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# Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

**- Μάρτιος 2013 -**

"There are only two people who can tell you the truth  
about yourself - an enemy who has lost his temper and a  
friend who loves you dearly"  
*(Antisthenes)*

## Newsletter of the Hellenic Society of Archaeometry

**- March 2013 -**

**Nr. 144**

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## **ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS**

### **ITALY PRESERVATION FIELD SCHOOL - BUILDINGS, CERAMICS, PAPER, BOOKS AND ART, SUMMER 2013**

Dear Colleague,

I would like to inform you about our summer 2013 field school, the San Gemini Preservation Studies Program, now in its 14th year, which is dedicated to the preservation of cultural heritage and offers students the opportunity to study and travel in Italy. Our deadline for applications is March 15, 2013.

The courses offered are listed below:

Building Restoration\* (May 26th thru June 22nd, 2013)  
Introduction to Art and Building Restoration in Italy  
Surveying and Analyzing Historic Buildings

Ceramics Restoration (May 26th thru June 22nd, 2013)  
Introduction to Conservation of Archaeological Ceramics  
Workshop on Ceramics and Ceramics Conservation

(NEW) Book Bindings Restoration\* (May 26th thru June 22nd, 2013)  
Introduction to the Restoration of Book Bindings  
Workshop on the Restoration of Book Bindings

Paper Restoration\* (July 7th thru August 3rd, 2013)  
Introduction to Restoration of Paper in Books and Archival Documents  
Restoration Workshop – Paper in Books and Archival Documents

Traditional Painting Materials & Techniques (July 7th thru August 3rd, 2013)  
Traditional Painting Methods and Techniques in Italy, including Issues of Weathering and Aging  
Painting Workshop – Traditional Painting Methods and Techniques in Italy

Preservation Theory and Practice in Italy (July 7th thru August 3rd, 2013)  
Restoration in Italy – Issues and Theory

\*Field Projects:

Restoration of the Porta Burgi (12th Century city gate in San Gemini)  
Surveying the 12th Century San Giovanni Battista Church complex  
Archaeological survey of the public baths in Carsulae  
San Gemini Historic Archives Project (restoration and digitalization of 16-18 Century archival material)

To find out more about our programs and review the syllabi, please visit our website.

Our courses are open to students from various disciplines, both undergraduate and graduate. All lessons are taught in English.

If you know any students, scholars, or others interested in this type of study, please inform them about our program. We would appreciate it if you could list our program on your organization's website as an available educational resource.

We have a 2013 flyer that you may wish to post on your department notice board or forward to interested parties. You can print this from our website, on our About Us page. Please let us know if you have any problem printing and we can email you the PDF.

Thank you very much.

Cordially, Max Cardillo  
Director  
San Gemini Preservation Studies Program

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# **FITCH LABORATORY - BRITISH SCHOOL** **AT ATHENS, GREECE** **INTRODUCTION TO CERAMIC PETROLOGY** **COURSE 2013**

In June 2013, the Fitch Laboratory will hold a two-week postgraduate training course providing an introduction to ceramic petrology, building upon the Laboratory's established reputation on ceramic petrology applications and its extensive reference collections of geological and ceramic thin sections.

The course is open mainly to people with no (or limited) previous experience on petrology although familiarity with archaeological ceramics will be useful. It is an excellent introduction for students already (or hoping to embark) on a Master's or research degree in archaeological materials, as well as for postdoctoral researchers interested in being familiar with ceramic petrology applications. Although the focus is primarily with ceramic materials, the skills learnt are applicable to the study of lithics, building materials, pigments and soils.

The course comprises daily lectures and practicals introducing to optical polarizing light microscopy, the identification of main rock-forming minerals, the classification of rock types, the use and interpretation of geological maps and, subsequently, the analysis of ceramic thin sections to reconstruct provenance and technology. Furthermore, a field class to Aegina, including a visit to a traditional pottery workshop, provides practical experience on prospection for pottery raw materials and sampling, as well as contemporary potting practices. Towards the end, each participant has the opportunity to undertake a case study project. In total, the course includes 18 hours of lectures, 26 hours of laboratory practicals, 10 additional contact hours for project accomplishment, plus a day-fieldtrip.

A course manual and a fieldtrip guide are provided for participants covering all aspects of the course and further reading, and a certificate of attendance is issued for each participant upon course completion. The course co-coordinators and instructors are Dr Evangelia Kiriati (Director, Fitch Laboratory) and Dr Ruth Siddall (Senior Lecturer, Earth Science/Dean of Students, UCL).

**Dates: 3 – 14 June 2013.**

**Course Fee:** The course fee includes tuition, accommodation, fieldtrip expenses, all teaching materials, BSA membership for a month including 24 hour access to the superb library and entry to archaeological sites and museums, plus daily coffee and biscuits, packed lunch for the fieldtrip and a welcome and a farewell meal. The fee is 900€ for shared accommodation in double rooms and 1000€ for single accommodation. Self-catering accommodation (including breakfast) will be provided at the BSA Hostel, next to the Fitch Laboratory building ([http://www.bsa.ac.uk/pages/content.php?cat\\_id=19](http://www.bsa.ac.uk/pages/content.php?cat_id=19)). Travel to and from Athens is the sole responsibility of the course participant.

The course is limited to 10 places. Post-graduate students are recommended to apply to their universities for financial support; limited funding may be available (to cover part of the fees) for students who would otherwise be unable to attend and they should express their interest in such financial support in their application.

Applications forms can be downloaded from the BSA website. Applications should be submitted to the Fitch Laboratory administrator, Ms Zoe Zgouleta via e-mail ([flsecretary@bsa.ac.uk](mailto:flsecretary@bsa.ac.uk)).

Closing date: 8 March 2013. References must also be received by then through e-mail: it is the applicant's responsibility to ensure that the reference is sent. The successful candidates will hear by early April 2013.

For further information, please check the relevant sections on the British School at Athens web pages (<http://www.bsa.ac.uk/>) or contact either of the two course coordinators, Dr Evangelia Kiriatzi ([fdirector@bsa.ac.uk](mailto:fdirector@bsa.ac.uk)) or Dr Ruth Siddall ([r.siddall@ucl.ac.uk](mailto:r.siddall@ucl.ac.uk)).

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**CULTURES OF ANCIENT SCIENCE, UCL,**  
**FRIDAY MARCH 15TH TO SUNDAY MARCH**  
**17TH, UCL, UK**

This conference will bring together the leading international scholars of the history of science of many ancient cultures to discuss the content and methodology of the study of ancient science and prospects for future research. The scope here is important and unique. While there are conferences on the science of individual ancient cultures, there are not conferences on ancient science across many cultures

Prof. Geoffrey Lloyd Chinese Science	University of Cambridge
Prof. Martin Bernal Greek Science	Cornell
Prof. Heinrich von Staden Greek Science	Princeton
Prof. Francesca Rochberg Babylonian Science	Berkeley
Prof. Nathan Sivin Chinese Science	University of Pennsylvania
Dr. Alexandra von Lieven Egyptian Science	Freie Universitat Berlin
Dr. Eleanor Robson Babylonian Science	University of Cambridge
Prof. Charles Burnett Early Islamic/ Arabic Science	Warburg Institute
Prof. Vivian Nutton Ancient Medicine	University College London
Dr. Stephanie Koerner Meso-American Science	Manchester University
Dr. Serafina Cuomo Roman Science and Technology	Birkbeck College London
Prof. Sacha Stern Ancient Jewish Science	University College London

The registration cost for the conference is £20 or £10 for students, which includes lunch and refreshments.

Please contact Alasdair Tatum ([a.tatam@ucl.ac.uk](mailto:a.tatam@ucl.ac.uk)) to register.

Sponsored by:

The British Society for the History of Science  
The Department of Science and Technology Studies,  
UCL The Institute of Classical Studies  
The Petrie Museum of Egyptology

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**CONSERVATION IN THE NINETEENTH  
CENTURY (CINC) CONFERENCE,  
NATIONAL MUSEUM OF DENMARK, NY  
VESTERGADE 10, COPENHAGEN,  
12-15/5/2013**

Registration for the CiNC Conference is open.

Inquiries: [isabelle.brajer@natmus.dk](mailto:isabelle.brajer@natmus.dk)

**PROGRAM**

**Sunday, 12 May 2013**

15:30 - 17:00 Registration

**Monday, 13 May 2013**

8:00-9:00 Registration

9:00-9:30 Opening of Conference

9:30-10:10 The Battle of Clio and Euterpe  
Guest speaker: Salvador Munoz Vinas

**Presentations:**

10:10 - 10:45 Interpreting historical conservation terminology: 'cleaning' paintings in  
Dutch 18th and 19th century sources  
Mireille te Marvelde

10:45 - 11:15 Coffee and tea

11:15- 11:50 Art, Science, and Painting Restoration in Napoleonic Italy, 1796-8  
Cathleen Hoeniger

11:50 - 12:25 Raphael's Marriage of the Virgin in Milan and the restoration by  
Giuseppe Molteni (1858)  
Giorgio Bonsanti

12:25 - 13:30 Lunch

13:30 - 14:05 A higher reality, born of the mind: notes for a philosophy of transfer  
Matthew Hayes

14:05 - 14:40 Richard Redgrave (1804-1888), first curator of paintings at the South

Kensington Museum  
Nicola Costaras

14:40 - 15:10 Coffee and tea

15:10 - 15:45 Charles Chapuis: Degas' "Picture Doctor" and painting restoration at the end of the nineteenth century  
Ann Hoenigswald

15:45 - 16:20 Il Manuale by Giovanni Secco Suardo: an attempt to depict his impetus for the development of conservation and restoration in the nineteenth century  
Bettina Achsel

16:20 - 16:45 The Conservation of Polychromy on Mediaeval Sculptures in Belgium in the Nineteenth Century and its Perception by the Royal Monuments Commission of the time  
Delphine Steyaert

19:00 Reception: Thorvaldsens Museum

### **Tuesday, 14 May 2013**

9:00 - 9:25 The search for an enduring painting technique: Franz Fernbach and his encaustic technique as a restoration procedure for wall paintings in the early nineteenth century  
Barbara Beckett

9:25 - 10:00 Jacob Kornerup and the conservation of wall-paintings in nineteenth century Denmark  
Susanne Orum and Isabelle Brajer

10:00 - 10:35 Documentation of medieval wall-paintings in Denmark and Germany in the nineteenth century and its impact on conservation and contemporaneous art  
Isabelle Brajer  
Ursula Schadler-Saub  
Susanne Orum

10:35 - 11:35 Poster session. Coffee and tea

Posters:

Conservation-Restoration Testimony from the archive of the Prague Castle  
Eliska Fucikova  
Zuzana Bauerova

Fine Art Transport in the 19th century: A contribution to the History of Conservation

Anne Wermescher

Joseph Loxton Rawbon, 'The Master Restorer'  
Cyndie Lack

An unexpected technique by Ingres and an excessive restoration of  
one of his drawings  
Helene Guicharnaud  
Alain Duval

Nineteenth Century Parisian Treatments on Viennese Paintings  
N. Gustavson  
G. Krist  
S. Penot  
M. Griessery  
V. Pitthard  
S. Stanek

The rehabilitation of zinc hydroxy chloride, a versatile 19th-century  
stone mortar  
Lisya Bicaci  
Luc Megens  
Guus Verhaar  
Nicolas Verhulst  
Norman H. Tennent

Re-creation of 17th to 18th century polychromy and development of  
paint archaeological methodology in the late nineteenth century  
Karin Vestergaard Kristiansen

Friedrich Rathgen and his Impact on Slovenian Conservation at the  
turn of the 20th Century  
Natasa Nemecek

- 11:35 - 12:10 Bonnardot's Essai: A nineteenth-century restoration manual and its  
author  
Christopher Sokolowski
- 12:10 - 12:35 The Test of Time: Nineteenth Century Innovations in Paper Fibre  
Analysis  
Debora D. Mayer
- 12:35 - 13:35 Lunch
- 13:35 - 14:10 Restoration of flat textiles: Ideological framework, ideas, and  
methods in Sweden before 1900  
Maria Brunskog  
Johanna Nilsson

- 14:10 - 14:45 Documentary and material evidence of nineteenth-century interventions on musical instruments of the Paris collection  
Jean-Philippe Echard  
Justine Provino  
Thierry Maniguet  
Christine Laloue  
Joel Dugot  
Stephane Vaiedelich
- 14:45 - 15:20 The Restoration and Conservation of the Bronze Apollo Saettante from Pompeii  
Erik Risser  
David Saunders
- 15:20 - 15:50 Coffee
- 15:50 - 16:25 Precision and Mastery: Identifying the Work of Raffaele Gargiulo on Four Apulian Vases  
Marie Svoboda
- 16:25 - 17:00 Preservation of antiquities in Denmark, 1807-32  
Helge Brinch Madsen  
Jan Holme Andersen
- 19:00 Conference dinner

**Wednesday, 15 May 2013**

- 9:00 - 16:00 Conference excursion - Roskilde

Attention: CiNC delegates are welcome to attend the ICOM-CC interim meeting of the Theory and History of Conservation Working Group taking place on Thursday and Friday, 16-17 May at the same venue.

