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(Ένωση Ελλήνων Χημικών)

**ΔΙΟΙΚΗΤΙΚΟ  
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Ε. Αλούπη (αντιπρόεδρος),  
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Ε. Κουλουμπή (ταμίας),  
Θ. Βάκουλης (μέλος),  
Β. Κυλίκογλου (μέλος),  
Γ. Φακορέλλης μέλος)

**Πληροφορίες:**

Γ. Φακορέλλης  
**E-mail:** [yfacorel@teiath.gr](mailto:yfacorel@teiath.gr)

Scientific Association, Year  
of Establishment 1982,  
Headquarters: Kaniggos 27,  
106 82 Athens (Association  
of Greek Chemists)

**BOARD:**

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**Information:** Υ. Facorellis  
**E-mail:** [yfacorel@teiath.gr](mailto:yfacorel@teiath.gr)

# Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

**- Αύγουστος 2010 -**

# Newsletter of the Hellenic Society of Archaeometry

**- August 2010 -**

**Nr. 113**

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**ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS**

**HMS RESEARCH IN PROGRESS**  
**MEETING 2010 - NOVEMBER 10TH, UCL,**  
**LONDON**

Dear all,

We are pleased to announce that the Historical Metallurgy Society's Research in Progress meeting has been confirmed for November 10th, 2010.

The meeting will be held at the Institute of Archaeology, UCL, London.

Registration is £20 for non-members, £18 for members of HMS, and includes lunch and coffee.

We are interested in attracting a variety of contributors from across the academic, contract and public sector worlds. If you are currently working on metallurgical material, related economic or historical concepts, or studying a site associated with metallurgical activity, we invite you to meet others working in this field and present your research to an interested community.

Deadline for abstract submission is Monday 27th September 2010.

Further information, registration forms and the call for papers poster, please visit:

<http://www.hist-met.org/hmsrip2010.html>

Many thanks,

Ruth Fillery-Travis  
Miljana Radivojevic

\*\*\*\*\*

MPhil/PhD candidates  
Institute of Archaeology  
University College London

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**INTERNATIONAL SYMPOSIUM "GRAVE  
INVENTORIES AND THEIR  
(INTER)REGIONAL CONTEXT. AN  
INTERDISCIPLINARY APPROACH.",  
NOVEMBER 25-27, 2010, TÜBINGEN,  
GERMANY**

The Post-graduate school "Symbols of the Dead: Archaeological, archaeometrical and religio-historical studies on sepulchral and memorial contexts in the Ancient Near East" supervised by Profs. P. Pfaelzner, H. Niehr and E. Pernicka (Eberhard Karls University Tuebingen, Germany) cordially invites all interested persons to the:

International Symposium

"Grave Inventories and their (Inter)Regional Context. An Interdisciplinary Approach."

The Symposium will take place from November 25-27, 2010 at the Schloss Hohentübingen in 72070 Tübingen, Germany. The official language of the symposium is English.

For further information please visit:

<http://www.promotionsverbundao.uni-tuebingen.de/sdt/symposium.html>

<https://freemailing0105.web.de/jump.htm?goto=http%3A%2F%2Fwww.promotionsverbundao.uni-tuebingen.de%2Fsdt%2Fsymposium.html>

For planning purposes we would appreciate registration by e-mail:

[tagung.symbole\\_der\\_toten@ifu.uni-tuebingen.de](mailto:tagung.symbole_der_toten@ifu.uni-tuebingen.de)

Participation is free of charge.

Preliminary program - shortly also available for download at:

<http://www.promotionsverbundao.uni-tuebingen.de/sdt/symposium/program.html>

Thursday, 25<sup>th</sup> November 2010

11.30 -- 13.30 registration

13.30 -- 14.00 /address of welcome/

14.00 -- 14.45 Richard L. Zettler (Philadelphia) /Rediscovering the Royal Cemetery of Ur: New Research on Old Excavations//

14.45 -- 15.30 Jill A. Weber (Philadelphia) /Skeletons and Scent: the Importance of Odor in Death Rituals at Tell Majnuna, Syria, in the early 4<sup>th</sup> Millennium///

15.30 -- 16.00 coffee break

16.00 -- 16.45 Richard Evershed (Bristol) /Will give a presentation //on Residue Analysis of the Vessels from the Royal Tomb of Qatna//

16.45 -- 17.15 Sarah Lange (Tübingen)  
/Will give a presentation //on Food Offerings for the Dead in the Royal Tomb of Qatna/

17.15 -- 18.00 Julie Patrier (Strasbourg) /Feeding the Dead in Anatolia in the 2nd Millennium BC/

18.00 -- 18.45 Patrick E. McGovern (Philadelphia) /Funerary Feasts: An Archaeological and Chemical Perspective///

19.00 reception

Friday, 26<sup>th</sup> November 2010

09.00 -- 09.45 Daniele Morandi Bonacossi (Udine) /Will give a presentation on MBA Grave Inventories at Qatna /

09.45 -- 10.30 Claude Doumet-Serhal (London) /Mortuary Practices in Sidon in the Middle Bronze Age: A Reflection on Sidonian Society in the Second Millennium BC./

10.30 -- 11.00 Panayiotis Andreou (Tübingen) /Pricing Death. "Some theoretical Considerations on the Classification of Grave Goods and Inventories."/

11.00 -- 11.30 coffee break

11.30 -- 12.15 Elisa Rossberger (Freiburg) /Will give a presentation on Jewellery and Prestige in the Grave/

12.15 -- 13.00 Thilo Rehren (London)  
/Production and Consumption in the LBA eastern Mediterranean/

13.00 -- 15.00 lunch break

15.00 -- 15.45 Michèle Casanova (Rennes, Nanterre) /Will give a presentation on Alabaster and Steatite Vases and Lapis Lazuli/

15.45 -- 16.15 Tina Köster (Tübingen)  
/Provenance Analysis of Calcite-Alabaster Vessels from Qatna///

16.15 -- 16.45 coffee break

16.45 -- 17.30 Judit Zöldföldi (Tübingen) /Will give a presentation on Lapis Lazuli///

17.30 -- 18.00 Katharina Teinz (Tübingen) /Will give a presentation on Archaeological Remains of Ancestor Worship///

18.00 -- 18.45 Zuzanna Wagnanska (Warschau) /Ancestor Cult at MBA Tell Arbid/ Syria///

19.30 conference dinner (only speakers)

\*Saturday, 27<sup>th</sup> November 2010\*

09.00 -- 09.45 Filomena Fausta Squadrone (Rom) /Symbols of the Dead in the Birecik Dam E.B.A. Cemetery///

09.45 -- 10.15 Anne Wissing (Tübingen)  
/Will give a presentation on Finds from the Graves in the Upper Town of Tall Mozan / Urkesh///

10.15 -- 11.00 Lindy Crewe (Manchester)  
/Creating space for the ancestors: bodies, grave goods and urban dynamics at Enkomi///

11.00 -- 11.30 coffee break

11.30 -- 12.00 Matthias Lange (Tübingen) /Grave Goods in Cremation Burials of the Iron Age///

12.00 -- 12.45 Maria Eugenia Aubet Semmler (Barcelona) /Mortuary Practices in the Cemetery of Tyre-Al Bass///

12.45 -- 13.30 /Synthesis and Concluding Remarks///

13.30 end

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**46TH INTERNATIONAL CONGRESS ON  
MEDIEVAL STUDIES, DE-  
MARGINALIZED SCIENCES:  
REHABILITATING ASTROLOGY,  
MAGIC, ALCHEMY, DIVINATION,  
MEDICINE, ETC. IN MEDIEVAL  
SCHOLARSHIP, MAY 12-15, 2011  
KALAMAZOO, MICHIGAN**

**CALL FOR PAPERS**

DEADLINE FOR PROPOSALS: September 15, 2010

As traditionally defined, academic discussions of the history of the pre-modern rational sciences often leave little room for quasi-scientific subjects such as astrology, alchemy, or even medicine—subjects that were at the center of lived experience for medieval people. With the application of anthropological methods to the study of rational practices of the past, important efforts have been made that rescue these disciplines from the trash heaps of history. It is, basically, to consider them as human practices rather than as failed science on the way to real science. Because scholars of these subjects often work in near isolation, this panel is intended to be a forum to share research, to compare methodologies, and to enjoy fruitful exchange and dialogue.

Papers on any aspect of these subjects as they were practiced or discussed in any language or culture relevant to the medieval period as usually defined will be considered—including, but not necessarily limited to—Europe, the Mediterranean world, the Middle East, Latin, Arabic, Greek, or any relevant vernacular tradition.

Please submit proposed title and abstract to Glen M. Cooper by September 15, 2010.

\*\*\*\*\*

Glen M. Cooper, Ph.D.  
Department of History  
2103 JFSB  
Brigham Young University  
Provo, UT 84602  
[glen\\_cooper@byu.edu](mailto:glen_cooper@byu.edu)

<http://byu.academia.edu/GlenCooper>

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General Call for Papers:

(<http://www.wmich.edu/medieval/Assets/pdf/congress/Sessions11.pdf>)

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## **ΣΕΜΙΝΑΡΙΟ - Η ΤΕΧΝΙΚΗ ΤΗΣ** **ΝΩΠΟΓΡΑΦΙΑΣ & ΞΗΡΟΓΡΑΦΙΑΣ, 1-3** **ΟΚΤΩΒΡΙΟΥ 2010, ΑΝΑΣΤΑΣΕΩΣ 48,** **ΠΑΠΑΓΟΥ**

Το σεμινάριο απευθύνεται σε επαγγελματίες και φοιτητές αγιογραφίας, εικαστικών τεχνών, συντήρησης, μουσειολογίας, αρχαιολογίας, καθώς και σε ιδιώτες συλλέκτες. Σκοπός του σεμιναρίου είναι να εισαγάγει τον σπουδαστή στην πρακτική κατασκευή των κονιαμάτων, στην δύσκολη τεχνική της νωπογραφίας και ξηρογραφίας και στην κατασκευή ενός ολοκληρωμένου έργου. Οι ενδιαφερόμενοι θα έχουν την δυνατότητα να αποτυπώσουν το σχέδιο που θα έχουν προσωπικά επιλέξει.

Εισηγητής σεμιναρίου: Δρ. **Χρήστος Χ. Καρύδης**  
Μεταδιδακτορικός Ερευνητής, Διαγνωστικό Κέντρο Τέχνης  
Ορμούλιας & Getty Institute  
Επ. Διδάσκων, Α.Π.Θ

### **Πρόγραμμα Σεμιναρίου:**

- Εισαγωγή- Ορισμοί- Γνωριμία με τα υλικά.
- Ιδιότητες και επιλογή κατάλληλων χρωμάτων για νωπογραφία.
- Γενική ιστορική αναδρομή (Αίγυπτος, Μακεδονικοί Τάφοι, Πομπηία, Σαντορίνη, Βυζαντινά & Μεταβυζαντινά μνημεία).
- Κατασκευή Φρέσκου (Νωπογραφία) με παραδοσιακά υλικά
- Παρουσίαση κατασκευής τοιχογραφίας με ξηρογραφικές τεχνικές (καζεΐνη, αυγοτέμπερα, λάδι).
- Παρουσίαση κονιαμάτων με συνθετικά σύγχρονα υλικά.

