team investigated “rich economic data” such as animal bone, ceramics, charcoal and bone needles. “Normally washed away by erosion, the material here was trapped beneath buildings that were constructed over this ashy dump of food remains. It may have been deposited by temporary visitors to Souskiou before it was formally settled,” it said.

The four-week field work at the site was conducted by a team from the Lemba Archaeological Research Centre and the University of Edinburgh under the direction of Professor Edgar Peltenburg.

Please visit the site: <http://www.cyprus-mail.com/cyprus/ancient-figurine-factory-uncovered/20100610?>



## MINOAN SHIPWRECK AT PSEIRA

Dear all,

News about the Minoan shipwreck at Pseira have been circulated on various online sources from 2006 to 2010.

The following link is from the Times.

[http://www.timesonline.co.uk/tol/life\\_and\\_style/court\\_and\\_social/article7028160.ece](http://www.timesonline.co.uk/tol/life_and_style/court_and_social/article7028160.ece)

I wonder how research in question progresses nowadays and if there are any recent or forthcoming publications about it, other than internet sources.

All best

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<http://www.archaeologyplanet.blogspot.com/>

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## **THIS SHOE HAD PRADA BEAT BY 5,500 YEARS, BY PAM BELLUCK**

Think of it as a kind of prehistoric Prada: Archaeologists have discovered what they say is the world's oldest known leather shoe.

Perfectly preserved under layers of sheep dung (who needs cedar closets?), the shoe, made of cowhide and tanned with oil from a plant or vegetable, is about 5,500 years old, older than Stonehenge and the Egyptian pyramids, scientists say. Leather laces crisscross through numerous leather eyelets, and it was worn on the right foot; there is no word on the left shoe.

While the shoe more closely resembles an L. L.Bean-type soft-soled walking shoe than anything by Jimmy Choo, “these were probably quite expensive shoes, made of leather, very high quality,” said one of the lead scientists, Gregory Areshian, of the Cotsen Institute of Archaeology at the University of California, Los Angeles.

It could have fit a small man or a teenager, but was most likely worn by a woman with roughly size 7 feet. (According to the Web site [www.celebrityshoesize.com](http://www.celebrityshoesize.com), that would be slightly roomy for Sarah Jessica Parker, whose Manolo Blahniks are size 6 ½, and a tad tight for Sarah Palin, who, during the 2008 campaign, wore red Double Dare pumps by Naughty Monkey, size 7 ½.)

The shoe was discovered by scientists excavating in a huge cave in Armenia, part of a treasure trove of artifacts they found that experts say provide unprecedented information about an important and sparsely documented era: the Chalcolithic period or Copper Age, when humans are believed to have invented the wheel, domesticated horses and produced other innovations.

Along with the shoe, the cave, designated Areni-1, has yielded evidence of an ancient winemaking operation, and caches of what may be the oldest known intentionally dried fruits: apricots, grapes, prunes. The scientists, financed by the National Geographic Society and other institutions, also found skulls of three adolescents (“subadults,” in archaeology-speak) in ceramic vessels, suggesting ritualistic or religious practice; one skull, Dr. Areshian said, even contained desiccated brain tissue older than the shoe, about 6,000 years old.

“It’s sort of a Pompeii moment, except without the burning,” said Mitchell Rothman, an anthropologist and Chalcolithic expert at Widener University who is not involved in the expedition. “The shoe is really cool, and it’s certainly something that highlights the unbelievable kinds of discoveries at this site. The larger importance, though, is where the site itself becomes significant. You have the transition really into the modern world, the precursor to the kings and queens and bureaucrats and pretty much the whole nine yards.”

Previously, the oldest known leather shoe belonged to Ötzi the Iceman, a mummy found 19 years ago in the Alps near the Italian-Austrian border. His shoes, about 300 years

younger than the Armenian shoe, had bearskin soles, deerskin panels, tree-bark netting and grass socks.

Footwear even older than the leather shoe includes examples found in Missouri and Oregon, made mostly from plant fibers.

The Armenian shoe discovery, published Wednesday in PLoS One, an online journal, was made beneath one of several cave chambers, when an Armenian doctoral student, Diana Zardaryan, noticed a small pit of weeds. Reaching down, she touched two sheep horns, then an upside-down broken bowl. Under that was what felt like “an ear of a cow,” she said. “But when I took it out, I thought, ‘Oh my God, it’s a shoe.’ To find a shoe has always been my dream.”

Because the cave was also used by later civilizations, most recently by 14th-century Mongols, “my assumption was the shoe would be 600 to 700 years old,” Dr. Areshian said, adding that “a Mongol shoe would have been really great.” When separate laboratories dated the leather to 3653 to 3627 B.C., he said, “we just couldn’t believe that a shoe could be so ancient.”

The shoe was not tossed devil-may-care, but was, for unclear reasons, placed deliberately in the pit, which was carefully lined with yellow clay. While scientists say the shoe was stuffed with grass, acting like a shoe tree to hold its shape, it had been worn.