Please contact Isabelle Brajer for a preliminary program (there is no registration fee):  
[isabelle.brajer@natmus.dk](mailto:isabelle.brajer@natmus.dk)

Please visit the site: <http://natmus.dk/en/bevaringsafdelingen/forskning-analyse-og-raadgivning/kongresser/cinc/welcome/>

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**CALL FOR APPLICATIONS - DOCTORAL  
WORKSHOP, FOOD AND BIOPRODUCTS  
ARCHAEOLOGICAL RESEARCH:  
PROBLEMATIC SITUATIONS AND  
METHODS, MAY 2-9, 2013, ROME AND  
CERVETERI**

Within the framework of the project entitled MAGI (Manger, boire, offrir pour l'Internitt en Gaule et Italie proumaines) financed by The French National Research Agency (Project-based funding to advance French research), the Icole française de Rome and the Centre Jean Birard, Naples (USR 3133), associated with the AOROC (UMR 8546), the UMR 5140 Archaeology of Mediterranean societies as well as with the Nicolas Garnier laboratory, submits the following workshop proposal : Archaeological approach of biological products . problematic situations and methods.

Food and bioproducts archaeological research emerges as a new growing human sciences field of study by resorting to a more systematic scientific analysis. This workshop is not only aimed in such a pluridisciplinary perspective at presenting conclusions through theoretical courses to both students pursuing a PhD and researchers either in archaeology and history of the Greco-Roman world or in chemistry applied to archaeological questions, but also at introducing them through case studies and practical field survey to botanical analysis, chemical composition and genetic variants of bioproducts correlated with food condition, libation offering and body care, taking yet into account potentialities and limitations of these approaches.

The theoretical part will take place at the Icole française de Rome, piazza Navona, 62. Syntheses of historiography and methodology based on the study of different types of biological contents, examination of archaeobotanical approaches, chemical and physico-chemical analysis, interpretation of chemical markers will alternate with presentations of specific cases of salting, hive products, food and drinks, oils, perfumes and oleoresins, not to mention the palynological contribution to funeral practices.

Practical activities on the different problematics and methodological approaches according to the content will be held at the National Etruscan Museum of Villa Giulia and at the National Etruscan Museum of Cerveteri and will lead to an introduction of excavation methods and archeobotanical samples through a granulometric, genetic and chemical data approach. Both a roundtable and a documentary are planned as well. By the end of the workshop there will be an appraisal of the training.

This workshop is meant for PhD students, postdoctoral fellows and tenured researchers and covers lunch and accommodation, whereas participants must pay for their own travel costs as well as a registration fee of 50 €. Emailed applications consisting of a Curriculum Vitae and a letter of motivation should be sent to the following address: [secrant@efrome.it](mailto:secrant@efrome.it) by midnight 27 March 2013.

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

**POSTDOCTORAL POSITION IN**  
**ARCHAEOLOGY, STANFORD UNIVERSITY**

The Stanford Archaeology Center invites applications for a post-doctoral fellowship in archaeological science. Preferred fields of expertise are materials science, GIS and/or quantitative/statistical/database applications in archaeology. The candidate is also expected to teach one course per year in archaeological science and engage with faculty and graduate students at the Center. The faculty sponsor of this postdoc will be Prof. Lynn Meskell.

The appointment carries a twelve-month salary commensurate with the University Provost established minimum pay levels based on research experience. The appointment may be eligible for renewal for up to two years based on satisfactory performance and the existence of funding. Post-doctoral scholars are required to be in residence in the Stanford area during the term of the appointment. Applicants must have received their Ph.D. by September 1, 2013. U.S. citizenship is not required.

The application receipt deadline is March 15, 2013. The position will begin September 1, 2013.

Submit your print materials via U.S. mail to:  
Postdoctoral Fellowship Search Committee  
Stanford Archaeology Center  
Stanford University  
P. O. Box 20446  
Stanford, CA 94309

All applications must include the following:

- A current curriculum vitae
- A statement of proposed research
- A dissertation abstract or summary
- An undergraduate/graduate course proposal, inclusive of syllabus
- A writing sample (dissertation chapter or other paper)
- Three sealed letters of recommendation should be sent directly by the recommender to the address above.

Please direct inquiries to [archaeology@stanford.edu](mailto:archaeology@stanford.edu).

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## **HONOR FROST FOUNDATION RESEARCH GRANTS IN MARINE AND MARITIME ARCHAEOLOGY; HFF LOGO COMPETITION**

Research Grants in Marine and Maritime Archaeology.

HFF Research Grant applications deadline for the next round of funding is 1 April 2013 with the Grant Awards to be announced in June 2013.

For more details go to the HFF website's research page.

Please note that all Referees are required to submit references directly to the HFF by 15 April for the 1 April grant deadline and 15 October for the 1 October grant deadline using the Reference Form on the grants page <http://www.honorfrostfoundation.org/applications.html>

2.

Honor Frost Foundation Logo Competition

**Deadline for submissions 1 April 2013**

HFF is launching a competition to provide the Foundation with a logo that encapsulates and communicates its mission. The logo will be used throughout the organisation; on stationary, in publications and on our web site.

The Honor Frost Foundation was founded in 2011. The Foundation's mission is to promote the advancement and research, including publication, of marine and maritime archaeology with particular but not exclusive focus on the Eastern Mediterranean with an emphasis on Lebanon, Syria and Cyprus.

### **The Rules & Conditions**

The Foundation's name needs to be part of the logo as does the subhead 'Supporting Marine and Maritime Archaeology in the Eastern Mediterranean'.

Information about the Honor Frost Foundation, its formation, its work and the life of its benefactor can be found on the web site [www.honorfrostfoundation.org](http://www.honorfrostfoundation.org) - no other information will be provided and no dialogue entered into.

Finished artwork in the form of a .pdf needs to be sent to Joan Porter McIver, Executive Director Honor Frost Foundation via email to [hff@britac.ac.uk](mailto:hff@britac.ac.uk) by 1 April 2013.

All copyright for the winning entry becomes the property of the Honor Frost Foundation with the payment of the prize.

The winning entry will receive a prize of £1,000.

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## **POSTDOCTORAL SCHOLAR ON SOURCES AND CYCLING OF NON-PHOTOSYNTHETIC CARBON IN PLANTS**

The Department of Earth System Science at the University of California, Irvine seeks applicants for a postdoctoral scholar in experimental research on sources and cycling of non-photosynthetic carbon in plants. The successful candidate will work closely with Drs. Guaciara dos Santos and Kathleen Treseder to design and test hypotheses regarding the role of carbon within high plant biosilica structures known as phytoliths. The project involves working with carbon isotopes and nanotechnological particles coupled with image techniques (SEM-EDS, Confocal, etc), in addition to collaborations with the Stable Isotope laboratory team in CEREGE/France and the Soils and Sediments Analysis Laboratory, University of Wisconsin-Madison. The position will be based primarily at KCCAMS/UCI facility, but some travelling to the field and other laboratories are expected. The position will be initially for 1 year, renewable for an additional 2 years dependent on applicant personal contributions to the project and available funding. Salary commensurate with qualifications.

### **Opportunity Information**

Deadline:  
Sunday, June 30, 2013

### **Qualifications:**

The applicant should have, or be about to gain, a Ph.D. in chemistry, biochemistry or related fields, and is expected to have some experience with phytoliths and/or image techniques (such as scanning electron and confocal microscopes). The successful candidate is expected to dedicate full time to this project. Experience with isotope analyses is desirable.

### **Application Method:**

Email applications including CV, a statement of research interests and a list of references (including all former supervisors) to: Dr. Guaciara dos Santos at [gdossant@uci.edu](mailto:gdossant@uci.edu).

The University of California, Irvine is an equal opportunity employer committed to excellence through diversity.

Contact Information

\*\*\*\*\*

For more information, please contact the individual(s) listed below

Name:

Dr. Guaciara dos Santos

Email Address:

[gdossant@uci.edu](mailto:gdossant@uci.edu)

Please visit the site: <http://ess.uci.edu/opportunity/postdockeck>

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## **TWO NEW CAARI RESEARCH FELLOWSHIPS IN CYPRUS**

The Cyprus American Archaeological Research Institute (CAARI) in Nicosia, Cyprus, invites applications for two CAARI RESEARCH FELLOWSHIPS funded by the U.S. Department of State Bureau of Educational and Cultural Affairs through a grant from the Council of American Overseas Research Centers. The fellowships provide \$8000 each and are designed for scholars in the humanities, social sciences, and related natural sciences who already have their PhDs, whose research engages the culture, history, archaeology, or geography of Cyprus, and who would derive significant benefit from research time on the island. Particular consideration will be given to applicants whose projects will enable them to include Cyprus in their teaching. Applicants must be U.S. citizens.

Recipients will receive \$2000 to be used for transport, \$5500 toward living expenses and an additional \$500 for research expenses on the island. Residence at CAARI is required. Recipients will present a public lecture or workshop on their research at CAARI during their residency, file a report on their project at its conclusion, and acknowledge CAARI in publications resulting from research done there. The fellowship could be held concurrently by the annual Senior Scholar in Residence (with separate application for each position).

CAARI is located in central Nicosia close to the Cyprus Museum, major libraries, and the main business and commercial district. The institute has hostel accommodations and excellent research facilities, in particular its library with extensive holdings covering all periods of Cypriot history and prehistory, as well as a good basic collection of works on Anatolia, the Aegean and the Near East.

APPLICATION FORM: see [www.caari.org/fellowships](http://www.caari.org/fellowships)

APPLICATION DEADLINE: March 18, 2013

FURTHER INFORMATION is available from:

CAARI  
656 Beacon Street (Fifth Floor)  
Boston, MA 02215  
Fax: 617-353-6575  
Email: [caari@bu.edu](mailto:caari@bu.edu)

\*\*\*\*\*

Donald R. Keller  
Associate Director  
American Center of Oriental Research  
656 Beacon Street, 5th Floor  
Boston, MA 02215 USA  
Telephone: 617-353-6571, Fax: 617-353-6575  
Email: [acor@bu.edu](mailto:acor@bu.edu), Web site: [www.bu.edu/acor](http://www.bu.edu/acor)  
main web site: [www.acorjordan.org](http://www.acorjordan.org)

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## **ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS**

### **IAA PRIZE FOR FIRST ARTICLES AFTER THE PH.D.**

The IAA awards a prize for the best first article written after the Ph.D. Please observe the following rules and regulations (see also the IAA website <http://www.let.leidenuniv.nl/IAA/index.html> -> Prizes):

#### **Conditions**

1. The article should be available in one of the official RAI languages, French, German or English.
2. The article should be published or should have been accepted in final form for publication within the last two years and no more than five years after the PhD.
3. Applicants must be members of the IAA.
4. A person can apply only once. There is no age limit.
5. The winner receives €1,000, the runner-up will receive €250.

#### **Committee**

1. The committee will consist of three persons, one from the IAA Board and two from among the other members of the IAA.
2. The committee members will serve for three years, after which a new committee will be chosen.

#### **Time table**

1. Articles should be delivered as a PDF with embedded fonts to the IAA Office in Leiden no later than March 1. The office shall then forward them to the committee members before March 10.
2. The three members of the committee will evaluate the articles and make a preliminary ranking.
3. The committee will submit its selection report to the IAA Board no later than May 1.
4. During the following Rencontre the conclusions will be discussed at the Board meeting.
5. The prizes will be awarded during the general meeting.

#### **Please send your article to:**

International Association for Assyriology c/o Prof. Dr. W.H. van Soldt  
Email: [w.h.van.soldt@hum.leidenuniv.nl](mailto:w.h.van.soldt@hum.leidenuniv.nl)

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## **OXCAL V4.2 RELEASED**

I have now released OxCal v4.2 for use online or download:

<http://c14.arch.ox.ac.uk/oxcal.html>

For a list of changes from the previous versions please see:

[http://c14.arch.ox.ac.uk/oxcalhelp/hlp\\_develop.html](http://c14.arch.ox.ac.uk/oxcalhelp/hlp_develop.html)

If you decide you wish to use the download version please read the installation instructions first and note that this requires Firefox version 16, not the latest version:

<http://c14.arch.ox.ac.uk/oxcalhelp/readme.html#local>

Please let me know if there are any problems. The previous versions are also available on our website for download if you wish to revert to an older version. You should stop using the beta test version, if you were using that before, as the online beta-test version will in future be used for testing purposes in a way which may interfere with normal operation.

Best wishes

Christopher

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## **WATER SPECIAL ISSUE OF WATER ON WATER HISTORY**

Dear Colleagues,

The following Special Issue will be published in Water journal and is now open to receive submissions of full research papers and comprehensive review articles for peer-review and possible publication:

Special Issue: Worldwide History of Water Supply, Sanitation, Wastewater and Stormwater Technologies,

[http://www.mdpi.com/journal/water/special\\_issues/stormwater\\_technologies](http://www.mdpi.com/journal/water/special_issues/stormwater_technologies),

Please submit your manuscripts before 1 July 2013.

You may send your manuscript now or up until the deadline. Submitted papers should not have been published previously, nor be under consideration for publication elsewhere. In case of questions, please contact the Editorial Office at: [water@mdpi.com](mailto:water@mdpi.com)

We are looking forward to hearing from you.

Kind regards,

Andreas N. Angelakis and Zheng Xiao Yun

\*\*\*\*\*  
IWA Workshop on Traditional Qanats Technologies, in Marakesh, Morocco, 24-26 October 2013, <http://www.iwahq.org/1ww/events/iwa-events/2013/qanats-workshop.html>

IWA Regional Symposium on Water, Wastewater, and Environment: Traditions and Culture will be held in Patras, Hellas, March 22-25, 2014, <http://wwetc2014.env.uwg.gr/wms/>

Dr. Andreas N. Angelakis  
Honorary Member of IWA  
Fellow IWA  
Past President of EUREAU  
Chairperson of IWA-WWAC SG on Water and Wastewater in Ancient Civilizations

Addresses:

National Agricultural Research Foundation, Institute of Iraklion,  
P.O. Box 2229, 71307 Iraklion, Hellas.

or

Hellenic Water Supply and Sewerage Systems Association,  
15 Patroklou str., 41222 Larissa, Hellas.