Κόστος σεμιναρίου: 150 Ευρώ (100 Ευρώ φοιτητικό)

Πληροφορίες-εγγραφές: Δρ. Αφροδίτη Καμάρα, τηλέφωνο: 210 6510549, e-mail:  
[info@timeheritage.gr](mailto:info@timeheritage.gr)

\*\*\*\*\*  
**TIME HERITAGE, Technology Information Management Education**

Σύμβουλοι Διαχείρισης Πολιτιστικής Κληρονομιάς  
Αναστάσεως 48, 156 69 Αθήνα  
Τηλ.-φαξ: 210 - 65 10 549  
e-mail: [info@timeheritage.gr](mailto:info@timeheritage.gr)  
[www.timeheritage.gr](http://www.timeheritage.gr)

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**FIRST ANNOUNCEMENT: 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.)

\*\*\*\*\*

Contact Addresses for the Congress

XVIIth International Bronze Congress  
c/o Doc. Dr. Ergun LAFLI  
Dokuz Eylul Universitesi  
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)>

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**ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –**  
**JOB VACANCIES/FELLOWSHIPS**

**ARCHAEOBOTANIST,**  
**PALAEOECOLOGY RESEARCH**  
**SERVICES LIMITED (PRS), UNIT 4,**  
**NATIONAL INDUSTRIAL ESTATE,**  
**BONTOFT AVENUE, KINGSTON UPON**  
**HULL HU5 4HF, UNITED KINGDOM**

**Job title:** Archaeobotanist  
**Employer:** Palaeoecology Research Services Limited (PRS), Unit 4, National Industrial Estate, Bontoft Avenue, Kingston upon Hull HU5 4HF, United Kingdom  
**Salary:** £20505-£23222 per annum (following BAJR Level 5 – Specialist 1 depending on experience)  
**Closing date for applications:** Friday 27<sup>th</sup> August 2010  
**Telephone:** 01482 348680 01482 348680  
**Email:** enquiries@palaeoecology.co.uk  
**Web:** www.palaeoecology.co.uk  
**Mail Address:** Palaeoecology Research Services Ltd  
Unit 4  
National Industrial Estate  
Bontoft Avenue  
Kingston upon Hull HU5 4HF  
United Kingdom

Palaeoecology Research Services Ltd is looking to fill the post of archaeobotanist to be based at its offices in Hull, East Riding of Yorkshire from September 2010. The successful candidate will be expected to undertake the identification, analysis and reporting of botanical macrofossil remains (preserved by both charring and anoxic waterlogging), including archaeological wood, for evaluation, assessment and technical standard reports and to produce publication quality text when required.

Applicants should have a post-graduate qualification in archaeobotany or related field (including a significant practical content – please note that palynological experience is not relevant for this position), or equivalent practical experience (at least 3 years) with a background in archaeology or an environmental science (to first degree level). Training can be arranged in specialist areas but it is essential that the candidate is self-motivated and has a demonstrated ability to write clear, concise technical reports. This post offers an excellent opportunity to develop archaeobotanical and other skills within a small commercial company and scope for interesting and varied work.

It is anticipated that this will be a full-time permanent position, subject to a 2 month probationary period and 6 monthly review.

## **JOB DESCRIPTION**

**Job Title:** Archaeobotanist

**Responsible to:** The Directors – John Carrott and/or Deborah Jaques

**Responsible for:** liaison with staff processing sediment samples over botanical issues

### **Working conditions**

The job will be located principally at PRS's offices which are located in Hull. The majority of your workload will be project based and most projects will involve team working in collaboration with one or more other internal specialists and, occasionally, with outside sub-contracted individuals or institutions.

Your post will be concerned with the provision of specialist advice, the analysis of botanical macrofossil remains and the management of some smaller environmental projects (specifically those mostly or wholly concerning botanical remains). It may also include periods of fieldwork, site visits or library/laboratory work within the United Kingdom (and, perhaps, occasionally further afield). There will, therefore, sometimes be a need for travel and could also be a need for overnight stays away from home (though it is envisaged that instances of the latter will be rare).

Your standard hours will be 37 hours per week, based on a 7.4 hour day, Monday to Friday. It is expected that exceptionally (e.g. during fieldwork) there will be a need to work longer hours, or at more flexible times, such as at weekends. Any overtime incurred will normally be compensated by 'time off in lieu' but, in exceptional circumstances, may be paid.

### **Job content**

You will be assigned to projects as they arise and the ability to prioritise conflicting demands on your time will be essential. Your main responsibilities will be:

1. to process and sort (or provide supervisory input to the processing and sorting) of samples for biological remains in general but with specific reference to botanical remains
2. be responsible for identifying and recording, assessment, analysis, and reporting of a wide range of archaeobotanical assemblages to an appropriate level (e.g. evaluation, assessment and technical reports) and the production of publication quality text when required
3. prepare complete reports for smaller projects and contributory text to larger works
4. to advise on sampling strategies and offer specialist advice internally and externally

5. to undertake any identifications and coordination required for submission of radiocarbon samples
6. to operate within defined (though often shifting) project objectives, budgets and timetables

You will require the following general skills and abilities:

1. good organisational ability to manage a variety of essential tasks and competing demands on your time
2. accuracy and attention to detail, together with a systematic approach to the recording and presentation of results
3. adaptability
4. a team orientated approach
5. good general computing skills (including knowledge of Microsoft Office software)

In addition from time to time you may be required to undertake periods of archaeological fieldwork (e.g. specialist sampling), environmental supervision or research (e.g. documentary research), in the field or elsewhere away from the office, as determined by the directors.

You may also be required to undertake other tasks appropriate to your experience as deemed necessary by the Company Directors.

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## **RESEARCH ASSOCIATE/FELLOW - AMS** **SCIENTIST REF NO: 00020-4**

This post is available at either grade 7 or grade 8 depending upon knowledge and experience. Appointees to grade 8 are expected to take the initiative in programme development.

The SUERC AMS Laboratory for environmental science is well equipped with two modern accelerator mass spectrometers and the spectrometry of six species is established: [www.gla.ac.uk/departments/suerc/researchthemes/ams](http://www.gla.ac.uk/departments/suerc/researchthemes/ams). Working with the other AMS staff, and partner radiocarbon and cosmogenic isotope groups, you will develop and apply these tools in pursuit of Centre science, and your own research. Although focusing on heavy-ion measurement, including ~500 CI samples per year, you will share responsibilities for routine and experimental work, liaison and administrative duties as required. You will have expertise in the instrumentation and techniques and an enthusiasm to develop a personal research programme in AMS science.

Further enquiries to Prof. Stewart Freeman at [s.freeman@suerc.gla.ac.uk](mailto:s.freeman@suerc.gla.ac.uk).  
Further details and on-line application instructions are at [www.gla.ac.uk/jobs/](http://www.gla.ac.uk/jobs/).

This post has funding for 3 years in the first instance.

Job Family Research & Teaching

Position Type Full Time

Salary Range £31,671 - £35,646/£38,951 - £45,155 (Grade 7/8) Closing date for applications: 15th September 2010

\*\*\*\*\*

Professor Stewart P.H.T. Freeman

AMS Laboratory

Scottish Universities Environmental Research Centre Scottish Enterprise Technology  
Park East Kilbride G75 0QF

email: [s.freeman@suerc.gla.ac.uk](mailto:s.freeman@suerc.gla.ac.uk)

phone: +44 (0)1355 270187

fax: +44 (0)1355 229898

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**POST-DOCTORAL FELLOW FOR THE**  
**ID21 BEAMLINE, X-RAY IMAGING**  
**GROUP, ESRF (EUROPEAN**  
**SYNCHROTRON RADIATION**  
**FACILITY), GRENOBLE, FRANCE**

Dear all,

Please find a link to a call for application for a post-doctoral fellow for the ID21 beamline, X-ray imaging group, at the ESRF (European Synchrotron Radiation Facility), Grenoble, France:

<http://www.esrf.eu/Jobs/Research/PDID21-2>

The deadline for application is the 31st of August 2010.

I would be grateful if you could advertise this application or forward it to any relevant people.

I thank you very much for your consideration. Please accept my apologies if you receive multiple copies of this announcement.

Best regards,

Marine Cotte

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## *INTERNET SITES*

# **UNESCO DATABASE OF NATIONAL CULTURAL HERITAGE LAWS HOMEPAGE**

In 2003, UNESCO devised an international solution to combat the illicit traffic of cultural property: the UNESCO Database of National Cultural Heritage Laws.

By compiling on the Internet the national laws of its Member States, UNESCO offers all stakeholders involved (Governments, customs officials, art dealers, organizations, lawyers, buyers and so forth) a complete and easily accessible source of information. In the event of a legal question about the origin of an object (which may have been stolen, pillaged, or illegally exported, imported or acquired), it is useful to have rapid access to the relevant national laws.

The UNESCO Database of National Cultural Heritage Laws allows the following to be consulted:

- \* national laws currently in force related to the protection of the cultural heritage in general;
- \* import/export certificates for cultural property (available on request);
- \* official or unofficial translations of national laws and certificates;
- \* contact details for the national authorities responsible for the protection of the cultural heritage;
- \* addresses of the official national websites dedicated to the protection of the cultural heritage.

The database offers access to national legislation relating to the cultural heritage in general, in other words the laws on the following main categories of heritage:

- \* cultural heritage:
  - tangible cultural heritage:
    - >immovable cultural heritage (monuments, archaeological sites, etc.)
    - >movable cultural heritage (paintings, coins, archaeological objects, etc.)
    - >underwater cultural heritage (shipwrecks, underwater cities, etc.)
  - intangible cultural heritage (oral traditions, performing arts, rituals, etc.)
- \* natural heritage (natural sites, physical, biological or geological formations, etc.).

For more information, please see the list of international normative instruments for the protection of the cultural heritage (conventions, agreements, charters, codes, declarations, action plans, protocols, recommendations, etc.).

Please visit the site: [http://portal.unesco.org/culture/en/ev.php-URL\\_ID=33928&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/culture/en/ev.php-URL_ID=33928&URL_DO=DO_TOPIC&URL_SECTION=201.html)

## **AWOL - THE ANCIENT WORLD ONLINE, STATE ARCHIVES OF ASSYRIA ONLINE (SAAO)**

State Archives of Assyria Online (SAAO) is an open-access web resource that aims to make the rich Neo-Assyrian materials found in the royal archives of Nineveh, and elsewhere, more widely accessible.