“You can see the imprints of the big toe,” said another team leader, Ron Pinhasi, an archaeologist at University College Cork in Ireland, who said the shoe resembled old Irish pampooties, rawhide slippers. “As the person was wearing and lacing it, some of the eyelets had been torn and repaired.”

Dr. Pinhasi said the cave, discovered in 1997, appeared to be mainly used by “high-status people, people who had power,” for storing the Chalcolithic community’s harvest and ritual objects. But some people lived up front, probably caretakers providing, Dr. Areshian said, the Chalcolithic equivalent of valet parking.

Many tools found were of obsidian, whose closest source was a 60-mile trek away. (Perhaps why they needed shoes, Dr. Areshian suggested.)

“It’s an embarrassment of riches because the preservation is so remarkable,” said Adam T. Smith, an anthropologist at the University of Chicago who has visited the cave. He said that distinguishing Chalcolithic objects from later civilizations’ artifacts in the cave had been complicated, and that “we’re still not entirely clear what the chronology is” of every discovery.

“The shoe,” he said, “is in a sense just the tip of the iceberg.” (He probably meant to say wingtip.)

**Please visit the site:**

<http://www.nytimes.com/2010/06/10/science/10shoe.html?scp=2&sq=armenia&st=cs>  
e [Go there for nice image] [Scholarly article at:  
<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0010984>]

## **EBLA KINGDOM - GREATEST ARCHAEOLOGICAL DISCOVERY IN MIDDLE EAST, BY RASHA MILHEM**

54 Km away from Aleppo, lies the excavated site that used to be the capital of an ancient kingdom. Ebla the ancient city found at Tal Mardikh is one of the most important archaeological discoveries in Syria.

The name "Ebla" means "White Rock", and refers to the limestone outcrop on which the city was built.

### History and Archaeological Importance

The city was circular and surrounded by a 20 to 30 meters thick wall and had a citadel or acropolis in the center of it.

At four points round the city, the wall was perforated by gateways guarded by bastions with towers. One of these gateways is still evident on the southwest side of the city walls.

The citadel at the center includes two palaces; the main one is the royal palace on the west side that consists of the royal quarters and an administrative area.

There are also three caves below this where some of the royals were buried. Ebla's power grew and reached its apogee in the second half of 2000 BC.

### Prosperity and People's Activities

The Kingdom is not only important archeologically and historically speaking but it is also important due to the indications it has which refers to the economic feature of life dating back to that era.

Director of Idleb Museum Fajr Haj Mohammad said that the Ebla's geographic site helped making it the first economic capital in Syria in addition to its fertile land which helped spread grains and fruitful trees planting.

Its rich nature which is full of raw materials helped the flourishing of industry and trade. According to Haj Mohammad, Ebla Kingdom was famous for many food industries such as wine, oil and molasses in addition to other industries like textile.

Head of Idleb Antiquities Department Nicola Kabbad said the cuneiforms found at the site indicate that the inhabitants of Ebla used to exchange gold with goods including wood, oil, wine and textile.

Kabbad pointed out that the study conducted by Italian Prof. Archi from the University of Rome proved that the people of Ebla used a weight unit called al-Mina which is equivalent to 470 grams.

Historical documents showed that gold had a special value for the women of Ebla as they used to be endowed with it as a wedding gift, Kabbad added. (SANA)

Please visit the site:

<http://www.english.globalarabnetwork.com/201006096153/Travel/syria-ebal-kingdom-greatest-archaeological-discovery-in-middle-east.html>

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## **LEATHER FASHIONABLE EVEN IN PREHISTORIC TIMES, BY DAN VERGANO**

Leather pants aren't just for rock-and-roll stars, archaeologists report, since similar prehistoric leggings made the scene some 4,200 years ago.

Discovered in 2003 in the same Swiss Alps area as the 3,300 year-old Tyrolean iceman known as "Otzi", the frozen leather leggings reported in the current Journal of Archaeological Science emerged in 2003 from melting glaciers of the Schnidejoch ice patch, along with a bevy of artifacts, including arrows, coins, shoe straps and more, dating from 4,900 to 1,100 years ago.

"The conversion of raw animal hides and skins into durable leathers, with enhanced stability to water, bacterial degradation, heat and abrasion, was most probably the man's oldest technology combining exploitation of animals and plants," says the study led by Jorge Spangenberg of Switzerland's University of Lausanne:

"All the material recovered from Schnidejoch ice-patch comes directly from the ice border or very close to it, and were very well preserved in situ, frozen in ice and snow, under anaerobic conditions, protected from sun light, wind, dirt, silt or clay, with limited biological activity until uncovered by archaeologists. Therefore the leather material from Schnidejoch provide an unequal opportunity to perform a detailed study of the origin of the animal skin and tanning agents or chemicals used to make the prehistoric leather," says the study.

Detailed chemical and microscopic analysis on the leather legging, some 32 inches long, reveal it was made of goatskin, and tanned using birch bark and other plants. The goat belonged to a breed now found only in Laos, suggesting today's breeds crowded out others popular in prehistory.

**Please visit the site:**

**<http://content.usatoday.com/communities/sciencefair/post/2010/06/leather-fashionable-in-prehistoric-times/1>**

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