Tel.: +30 2810 302300 or +30 2810 225833

Fax: +30 2810 245873 or +30 2810 245858

Emails: [info@a-angelakis.gr](mailto:info@a-angelakis.gr) or [angelak@nagref-her.gr](mailto:angelak@nagref-her.gr)

Site: <http://www.a-angelakis.gr/>

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**IWA WORLD WATER CONGRESS &  
EXHIBITION TO BE HELD IN LISBON,  
PORTUGAL, 21-26 SEPTEMBER 2014**

Dear All,

We (as IWA SG on WWAC) have been asked to organize one to two workshops during the next IWA World Water Congress & Exhibition which will be held in Lisbon, Portugal, 21–26 September 2014. Thus, i would appreciate receiving your suggestions for potential themes and speakers.

With warm regards,

Andreas

\*\*\*\*\*  
IWA Workshop on Traditional Qanats Tecnologies, in Marakesh, Morocco, 24-26 October 2013,  
<http://www.iwahq.org/1ww/events/iwa-events/2013/qanats-workshop.html>

IWA Regional Symposium on Water, Wastewater, and Environment: Traditions and Culture will be held in Patras, Hellas, March 22-25, 2014,  
<http://wwetc2014.env.uwg.gr/wms/>  
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Site: <http://www.a-angelakis.gr/>

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## *INTERNET SITES*

### **THE BRITISH LIBRARY GEOREFERENCING TOOLS**

The British Library has just completed the third phase in its project to georeference old maps in its collections. Georeferencing tools allow historic maps to be overlaid on modern mapping, enhancing the ability to view and compare the past with the present. The British Library is using crowd sourced materials by allowing members of the public to assist. Details of the project and a video and examples are on the project website, and the georeferenced maps are being loaded onto old maps online:

[http://www.oldmapsonline.org/#bbox=-](http://www.oldmapsonline.org/#bbox=-0.619625,51.301674,0.380131,51.700043&q=&datefrom=1000&dateto=2010)

[0.619625,51.301674,0.380131,51.700043&q=&datefrom=1000&dateto=2010.](http://www.oldmapsonline.org/#bbox=-0.619625,51.301674,0.380131,51.700043&q=&datefrom=1000&dateto=2010)

<http://www.bl.uk/maps/georefabout.html>

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## **ΤΟ ΨΗΦΙΟΠΟΙΗΜΕΝΟ ΣΗΜΕΙΩΜΑΤΑΡΙΟ** **ΤΟΥ ΝΕΥΤΩΝΑ** **(NEWTON'S DIGITAL MANUSCRIPT)**

Online, για πρώτη φορά, τα ιστορικά χειρόγραφα του Ισαάκ Νεύτωνα.  
(Isaac Newton's Notebook on line)

Το πανεπιστήμιο Κέμπριτζ, όπου δίδασκε ο διάσημος φυσικός και μαθηματικός Ισαάκ Νεύτων, επιτρέπει πλέον για πρώτη φορά τη διαδικτυακή πρόσβαση οποιουδήποτε ενδιαφερόμενου στα ψηφιοποιημένα χειρόγραφα και πρωτότυπα τυπωμένα έργα του μεγάλου επιστήμονα. Μεταξύ αυτών βρίσκεται η πρωτότυπη τυπωμένη έκδοση του αριστουργήματός του «Principia Mathematica» (Μαθηματικές Αρχές της Φυσικής Φιλοσοφίας), μαζί με τις εμβόλιμες σχετικές χειρόγραφες σημειώσεις και απαντητικά σχόλια στους επικριτές του, που ο ίδιος είχε κάνει πάνω στο δικό του αντίτυπο. Μέχρι στιγμής, σύμφωνα με τη βρετανική «Γκάρντιαν», περισσότερες από 4.000 σελίδες, δηλαδή περίπου το ένα πέμπτο του αρχείου του Νεύτωνα, που διατηρεί το φημισμένο πανεπιστήμιο, έχουν ψηφιοποιηθεί και είναι προσβάσιμα online στο πλαίσιο ενός προγράμματος, το οποίο θα δώσει στο ευρύ κοινό πρόσβαση στο έργο και άλλων «κολοσσών» της επιστήμης, όπως ο Δαρβίνος.

Όπως δήλωσε ο υπεύθυνος για την ψηφιοποίηση στη βιβλιοθήκη του Κέμπριτζ, Γκραντ Γιανγκ, τα χειρόγραφα του Νεύτωνα αποκαλύπτουν τον τρόπο που σκεπτόταν και σταδιακά προχωρούσε στις σημαντικές ανακαλύψεις του, που σφράγισαν τη σύγχρονη επιστήμη. (Μεγεθύνετε την εικόνα στο σημειωματάριό του. Αναγνωρίζετε τη γλώσσα που χρησιμοποιούσε;)

This is a notebook Newton acquired while he was an undergraduate at Trinity College and used from about 1661 to 1665. It includes many notes from his studies and, increasingly, his own explorations into mathematics, physics and metaphysics. - [Zoom at the image of the notebook. Do you recognize the language used?](#)

Please visit the site: <http://cudl.lib.cam.ac.uk/view/MS-ADD-03996/9>

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## **CONSERVATION ONLINE - RESOURCES** **FOR CONSERVATION PROFESSIONALS**

Welcome to CoOL

CoOL, an online resource operated by the Foundation of the American Institute for Conservation is a full text library of conservation information, covering a wide spectrum of topics of interest to those involved with the conservation of library, archives and museum materials. It is a growing online resource for conservators, collection care specialists, and other conservation professionals.

Please visit the site: <http://cool.conservation-us.org/>

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## **OXALID DATABASE - AN OPEN RESEARCH RESOURCE**

Please let know anyone interested in analyses of Bronze Age Aegean (and others) artefacts that there is now available a digital database of the lead isotope and chemical analyses obtained in the Oxford Isotope Laboratory in the years 1978-2001. This research was funded from the UK government, Leverhulme and INSTAP grants and it has been decided that it should be an open source of information to the academic community.

The website is on the University of Oxford Web Pages and is called OXALID (OXford Archaeological Lead Isotope Database). Not all the data are as yet available, because the process of editing and digitising is quite time consuming, but there are already available data for the Cypriot and Minoan metals and comparative data for the copper and lead/silver ores. All tables can be directly copied into Excel and used as needed. The link is: <http://oxalid.arch.ox.ac.uk>

If you have any questions or suggestions concerning this website please do not hesitate to contact me.

Dr. Zofia Anna Stos-Gale  
E-mail: [zofia.stos-gale@rlaha.ox.ac.uk](mailto:zofia.stos-gale@rlaha.ox.ac.uk)

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## **JVRP WHITE PAPERS IN ARCHAEOLOGICAL TECHNOLOGY**

The Jezreel Valley Regional Project announces the first publication in its new web series, JVRP White Papers in Archaeological Technology (<http://www.jezreelvalleyregionalproject.com/technology>).

The JVRP WPAT series is designed to document the variety of technologies employed in the field and lab by the Jezreel Valley Regional Project. In some cases similar technologies are already being used by other excavations, in other cases, we present new technologies or new applications and procedures for existing technologies. In these papers, you will find detailed summaries of technologies and their applications in archaeology, step by step procedures for using these technologies, detailed bibliographies and links for further information. Our goals for the WPAT program are to document and to make transparent our data acquisition as a supplement to our other publications, and to provide useful guides for other archaeological projects to utilize as they see fit. The papers are dynamic - they will be updated with new ideas, techniques, and technology over time.

WPAT 1: "Practical Uses of Photogrammetry on Archaeological Excavations" by Adam Prins and Matthew J. Adams

**Please visit the site:**

<http://www.jezreelvalleyregionalproject.com/technology/practical-uses-for-photogrammetry-on-archaeological-excavations>

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## **DĀMOS (DATABASE OF MYCENAEAN AT OSLO) - AN ANNOTATED ON LINE CORPUS OF THE MYCENAEAN TEXTS**

DĀMOS aims at being an annotated electronic corpus of all the published Mycenaean texts. Files reproducing current editions have been imported into an Sql database; also the epigraphical data which are usually conveyed by the transliteration conventions have been imported, so that important epigraphical information relative to the contexts of syllable/syllabogram, word, line and text (e.g. the chronology of a given text and its attribution to a particular scribe) is tagged and can be made available for searches. The texts are then being manually annotated for morphology and syntax (with particular attention to case and case syntax) and provided a translation and additional lexical information (e.g. the Indo-European root, if reconstructible) for each word.

In this first online version of DĀMOS it is possible to browse the transliterations of all the published Mycenaean texts and to perform word searches in the whole corpus or in a desired subgroup. For each document one can see text, metadata, possible notes and a first essential bibliography based on the main commented anthologies of texts. The texts have been updated according to the most recent editions and/or publications of joins and new readings - this is given account for in the notes and, in general, in the website section "The Texts in DĀMOS" and the parts of a text which depart from the current standard versions have also been tagged and we will make also this information available for visualization in a future version of the database.

More detailed information about DĀMOS and on how to search it can be found at:  
<https://www2.hf.uio.no/damos/Index/about>

We apologize for any possible inconvenience due to the fact that:

1) we are still doing small adjustments to the website content, layout and functionality. We have tested the mostly used browsers: Chrome, Explorer, Firefox and Opera (which is, in fact, a little slow in charging the "Tablet Search" menu), both for PC's and Mac, but if you find any errors or malfunctions, please let us know, and we'll try to fix them as soon as possible.

2) all texts are being revised in order to find possible errors due to the digitization process. Also the layout of the texts, i.e. the spacing between words which in the current editions aims at reproducing the disposition of the text on the original documents, is being taken care of during the revision process. The texts from Pylos and Knossos are still undergoing this process. That is why their layout at the moment does not correspond to that of the published ones, and you may also find some very few errors in their text.

Best regards,

Federico Aurora

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Federico Aurora  
PhD Fellow  
Department of Philosophy, Classics, History of Art and Ideas - University of Oslo

Postboks 1020 Blindern  
0315 OSLO  
Tel: +47-22844167

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Please visit the site: <https://www2.hf.uio.no/damos/>



## NEW CMS WEBSITE

Dear All,

the new CMS website has just been launched:

[www.cmsheidelberg.uni-hd.de](http://www.cmsheidelberg.uni-hd.de)

It contains information about the CMS history, the Corpus archives at Heidelberg, the ARACHNE database, current and future projects, new finds and publications, and the purchase of CMS volumes. Please take a look. Any feedback is much appreciated. You can email us at: [cms@zaw.uni-heidelberg.de](mailto:cms@zaw.uni-heidelberg.de)

Best wishes,

Diamantis Panagiotopoulos and Maria Anastasiadou

\*\*\*\*\*

Prof. Diamantis Panagiotopoulos  
Director of the Institute of Classical Archaeology Marstallhof 4  
D-69117 Heidelberg  
fon: ++49-6221-542511  
fax: ++49-6221-543385

Speaker of Research Area A of the  
Heidelberg Cluster of Excellence  
"Asia and Europe in a Global Context"

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

### **ROUTES MARITIMES ET SYSTEMES D’ECHANGES INTERNATIONAUX AU BRONZE RECENT EN MEDITERRANEE ORIENTALE, CAROLINE SAUVAGE**

Lyon : Maison de l’Orient et de la Méditerranée – Jean Pouilloux, 2012 – 372 pages ; 30 cm (Travaux de la Maison de l’Orient et de la Méditerranée, 61) – ISBN 978-2-35668-028-0 – 44 €

La Méditerranée orientale du Bronze récent (seconde moitié du II<sup>e</sup> millénaire avant notre ère) est caractérisée par d’intenses échanges de biens, d’hommes et d’idées, qui ont parcouru ses flots et ont contribué à la création d’une culture internationale le long de ses côtes. Ce commerce à longue distance fut favorisé par l’utilisation commune d’une langue internationale, l’accadien, un intérêt partagé pour les objets de prestige, et par l’échange de présents qui forgent des liens entre les pays et développent les négociations commerciales.

L’étude de ce commerce maritime, à l’image de son caractère international, englobe les différents horizons culturels qui entouraient cette mer d’échanges, et procède à un réexamen critique des sources : matériel archéologique, épaves, sites côtiers et textes anciens. L’environnement, les moyens de transports, le statut des participants aux échanges ainsi que les réglementations commerciales, font partie des questions abordées dans cet ouvrage.

The eastern Mediterranean of the Late Bronze Age (second half of the second millennium BC) was a period of intense exchange of goods, ideas, and people, who traversed the sea and contributed to the creation of an international culture along its shores. Long-distance trade was facilitated by the use of Akkadian as the international written communication system, by a shared interest for prestige goods, and by the exchange of gifts for the purpose of establishing diplomatic and commercial relations between countries. Reflecting its international character, the study of this maritime commerce embraces the diverse cultures that participated in circum-Mediterranean interaction, and involves a fresh critical examination of the sources : archaeological remains, shipwrecks, coastal sites, and ancient texts. The environment, means of transportation, status of participants in exchange, and the regulation of commerce are among the main themes treated in this volume.