Based on an existing ASCII text database created by Simo Parpola and his team at the University of Helsinki, the online transliterations and translations are those of the standard editions in the series “State Archives of Assyria”. All of the published volumes are accessible online. The web presentation and linguistic annotation are carried out using tools and standards developed by Steve Tinney (University of Pennsylvania, Philadelphia).

The state correspondence of king Sargon II (published in volumes 1, 5, 15 and 17) is the first chunk of the SAAO materials to have been “lemmatized”, providing glossaries and interactive translation facilities which allow the user to check and question the translations in detail and make the corpus fully searchable, in order to facilitate and encourage an active understanding of the primary sources. This is the work of a team headed by Karen Radner (University College London) and funded by the British Arts and Humanities Research Council.

Other parts of the SAAO materials will be made available in the same manner by teams headed by Heather D. Baker (University of Vienna), Michael Jursa (University of Vienna) and Eleanor Robson (University of Cambridge).

Online portals provide context and explanatory materials for SAAO. Hence, the website “Knowledge and Power in the Neo-Assyrian Empire”, created by Radner, Robson and Tinney with funding from the British Higher Education Academy, is dedicated to the 7th century letters, queries and reports exchanged between kings Esarhaddon and Assurbanipal and their scholarly advisors. Another such portal is devoted to the 8th century political correspondence as part of the project Assyrian Empire Builders. Further portals are planned.

State Archives of Assyria Online (SAAO) is a component of Oracc.

The Open Richly Annotated Cuneiform Corpus Launched

Posted: 01 Jul 2010 03:37 AM PDT

Oracc: The Open Richly Annotated Cuneiform Corpus

Oracc comprises a workspace and toolkit for the development of a complete corpus of cuneiform whose rich annotation and open licensing support the next generation of scholarly research. It emerged from the CDLI and from the application of ePSD technology to a wider range of texts, languages and current XML standards. Oracc is the

creation of Steve Tinney, and is steered by Eleanor Robson, Tinney, and Niek Veldhuis.  
Read more ...

#### Oracc Project List

##### AEB: Assyrian Empire Builders

This website places the letters exchanged between Sargon II, king of Assyria (721-705 BC), and his governors and magnates in their historical and cultural context and provides resources and materials for their study.

##### CAMS: Corpus of Ancient Mesopotamian Scholarship

Starting with tablets from Huzirina, Kalhu, and Uruk for the Geography of Knowledge project, CAMS will eventually comprise editions and translations of a wide range of Mesopotamian scholarly writings.

##### CDLI: The Cuneiform Digital Library Initiative

The foundational online cataloging and archiving project for the cuneiform corpus. The Oracc presentation is based directly on public CDLI data which is updated nightly.

##### DCCLT: Digital Corpus of Cuneiform Lexical Texts

DCCLT provides editions and translations of lexical texts (word lists and sign lists) from all periods of cuneiform writing.

##### DCCMT: Digital Corpus of Cuneiform Mathematical Texts

DCCMT aims to present transliterations and translations of around a thousand published cuneiform mathematical tablets.

##### ePSD: electronic Pennsylvania Sumerian Dictionary

The PSD is preparing an exhaustive dictionary of the Sumerian language which aims to be useful to non-specialists as well as Sumerologists.

##### GKAB: The Geography of Knowledge in Assyria and Babylonia

The AHRC-funded GKAB project studies Assyro-Babylonian scholarship by editing the contents of four cuneiform libraries in the Corpus of Ancient Mesopotamian Scholarship and by analysing their changing socio-political contexts.

##### HBTIN: Hellenistic Babylonia: Texts, Iconography, Names

HBTIN presents the texts, iconography and onomastic data in the cuneiform documentation from Hellenistic Babylonia, primarily from Uruk. HBTIN texts form the demonstrator corpus of the Berkeley Prosopography Service (BPS).

##### K&P: Knowledge and Power in the Neo-Assyrian Empire

This website presents Neo-Assyrian scholars' letters, queries, and reports to their kings in seventh-century Nineveh and provides resources to support their use in undergraduate teaching.

OGSL: Oracc Global Sign List

Provides a global registry of sign names, variants and readings for use by Oracc.

Qcat: The Q Catalogue

The Q catalogue provides a global registry of compositions rather than objects, supporting the creation of scores on Oracc.

SAAo: State Archives of Assyria Online

An open-access web resource that aims to make the rich Neo-Assyrian materials found in the royal archives of Nineveh, and elsewhere, more widely accessible. Portals include Knowledge and Power and Assyrian Empire Builders.

**Please visit the site: <http://ancientworldonline.blogspot.com/> [Go there for links]**

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## THE CHANGING EMPIRES AROUND THE MEDITERRANEAN

Dear friends,

Although this is naturally simplified, a nice little 90 second video the link to which a friend sent to me shows the map of the Mediterranean with its surrounding land and how the empires changed over the last 5000 years.

<http://www.mapsofwar.com/images/EMPIRE17.swf>

Cheers

Sabine

\*\*\*\*\*

Sabine Beckmann

[sabine7@otenet.gr](mailto:sabine7@otenet.gr)

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## **E-BOOK OF POST-BYZANTINE ART BY LATSIS FOUNDATION**

Please visit the site: <http://www.latsis-foundation.org/megazine/publish/ebook.php?book=21&preloader=1>

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## **CIDE ARCHAEOLOGICAL PROJECT** **(COASTAL BLACK SEA)**

The Cide Archaeological Project (CAP) is a three year archaeological survey, which started in 2009. CAP is an international collaborative project co-directed by Bleda Düring (Leiden University), Claudia Glatz (University of Glasgow) and Tevfik Emre Şerifoğlu (Çanakkale On-Sekiz Mart Üniversitesi). [Click for contact details].

The project aims to explore and investigate the archaeological remains of the coastal Black Sea district of Cide and the adjacent inland district of Şenpazar (Kastamonu province, Turkey) using a combination of both targeted extensive and intensive archaeological surface surveying techniques. CAP is a multi-period survey with a special focus on exploring previously undocumented or little understood periods in the wider region such as the Neolithic, Bronze and Iron Ages.

Before this project started there had been no systematic investigations of the archaeology of the Cide area. Very little, therefore, was known about the region's long-term settlement history and hardly any sites had been recorded. In the wider context of the Black Sea littoral, archaeological surveys have tended to focus predominantly on the classical and later periods, with rather less attention on pre-classical occupation episodes.

One of the reasons we are interested in exploring the Cide and Şenpazar regions are their geographical situation. The southern Black Sea littoral occupies a geographically marginal zone with respect to inner Anatolia due to the east-west orientation of the Pontic mountain range. In many periods this topographic situation translates into localised cultural traditions, socio-political organisation and economic strategies. At the same time, the sea facilitates communication along and across the Black Sea. Both factors, a simultaneous peripheral and connected position in two different interaction networks, are likely to have played a significant role in the socio-economic development of the western Anatolian Black Sea littoral and its cultural orientation.

**Please visit the site: <http://cidearchaeology.com/cap/> [Go there for links to much information]**

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## ***ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS***

### **HOW THEY DIED IN POMPEII**

Giuseppe Mastrolorenzo<sup>1\*</sup>, Pierpaolo Petrone<sup>2</sup>, Lucia Pappalardo<sup>1</sup>, Fabio M. Guarino<sup>3</sup>

1 Istituto Nazionale di Geofisica e Vulcanologia, sezione di Napoli, Osservatorio Vesuviano, Napoli, Italy, 2 Museo di Antropologia, Centro Musei delle Scienze Naturali, Università degli Studi di Napoli Federico II, Naples, Italy, 3 Dipartimento di Biologia Strutturale e Funzionale, Università degli Studi di Napoli Federico II, Naples, Italy

#### **Abstract**

##### **Background**

The evaluation of mortality of pyroclastic surges and flows (PDCs) produced by explosive eruptions is a major goal in risk assessment and mitigation, particularly in distal reaches of flows that are often heavily urbanized. Pompeii and the nearby archaeological sites preserve the most complete set of evidence of the 79 AD catastrophic eruption recording its effects on structures and people.

##### **Methodology/Principal Findings**

Here we investigate the causes of mortality in PDCs at Pompeii and surroundings on the bases of a multidisciplinary volcanological and bio-anthropological study. Field and laboratory study of the eruption products and victims merged with numerical simulations and experiments indicate that heat was the main cause of death of people, heretofore supposed to have died by ash suffocation. Our results show that exposure to at least 250°C hot surges at a distance of 10 kilometres from the vent was sufficient to cause instant death, even if people were sheltered within buildings. Despite the fact that impact force and exposure time to dusty gas declined toward PDCs periphery up to the survival conditions, lethal temperatures were maintained up to the PDCs extreme depositional limits.

##### **Conclusions/Significance**

This evidence indicates that the risk in flow marginal zones could be underestimated by simply assuming that very thin distal deposits, resulting from PDCs with poor total particle load, correspond to negligible effects. Therefore our findings are essential for hazard plans development and for actions aimed to risk mitigation at Vesuvius and other explosive volcanoes.

**Please visit the site:**

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0011127>

**[Go there for article]**

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## **EΙΔΗΣΕΙΣ - NEWS RELEASE**

# **PROTONS FOR STUDYING THE DEAD SEA SCROLLS, ISTITUTO NAZIONALE DI FISICA NUCLEARE**

Researchers of the National Laboratories of the South (LNS) in Catania of the Istituto Nazionale di Fisica Nucleare (INFN, Italy's National Institute for Nuclear Physics) have shed light on the origin of one of the extraordinary Dead Sea Scrolls. It is a collection of about 900 documents discovered half a century ago in various caves near the Dead Sea and constituting the oldest known biblical texts, dating back to the period from about 100-200 B.C. to several decades after the birth of Christ. This finding was made possible by the combined use of a new system of analysis known as "XPIXE", patented by the INFN National Laboratories of the South, and a particle accelerator located at the same facility.

The results of the analyses were presented yesterday, 1 July 2010, by Professor Giuseppe Pappalardo of the INFN, at the PIXE 2010 Conference in Surrey, Great Britain.

The analyses, which were conducted by INFN physicists in collaboration with researchers from IBAM-CNR, have revealed that one of the Dead Sea Scrolls, in particular, the Temple Scroll (which is not part of the biblical narration and instead describes the construction and life of a temple and dictates how laws are to be communicated to the people), may have been made near the Dead Sea, in the area of Qumran, where the scrolls were found. In other words, the scrolls may have been created locally.

The analyses were conducted on seven small samples of the scrolls (average size of one square centimetre), following a request made by Dr. Ira Rabin of BAM (Bundesanstalt für Materialforschung) in Berlin. The scrolls belong to the Shrine of the Book of the Israel Museum and the Ronald Reed Collection of the John Rylands University Library.

At the LANDIS laboratory (one of the INFN laboratories in Catania), non-destructive analyses were performed to obtain results on the origin of the scrolls. To produce a scroll, which was the writing material used at the time, a great quantity of water is needed. By analysing water samples taken in the area where the scrolls were found, the presence of certain chemical elements was established, and the ratio of their concentrations was determined.