#### **SOMMAIRE**

Remerciements

Préface par Laure Pantalacci et Marguerite Yon Abréviations usuelles dans le texte

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Les sites archéologiques \*La côte de la Turquie (carte 1) \*Chypre (carte 2) \*La côte levantine (cartes 2 et 3) \*L'Égypte (carte 5) \*La Grèce et le Bassin égéen (carte 6) \*La Crète (carte 7) Les ports, les ancrages et leur fonctionnement \*Les abris naturels \*Les marqueurs du paysage \*Les constructions humaines \*Conclusion

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?

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\*Crète-Levant

\*Crète-Égypte

Conclusion

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Please visit the site: <http://www.mom.fr/Routes-maritimes-et-systemes-d.html>

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# **THE ARCHAEOLOGY OF CYPRUS. FROM EARLIEST PREHISTORY THROUGH THE BRONZE AGE A. BERNARD KNAPP**

University of Glasgow  
Series: Cambridge World Archaeology  
ISBN:9780521723473  
672pages  
134 b/w illus. 5 maps 3 tables  
Available from April 2013  
£20

Situated between the worlds of the Near East, Europe and Africa, the archaeology and culture of Cyprus are central to an understanding of the ancient Mediterranean world. This book treats the archaeology of Cyprus from the first-known human presence during the Late Epipalaeolithic (c.11,000 BC) through the end of the Bronze Age (c.1000 BC). A. Bernard Knapp examines the archaeological and documentary records of prehistoric Cyprus within their regional context, paying special attention to the Levant and the Aegean. The appendix (compiled by Sturt W. Manning) analyses all published radiocarbon dates from the island, providing for the first time a comprehensive chronological framework for all of Cypriot prehistory.

Focusing on key themes such as identity, insularity and connectivity, and society, community and polity throughout, this book provides a remarkably up-to-date and integrated synthesis of human activity on the Mediterranean's third-largest island.

## **Table of Contents**

Preface and acknowledgements

1. Introduction

2. Chronology, current research and interpretative context 3. Early prehistoric Cyprus i: Palaeolithic - Early Aceramic Neolithic 4. Early prehistoric Cyprus ii: Late Aceramic Neolithic (LAN) and Ceramic Neolithic 5. Later prehistoric Cyprus: Chalcolithic - Late Chalcolithic 6. Prehistoric Bronze Age Cyprus (PreBA) 7. Protohistoric Bronze Age Cyprus (ProBA) 8. Conclusions: insularity, connectivity and identity on prehistoric and protohistoric Cyprus.

**Please visit the site:**

[http://www.cambridge.org/gb/knowledge/isbn/item6796383/The%20Archaeology%20of%20Cyprus/?site\\_locale=en\\_GB#](http://www.cambridge.org/gb/knowledge/isbn/item6796383/The%20Archaeology%20of%20Cyprus/?site_locale=en_GB#)

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# **INTERNATIONAL JOURNAL OF NAUTICAL ARCHAEOLOGY © THE NAUTICAL ARCHAEOLOGY SOCIETY**

Volume 42, Issue 1 Pages 1 - 242, March 2013 The latest issue of International Journal of Nautical Archaeology is available on Wiley Online Library

## **Editorial**

Editorial (page 1)

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12006

## **Articles**

A Late Bronze Age Shipwreck with a Metal Cargo from Hishuley Carmel, Israel (pages 2–23) Ehud Galili, Noel Gale and Baruch Rosen Article first published online: 5 JUL 2012 | DOI:

10.1111/j.1095-9270.2012.00344.x

A Multi-disciplinary Approach to the Archaeological Investigation of a Bedrock-Dominated Shallow-Marine Landscape: an example from the Bay of Firth, Orkney, UK (pages 24–43) Martin R. Bates, Nigel Nayling, Richard Bates, Sue Dawson, Dei Huws and Caroline Wickham-Jones Article first published online: 2 OCT 2012 | DOI:

10.1111/j.1095-9270.2012.00360.x

The Roman Shipwreck of Antirhodos Island in the Portus Magnus of Alexandria, Egypt (pages 44–59) Patrice Sandrin, Alexander Belov and David Fabre Article first published online: 16 OCT 2012 | DOI:

10.1111/j.1095-9270.2012.00363.x

The Belgammel Ram, a Hellenistic-Roman Bronze Proembolion Found off the Coast of Libya: test analysis of function, date and metallurgy, with a digital reference archive (pages 60–75) Jonathan R. Adams, Annita Antoniadou, Christopher O. Hunt, Paul Bennett, Ian W. Croudace, Rex N. Taylor, Richard B. Pearce, Graeme P. Earl, Nicholas C. Flemming, John Moggeridge, Timothy Whiteside, Kenneth Oliver and Anthony J. Parker Article first published online: 6 DEC 2012 | DOI: 10.1111/1095-9270.12001

The Acqualadroni Ram Recovered Near the Strait of Messina, Sicily: dimensions, timbers, iconography and historical context (pages 76–86) Cecilia A. Buccellato and Sebastiano Tusa Article first published online: 4 DEC 2012 | DOI: 10.1111/1095-9270.12000

Maritime Site Protection and the Fetch Method: an example from Rogaland, Norway (pages 87–102) Marianne Nitter, Endre Elvestad and Lotte Selsing Article first published online: 18 OCT 2012 | DOI:

10.1111/j.1095-9270.2012.00365.x

One of His Majesty's 'Beste Kraffwells': the wreck of an early carvel-built ship at Franska Sternarna, Sweden (pages 103–117) Jonathan Adams and Johan Rönby Article first published online: 30 JUL 2012 | DOI: 10.1111/j.1095-9270.2012.00355.x

Dendrochronological Dating and Provenancing of Timbers from the Arade 1 Shipwreck, Portugal (pages 118–136) Marta Domínguez-Delmás, Nigel Nayling, Tomasz Ważny, Vanessa Loureiro and Catherine Lavier Article first published online: 2 OCT 2012 | DOI: 10.1111/j.1095-9270.2012.00361.x

A Late-18th-Century Merchantman Wrecked in the South Edinburgh Channel, Thames Estuary, England (pages 137–149) David Parham, Elizabeth Rundell and Pieter van der Merwe Article first published online: 16 OCT 2012 | DOI: 10.1111/j.1095-9270.2012.00364.x

The Lead Ingots from the Wreck of the Zuiddorp (1712), Western Australia: a report on their provenance and manufacture (pages 150–166) Wendy van Duivenvoorde, Jim Stedman, Kjell Billström, Zofia Anna Stos-Gale and Michael McCarthy Article first published online: 25 SEP 2012 | DOI: 10.1111/j.1095-9270.2012.00362.x

The 19th-Century Akko 1 Shipwreck, Israel: hull-construction report (pages 167–187) Deborah Cvikel and Yaacov Kahanov Article first published online: 30 JUL 2012 | DOI: 10.1111/j.1095-9270.2012.00356.x

### **Erratum**

Erratum (page 187)  
Article first published online: 7 JAN 2013 | DOI: 10.1111/1095-9270.12012

This article corrects:

A Late Bronze Age Shipwreck with a Metal Cargo from Hishuley Carmel, Israel

Vol. 42, Issue 1, 2–23, Article first published online: 5 JUL 2012 Notes

The Transition from Shell to Skeleton in the Mediterranean and in North-west European Waters (pages 188–189) Seán McGrail Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12007

A Submerged Monumental Structure in the Sea of Galilee, Israel (pages 189–193) Yitzhak Paz, Reshef Moshe, Ben-Avraham Zvi, Marco Shmuel, Gideon Tibor and Dani Nadel Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12005

A Pascual 1 Roman Amphora from Catalonia from the sea at Saint Alban's Head Ledge, Dorset, England (pages 193–196) D. Parham and A. P. Fitzpatrick Article first published online: 4 FEB 2013 | DOI: 10.1111/j.1095-9270.2012.00368.x

Subterranean Maritime Archaeology in Sigtuna, Sweden: excavated evidence of Viking Age boat building and repair (pages 196–204) Rune Edberg Article first published online: 4 FEB 2013 | DOI: 10.1111/j.1095-9270.2012.00366.x

High-resolution Imaging of the M/S Dodekanisos Shipwreck Site off Deveboynu Burnu, Turkey (pages 204–208) Michael L. Brennan Article first published online: 4 FEB 2013 | DOI: 10.1111/j.1095-9270.2012.00367.x

### **Book reviews**

Between Continents: proceedings of the twelfth symposium on boat and ship archaeology, Istanbul 2009 edited by Nergis Günsenin (ed.) 342 pp., fully illustrated in colour and b&w University of Istanbul via Zero Books, Kalio Mustafa Celebi Mahallesi, Abdullah Sokak no. 17, Beyoğlu Istanbul 34433 Turkey, 2012, €99 (hbk), ISBN 978-6054701025 (pages 209–211)

Patrice Pomey

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008

P.S. Angela Croome (just returned from ISBSA 13 in Amsterdam) writes (pages 211–212) Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_2

Across Atlantic Ice: the origin of America's Clovis culture by Dennis J. Stanford and Bruce A. Bradley iv + 319 pp., 80 figs, 6 tables University of California Press, Berkeley 94704, USA or via John Wiley and Sons Ltd, European Distribution Centre, New Era Estate, Oldlands Way, Bognor Regis PO22 9NQ, England, 2012, £24.95 (hbk), ISBN 978-0520227835 (pages 212–213)

Atholl Anderson

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_3

A Small Greek World: networks in the ancient Mediterranean by Irad Malkin 284 pp., 18 b&w figs, 14 maps Oxford University Press Inc., 198 Madison Avenue, New York, NY 10016, USA, 2012, £40 (hbk), ISBN 978-0199734818 (pages 213–215)

Damian Robinson

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_4

Trireme Olympias: the final report—sea trials 1992–4, conference papers 1998 edited by Boris Rankov (ed.) with 19 Contributors 243 pp., 91 b&w figs and drawings, many tables, colour cover Oxbow Books, 10 Hythe Bridge Street, Oxford, OX1 2EW UK, or David Brown Book Company, PO Box 511, Oakville, CT 06779, USA, 2012, £60/\$120 (hbk), ISBN 978-1842174340 (pages 215–217)

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Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_5

Maritime Archaeology and Ancient Trade in the Mediterranean (Oxford Centre for Maritime Archaeology, Monograph 6) edited by Damian Robinson, Andrew Wilson (eds) 230 pages, 85 colour and 36 b&w illustrations, 11 tables Oxford Centre for Maritime Archaeology, Institute of Archaeology, 36 Beaumont Street, Oxford OX1 2PG, 2011, £40 (hbk), ISBN 978-1905905171 (pages 217–218)

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Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_6

Gujarat and the Sea edited by Lotika Varadarajan (ed.) with 39 Contributors 653 pp., 230 b&w illustrations and some colour Darshak Itihas Nidhi Publishers, Vadodara, Gujarat, available Rangdwar Prakashan, G-15, University Plaza nr. Dadasaheb Pagla, Navrangpura Ahmedabad 380 015, Gujarat, India, 2011, \$39 /1600 rupees (hbk), ISBN 978-8192263908 (pages 218–220)

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Mariners and Merchants: a study of the ceramics from Sanjan (Gujarat) (Sanjan Reports Volume 1/BAR International Series 2231) by Rukshana J. Nanji pp. 241, 10 b&w figs and pottery line drawings, 4 maps, 4 graphs, 11 table series; 18 colour plates. Additional full-colour images at <http://www.wzcf.org/sanjan-excavations/pottery.html> BAR, via Archeopress, Gordon House, 276 Banbury Road, Oxford OX2 &ED, 2011, £45 (sbk), ISBN 978 1407307930 (pages 220–221)

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Tae-an-Mado Shipwreck No. 2: underwater excavation by the National Research Institute of Maritime Cultural Heritage of Korea NRMCH (ed.) with Minkoo Kim, Seon-Young Park, Deogim An and 14 other Contributors 478 pp., more than 500 colour pictures and plans, b&w line drawings NRMCH, Namrong-ro 136, Mokpo, Jeollanamdo 530–840, Republic of Korea, 2011, npg (sbk), ISBN 978-8963257815 (pages 221–223)

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Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_9

The Oxford Handbook of Engineering and Technology in the Classical World edited by John Peter Oleson (ed.) 896 pages, 60 b&w illustrations Oxford University Press Inc., New York, NY 10016, 2009 softback edition, \$60/£40, ISBN 978-0199734856 (page 223)

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Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_10

Seaward Landward: investigations on the archaeological source value of the landing site category in the Baltic Sea region by Kristin Ilves 144 pp., 33 illustrations (some colour) Department of Archaeology and Ancient History, Box 626, Uppsala University, Sweden, 2012, npg (sbk), ISBN 978-9150622850 (pages 223–224)

Arne Emil Christensen

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_11

Roles of the Sea in Medieval England edited by Richard Gorski (ed.) and eight other Contributors 204 pages, colour cover, 2 b&w maps, 16 tables The Boydell Press, PO Box 9, Woodbridge, Suffolk, IP12 3DF, £50 (hbk), 2012, ISBN 978-1843837015 (pages 224–225)

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Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_12

The Terror of the Seas? Scottish Maritime Warfare, 1513–1713 by Steve Murdoch 444 pp. (inc. 57 pp. of Appendices), 8 b&w illustrations Brill, PO Box 9000, Leiden 2300 PA, The Netherlands, 2010, £119/€140/\$199 (hbk), ISBN 978-9004185685 (pages 225–227)  
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Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_13

Nicolaes Witsen and Shipbuilding in the Dutch Golden Age by A. J. Hoving (translation Alan Lemmers) 310 pp., 313 b&w images (mostly drawings), 9 tables Texas A & M University Press, College Station, TX 77843-4354, 2012, \$120 (hbk), ISBN 978-1603442862 (pages 227–228)

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Fighting at Sea in the Eighteenth Century: the art of sailing warfare by Sam WILLIS (maps by Jane Way) 254 pp., 22 b&w illustrations 9 maps Boydell Press, PO Box 9, Woodbridge, Suffolk, IP12 3DF, UK, 2010, £30/\$50 (hbk), ISBN 978-1843833673 (pages 229–230)

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The Naval Mutinies of 1797: unity and perseverance edited by Ann Veronica Coats and Philip Macdougall (eds) with 8 Contributors 316 pages; 13 b&w illustrations, 14 tables Boydell Press, PO Box 9, Woodbridge, IP12 3DF, 2011, £60/\$99 (hbk), ISBN 978-1843836698 (pages 230–231)

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The Emergence of Britain's Global Naval Supremacy: the war of 1739–48 by Richard Harding 392 pp., 8 b&w plates, 11 figures, 15 maps, 27 tables Boydell Press, PO Box 9, Woodbridge IP12 3DF, UK, 2012, £65/\$115 (hbk), ISBN 978-1843835806 (pages 231–233)

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The Archaeology and History of the Flower of Ugie, Wrecked 1852 in the Eastern Solent (HWTMA monograph No 1/BAR British series 551) edited by Julian Whitewright and Julie Satchell (eds), with 7 Contributors 112 pp., 59 figs. some colour, 17 tables BAR via Archaeopress, Gordon House, 276 Banbury Road, Oxford OX2 7ED, 2011, £29 (sbk), ISBN 978-14073088890 (pages 233–234)

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The Hulks of Forton Lake, Gosport: the Forton Lake archaeological project 2006–9 (BAR British series 536, NAS Mono no 3) by Mark Beattie-Edwards and Julie Satchell, with 8 Contributors 106 pages; 60 colour plates, 85 b&w figs, 16 tables BAR via Archaeopress, Gordon House, 276 Banbury Road., Oxford OX2 7ED, or NAS, Fort Cumberland, Eastney, Portsmouth PO4 9LD, 2011, £30/£27 for members via NAS (sbk), ISBN 978-1407308135 (pages 234–235)

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USS Monitor: a historic ship completes its final voyage (Ed Rachal Foundation Nautical Archaeology Series) by John D. Broadwater 239 pages, more than 100 b&w and colour illustrations including plans and drawings Texas A&M University Press, 4354 TAMU, College Station. TX 77853-4354, 2012, \$39.95, (hbk) ISBN 978-1603444736 (pages 235–237)

Michael McCarthy

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_21

Stalking the U-Boat: U.S. naval aviation in Europe during World War I (New Perspectives on Maritime History and Nautical Archaeology series) by Geoffrey L. Rossano 429 pp., 35 b&w photographs, 3 maps University of Florida Press, 15 NW 15th St., Gainesville, FL 32603, 2010, \$85 (hbk), ISBN 978-0813034881 (pages 237–238)

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Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_22

Cultural Heritage Conventions and Other Instruments: a compendium with commentaries by Patrick J. O’Keefe and Lyndel Prott 458 pp. Institute of Art and Law, Pentre Moel, Cickendarn, Builth Wells LD2 3BX, Wales. Available via [www.ial.uk.com](http://www.ial.uk.com), 2012, £39 (sbk), ISBN 978-1903987123; International Law and the Protection of Cultural Heritage by Craig Forrest 343 pp., 37 colour illustrations Routledge, 2 Park Square, Milton Park, Abingdon OX14 4RN, 2011, £26 (sbk), ISBN 978-0415684170 (pages 238–239)

Antony Firth

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_23

Oceans Odyssey 2: underwater heritage management & deep-sea shipwrecks in the English Channel & Atlantic Ocean edited by Greg Stemm and Sean Kingsley (eds), 13 Contributors 354 pp., 514 mostly colour illustrations, 5 maps, 20 tables, 5 ‘pie’ charts Oxbow Books, 10 Hythe Bridge Street, Oxford OX1 2EW, 2010, £25 (hbk), ISBN 978-1842174425 (pages 239–241)

Patrick J. O’Keefe

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_24

The Man Who Thought Like a Ship (Ed Rachal Foundation Nautical Archaeology Series) edited by Steffy Loren C. 196 pp, 56 b&w photographs Texas A&M University Press, 4354 TAMU, College Station, TX 77843-4354, USA, 2012, \$35/£29.95 (hbk), ISBN 978-1603446648 (pages 241–242)

Colin Martin

Article first published online: 4 FEB 2013 | DOI: 10.1111/1095-9270.12008\_25

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## **CYPRO-MINOAN INSCRIPTIONS. VOLUME** **1: ANALYSIS, SILVIA FERRARA**

BMCR 2013.02.04 on the BMCR blog

Bryn Mawr Classical Review 2013.02.04

Oxford; New York: Oxford University Press, 2012. Pp. 336. ISBN 9780199607570. \$125.00.

Reviewed by M. J. C. Scarborough, University of Cambridge ([mjcs2@cam.ac.uk](mailto:mjcs2@cam.ac.uk))

Cypro-Minoan is perhaps one of the least known and least understood of the various scripts derived from the Aegean tradition of writing, among which Linear A and Linear B are the best-known representatives.

Part of the reason for this is that the Cypro-Minoan writing system(s) present a very diverse corpus of material spread over a very small number of objects, and no complete published corpus exists. The book under review by Silvia Ferrara is the first of two projected volumes on Cypro-Minoan: this first volume conducts a new contextual, epigraphic, and palaeographical analysis of the inscriptions, while the second will present for the first time a complete corpus, scheduled to be published by Oxford University Press in 2013.1

The author indicates her principal approach in the introduction to her study, as ‘focus[ing] on ways of understanding an undeciphered script’ (p. 1), specifically through a contextual, holistic analysis of the documents, without attempting a decipherment or linguistic identification. Such an approach was called for earlier by Palaima in a paper by which this book has been greatly influenced.<sup>2</sup> The goals of Ferrara’s study are twofold: The first part of the book situates Cypro-Minoan in its historical and especially archaeological contexts of Bronze Age Cyprus, and the second part addresses specific problems in the epigraphy and palaeography of Cypro-Minoan. The author ultimately attempts to synthesize a standardized sign repertoire across the attested varieties of the script. Another overarching argument advanced by the study is that Cypro-Minoan, traditionally divided into three varieties, may actually constitute a single, coherent writing system.

The first chapter serves as a general introduction to Cypro-Minoan studies by providing a brief overview of previous scholarship and situating Cypro-Minoan writing in the broader context of Bronze Age Cypriot society. Here the corpus under investigation is defined as a collection of 243 inscriptions (fully enumerated in Appendix 1), following the conventional classification schemes of three different Cypro-Minoan scripts: CM1, CM2, and CM3, as devised by Masson and followed in Olivier’s edition of the inscriptions *Édition holistique des textes Chypro-Minoens* (Pisa and Rome, 2007; henceforth *HoChyMin*).<sup>3</sup> This chapter further discusses the sociopolitical aspects of writing and argues that Cypro-Minoan writing was created specifically as an expression of Cypriot cultural identity in contrast to readily available (and in principle equally readily adaptable) writing traditions from the Near East (pp. 40-42).

The second chapter progresses from the general and moves on to specifically situate Cypro-Minoan in its synchronic and diachronic distributions as attested in the

archaeological record from its beginnings in LC I up to the end of the LC IIC period. The early development of the corpus is first considered through the archaic documents (CM0 of HoChyMin) Enkomi Tablet ##001, and the ‘weight’ ##095, which is reinterpreted (pp. 53-56) as a label. The dynamics of the borrowing process are here considered within a historical-archaeological perspective; as Cypro-Minoan elites may have known Akkadian, or at least were familiar with cuneiform writing through the employment of itinerant scribes from the Near East, the argument that was advanced in the first chapter, that Cypro-Minoan’s adaptation from the Aegean writing traditions (specifically, from Linear A) occurred as an expression of Cypriot cultural identity, (pp. 62-63) is reinforced. The remainder of the chapter traces the development of the early CM1 corpus in the archaeological record across the island.

Chapter three continues the contextual study of Cypro-Minoan into the LC IIIA period, the time period that has produced the majority of the Cypro-Minoan inscribed artefacts. A significant portion of the chapter (pp. 90-124) is dedicated to the contextualization and interpretation of the inscribed clay boules which comprise a significant part of the Cypro-Minoan corpus (HoChyMin ##002–##091, 90 out of the total 243 objects). The remainder of the chapter discusses the diffusion of CM1 in the rest of Cyprus during the LC IIIA period (pp. 124- 132), and the context of the CM3 documents attested at Ugarit (pp. 132-145).

Ferrara concludes, on the basis of her contextual-historical analysis of the first three chapters, that the interpretation of Cypro-Minoan documents as having performed either a purely votive or administrative function is problematic, as the documents are contextually distributed in both spheres, and that the script could be interpreted as having functioned in both roles.

The fourth chapter is the first of two chapters in the second section dealing with the epigraphy and palaeography of Cypro-Minoan. One of main aims of this part of the study is to attempt to reconcile the diversity of Cypro-Minoan inscribed materials and to challenge Masson’s conventional tripartite classification of the documents into the subgroupings CM1, CM2, and CM3. The first steps in this direction are made through critically reassessing the relationship of the variation in the palaeography, as determined by the properties of the inscribed object, and the epigraphic techniques required to produce them. This approach is welcome, as the diversity of the materials on which the corpus is inscribed (clay, metal, stone, and ivory), makes individual signs in the signary more prone to classificatory fragmentation because of the varying means required to inscribe them, whether it be by incision, impression by stylus, or, in a single case, painting (##094). As the clay boules form a large and distinct sub- class of Cypro-Minoan documents (##002–##091), a classification of scribal hands is attempted on a small group of these found in close archaeological context to one another (pp. 181 ff.). Likewise, the Cypro-Minoan tablets form their own distinct class consisting of four fragments from Enkomi (##207A+B–##209) comprising the entirety of CM2, and four CM3 fragments from Ugarit (##212-215). Ferrara gives these their own specific pinacological study, taking note of dimensions, shape, formatting techniques, and importance of the epigraphic variables for the ductus attested on these documents. Ferrara also argues that the join between the two fragments ##207A and ##207B is invalid on epigraphic grounds. Epigraphic variation in the documents, such as reading direction and word-division, are examined insofar as it may be ascertained within an undeciphered script.

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The fifth chapter starts with the goal of tracing the development of the Cypro-Minoan signary and attempting to set up a tentative standardized sign repertoire for the script across the varieties of the script. In attempting to thus demonstrate unity across them the 'tentative suggestion' is made that such cohesion 'could point to the possibility that Cypro-Minoan may constitute only one script' (pp. 219-220). While it is worth noting that it is possible to go too far in over-synthesizing the evidence in its undeciphered state, since a full decipherment of Cypro-Minoan at this time seems unlikely given the current paucity of evidence and the wide diversity of the corpus, an attempt at such a synthesis is entirely sensible.<sup>4</sup> Ferrara argues, based on a sound discussion of syllabaries that is well informed by cross-linguistic typology, that the syllabary was likely of the 'open' type (i.e. only writing 'open' V, CV, or CCV syllables), a conclusion which would otherwise have to be simply assumed on the basis that Linear B (and presumably Linear A, from which Cypro-Minoan arguably derives) and the later Cypriot Greek syllabaries from the Classical period are also open syllabaries. The process of adaptation, and the sociolinguistic and sociocultural dynamics of the adaptation of writing systems, are also well discussed in typological comparisons considering examples from the transmission of the alphabet, localized comparisons with Urartean, Hurrian, and Hittite syllabic cuneiform, and in comparison to other, better known Aegean syllabic scripts.

After considering theoretical concerns, Ferrara analyzes the palaeographic variation across the Cypro-Minoan corpus, and through this produces a tentative, standardized sign repertoire of 74 signs, organized synoptically across CM1, CM2, and CM3. The final section of the chapter is devoted to an explicit critique on Masson's linguistic analyses of CM2 and CM3 as representing, respectively, Hurrian and Semitic languages. This critique is a necessary step in substantiating Ferrara's interpretation of Cypro-Minoan as a single, unified script.

The sixth and final chapter offers a retrospective of the results of the study and prospects for further Cypro-Minoan research, and is followed by numerous appendices, including a complete list of the inscriptions in the corpus, archaeological contexts of inscribed artefacts, and complete analytical repertoires of the CM1, CM2, and CM3 signaries.

An overall assessment of the work requires bearing in mind the caveat that the prospects for deciphering Cypro-Minoan are still rather slim given the small sample size of the corpus, but the possibility of new discoveries may change those prospects in the future. While new discoveries or a future decipherment could, naturally, call into question some of the epigraphic and palaeographic analyses, the work makes an excellent effort towards a synthesis of the difficult and variegated evidence that the current state of the corpus provides.

Additionally, the historical and archaeological contextualization of Cypro-Minoan is an innovative approach in comparison to earlier, decipherment-oriented studies. Whether or not Cypro-Minoan actually constitutes a single script as the author contends, the work does an admirable job of attempting to make well-reasoned deductions and analyses on the basis of the available evidence, and readily illustrates and avoids the pitfalls of taking linguistic identification as the end goal of working on an undeciphered script.

Students and scholars of Aegean scripts and prehistory, as well as historians and archaeologists specializing in Bronze Age Cyprus, will find that the work serves to fill an important gap in the existing literature with its archaeological-contextual study of the documents, as well as offering a fresh approach to the epigraphy and palaeography of the Cypro-Minoan script itself.