The ratio of chlorine to bromine in the fragments of the Temple Scroll was then analysed using proton beams of 1.3 MeV, produced by the Tandem particle accelerator at the INFN National Laboratories of the South.

According to this analysis, the ratio of chlorine to bromine in the scroll is consistent with the ratio in local water sources. In other words, this finding supports the hypothesis that the scroll was created in the area in which it was found. The next step in the research will be to analyse the ink used to write the scrolls.

Please visit the site: <http://www.infn.it/news/newsen.php?id=578>

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## **ANCIENT GREEK TOWN FROM WHERE SHIPS WERE LAUNCHED FOR TROY UNEARTHED**

Archeologists have found an ancient underground town in Kyparissia in Greece during a local construction work.

According to Katerina Nikolas, a columnist for <helium.com>, recently some local road works were being carried out near a swimming pool in the city and something unusual caused them to stop their work immediately. It appeared that an ancient underground town had been discovered on the site, which archeologists are now excavating.

Interestingly some parts of the ancient town are 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 kept quiet for the fear of losing his land to the Government.

Nikolas has also disclosed that the area has been sealed and excavation work has begun. So far, the archeologists have discovered outlines of buildings 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.

Kyparissia is an ancient town on the Western Pelopennese coast of Greece, and the writer describes it as a place of great charm and beauty, dominated by the Castle of Kyparissia, or Arkadia, as the town was once known.

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 while below it 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.

Meanwhile, the landmark water park has been closed down and it might have to give up its summer pleasures to the rights of the ancient past. (ANI)

Please visit the site: <http://sify.com/news/ancient-greek-town-from-where-ships-were-launched-for-troy-uneearthed-news-international-kg4p4fjaeig.html>

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## **EXPERTS COMPLETE EXCAVATIONS OF ANCIENT EGYPTIAN TUNNEL**

Egyptian archaeologists who have completed excavations of an unfinished ancient tunnel believe it was meant to connect a 3,300-year-old pharaoh's tomb with a secret burial site, according to officials.

Egyptian chief archaeologist Zahi Hawass said it has taken three years to excavate the 570 foot long tunnel in Pharaoh Seti I's ornate tomb in southern Egypt's Valley of the Kings. The pharaoh died before the project was finished.

First discovered in 1960, the tunnel has only now been completely cleared and archaeologists discovered ancient figurines, shards of pottery and instructions left by the architect for the workmen.

"Move the door jamb up and make the passage wider," read an inscription on a decorative false door in the passage. It was written in hieratic, a simplified cursive version of hieroglyphics.

Elsewhere in the tunnel there were preliminary sketches of planned decorations, said Mr Hawass.

Pharaoh Seti I (1314-1304 BC) was one of the founders of the New Kingdom's 19th Dynasty known for its military exploits and considered the peak of ancient Egyptian power. His tomb is famous for its colourful wall paintings.

Seti's son Ramses II built grandiose temples and statues of himself all over Egypt.

**Please visit the site: <http://www.timesofmalta.com/articles/view/20100702/world-news/experts-complete-excavations-of-ancient-egyptian-tunnel>**

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## ONE LESS LOST CITY

State-of-the-art radar imaging techniques have allowed the outline of the Hyksos capital Avaris to be mapped in detail, reports Nevine El-Aref [Click to view caption](#)

Minister of Culture Farouk Hosni has announced that the Austrian mission at Tell Al-Dabaa has located the southern suburban quarters of the ancient city of Avaris, the capital of the Hyksos, dating back to the Second Intermediate Period (1664- 1569 BC). The excavation team found the area using a combination of magnetometry and resistivity surveys.

The 3,500-year-old city was established after the Hyksos invaded Egypt, which they ruled for more than a century, holding the southern part of the country in alliance with the Nubian kingdom of Cush. The drive to expel the invaders began in Thebes, and the Hyksos were finally repelled by Ahmose, the founder of the 18th Dynasty.

The location of their summer capital, Avaris, had long been one of the great mysteries of Egyptology.

Objects excavated at San Al-Hagar, Tel Al-Yahoudiya in Qalioubiya and Tel Al-Rataba in Ismailia, had led to wrong attributions of their capital, Mohamed Abdel-Maqsood, head of Antiquities in Lower Egypt and Alexandria, told Al-Ahram Weekly. Later studies revealed that while the unearthed artefacts did indeed date from the time of the Hyksos rule they were reused items that had been transferred from Avaris.

"The site of the ancient city was one of the great historical enigmas," says Abdel-Maqsood. "The city was almost completely destroyed during the war to liberate Egypt, and it was not until the early 1960s that the Egyptologists Mahmoud Hamza and Labib Habashi correctly identified the site of Avaris at Tel Al-Dabaa in Sharqiya governorate.

The settlement was in antiquity a well-developed trade centre with a large harbour that moored over 300 ships during the height of the trading season.

The Hyksos, probably Semitic in origin, brought more than weapons to the country. Along with the invaders came hump backed Zebu cattle and new vegetable and fruit crops. They introduced technical innovations in the making of pottery, improving traditional potters' wheels and in the weaving of cloth with the novel introduction of vertical looms. But perhaps the greatest contribution of the Hyksos was their preservation of Egyptian documents, both literary and scientific.

The hunt to discover their capital was further complicated by the construction of cities nearby. When Ramses II came to the throne, he built a new capital, Pi-Ramses, two kilometres from Avaris. Successive dynasties also engaged in major construction, building cities such as Tanis (San Al-Hagar) and Bu-Bastet (Tel Basta). Along the way the ruins of Avaris disappeared from sight.



In the second part of the 1960s an Austrian mission headed by Egyptologist Manfred Bietak traced all the former branches of the Nile, and the cities built along the banks, Avaris among them.

In 2004, geophysical surveys undertaken by an Austrian archaeological team headed by Irene Forstner-Møller, determined the extent of the ancient city, which remains hidden beneath agricultural land and modern settlements.

The latest radar imaging, says Zahi Hawass, secretary-general of the Supreme Council of Antiquities (SCA), has allowed for detailed computer-generated images of the city to be constructed. A very detailed layout of Avaris's street plan has emerged. Several architectural features, including houses, temples, streets, cemeteries and palaces can be seen. The team has also been able to make out the arrangement of neighbourhoods and living quarters.

"Using such a special scientific survey to locate such a city is the only way to gain a better understanding of such a large area at one time," Hawass points out.

Forstner-Møller says that approximately 2.6 square kilometres have been investigated using a combination of geophysical survey and excavation.

She explains that the aim of the magnetometric and resistivity surveys were to define the borders of ancient Avaris. The team has succeeded in identifying a collection of houses and a possible harbour area. A series of pits of different sizes are also visible but their function has not yet been determined.

Such high-tech surveys, Abdel-Maqsood told the Weekly, accomplish what would take a century of conventional excavations to uncover. Now, he says, excavations can be more focussed, pin-pointing the most important monuments, thus saving time, effort and money.

Avaris is one of four ancient cities in the area. Given the close proximity of Pi-Ramses, Bu-Bastet and San Al-Hagar, the SCA is looking into schemes to develop the site and attract more tourists, including the construction of a museum dedicated to the history of the four cities.

**Please visit the site: <http://weekly.ahram.org.eg/2010/1004/fr2.htm>**

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## **UNEARTHED, THE ANCIENT TEXTS THAT TELL STORY OF CHRISTIANITY**

A British bookbinder has restored ancient copies of the gospels dating back to the fourth century, writes Jerome Taylor

for the handful of hardy travellers who make it to the Abuna Garima monastery in Ethiopia's Tigray Highlands, there is a book that local monks believe holds magic properties.

Kept under lock and key in a bright-blue circular hut at the centre of the isolated monastery, the Garima gospels are one of the Christian world's oldest and most exquisite treasures. Until recently, scholars had always assumed that the two 10-inch-thick volumes, which are written on goat skin and brightly illustrated, dated back to the early 11th century. But recent carbon-testing has proved what the monks believed all along: the books are among the oldest gospels in existence.

New dating techniques have put the creation of the two books to somewhere between 330 and 650, making them a close contender to being the most ancient complete Christian texts. The only major collection of scripture that is known to be older is the Codex Sinaiticus, a copy of the Bible hand-written in Greek which dates back to the third century. Unlike the Garima Gospels, the Codex includes large chunks of the Old Testament, but the entire work is divided between museums and monasteries in Egypt, Britain, Russia and the USA.

The Garima Gospels, meanwhile, have been in one piece in the same place for the best part of 1,600 years, guarded by generations of monks from Muslim invaders, colonial conquerors and a fire in the 1930s which destroyed their church.

The monks have their own legend about how the gospels came into their possession. They believe they were written by Abba Garima, a Byzantine royal who arrived in what was then the kingdom of Axum in 494 and went on to found the monastery. According to the monks, Abba Garima finished his exquisite work in a single day because God stopped the sun from setting while he worked.

The Ethiopian Heritage Fund, a British charity which specialises in preserving the myriad of stunning artefacts that fill Ethiopia's monasteries, has recently finished restoring the two books to bring them back to their former glory.

Reaching the monastery, which is 7,000ft above sea level and clings to a mountainside, was no mean task. Lester Capon, a British bookbinder normally based in Tewkesbury, Gloucestershire, spent three weeks working with the monks to rebuild and restore the bindings that held the pages together.

"The monks won't even let the books out of the monastery, let alone the country," he told The Independent. "To them it really is a magical book, written by their founder. To begin with, they were very nervous about having someone mark and take the pages out of their book. But they soon understood what we were doing."

For Mr Capon, who has been binding books for more than 30 years in the UK, the restoration work was a serious challenge "without any of the normal facilities in a European conservation unit".

Forced to work outside, he had to be constantly on the look-out for a group of monkeys that seemed determined to cart the sacred book high up into the mountains.

An earlier conservation project in the early 1960s had resulted in some sections of the gospels being sewn together entirely. Mr Capon had to undo the stitches, take out each page, clean it and put it back in the right order. Jacques Mercier, a French expert on Ethiopian manuscripts, was on hand to ensure each page was put back correctly.

The books themselves are written in Ge'ez, an ancient Ethiopian Semitic language and consist of three manuscripts in two volumes. Both contain the four gospels and one of the volumes has added pages from a 15th century manuscript.

The Ethiopian Heritage Fund is now working to preserve a series of ancient wall paintings at nearby monasteries and hopes to build a small museum at Abuna Garima to house the newly restored gospels.

Please visit the site: <http://www.independent.co.uk/arts-entertainment/books/features/unearthed-the-ancient-texts-that-tell-story-of-christianity-2019188.html>

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## **HIPS DON'T LIE: RESEARCHERS FIND MORE ACCURATE TECHNIQUE TO DETERMINE SEX OF SKELETAL REMAINS MATT SHIPMAN**

Research from North Carolina State University offers a new means of determining the sex of skeletal human remains – an advance that may have significant impacts in the wake of disasters, the studying of ancient remains and the criminal justice system.