**Notes:**

1. The author states in her introduction (p. 4): “The present volume on the analysis of the script, while conceived as self-standing and autonomous, is intended to be read and consulted in conjunction with the Corpus, because each volume offers interpretations and descriptions heavily reliant on the data of the other, and the Corpus offers a photographic apparatus designed to showcase all known inscriptions comprehensively.” As the corpus was unpublished at the time of this review, I have relied upon J. P. Olivier’s mostly complete corpus (which contains 217 of the total 243 inscriptions used by this study), *Édition holistique des textes Chypro-Minoens* (Pisa; Rome, 2007), in the course of writing this review. A full list of the inscriptions used by Ferrara in the present study are catalogued in her first appendix.
2. Cf. T. G. Palaima, “Cypro-Minoan Scripts: Problems of Historical Context” in Y. Duhoux, T. G. Palaima, and J. Bennet (eds.) *Problems in Decipherment* (Louvain-la-Neuve, 1989).
3. The classification into these three categories follows Masson’s argument that the three scripts of Cypro-Minoan write three different languages. See discussion to chapter five of the book below, and for a summary of Masson’s views, which identifies the languages of CM2 and CM3 as Hurrian and a Semitic language respectively, cf. Masson “Cypro-Minoan Scripts” in *A History of Ancient Greek: From the Beginnings to Late Antiquity*, ed. A. F. Christidis (Cambridge, 2007), pp. 235-238.
4. It is possible that mistakes may be inevitable in the process of synthesizing variation. For example, the case of the Linear B sign \*90 = dwo at a pre-decipherment stage was rationalized as a sequence of two repeated signs \*42-\*42 = wo-wo, and it was only after the decipherment that the pun embedded in the script was recognized.

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## **ARCHAEOLOGIA BULGARICA XVI 2012 # 3**

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Regards,

Lyudmil Vagalinski  
editor

[www.archaeologia-bulgarica.com](http://www.archaeologia-bulgarica.com)

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## **GEMS OF HEAVEN:’ RECENT RESEARCH ON ENGRAVED GEMSTONES IN LATE ANTIQUITY C. AD 200-600, CHRIS ENTWISTLE, NOËL ADAMS (ED.)**

Bryn Mawr Classical Review 2013.02.10

Chris Entwistle, Noël Adams (ed.), ‘Gems of Heaven:’ Recent Research on Engraved Gemstones in Late Antiquity c. AD 200-600. British Museum Research Publication 177. London: Trustees of the British Museum, 2011. Pp. x, 274. ISBN 9780861591770. \$80.00.

Reviewed by Lynn Lidonnici, Vassar College (lylidonnici@vassar.edu) This collection of thirty essays represent papers delivered at a conference held at the British Museum in May, 2009 ; they cover a wide range of subjects, and many are important contributions to the multiple fields of study for which inscribed gems are a significant form of evidence. Each essay is copiously annotated, and the volume has more than 600 color illustrations of items under discussion, each very helpfully labeled. Given the sheer number of contributions this review will be rather schematic, grouping the essays in ways that the editors may not have intended.

The first four articles (Çiğdem Lüle, “Non-destructive Gemmological Tests for the Identification of Ancient Gems;” Lisbet Thoresen, “A Case Study on Gemstone Origins: Chrysothrix, a Group of Roman Magical Gems;” Noël Adams, “The Garnet Millennium: The Role of Seal Stones in Garnet Studies;” Noël Adams, Çiğdem Lüle and Emma Passmore, “Lithóis Indikois: Preliminary Characterization of Garnet Seal Stones from Central and South Asia”) deal with the materials from which some gems were made, and the extent to which geographical sources can be identified for completed gems that may today be found everywhere on earth, wherever they may have been initially created or used. These fascinating essays represent an important new arena in ancient history and archaeology that brings modern scientific techniques and methods together with ancient literary sources dealing with stones, thus beginning to parse out the social-historical and economic trends that can be gleaned from both the kinds of stones and the images those stones were chosen to convey.

The next six essays (Richard Gordon, “Archaeologies of Magical Gems;” Chris Faraone, “Text, Image and Medium: the Evolution of Graeco-Roman Magical Gemstones;” Attilio Mastrocinque, “The Colours of Magical Gems;” Véronique Dasen, “Magic and Medicine: Gems and the Power of Seals;” Árpád M. Nagy, “Magical Gems and Classical Archaeology;” and Simone Michel-von Dungern, “Studies on Magical Gems in the British Museum”) consider inscribed gems primarily categorized as ‘magical’ and the scholarly perspectives that have hindered their full inclusion into either Classical archaeology on the one hand, and the study of ancient Mediterranean magical (or religious) traditions on the other.

These articles should be required reading for anyone working in either of those areas today. Gordon’s essay introduces the subject by describing the ‘cognitive location’ of gems such as these within the scholarly literature and within ancient literary sources dealing with gems; this methodological focus is also at the center of Nagy’s contribution.

Faraone discusses the evolution of the texts and images included on the gems and concludes that in actuality, where healing objects are concerned, it seems the stone itself to be of greatest importance, followed by the image it carries and finally the text, which seems to be the latest addition to the tradition. This focus on the stone itself is also the subject of Mastrocinque's essay. Dasen discusses the double meaning of the ancient term 'sphragis,' as both a stamp, for which inscribed gems could be and were used, and as the remedy or pill that carries the stamp. I would observe also that the gem itself may reflect the 'sealing' of a ritual act performed, which then confers some kind of efficacy onto the object then worn or carried, whether by the practitioner himself or by the marketplace customer for lucky objects. Michel-von Dungern's essay concerns the astrological dimension of many of the common images and inscriptions on gems. Although the paper focuses upon British Museum holdings, it is relevant to the study of gems overall and is an important contribution that connects these images and their associated texts with the decans and also with the differing views of the constellations and the zodiac in late antiquity.

The remaining twenty essays are not so easy to group or to categorize.

Some are area studies or surveys that cover material from Israel (Orit Peleg-Barkat and Yotam Tepper, "Intaglios in Military Contexts in 2nd-4th Century AD Palestine: the Case of Legio and Aelia Capitolina;" Shua Amorai-Stark and Malka HersHKovitz, "Selected Antique Gems from Israel"); Portugal (Graça Cravinho and Shua Amorai-Stark, "The Christian Gems from Portugal in Context"); Gaul (Hélène Guiraud, "Intaglios and Cameos from Gaul in the 3rd and 4th Centuries AD"); and Croatia (Bruna Nardelli, "Late Roman Gems from Tilurium in Croatia").

The interpretation of area surveys such as these is complicated by the urge to collect in both antiquity and the modern period, and the ease with which gems could be transported even by ancient owners who may have left their full-size marble sculptures at home when posted to faraway places.

In addition, there are studies of particular motifs or artistic content (Ken Lapatin, "Grylloi;" Erika Zwielerlein-Diehl, "Gem Portraits of Soldier Emperors;" Adrian Marsden, "Overtones of Olympus: Roman Imperial Portrait Gems, Medallions and Coins in the 3rd Century AD;" Helen Molesworth and Martin Henig, "Love and Passion: Personal Cameos in Late Antiquity from the Content Collection;" Hadrien Rambach, "The Fight of Athena and Poseidon and its Depiction on Glyptics Across the Centuries"); of single objects (Antje Krug, "The Belgrade Cameo") ; of variations over time in arranging text around an image (Sébastien Aubry, "Inscriptions on Portrait Gems in Late Antiquity (4th – 6th centuries): Between Epigraphic Tradition and Numismatic Particularism"); and on how much latitude there was in recreating famous likenesses in miniature, which has implications for gems and coinage (Elisabetta Galletti, "Three Degrees of Separation: Detail Reworking, Type Updating and Identity: Transformation in Roman Imperial Glyptic Portraits in the Round"). These essays cover a lot of primarily art-historical ground and provide excellent illustrations and examples of the various subjects and areas they address.

Three articles deal with Christian iconography and the problem of determining the date or authenticity of Christian objects on the basis of iconography (Jeffrey Spier, "Late Antique and Early Christian Gems: some Unpublished Examples;" Josef Engemann, "The Argument from Silence – Iconographical Statements of 1981 on Faked Gems Reconsidered;" Felicity Harley-McGowan, "The Constanza Carnelian and the

Development of Crucifixion Iconography in Late Antiquity”). These essays are of particular interest for Classicists and archaeologists who rely upon established (or hopefully established) sequences of pottery and other markers that are arranged based partly upon progressions in style and technological sophistication, and partly on dated or datable finds. The first two of these papers address the ways in which the issue of forgery complicates the discussion in an interesting and helpful way.

Finally, four essays discuss the way ancient engraved gemstones are reinterpreted or re-used in the medieval period and beyond (Gertrud Platz-Horster, “Seals in Transition: Their Change of Function and Value in Late Antiquity;” Gemma Sena Chiesa, “Myth Revisited: The Re-use of Mythological Cameos and Intaglios in Late Antiquity and the Early Middle Ages;” Genevra Kornbluth, “Roman Intaglios Oddly Set: the Transformative Power of the Metalwork Mount;” Tamás Gesztelyi, “The Re-use and Re-interpretation of Gemstones in Medieval Hungary”).

Such a varied collection of essays will be of interest to scholars working in many different fields, and the book should certainly be in university libraries, especially libraries of art. As noted, the six articles dealing with so-called magical gems (upon which I am best able to comment) are important and should be widely read by scholars of classics, magic, religion and ancient medicine, as should the articles on the geological sources of the gems and how they relate to the subjects engraved upon them.

Given its scope, it is surprising that the book does not address the ethical and scientific issues involved in relying upon unexcavated and unpublished material from private collections, nor is the issue of the forgery of objects of desire such as inscribed gems brought to the forefront of the overall discussion. These matters are discussed in some of the articles, most explicitly in those by Gordon and Spier.

The essay by Peleg-Barkat and Tepper carefully distinguishes between excavated and collected material, and the question of whether specific objects are forgeries is the subject of Engemann’s paper. Several other essays also mention the issue in passing. However, given the importance of this problem and the different ways in which both international law and the various scholarly associations such as AIA, ASOR, and the SBL are currently grappling with this many-headed Hydra, it is strange that no specific essay dealing with the subject was included. I recognize that the volume collects presentations from a specific conference, but if no paper dealing with this important issue was delivered there, then I think that publication of the volume would have provided an opportunity for this lack to be noted – an opportunity that was missed. Indeed, the book lacks an introduction of any kind. In a collection of so many essays of such varied content, an introduction seems an essential component that could set each contribution into context with the others, and extend the necessarily narrow focus of most of them into a conversation with broader frames of thought in scholarship on antiquity.

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## **JOURNAL ORIGINI XXXIV**

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**THE ANCIENT HARBOURS OF THE  
PIRAEUS: THE ZEA SHIPSHEDS AND  
SLIPWAYS (2 VOLS.), BJØRN LOVÉN,  
METTE SCHALDEMOSE**

BMCR 2013.02.39 on the BMCR blog

Bryn Mawr Classical Review 2013.02.39

Bjørn Lovén, Mette Schaldemose, *The Ancient Harbours of the Piraeus: the Zea Shiphsheds and Slipways (2 vols.)*. Monographs of the Danish Institute at Athens, 15.1-2. Athens: Danish Institute at Athens, 2011.

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Reviewed by Carmelo Di Nicuolo, University of Rome 2 «Tor Vergata» - Italian Archaeological School at Athens

([carmelo.dinicuolo@beniculturali.it](mailto:carmelo.dinicuolo@beniculturali.it))

[The Table of Contents is listed below.]

The difficulties of performing archaeological surveys and field operations in heavily urbanized areas are well known. Many of the metropolitan areas around the Mediterranean Sea are the result of millenary urban development and architectural stratification, constantly changing through the reuse of the material evidence of their past history.

This is not the case for Piraeus, one of the major port cities in the Mediterranean. This port city is an example of a sudden re-foundation of an ancient urban center which had ceased to exist for a long period of time. The new neoclassical Piraeus of the 19th century, seriously damaged during World War II, was gradually swallowed up by an aggressive urban expansion that created a hypertrophic port city, encompassing and in many cases destroying most of the evidence of a glorious past within the space of a few years.

The Zea Harbour Project (ZHP), directed by Bjørn Lovén, has been working in this context under the auspices of the Danish Institute at Athens and in collaboration with the 26th Ephorate for Prehistoric and Classical Antiquities of Piraeus since 2001. Its initial field of research was limited to the Harbour at Zea (present day Pasalimani). In 2005 the scope was extended to include the survey and excavation of the Neosoikoi outlining the profile of the ancient Harbour of Mounichia (present day Mikrolimano).

The objective of this book is to review the topography and the architectural aspects of the Zea shipsheds and slipways. This is only the first step in a challenging editorial project to be published in five volumes, where both the results of ongoing research in Zea and those provided by future exploration scheduled in Mounichia for 2014 will be presented.

The first volume consists of two fascicles. The first of these features texts by Lovén on historical evidence, topography, architecture and the new proposed definition of the

periods and main building phases of the shipsheds and slipways of Zea. The second fascicle contains an analysis by Mette Schaldemose of all the materials found during the excavation of the Area 1 shipsheds and includes the catalogues, appendices (one of which was authored by M. M. Nielsen; see Appendix 7), a rich bibliography, indices, and an excellent illustrative apparatus. The latter also comprises impressive graphic documentation by B. Klejn Christensen and some fine artistic reconstructions by Y. Nakas.