Historically, forensic scientists have been able to determine the sex of skeletal remains by visually evaluating the size and shape of the pelvis, or os coxa. “This technique is accurate, but is not without its limitations,” says Dr. Ann Ross, associate professor of sociology and anthropology at NC State and co-author of a paper describing the research.

The new technique for determining the sex of skeletal human remains is significantly more accurate than traditional visual inspections.

“For example,” Ross says, “when faced with fragmentary remains of the os coxa, it can be difficult to determine the deceased person’s sex based solely on visual inspection. This can be a significant challenge when evaluating remains from disasters – such as plane crashes – or degraded remains in mass burials – whether the burials date from prehistory or 20th century political violence.”

But Ross and her colleague Dr. Joan Bytheway have now used three-dimensional imaging technology to effectively quantify the specific characteristics of the os coxa that differentiate males from females. Bytheway is an assistant professor of forensic science at Sam Houston State University.

The researchers found more than 20 anatomical “landmarks” on the os coxa that can be used to determine a body’s sex. Finding so many landmarks is important, Ross says, because it means that the sex of a body can be ascertained even if only a small fragment of the pelvis can be found. In other words, even if only 15 percent of the pelvis is recovered, it is likely that at least a few of the landmarks can be found on that fragment.

Here’s how it would work: a forensic scientist would use a digitizer to create a 3-D map of the pelvic fragment and measure the relevant anatomical landmarks. The scientist could then determine the sex of the remains by comparing those measurements to the measurements listed in the paper by Bytheway and Ross.

“This technique also has the benefit of being significantly more accurate than traditional visual inspections,” Ross says. While determining sex based on visual inspections of os coxa have an accuracy rate of approximately 90 percent, the new technique from Ross and Bytheway has an accuracy rate of 98 percent or better. The researchers found, for example, that several anatomical landmarks commonly used in visual inspection to estimate sex are actually very poor indicators of sex.

The new technique could also have significant benefits in the courtroom. Obviously the improved accuracy is important, but so is the fact that the method relies on quantifiable metric data – not an opinion. This is an important distinction under the federal rules of evidence that govern what evidence can be submitted in criminal court.

The researchers are planning to incorporate their findings into the National Institute of Justice's 3D-ID program. The 3D-ID program consists of software that allows forensic scientists to plug in data on skeletal remains and determine the sex and ancestral origin of those remains.

The research, "A Geometric Morphometric Approach to Sex Determination of the Human Adult Os Coxa," is published in the July issue of Journal of Forensic Sciences.

NC State's Department of Sociology and Anthropology is a joint department under the university's College of Humanities and Social Sciences and College of Agriculture and Life Sciences.

Note to editors: The study abstract follows.

"A Geometric Morphometric Approach to Sex Determination of the Human Adult Os Coxa"

Authors: Joan A. Bytheway, Sam Houston State University; Ann H. Ross, North Carolina State University

Published: July 2010, Journal of Forensic Sciences

Abstract: Sex determination of the human skeleton is best assessed from the os coxa. The present study explored the possibility of using three-dimensional landmark coordinate data collected from various landmarks located over the entire bone to determine whether there were significant sex differences local to the landmarks. Thirty-six landmarks were digitized on 200 African American and European American male and female adult human os coxae. MANCOVA results show that sex and size have a significant effect on shape for both European Americans (Sex,  $F = 17.50$ , d.f. = 36, 63,  $p > F = 0.0001$ ; Size,  $F = 2.56$ , d.f. = 36, 63,  $p > F = 0.0022$ ) and African Americans (Sex,  $F = 21.18$ , d.f. = 36, 63,  $p > F = 0.0001$ ; Size,  $F = 2.59$ , d.f. = 36, 63,  $p > F = 0.0005$ ). The discriminant analysis shows that sexing accuracy for European Americans is 98% for both males and females, 98% for African American females, and 100% for African American males.

Please visit the site: <http://news.ncsu.edu/releases/wmsrossoscoxa/>

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## **COMPUTER AUTOMATICALLY DECIPHERS ANCIENT LANGUAGE**

A new system that took a couple hours to decipher much of the ancient language Ugaritic could help improve online translation software. Larry Hardesty, MIT News Office

In his 2002 book *Lost Languages*, Andrew Robinson, then the literary editor of the *London Times*' higher-education supplement, declared that “successful archaeological decipherment has turned out to require a synthesis of logic and intuition ... that computers do not (and presumably cannot) possess.”

Regina Barzilay, an associate professor in MIT's Computer Science and Artificial Intelligence Lab, Ben Snyder, a grad student in her lab, and the University of Southern California's Kevin Knight took that claim personally. At the Annual Meeting of the Association for Computational Linguistics in Sweden next month, they will present a paper on a new computer system that, in a matter of hours, deciphered much of the ancient Semitic language Ugaritic. In addition to helping archeologists decipher the eight or so ancient languages that have so far resisted their efforts, the work could also help expand the number of languages that automated translation systems like Google Translate can handle.

To duplicate the “intuition” that Robinson believed would elude computers, the researchers' software makes several assumptions. The first is that the language being deciphered is closely related to some other language: In the case of Ugaritic, the researchers chose Hebrew. The next is that there's a systematic way to map the alphabet of one language on to the alphabet of the other, and that correlated symbols will occur with similar frequencies in the two languages.

The system makes a similar assumption at the level of the word: The languages should have at least some cognates, or words with shared roots, like *main* and *mano* in French and Spanish, or *homme* and *hombre*. And finally, the system assumes a similar mapping for parts of words. A word like “overloading,” for instance, has both a prefix — “over” — and a suffix — “ing.” The system would anticipate that other words in the language will feature the prefix “over” or the suffix “ing” or both, and that a cognate of “overloading” in another language — say, “*surchargeant*” in French — would have a similar three-part structure.

### Crosstalk

The system plays these different levels of correspondence off of each other. It might begin, for instance, with a few competing hypotheses for alphabetical mappings, based entirely on symbol frequency — mapping symbols that occur frequently in one language onto those that occur frequently in the other. Using a type of probabilistic modeling common in artificial-intelligence research, it would then determine which of those mappings seems to have identified a set of consistent suffixes and prefixes. On that basis, it could look for correspondences at the level of the word, and those, in turn, could help it refine its alphabetical mapping. “We iterate through the data hundreds of times, thousands of times,” says Snyder, “and each time, our guesses have higher probability,

because we're actually coming closer to a solution where we get more consistency." Finally, the system arrives at a point where altering its mappings no longer improves consistency.

Ugaritic has already been deciphered: Otherwise, the researchers would have had no way to gauge their system's performance. The Ugaritic alphabet has 30 letters, and the system correctly mapped 29 of them to their Hebrew counterparts. Roughly one-third of the words in Ugaritic have Hebrew cognates, and of those, the system correctly identified 60 percent. "Of those that are incorrect, often they're incorrect only by a single letter, so they're often very good guesses," Snyder says.

Furthermore, he points out, the system doesn't currently use any contextual information to resolve ambiguities. For instance, the Ugaritic words for "house" and "daughter" are spelled the same way, but their Hebrew counterparts are not. While the system might occasionally get them mixed up, a human decipherer could easily tell from context which was intended.

## Babel

Nonetheless, Andrew Robinson remains skeptical. "If the authors believe that their approach will eventually lead to the computerised 'automatic' decipherment of currently undeciphered scripts," he writes in an e-mail, "then I am afraid I am not at all persuaded by their paper." The researchers' approach, he says, presupposes that the language to be deciphered has an alphabet that can be mapped onto the alphabet of a known language — "which is almost certainly not the case with any of the important remaining undeciphered scripts," Robinson writes. It also assumes, he argues, that it's clear where one character or word ends and another begins, which is not true of many deciphered and undeciphered scripts.

"Each language has its own challenges," Barzilay agrees. "Most likely, a successful decipherment would require one to adjust the method for the peculiarities of a language." But, she points out, the decipherment of Ugaritic took years and relied on some happy coincidences — such as the discovery of an axe that had the word "axe" written on it in Ugaritic. "The output of our system would have made the process orders of magnitude shorter," she says.

Indeed, Snyder and Barzilay don't suppose that a system like the one they designed with Knight would ever replace human decipherers. "But it is a powerful tool that can aid the human decipherment process," Barzilay says. Moreover, a variation of it could also help expand the versatility of translation software. Many online translators rely on the analysis of parallel texts to determine word correspondences: They might, for instance, go through the collected works of Voltaire, Balzac, Proust and a host of other writers, in both English and French, looking for consistent mappings between words. "That's the way statistical translation systems have worked for the last 25 years," Knight says.

But not all languages have such exhaustively translated literatures:

At present, Snyder points out, Google Translate works for only 57 languages. The techniques used in the decipherment system could be adapted to help build lexicons for thousands of other languages. "The technology is very similar," says Knight, who works on machine translation. "They feed off each other."

Please visit the site:

<http://www.google.com/gwt/x?gl=us&source=mig&u=http%3A%2F%2Fweb.mit.edu/newsoffice/2010/ugaritic-barzilay-0630.html&wsi=02aed3ed65b2cd41&ei=J0IsTNX3I8WD1Aaq2Oj6Aw&wsc=eb>

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## EGYPT'S NEWEST ANTIQUITIES, BY TARA WEINGARTEN

King Tut is certainly more famous now than in his own time. The boy king died suddenly at the age of 19, before he could make a monument, or even a name, for himself. But just look at him now. He, or at least his stuff—the gilded masks, the lapis lazuli necklaces, the ornate thrones—is on a second blockbuster tour, traveling the world displayed safely behind glass in grand museums. Meanwhile, the pharaoh himself lies mummified in a decidedly unroyal-looking tomb in Egypt's Valley of the Kings.

You could line up with the throngs and plunk down about \$28 to see a few of Tut's treasures, or you can hop a plane and see the royal mummy—and thousands of other ancient artifacts—on their home turf, where they have context, relevance, and meaning. There's never been a better time to visit the cradle of civilization: Egypt is on a tear to open newly restored antiquities. Beginning now, and for the next three years, the government will inaugurate an impressive 22 new museums and attractions throughout the country—all in anticipation of the vast sums of tourism money likely to flow into the country as a result.

This month sees the opening of the mind-boggling Avenue of the Sphinxes on the east bank of the Nile River, a promenade of 1,350 lionlike statues that once linked the opulent temples of Karnak and Luxor. Though archeologists weren't able to unearth the entire avenue—it would have destroyed much of the modern town of Luxor built atop the ruin—a sizable portion of the alleyway was uncovered, exposing 900 original statues. Also on view are the remains of a Roman village on the site, complete with a large-production bakery, a wine factory, and a residential neighborhood, as well as several unearthed cartouches of Cleopatra, which experts believe prove she visited the grand avenue.

Also this month, Abusir, situated just outside Cairo between Giza and the vast burial ground of Saqqara, will open, showcasing a collection of 11 pyramids that have long been off limits to tourists. Just south of Saqqara, less than an hour's drive from Cairo, the NK Cemetery has been revealed, allowing access to its painted tombs of the less-famous (though not less extraordinary) royal family members Maya and Horemheb.

Saqqara itself deserves a serious visit. It's home to the stunning 4,700-year-old step pyramid of Djoser, which will also open late this summer for interior tours. There are 16 pyramids on the site, in varying degrees of dilapidation. Even those that look like piles of rock can offer good examples of pyramid advancement. There's early graffiti painted on a tomb wall, likely left by hoodlums during Jesus' time. Most impressive, though, is the hewn-stone building complex—once used as gathering spots and administrative offices for the pharaoh and his cronies—considered to be the oldest of its kind remaining anywhere on earth. Strolling through the complex, you can easily imagine what the village must have looked like abuzz with robed ancient Egyptians instead of today's fanny-packed sightseers.

A visit to Saqqara and Abusir could also include a look at the 4,600-year-old bent pyramid of Dahshur, thought to be the first true flat-sided pyramid. The bent pyramid's

interior chambers will finally be opened to tourists this December. That same month, visitors to the very recognizable pyramids of Giza will find that the touristy camel and horseback rides, along with the trinket salesmen and most of the panhandlers, are gone, replaced by wide-open spaces and slender paved roads to accommodate electric trams. “We’re cleaning up the site,” says Zahi Hawass, secretary-general of Egypt’s Supreme Council of Antiquities. “We are finally giving these great pyramids the respect they deserve, and changing them from a zoo to a preserved park.”

For those who can’t make it to Egypt this year, there is still plenty of opportunity to catch upcoming debuts. The Grand Museum, opening near the pyramids of Giza in three years, will be the largest museum in the world, with 100,000 objects, including 4,500 objects from King Tutankhamun’s tomb.

There’s also a lot going on in the city of Alexandria, founded 2,300 years ago along the banks of the Mediterranean by Alexander the Great. The restored Royal Jewelry Museum is now reopened with hundreds of royal Egyptian jewels, portraits, and furnishings, housed in a grand Belle Époque palace. Nearby, several museums are currently under construction, including properties that showcase mosaics, ancient textiles, Greco-Roman culture, and maritime artifacts. The Egyptian government is working with UNESCO to construct an underwater museum to reveal the many treasures that lie submerged just off the coast due to the rising sea. Interested visitors can stay on top of current museum and attraction openings by visiting Egypt’s official Supreme Council of Antiquities Web site: <[sca-egypt.org](http://sca-egypt.org)>.

Perhaps most exciting is the archeological dig 186 kilometers west of Alexandria to find Cleopatra and Marc Antony’s tombs. The exploration has centered on a temple built, in part, by Cleo herself. So far the site has yielded remarkable treasures, including several gilded mummies and so many fragments of sphinxes that Hawass, the country’s chief Egyptologist, believes the temple was lined with its own avenue of sphinxes. The dig is closed to the public but can occasionally be accessed by savvy tour operators. And there’s more to come; Hawass is currently negotiating for the return of the Rosetta Stone from the British Museum and for the bust of Nefertiti from a museum in Berlin. Stay tuned; on your next visit you may get to view these, too.

Please visit the site: <http://www.newsweek.com/2010/07/11/egypt-s-newest-antiquities.print.html>

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## **OLDEST WRITTEN DOCUMENT EVER** **FOUND, BY BEN HARTMAN -** **ARCHEOLOGISTS UNEARTH 14TH** **CENTURY BCE FRAGMENT**

Hebrew University excavations recently unearthed a clay fragment dating back to the 14th century BCE, said to be the oldest written document ever found in Jerusalem.

The tiny fragment is only 2 cm. by 2.8 cm. in surface area and 1 cm thick and appears to have once been part of a larger tablet. Researchers say the ancient fragment testifies to Jerusalem's importance as a major city late in the Bronze Age, long before it was conquered by King David.

The minuscule fragment contains Akkadian words written in ancient cuneiform symbols. Researchers say that while the symbols appear to be insignificant, containing simply the words "you," "you were," "them," "to do," and "later," the high quality of the writing indicates that it was written by a highly skilled scribe. Such a revelation would mean that the piece was likely written for tablets that were part of a royal household.

The find was uncovered in a fill taken from the Ophel area, which lies between the Old City's southern wall and the City of David. The Ophel digs are being carried out by Dr. Eilat Mazar of the Hebrew University Institute of Archeology, through funding from US donors Daniel Mintz and Meredith Berkman of New York.

According to Mazar, the fragment was discovered over a month and a half ago during wet sifting of the Ophel excavations, but was only released to the press this week because researchers wanted to wait until analysis of the piece was complete so as to be absolutely certain of the details of the find.

The most ancient piece of writing found in Jerusalem before the Ophel fragment was a tablet unearthed in the Shiloah water in the City of David, dating back to the eighth century BCE – nearly 600 years "younger" than the Ophel find.

Hebrew University Prof. Wayne Horowitz, a scholar of Assyriology, deciphered the script with the assistance of his former graduate student Dr. Takayoshi Oshima. Horowitz said that while the script was too broken to get context out of it, the quality of the writing gave some indication of the creator's pedigree.

"What we can see is that the piece was written in very good script and the tablet was constructed very well. This indicates that the person responsible for creating the tablet was a first-class scribe.

In those days, you would expect to find a first-class scribe only in a large, important place," he said.

According to Horowitz, the high quality of the tablet piece indicates that it was most likely part of a message sent from a then-king of Jerusalem to the pharaoh in Egypt.

Horowitz said that the fragment, which is made of Jerusalem clay, indicated that Jerusalem was one of the central cities of the area at the time.

“This shows Jerusalem was not a provincial backwater, [but] one of the main cities of the area,” he said.

Mazar called the fragment “one of the most important finds we’ve ever had” and said she hoped it would lead to further big discoveries.

“A piece this small wouldn’t have been sitting there all by itself; there have to be more pieces like it,” she said.

In February, Hebrew University excavations led by Mazar in the Ophel area found ancient stone fortifications dating back some 3,000 years to the time of King Solomon and the First Temple.

Archeologists said that the 70-meter long and 6-m.-high wall indicated that there had been a strong central government in Jerusalem at the time, which had the manpower and resources to construct large-scale fortifications.

**Please visit the site: <http://www.ipost.com/Israel/Article.aspx?id=181135> [Go there for photo]**

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## **RICH FINDS AT BRONZE AGE SETTLEMENT**

EXCAVATIONS of the late Bronze Age settlement at Dromolaxia Vizatzia (Hala Sultan Tekke) have unearthed a rich array of imported and local bronze and pottery artefacts.

The finds at the ancient city which were carried out in May by the University of Gothenburg, Sweden, under the direction of Professor Peter M. Fischer, witness the central role Cyprus played during the Late Bronze Age, the Antiquities Department said in an announcement on Friday.

The ancient city was inhabited during the Late Bronze Age, which dates roughly to 1600-1100 BC. The city was once as large as 25 hectares making it one of the largest ancient cities of the period on the island.

This year's excavations exposed only 10m times 10m of the site, with nine rooms exposed so far. The city was built in two phases: one in the 13th/12th century BC and the other some hundreds years earlier.

The finds from the partly exposed complex include locally produced and imported pottery and objects of bronze, bone and stone. Dominating amongst the imported pottery are vessels from the Aegean region, mainly from the Greek mainland. There are also imports from the Levant and Egypt.

The imports from the Levant include so called Canaanite jars. These jars were of considerable size - 100 litres are not uncommon - and once contained oil and wine. Imports from Anatolia were also found. The large variety of finds provides evidence of the functions of these rooms, namely, pottery production, metal melting, food preparation, storage and administration.

Sophisticated equipment was used by the expedition and included an advanced GPS device for the exact location of the area of excavation.

Others were several electro-magnetic detectors, a laser-based measuring device and geo-radar. The radar results demonstrated the outlines of a large compound, at least 30m times 30m in size, buried deep under the surface. Air photographs of the excavated building were also taken by the local helicopter-based police.

Cypriot pottery, which was used as fine table ware, was exported to cultures all over the Mediterranean including today's Greece, Italy, Turkey, Syria, Lebanon, Israel, Jordan, the Palestinian authority, Egypt, and as far as today's Iraq.

**Please visit the site: <http://www.cyprus-mail.com/cyprus/rich-finds-bronze-age-settlement/20100704>**

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## REACTION TO CARBON DATES FOR EGYPT

Egyptian archeologists comment on carbon dating  
Valentina Cattane Science is playing an increasing role in supporting fields in the humanities, like Egyptology. As evidence, interpretations of the historical chronology of ancient Egypt--which are generally based on historical documents and archeological findings--have been verified by radiocarbon dating, which uses the naturally occurring radioisotope carbon-14 to determine the age of organic remains from archeological sites.

In a recent study published in Science Magazine on 18 June 2010, an international team of nine research professors (French, Austrian and Israeli) led by Bronk Ramsey, director of Oxford Radiocarbon Accelerator Unit at the Oxford University, have apparently determined more accurate dates for the ruling dynasties of Ancient Egypt by analyzing 211 samples.

The researchers tested seeds, baskets, and textiles, collected from tombs belonging to various museum collections across Europe and America, that had been previously dated.

The three-year study produced interesting results, some of which support the conclusions reached by conventional dating methods, while others don't.

The dates of the Old Kingdom and Middle Kingdoms roughly correspond to the conventional historical chronology, with minor differences.

However, the results obtained by Ramsey's team suggested a different chronology for the New Kingdom. With an average calendrical precision of 24 years, the new carbon dating results indicate the kingdom came into existence a decade before the conventional date of 1550 BCE.

The new evidence also suggests the Minoan Santorin eruption, which is a crucial stratigraphic time marker in the eastern Mediterranean region during the second millennium BCE, happened between 1626-600 BCE, and not around 1500 BCE as it is widely thought. This is considered crucial by researchers to better understand relations between Egypt and the other Mediterranean societies.

"For the first time, radiocarbon dating has become precise enough to constrain the history of ancient Egypt to very specific dates," said Ramsey in AFP report.

However, Zahi Hawass, Egyptian archeologist and secretary-general of the Egyptian Supreme Council for Antiquities, strongly disagrees with the use of carbon dating in archeology.

"Carbon-14 dating has a margin of error of 100 years. In order to date Egyptian dynasties, we need to have specific dates; you cannot use carbon dating," Hawass explained to Al-Masry Al-Youm. "This technique shouldn't be used at all in making changes to the chronology of the ancient Egypt, not even as a helpful addition."

By contrast, Salima Ikram, professor of Egyptology at AUC, showed interest in the results.

“They fit well with the archeological evidence that we already have,” she said. “Of course, ten years from now, there might be an improvement in carbon-14 dating, and the current crop of dates will have to be revised. Hard science is helpful, but should always be contextualized and tested against other data.”