In the introduction (chapter 1), the author provides a short and useful description of the main structural features of what the specialist literature of Anglo-Saxon tradition regards as shipsheds as opposed to simple unroofed slipways. Shipsheds («neosoikoi», literally «houses for ships») are complex buildings characterized by sloping ramps for hauling ships, with side passages and roofing systems supported by parallel colonnades.<sup>1</sup> The total silence of ancient sources on the subject of slipways, the simpler unroofed sloping ramps less suitable for the ordinary maintenance operations of ships, creates some doubt on the matter, unless we can think of an ambivalent use of the term «neosoikos».<sup>2</sup>

Chapter 1 ends with a methodological introduction, which mainly covers the systems for the extrapolation of the total length of the Zea shipsheds, the combination of linear regressive measurements to calculate the gradients of the ramps and the detection of the relative change in sea level since the Classical period (from ca. - 1.90 m and ca. - 2.90 m).

Chapter 2 collects all the written sources with direct or indirect references to the Piraeus shipsheds from the time of their construction, likely stemming from Themistocles' desire to establish a powerful naval base surrounded by walls in Piraeus (Thuc. 1.93.3-8), to the 2nd century A.D. (Paus.1.29.16). An essential source of information covered by Lovén's investigation is the group of inscriptions, commonly known as «Naval Inventories», discovered by chance in 1834 at the Kantharos, the largest of the three harbours of Piraeus.<sup>3</sup> These texts are particularly valuable for their information about several building activities in the Piraeus harbours. This was probably the result of a significant enhancement of the Athenian fleet, which gradually grew from 100 (Arist. Ath.Pol.22.7; Plu. Them.4.1) or 200 triremes (Hdt. 7.144) used at Salamis (480 BC) to the 372 located in 94 shipsheds in Kantharos, 196 in Zea and 82 in Mounichia in 330/29 BC (IG II2 1627, 398-405).

Chapter 3 documents the main stages of studies and field research on the Piraeus naval bases. This section starts with the pioneering survey of W. M. Leake (1821) and the monumental topographic essays by F. Aldenhoven (1837), H. N. Ulrichs (1843) and E. Curtius (1841 and 1868). It continues with a review of the results of the scientific survey of B. Graser (1872) and the first excavations carried out by I. C. Dragatsis (1885 to 1899) and W. Dörpfeld (1885), credited with the earlier interpretation of the oblong structures along the east coast of Zea as shipsheds. The discussion continues with a comprehensive summary of all the excavations conducted since the postwar period, which have greatly enriched the documentation on structures recognizable as shipsheds or slipways in the three Harbours of Piraeus. The third chapter concludes with a useful list of bibliographical references to all the sites in the Mediterranean where remains of shipsheds and / or slipways have been discovered.

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The presentation of the topographical arrangements and contextualization of all structures identified as possible shipsheds and slipways along the shorelines of the three harbours of Piraeus (chapter 4), is followed by an innovative proposal for the dating and differentiation into 4 main building phases of the Zea neosoikoi (chapters 5-7). This is undoubtedly one of the most interesting and original results of the research carried out by the ZHP, giving a much more structured building history of the naval bases of Piraeus. The clearer definition of this chronological succession has been confirmed in the study of the rock-cut sequences along the east coastline of Zea Harbour, where I. C. Dragatsis and W. Dörpfeld had already unearthed the monumental remains of the upper part of a few shipsheds (intersection Akti Moutsopoulou / Sirangiou 1 – «Area 1» in the new topographical reconstruction by ZHP). In more recent explorations of the ZHP the latter were found to be part of double-unit shipsheds, intended to accommodate two triremes.

The second fascicle presents Mette Schaldemose's analysis of all the finds. Apart from the reliable reconstruction of building sequences, a crucial element in the formalisation of the proposal for a relative chronology of the 4 phases of Zea slipways and shipsheds was the pottery found in a pit discovered at the southern edge of the ramp of shipshed 17. The analysis of the ceramic evidence allowed Schaldemose to date the most recent material to between 375 and 350 BC. The excavation clarified that this had been intentionally deposited just before the construction of the phase 3 shipshed 17 ramp, thus creating a sufficiently credible terminus post quem. At the same time, the pit was a terminus ante quem for the installation of phase 2 shipsheds, as it had the same orientation as those in phase 3, though it was based on a slightly different architectural / planimetric model.

These phase 2 structures are dated to the second half of the 5th century BC and could represent the first phase of monumental and technological upgrading of the Piraeus port facilities, which had previously only had unroofed slipways. Five of these were documented by ZHP in Area 1 and contextualised with the earliest organization of the harbours and the first defensive system of the Piraeus, generally attributed to the political project of Themistocles. As the author himself stated, the data were not sufficient to define the structural aspects and a more accurate chronology of the still too evanescent Phase 4.

Finally, study of the architectural elements of the superstructures and fragments of architectural terracottas allowed Schaldemose to propose the reconstruction of the roofing systems of Phase 2 and 3 shipsheds.

This is only the first of five volumes, which, when complete, will provide a veritable encyclopedia of Piraeus naval archaeology. Nevertheless, the quantity of data collected and the excellent study of the architecture of the naval installations of Zea, accompanied by top-quality graphic documentation, represent an essential tool for anyone who wants to study the topography and spatial organization of harbour districts in port cities of the ancient world.<sup>4</sup>

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**Notes:**

1. The author also proposes that the naval installations documented in phases 2 - 4 of Zea and Mounichia should be included.
2. One aspect of particular interest, although still problematic, concerns the proposal by Bjørn Lovén to translate the term «neorion», sometimes used in ancient literature as a synonym for «neosoikos», as "naval base". This should be understood to mean a whole military harbor district comprising the shipsheds amongst other structures.
3. The Kantharos area is now almost completely overbuilt; only a few structures of possible shipsheds had been investigated between the 19th and the 20th centuries.
4. For activities of the ZHP see: ZEA Harbour Project

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## **EΙΔΗΣΕΙΣ - NEWS RELEASE**

# **THE MYSTERY OF CURRY, BY ANDREW LAWLER**

It turns out we've been eating the spiced dish for a lot longer than anyone ever imagined.

What is curry? Today, the word describes a bewildering number of spicy vegetable and meat stews from places as far-flung as the Indian subcontinent, the South Pacific, and the Caribbean Islands. There is little agreement about what actually constitutes a curry. And, until recently, how and when curry first appeared was a culinary mystery as well.

The term likely derives from kari, the word for sauce in Tamil, a South-Indian language. Perplexed by that region's wide variety of savory dishes, 17th-century British traders lumped them all under the term curry. A curry, as the Brits defined it, might be a mélange of onion, ginger, turmeric, garlic, pepper, chilies, coriander, cumin, and other spices cooked with shellfish, meat, or vegetables.

Those curries, like the curries we know today, were the byproduct of more than a millennium of trade between the Indian subcontinent and other parts of Asia, which provided new ingredients to spice up traditional Indian stews. After the year 1000, Muslims brought their own cooking traditions from the west, including heavy use of meat, while Indian traders carried home new and exotic spices like cloves from Southeast Asia. And when the Portuguese built up their trading centers on the west coast of India in the 16th century, they threw chilies from the New World into the pot. (Your spicy vindaloo may sound like Hindi, but actually the word derives from the Portuguese terms for its original central ingredients: wine and garlic.)

But the original curry predates Europeans' presence in India by about 4,000 years. Villagers living at the height of the Indus civilization used three key curry ingredients—ginger, garlic, and turmeric—in their cooking. This proto-curry, in fact, was eaten long before Arab, Chinese, Indian, and European traders plied the oceans in the past thousand years.

You may be wondering how on earth anyone can know what people were cooking 4,500 years ago. While the ancients left behind plenty of broken pots and mud-brick house foundations, they generally didn't leave us their recipes. And foodstuffs, unlike pots, rapidly decay.

But thanks to technological advances, scientists can identify minute quantities of plant remains left behind by meals cooked thousands of years ago. It is no easy task; researchers must gather crumbling skeletons and find ancient dirty dishes before using powerful laboratory microscopes to pinpoint the ingredients of ancient meals.

But the effort is paying off, in the form of evidence that curry may be far, far older than previously thought.

The Indus society began to flourish around the same time that the ancient Egyptians built their pyramids and Mesopotamians constructed the first great cities in today's Iraq. Though less well known than its more famous cousins to the West, the Indus civilization

boasted a half-dozen large and carefully planned urban centers with sophisticated water and sewage systems unmatched until Roman times.

During its peak, between 2500 B.C. and 1800 B.C., the Indus dominated a land area larger than either ancient Egypt or Mesopotamia, covering much of today's Pakistan and most of western India, as far west as the Iranian coast, as far north as Afghanistan, and as far east as the suburbs of New Delhi. But unlike the hieroglyphic and cuneiform writing of the Egyptian and Mesopotamian scribes, the strange symbols left behind by their Indus counterparts has not yet been deciphered by today's scholars. Deciphering their food traditions has, until recently, been equally challenging.

Archaeologists have long known how to spot some ancient leftovers. The biggest breakthrough came in the 1960s, when excavators began to drop soil from their sites—particularly from places where food likely was prepared—onto mesh screens. The scientists then washed the earth away with water, leaving behind little bits of stone, animal bones, and tiny seeds of wheat, barley, millets, and beans. This flotation method allowed scientists to piece together a rough picture of an ancient diet. “But spices are absent in macro-botanical record,” says archaeologist Arunima Kashyap at Washington State University Vancouver, who, along with Steve Weber, made the recent proto-curry discovery.\*

Working with other Indian and American archaeologists, the two applied new methods for pinpointing the elusive remains of spices that don't show up in flotation tanks. Instead of analyzing dirt from Indus kitchens, they collected cooking pots from the ancient town of Farmana, a modest settlement that prospered in the late third millennium B.C. (Today, it's a two-hour drive west of Delhi.) They also obtained human teeth from the nearby cemetery from the same era.

Back in their lab, Kashyap used what is known as starch grain analysis. Starch is the main way that plants store energy, and tiny amounts of it can remain long after the plant itself has deteriorated.

If a plant was heated—cooked in one of the tandoori-style ovens often found at Indus sites, for example—then its tiny microscopic remains can be identified, since each plant species leaves its own specific molecular signature. To a layperson peering through a microscope, those remains look like random blobs. But to a careful researcher, they tell the story of what a cook dropped into the dinner pot 4,500 years ago.

Examining the human teeth and the residue from the cooking pots, Kashyap spotted the telltale signs of turmeric and ginger, two key ingredients, even today, of a typical curry. This marked the first time researchers had found unmistakable traces of the spices in the Indus civilization. Wanting to be sure, she and Weber took to their kitchens in Vancouver, Washington. “We got traditional recipes, cooked dishes, then examined the residues to see how the structures broke down,” Weber recalls. The results matched what they had unearthed in the field. “Then we knew we had the oldest record of ginger and turmeric.” Dated to between 2500 and 2200 B.C., the finds are the first time either spice has been identified in the Indus. They also found a carbonized clove of garlic, a plant that was used in this era by cooks from Egypt to China.

They found additional supporting evidence of ginger and turmeric use on ancient cow teeth unearthed in Harappa, one of the largest Indus cities, located in Pakistan west of the border with India. Why would cattle be eating curry-style dishes? Weber notes that in the region today, people often place leftovers outside their homes for wandering cows to

munch on. There are numerous ancient Indus images of cattle on terra-cotta seals, suggesting that during Indus times, people may have regarded cows as sacred, as Hindus do today. The Harappan ruins also contain evidence of domesticated chickens, which were likely cooked in those tandoori-style ovens and eaten.

And what would a proto-curry be without a side of rice? Many archaeologists once thought that Indus peoples were restricted to a few grains like wheat and barley. But Cambridge University archaeologist Jennifer Bates, part of a joint Indian-U.K. team, has been examining the relative abundance of various crops at two village sites near today's Masudpur, also west of Delhi. She found that villagers cultivated a wide array of crops, including rice, lentils, and mung beans. Finding significant quantities of rice was a particular surprise, since the grain was long thought to have arrived only at the end of the Indus civilization. In fact, inhabitants of one village appear to have preferred rice to wheat and barley (though millet was their favorite crop).

What does this mean for how we think about South Asian cuisine today?

Thanks to Kashyap and Weber, we know that curry is not only among the world's most popular dishes; it also may be the oldest continuously prepared cuisine on the planet. Vasant Shinde, an archaeologist at Pune University in India who directs the dig at Farmana, is delighted with the discovery. He says the find demonstrates that the Indus civilization pioneered not just good plumbing and well-planned cities, but one of the world's most loved cuisines. "I have been arguing for a long time that the [Indus people] are responsible for introducing most of the traditions in south Asia," he says, "and that includes tandoori chicken."

**Please visit the site:**

[http://www.slate.com/articles/life/food/2013/01/indus\\_civilization\\_food\\_how\\_scientists\\_are\\_figuring\\_out\\_what\\_curry\\_was\\_like.single.html](http://www.slate.com/articles/life/food/2013/01/indus_civilization_food_how_scientists_are_figuring_out_what_curry_was_like.single.html)

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## **ICE AGE LION MAN IS WORLD’S EARLIEST FIGURATIVE SCULPTURE, BY MARTIN BAILEY**

Work carved from mammoth ivory has been redated and 1,000 new fragments discovered—but it won’t make it to British Museum show

The star exhibit initially promised for the British Museum’s “Ice Age Art” show will not be coming—but for a good reason. New pieces of Ulm’s Lion Man sculpture have been discovered and it has been found to be much older than originally thought, at around 40,000 years. This makes it the world’s earliest figurative sculpture. At the London exhibition, which opens on 7 February, a replica from the Ulm Museum will instead go on display.