While the results of Ramsey’s research may present a compelling reason to revise records for the two millennia when Egypt dominated the Mediterranean world, Hawass remains categorical in his rejection of the technique: “Not even in five thousand years could carbon dating help archaeology. We can use other kinds of methods like geoarchaeology, which is very important, or DNA, or laser scanning, but carbon dating is useless. This science will never develop. In archaeology, we consider carbon dating results imaginary.”

Please visit the site: <http://www.almasryalyoum.com/en/news/egyptian-archeologists-comment-carbon-dating>

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## **LET THERE BE LIGHT, BY PAMELA J. JOHNSON**

Let's consider what New Jersey is famous for. The birthplace of Ol' Blue Eyes? Where Thomas Edison invented the light bulb? Or, heaven help us, Jersey Shore?

Fuggedaboutit!

The Garden State is home to one of the greatest archaeological discoveries of modern times.

In 1949 — two years after their discovery in a Judean desert cave — fragments of the Dead Sea Scrolls found their way to New Jersey and eventually to a red brick with white trim church in Teaneck.

For six decades, the fragments had been locked in the church's vault. At that juncture, St. Mark's Syrian Orthodox Cathedral and Dead Sea Scrolls officials knew it was time to call in the heavy hitters to document the 2,000-year-old manuscript.

About 2,450 miles west, USC College researcher Bruce Zuckerman got the call. A leading Dead Sea Scrolls scholar, Zuckerman was the first to record the New Jersey fragments dating around 100 B.C. by using high-end digital technology. In August 2009, he and other West Semitic Research Project members took their advanced imaging methods to the church and photographed the scrolls. Steven Fine of Yeshiva University in New York collaborated with the group as part of an ongoing partnership between USC and Yeshiva.

“Bruce Zuckerman's team is the best and the most experienced in photographing ancient texts,” said Weston Fields, executive director of the Dead Sea Scrolls Foundation, from Jerusalem. “He's definitely the first person anyone would think to call within Western scholarship.”

In his office at USC, Zuckerman, professor of religion and linguistics, pulled up some of the New Jersey Dead Sea Scrolls images on his computer screen. Written in carbon-based ink on parchment (possibly from a goat), many of the ancient Hebrew letters were indecipherable in conventional photos.

Founded in the early 1980s by Zuckerman and his brother Kenneth, the West Semitic Research Project was the first to use polynomial texture mapping (PTM) to photograph the Dead Sea Scrolls, in addition to the standard practice of taking color and infrared images. The technology uses the data from images taken at many different light angles to show the texture of the fragments' surface.

At his computer, Zuckerman examined a high-resolution image with Marilyn Lundberg, associate director of the project. Lundberg's husband, John Melzian, along with Kenneth Zuckerman, built the equipment enabling them to apply the innovative photographic methods originally developed by the Hewlett-Packard Co.



“Technology like this has never been used on the Dead Sea Scrolls until now,” Bruce Zuckerman said. “This New Jersey project was the first [in which] we were able to apply our method to such large fragments.”

Examining one fragment, part of a liturgical prayer, the pair spotted a tiny fleck on the first character in the word Adonai (Lord). They wondered whether the dot was parchment over the character or a tiny hole scraped off the ink. Because the image had been photographed from every conceivable angle, the computer software program allowed them to see the fragment in many combinations of light and shadow. A click of the mouse on an image acted like a flashlight, revealing the tiniest of details.

Shining their light on the character and examining the texture of the skin, they concluded that a tiny bit of ink had flecked off the surface. On closer inspection, it also appeared the scribe had slightly messed up the ink stroke and made a correction.

“This technology gives us more information than we ever thought was possible,” Zuckerman said, adding that his students are also using the method to analyze the scrolls. “The information about the skin and the ink was unexpected. This gives us great hope for research of the future.”

Leta Hunt of USC Libraries and her engineers developed the viewer software, based on work by Hewlett-Packard and other universities. More than 35,000 images gathered by the West Semitic Research Project can be accessed through the InscriptiFact Database Application ([InscriptiFact.com](http://InscriptiFact.com)).

In February, Zuckerman traveled to Milwaukee to deliver a lecture about the New Jersey Dead Sea Scrolls and the project’s advanced technology.

“Most people know the Dead Sea Scrolls are displayed at the Shrine of the Book at the Israel Museum in Jerusalem,” Zuckerman said. “But I’ll bet most of the public has no idea that the 20th century’s greatest manuscript discovery is also in New Jersey.”

How the scrolls ended up in the Diner Capital of the World begins with a tale about three Bedouin shepherds searching the cliffs along the Dead Sea for a wayward goat in the spring of 1947. Inside a dark cave, one of them discovered several narrow jars with bowl-shaped lids. Hoping for gold, he found bundles wrapped in cloth, greenish with age. He told the others there was no treasure.

The young Bedouins had discovered the first seven manuscripts of the Dead Sea Scrolls, written about 100 years before the birth of Christ and 1,000 years older than the oldest-known Hebrew texts of the Bible. After hanging from a pole in a tent for awhile, the scrolls were sold for a small amount to a cobbler in Bethlehem.

The cobbler noticed that writing appeared on the skins when accidentally splashed with water. He took four of them to Mar Athanasius Yeshue Samuel. A native of Syria, Samuel was the bishop at St. Mark’s Monastery in Jerusalem and a collector of old manuscripts.

“When Mar Samuel bought them, he thought they were interesting, but he didn’t know what they were,” Zuckerman said. “No one did.”

Samuel took them to scholars in Jerusalem who recognized their importance. He toured the United States with his scrolls trying to sell them, but couldn't find a buyer so he placed an ad in The Wall Street Journal. Under miscellaneous for sale, the scrolls were promoted as "an ideal gift to an educational or religious institution."

The scrolls sold for \$250,000 to an intermediary acting on Israel's behalf. But Samuel — who used the money to help victims of the war in Palestine and finance the growth of the Syrian Orthodox church in the U.S. — kept some of the fragments. He brought them to New Jersey when he became the U.S. archbishop of the church.

From 1949 to 1956, further searches yielded the remnants of about 900 scrolls in 11 Qumran caves. They included early copies of biblical books in Hebrew and Aramaic: hymns, prayers and other texts providing priceless insights into the culture that brought forth Rabbinic Judaism and Christianity.

After Samuel died in 1995 at 87, the fragments remained in the Syrian Orthodox archdiocese headquarters. Samuel himself might have been surprised at the technology now being used to study these antiquities.

Several offices in USC's Ahmanson Center are filled with the futuristic-looking machinery Zuckerman's team has created and uses to photograph ancient inscriptions. One contraption, dubbed the Twister, takes photos of an object perched on a turntable that revolves 360 degrees. Two other apparatuses nicknamed the Big Dome and Little Dome look like large black top hats adorned with red, white and blue wires. When artifacts are placed inside, photos are taken with light-emitting diodes (LEDs) staged at various angles.

Another room holds the Tarantula, a bigger, more powerful version of the domes with elements of the Twister. Lights are affixed throughout the seven-by-six foot gizmo. While lights turn on in succession, a camera shoots photos of an object balanced on a revolving turntable in the center.

"This is humanities enabled by science, by technology," Zuckerman said. "As technology evolves, the line between humanities and science will continue to blur. It's in this area especially that USC is leading the way."

Visit the West Semitic Research Project at [usc.edu/dept/LAS/wsrp](http://usc.edu/dept/LAS/wsrp)

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Bruce Zuckerman, professor of religion and linguistics, with Dead Sea Scrolls fragments at St. Mark's Syrian Orthodox Cathedral in Teaneck, N.J.  
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Please visit the site: <http://college.usc.edu/news/stories/724/let-there-be-light/>

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## **SYRIA: SCHOLAR COMPOSES MUSIC FROM ARCHAEOLOGICAL UGARITIC CUNEIFORM TABLET, BY H. SABBAGH**

Syria (Lattakia) – Musical scholar Ziad Ajjan composed eight poetry and musical pieces from the musical archaeological cuneiform tablet known as "Hymn of Supplication" H6 discovered in Ugarit in the early 20th century.

Ajjan composed three musical pieces based on the musical notes in the tablet which dates back to 1400 BC, naming the pieces "Sunrise," "Sunset" and "Holiday in Ugarit."

This marks the recording of the oldest music notation in the history of the world.

Ajjan said he is still working on the tablet based on information he reached after extensive study and previous experiment, making use of previous research by fellow Syrian scholars Mohammad Ahmad Soso and Sajii Kurkmaz and analyzing the phrases of the tablet's text.

The tablet contains a complete hymn, both words and music, in addition to detailed performance instructions for a singer accompanied by a harpist as well as instructions on how to tune the harp.

This tablet is one of several clay tablets were excavated in the early 1950s at the Syrian city of ancient Ugarit in what is now modern Ras Shamra, 12 kilometers north of the city of Lattakia in the Syrian Coast region, and around 260 kilometers north of Damascus.

Ugarit was an ancient cosmopolitan port city built around 6000 BC, reaching the height of its prosperity from 1450 BC until 1200 BC when it was abandoned.

The first written alphabet, the Ugaritic alphabet, was invented around 1400 BC. It consisted of 30 cuneiform letters, and shared similarities with the Arabic language in terms of meanings and grammar.

Earlier in June, Syrian Soprano Noma Omran performed a song from tablet at Daitoku-Ji, a Zen-Buddhist temple in Kyoto, accompanied by the temple's monks and Japanese percussionist Stomu Yamashta. (SANA)

**Please visit the site:**

**<http://www.english.globalarabnetwork.com/201007076478/Entertainment/syria-scholar-composes-music-from-archaeological-ugaritic-cuneiform-tablet.html>** [Go there for image]

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## **ANCIENT DNA IDENTIFIES DONKEY ANCESTORS, PEOPLE WHO DOMESTICATED THEM**

Genetic investigators say the partnership between people and the ancestors of today's donkeys was sealed not by monarchs trying to establish kingdoms, but by mobile, pastoral people who had to recruit animals to help them survive the harsh Saharan landscape in northern Africa more than 5,000 years ago.

The findings, reported today by an international research team in Proceedings of the Royal Society B, paint a surprising picture of what small, isolated groups of people were able to accomplish when confronted with unpredictable storms and expanding desert.

"It says those early people were quite innovative, more so than many people today give them credit for," said senior author Connie J. Mulligan, Ph.D., an associate professor of anthropology at the University of Florida and associate director of the UF Genetics Institute. "The domestication of a wild animal was quite an intellectual breakthrough, and we have provided solid evidence that donkey domestication happened first in northern Africa and happened there more than once."

Sorting through the most comprehensive sampling of mitochondrial DNA ever assembled from ancient, historic and living specimens, scientists determined that the critically endangered African wild ass -- which today exists only in small numbers in eastern Africa, zoos and wildlife preserves -- is the living ancestor of the modern donkey.

What's more, researchers found evidence to suggest that a subspecies called the Nubian wild ass, presumed vanished late in the 20th century, is not only a direct ancestor of the donkey -- it may still exist.

The ancestors of the domestic donkey were considered vital for collecting water, moving desert households and creating the first land-based trade routes between the ancient Egyptians and the Sumerians, according to study co-author Fiona B. Marshall, Ph.D., a professor of anthropology at Washington University in St. Louis.

An Old World prehistorian, Marshall has documented evidence of the donkey's domestic service by looking at skeletal wear and tear of animal remains found entombed near Egyptian pharaohs.

In the new study, scientists traced the family trees of the domestic donkey using samples from living animals, skeletons of African wild ass held in museums worldwide and isolated donkey bones from African archaeological sites.

"These were the first transport animals, the steam engines of their day," Marshall said. "Today domestic donkeys are often conceived of as animals of poor people, and little is known about their breeding. This is the first study to determine the African wild ass, which includes the Nubian strain, is the ancestor of the domestic donkey. That's important to know for efforts to preserve the species."

There are small numbers of the Somali subspecies of the African wild ass in zoos and wildlife preserves, and about 600 still exist in the wild in Eritrea and Ethiopia, but the Nubian subspecies was last seen in the Red Sea Hills of Sudan late in the 20th century.

Hope for its continued existence springs from a sample collected in northern Africa in the mid-1990s by co-author and biologist Albano Beja-Pereira of the University of Porto, Portugal. If any Nubian survivors are found, the possibility remains that the animals could be bred and reintroduced into the wild. The evidence reinforces the need for surveys and wildlife management plans in eastern Sudan and northern Eritrea, researchers say.

"The whole idea behind conservation is the need to maintain genetic variation," Mulligan said. "We don't know which elements are more or less important, but we think the whole range of diversity is important to the health of the species. Knowing the genetic makeup of the animals is essential to protect that diversity."

In addition, placing the domestication of the donkey in northern Africa helps scientists better understand the archaeological record and early culture of the area, researchers say.

"Knowing where a domestication event first occurred is important, because there are always cultural ramifications from being first," said Sandra Olsen, Ph.D., curator of anthropology at the Carnegie Museum of Natural History in Pittsburgh, who did not participate in the research. "With a nucleus of animals that can serve as either a food source, transportation or some other purpose, particular cultures acquire advantages that make them more successful than their neighbors. Consider that animals like the horse and the donkey were used for military purposes.

"From the point of view of a biologist or someone who studies animal husbandry, it is interesting to find the source for a species because it can even have veterinary ramifications," she said. "The work done in this project is extraordinary. They located very hard to find samples not common at all in museums, and the archeological specimens are difficult to obtain positive results from because the heat often destroys the organic material. They've made some considerable advances."

Besides revealing that the African wild ass is the living ancestor of today's domestic donkeys, the genetic evidence also reveals that the Somali wild ass is not a living ancestor as once suspected, but closer akin to a more modern cousin.

That leaves a question of a remaining, yet unidentified ancestor of modern donkeys believed to have sprung from a different branch of the family. Researchers suspect that ancestors of this animal are extinct, but they may have roamed the Maghreb of northeastern Africa, and possibly the coast of Yemen.

The research was initiated by funding from the National Science Foundation and also supported by the Wildlife Trust, St. Louis Zoo, Basel Zoo, Liberec Zoo and the Sea World and Busch Gardens Conservation Fund.

Conservation samples were collected by co-authors Patricia D. Moehlman of the International Union for Conservation of Nature, Hagos Yohannes of the Eritrea Ministry of Agriculture and Fanuel Kebede of the Ethiopian Wildlife Conservation Authority.

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Additional authors include Birgitta Kimura of Santa Fe College, Shanyuan Chen and Sonia Rosenbom of the University of Porto, Noreen Tuross of Harvard University, Richard C. Sabin of the Natural History Museum of South Kensington, London; Joris Peters of Ludwig-Maximilian University, Munich; Barbara Barich of Sapienza University of Rome, Redae Teclai of the Eritrea Ministry of Agriculture and Fanuel Kebede of the Ethiopian Wildlife Conservation Authority.

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Contact: John Pastor  
[jdpastor@ufl.edu](mailto:jdpastor@ufl.edu)  
352-273-5815  
University of Florida

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Please visit the site: [http://www.eurekalert.org/pub\\_releases/2010-07/uof-adi072810.php](http://www.eurekalert.org/pub_releases/2010-07/uof-adi072810.php)

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## **GERONISOS ISLAND EXCAVATIONS** **COMPLETED**

The Ministry of Communications and Works, Department of Antiquities, announces that the New York University Geronisos Island Excavations, under the direction of Professor Joan Breton Connelly, has completed five weeks of work on Geronisos island, just off the coast of Agios Georgios tis Pegeias, Paphos District.

The team of 19 excavators began work on the 16th of May, opening trenches in three distinct areas: the Hellenistic food preparation/dining complex at the central south of the island, the circular structure at the north, provisionally identified as a Hellenistic dance floor and three Early Byzantine square houses at the very centre of Geronisos. Material recovered from these trenches contributes greatly to our understanding of the three most robust phases of activity on the island: the Early Chalcolithic (3800 B.C.), the Hellenistic (1st century B.C.) and the Byzantine (6th century and 13th centuries A.D.)

A well-preserved Chalcolithic ground stone chisel contributes to an already impressive corpus of stone tools recovered from the island. This material, together with previously excavated pottery, a figurine and pendants, suggests that the Chalcolithic settlement on Geronisos was a significant one.

For the Hellenistic period, great progress was made toward the understanding of architectural structures that once stood on Geronisos. A large cornice block with dentilled moulding was unearthed. It attests to the great size and grandeur of the buildings of the first century B.C. The proximity of this block to a fragment of a lion's head waterspout found last season gives some idea of the scope and decoration of an impressive building that probably fell during the earthquake of 15 B.C. Sizable robbing trenches were uncovered along the southern edge of the island, attesting to the removal of large ashlar blocks from gypsum setting beds. This points to the extensive robbing of Geronisos for blocks of stone, probably during the Early Byzantine period. Most likely, widespread stealing of ashlar blocks provided materials for building the three Christian basilicas across the way at Agios Georgios in the 6-7th century A.D.

Architect Richard Anderson continued his work of preparing a new site plan for the entire island, using a total station laser theodolite. He was assisted by graduate student Charles Bartlett of New York University and Kathryn Minogue of Columbia University. The ongoing erosion of the cliff edges makes the survey and mapping of Geronisos all the more urgent. The production of a new and accurate map of the island's topography and built structures is a primary goal of the expedition's work.

Trenches opened near the Byzantine houses at the centre of the island yielded important finds. A small bronze handle attachment decorated with the head and shoulders of a bearded man were recovered. This may belong to an early Byzantine jug. Many fragments of sgraffito ware ceramics showing white, green and yellow-brown glaze were also unearthed here. These could be mended into a nearly complete footed bowl. This find, together with two other sgraffito ware bowls found in previous seasons, give tantalizing evidence for a significant 13th century occupation of Geronisos, one that is further attested by 15th century maps that show a church at the east end of the island.

A number of eminent scholars participated in the 2010 season on Geronisos, preparing the publication of material excavated over the past decade. Dr Jolanta Mlynarczyk of the University of Warsaw continued her study of the Hellenistic ceramics, while Dr Mariusz Burdajewicz of the Warsaw Museum worked on his publication of the glass finds and prepared drawings of pottery and architecture.

Incoming Fulbright Fellow to Cyprus Victoria Grinbaum of University College London and the University of Warsaw, continued her study of the Geronisos amphorae. Dr Paul Croft of the Lemba Archaeological Field Station excavated worked on his study of the animal bones from Geronisos, and taught in the New York University Geronisos Field School. Professor Zoe Kontes of Kenyon University gave seminars to the students participating in the Field School.

**Please visit the site:**

<http://www.moi.gov.cy/moi/pio/pio.nsf/All/DDF855E41C43B9C4C225776D002BCCFE?Opendocument>

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## **DEAD SEA SCROLLS MADE LOCALLY, TESTS SHOW RESEARCHERS WHO PROBED TINY FRAGMENTS OF A DEAD SEA SCROLL WITH PROTONS FOUND ITS CHEMISTRY MATCHES THAT OF THE WATER IN THE AREA WHERE THE ANCIENT DOCUMENT WAS FOUND, BY ROSSELLA LORENZI**

Proton beams have shed new light on the origin of the longest of the Dead Sea scrolls, suggesting its parchment was manufactured locally.

According to a study carried out at the labs of the Italian National Institute of Nuclear Physics (INFN) in Catania, Sicily, the 28-foot-long Temple Scroll was made in Qumran, in what is now Israel, in the same area on the Dead Sea coast where the faded parchments were found hidden in caves half a century ago.

The scrolls, a collection of about 900 highly fragmented documents, are considered one of the greatest archeological discoveries of the 20th century. They include the earliest written texts of the Bible and are nearly 2,300 years old. In addition to the biblical texts, the scrolls are filled with apocryphal material and sectarian writings, dating back to between 100-200 B.C. to 70 A.D.

Written as though God, himself, is speaking, the Temple Scroll contains detailed instructions on the building of a temple and dictates how laws are to be communicated to the people.

"We selected the fragments from the Temple Scroll because they were the cleanest, and would make our analysis easier," INFN physicist Giuseppe Pappalardo said.

Pappalardo and colleagues analyzed seven centimeter-sized fragments of the scroll using a new portable technique called "XPIXE" -- X-ray and Particle Induced X-ray emission - - and a particle accelerator.

"Basically, we concentrated on water. Like most of the other parchments, the Temple Scroll was made from animal skin, thus its production required extensive washing. Our goal was to compare and possibly find a match between the chemistry of the scroll and the very peculiar chemistry of the water from the area where the parchments were found," Pappalardo, who developed the XPIXE technology, told Discovery News.

The researchers bombarded the scroll fragments first with alpha-particles and X-rays from the portable XPIXE device, and then with proton beams produced by a particle accelerator.

The X-rays emitted by the samples showed that all of the fragments contained chlorine and that the ratio of chlorine to bromine within the Temple Scroll fragments was about three times higher than is normally found in sea water. The researchers concluded that the scroll may have been made from the very salty Dead Sea water.

"Our study focused on the parchment, we still don't know where the scroll was written. We are now planning to analyze the ink," Pappalardo said.

According to Ira Rabin, a scientist at the Federal Institute for Materials Research and Testing in Berlin, Germany, the Italian technology is important, but must be used in combination with other techniques, which are needed to validate the assumptions made by the experimental, non-destructive method.

"The Dead Sea Scrolls present an extremely complicated system that cannot be characterized by single technique. Each technique delivers a small part of the solution, only a combination of the results might produce a relevant result," Rabin told Discovery News.

Please visit the site: <http://news.discovery.com/archaeology/dead-sea-scrolls-protons.html>

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