The story of the discovery of the Lion Man goes back to August 1939, when fragments of mammoth ivory were excavated at the back of the Stadel Cave in the Swabian Alps, south-west Germany. This was a few days before the outbreak of the Second World War. When it was eventually reassembled in 1970, it was regarded as a standing bear or big cat, but with human characteristics.

The ivory from which the figure had been carved had broken into myriad fragments. When first reconstructed, around 200 pieces were incorporated into the 30cm-tall sculpture, with about 30% of its volume missing.

Further fragments were later found among the previously excavated material and these were added to the figure in 1989. At this point, the sculpture was recognised as representing a lion. Most specialists have regarded it as male, although paleontologist Elisabeth Schmid controversially argued that it was female, suggesting that early society might have been matriarchal.

The latest news is that almost 1,000 further fragments of the statue have been found, following recent excavations in the Stadel Cave by Claus-Joachim Kind. Most of these are minute, but a few are several centimetres long. Some of the larger pieces are now being reintegrated into the figure.

Conservators have removed the 20th-century glue and filler from the 1989 reconstruction, and are now painstakingly reassembling the Lion Man, using computer-imaging techniques. “It is an enormous 3D puzzle”, says the British Museum curator Jill Cook.

The new reconstruction will give a much better idea of the original. In particular, the back of the neck will be more accurate, the right arm will be more complete and the figure will be a few centimetres taller.

**An imaginative sculptor**

Even more exciting than the discovery of new pieces, the sculpture's age has been refined using radio-carbon dating of other bones found in the strata. This reveals a date of 40,000 years ago, while until recently it was thought to be 32,000 years old. Once reconstruction is completed, several tiny, unused fragments of the mammoth ivory are likely to be carbon dated, and this is expected to confirm the result.

This revised dating pushes the Lion Man right back to the oldest sculptures, which have been found in two other caves in the Swabian Alps. These rare finds are dated at 35,000 to 40,000 years, but the Lion Man is by far the largest and most complex piece. A few carved items have been found in other regions which are slightly older, but these have simple patterns, not figuration.

What was striking about the sculptor of the Lion Man is that he or she had a mind capable of imagination rather than simply representing real forms. As Cook says, it is “not necessary to have a brain with a complex pre-frontal cortex to form the mental image of a human or a lion—but it is to make the figure of a lion-man”. The Ulm sculpture therefore sheds further light on the evolution of homo sapiens.

Conservators experimented by making a replica of Lion Man, calculating that it would take a highly skilled carver at least 400 hours using flint tools (two months' work in daylight). This means that the carver would have had to be looked after by hunter-gatherers, which presupposes a degree of social organisation. There is an ongoing debate on what the Lion Man represents, and whether it is linked to shamanism and the spirit world.

Initially, it was hoped that the original of the Lion Man would be presented at the British Museum's exhibition, but this has not proved possible because conservators need further time to get the figure reconstructed as accurately as possible. The Ulm Museum now plans to unveil it in November.

**Please visit the site: <http://www.theartnewspaper.com/articles/Ice-Age-iLion-Man-is-worlds-earliest-figurative-sculpture/28595>**

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## **35 ANCIENT PYRAMIDS DISCOVERED IN SUDAN NECROPOLIS, BY OWEN JARUS**

At least 35 small pyramids, along with graves, have been discovered clustered closely together at a site called Sedeinga in Sudan.

Discovered between 2009 and 2012, researchers are surprised at how densely the pyramids are concentrated. In one field season alone, in 2011, the research team discovered 13 pyramids packed into roughly 5,381 square feet (500 square meters), or slightly larger than an NBA basketball court.

They date back around 2,000 years to a time when a kingdom named Kush flourished in Sudan. Kush shared a border with Egypt and, later on, the Roman Empire. The desire of the kingdom's people to build pyramids was apparently influenced by Egyptian funerary architecture.

At Sedeinga, researchers say, pyramid building continued for centuries. "The density of the pyramids is huge," said researcher Vincent Francigny, a research associate with the American Museum of Natural History in New York, in an interview with LiveScience. "Because it lasted for hundreds of years they built more, more, more pyramids and after centuries they started to fill all the spaces that were still available in the necropolis." [See Photos of the Newly Discovered Pyramids]

The biggest pyramids they discovered are about 22 feet (7 meters) wide at their base with the smallest example, likely constructed for the burial of a child, being only 30 inches (750 millimeters) long. The tops of the pyramids are not attached, as the passage of time and the presence of a camel caravan route resulted in damage to the monuments. Francigny said that the tops would have been decorated with a capstone depicting either a bird or a lotus flower on top of a solar orb.

The building continued until, eventually, they ran out of room to build pyramids. "They reached a point where it was so filled with people and graves that they had to reuse the oldest one," Francigny said.

Francigny is excavation director of the French Archaeological Mission to Sedeinga, the team that made the discoveries. He and team leader Claude Rilly published an article detailing the results of their 2011 field season in the most recent edition of the journal Sudan and Nubia.

### **The inner circle**

Among the discoveries were several pyramids designed with an inner cupola (circular structure) connected to the pyramid corners through cross-braces. Rilly and Francigny noted in their paper that the pyramid design resembles a "French Formal Garden."

Only one pyramid, outside of Sedeinga, is known to have been constructed this way, and it's a mystery why the people of Sedeinga were fond of the design. It "did not add either to the solidity or to the external aspect [appearance] of the monument," Rilly and Francigny write.

A discovery made in 2012 may provide a clue, Francigny said in the interview. "What we found this year is very intriguing," he said. "A grave of a child and it was covered by only a kind of circle, almost complete, of brick." It's possible, he said, that when pyramid building came into fashion at Sedeinga it was combined with a local circle-building tradition called tumulus construction, resulting in pyramids with circles within them.

#### **An offering for grandma?**

The graves beside the pyramids had largely been plundered, possibly in antiquity, by the time archaeologists excavated them. Researchers did find skeletal remains and, in some cases, artifacts.

One of the most interesting new finds was an offering table found by the remains of a pyramid. . It appears to depict the goddess Isis and the jackal-headed god Anubis and includes an inscription, written in Meroitic language, dedicated to a woman named "Aba-la," which may be a nickname for "grandmother," Rilly writes.

It reads in translation:

Oh Isis! Oh Osiris!

It is Aba-la.

Make her drink plentiful water;

Make her eat plentiful bread;

Make her be served a good meal.

The offering table with inscription was a final send-off for a woman, possibly a grandmother, given a pyramid burial nearly 2,000 years ago.

**Please visit the site: <http://news.yahoo.com/35-ancient-pyramids-discovered-sudan-necropolis-162426532.html> [Go there for pix gallery]**

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## **ANCIENT LANGUAGES RECONSTRUCTED** **BY COMPUTER PROGRAM, BY REBECCA** **MORELLE**

A new tool has been developed that can reconstruct long-dead languages.

Researchers have created software that can rebuild protolanguages - the ancient tongues from which our modern languages evolved.

To test the system, the team took 637 languages currently spoken in Asia and the Pacific and recreated the early language from which they descended.

The work is published in the Proceedings of the National Academy of Science.

Currently language reconstructions are carried out by linguists - but the process is slow and labour-intensive.

Dan Klein, an associate professor at the University of California, Berkeley, said: "It's very time consuming for humans to look at all the data. There are thousands of languages in the world, with thousands of words each, not to mention all of those languages' ancestors.

"It would take hundreds of lifetimes to pore over all those languages, cross-referencing all the different changes that happened across such an expanse of space - and of time. But this is where computers shine."

Rosetta stone

Languages change gradually over time.

Over thousands of years, tiny variations in the way that we produce sounds have meant that early languages have morphed into many different descendents.

Dr Klein explains: "These sound changes are almost always regular, with similar words changing in similar ways, so patterns are left that a human or a computer can find.

"The trick is to identify these patterns of change and then to 'reverse' them, basically evolving words backwards in time."

The scientists demonstrated their system by looking at a group of Austronesian languages that are currently spoken in southeast Asia, parts of continental Asia and the Pacific.

From a database of 142,000 words, the system was able to recreate the early language from which these modern tongues derived. The scientists believe it would have been spoken about 7,000 years ago.

They then compared the computer's findings to those of linguists, finding that 85% of the early words that the software presented were within one "character" - or sound - of the words that the language experts had identified.

But while the computerised method was much faster, the scientists said it would not put the experts out of a job.

The software can churn through large amounts of data quickly, but it does not bring the same degree of accuracy as a linguist's expertise.

Dr Klein said: "Our system still has shortcomings. For example, it can't handle morphological changes or re-duplications - how a word like 'cat' becomes 'kitty-cat'.

"At a much deeper level, our system doesn't explain why or how certain changes happened, only that they probably did happen."

While researchers are able to reconstruct languages that date back thousands of years, there is still a question mark over whether it would ever be possible to go even further back to recreate the very first protolanguage from which all others evolved.

**Please visit the site: <http://www.bbc.co.uk/news/science-environment-21427896>  
[At <http://www.pnas.org/content/early/2013/02/05/1204678110.full.pdf> is a  
downloadable pdf of "Automated reconstruction of ancient languages using  
probabilistic models of sound change"]**

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## **ANCIENT “EGYPTIAN BLUE” PIGMENT POINTS TO NEW TELECOMMUNICATIONS, SECURITY INK TECHNOLOGY**

The blue pigment used in ancient Egyptian artwork may foster development of new materials for TV remote controls, security inks and other modern technology. “Nanoscience of an Ancient Pigment” Journal of the American Chemical Society

A bright blue pigment used 5,000 years ago is giving modern scientists clues toward the development of new nanomaterials with potential uses in state-of-the-art medical imaging devices, remote controls for televisions, security inks and other technology. That’s the conclusion of an article on the pigment, Egyptian blue, in the Journal of the American Chemical Society.

Tina T. Salguero and colleagues point out that Egyptian blue, regarded as humanity’s first artificial pigment, was used in paintings on tombs, statues and other objects throughout the ancient Mediterranean world. Remnants have been found, for instance, on the statue of the messenger goddess Iris on the Parthenon and in the famous Pond in a Garden fresco in the tomb of Egyptian “scribe and counter of grain” Nebamun in Thebes.

They describe surprise in discovering that the calcium copper silicate in Egyptian blue breaks apart into nanosheets so thin that thousands would fit across the width of a human hair. The sheets produce invisible infrared (IR) radiation similar to the beams that communicate between remote controls and TVs, car door locks and other telecommunications devices. “Calcium copper silicate provides a route to a new class of nanomaterials that are particularly interesting with respect to state-of-the-art pursuits like near-IR-based biomedical imaging, IR light-emitting devices (especially telecommunication platforms) and security ink formulations,” the report states. “In this way we can reimagine the applications of an ancient material through modern technochemical means.”

The authors acknowledge funding from the University of Georgia.

Please visit the site: <http://tinyurl.com/a2me524>

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## **CORNELL CREATES INSTITUTE OF ARCHAEOLOGY AND MATERIAL STUDIES, BY LINDA B. GLASER**

A period of explosive growth in archaeology-related teaching and research at Cornell has culminated in the establishment of the new Cornell Institute of Archaeology and Material Studies (CIAMS).

CIAMS will "leverage the interdisciplinary nature of the field today in order to generate the new ideas and collaborations which will lead the field tomorrow," said Sturt Manning, CIAMS director and the Goldwin Smith Professor of Classical Archaeology.

"The 'material studies' part of the CIAMS name reflects a renewed engagement with the material world," Manning explained. "Many of the fundamental challenges of our time -- climate change, social inequality, gun control -- not to mention values we hold regarding aesthetics and behaviors -- all emerge out of centuries and even millennia of human interaction with the vast world of material objects."

The institute includes 18 faculty members and a postdoctoral researcher from five departments (anthropology, classics, history of art, landscape architecture and Near Eastern studies) and two colleges (Arts and Sciences; Agriculture and Life Sciences).

"We have exciting new faculty who make this a perfect moment for reconsidering archaeology as a whole," said Peter Lepage, the Harold Tanner Dean of the College of Arts and Sciences. "And because archaeology exists within the graduate fields and undergraduate departments of multiple disciplines at Cornell, by enhancing archaeology this institute will strengthen these departments as well."

Cornell boasts one of the country's larger concentrations of faculty specializing in classical and Mediterranean archaeology and art, according to Manning. He noted that Cornell is also the only U.S. center for study of the Caucasus with two prominent researchers working in the field. Other strengths at Cornell include Cypriot prehistory, garden archaeology, regional archaeology, Mesoamerica and the historic archaeology of New York and northeastern North America.

The new faculty members have increased the number of active field projects, which now span research in Armenia, Cyprus, Greece, Israel, Italy, Jordan, Turkey, the United States and the Americas (all of which involve student participants). Recent funding for these projects include two National Science Foundation (NSF) grants, a National Endowment for the Humanities grant and a share of a Canadian Social Sciences and Humanities Research Council award. At least three NSF applications have recently been submitted, indicating "a scale of archaeological activity and aspiration never seen before at Cornell," Manning said.

In the last five years, the number of archaeology-related courses at Cornell has doubled. CIAMS will structure these courses into a curriculum critically addressing the role of the past and of objects in shaping our world today, and preparing students for further study

or careers in fields ranging from heritage management and museum science to field archaeology, human environments and laboratory analysis of materials.

The undergraduate major and minor in archaeology will continue to be granted through the archaeology program, which has been subsumed under CIAMS. The revamped master's degree program will include a track in archaeology and one in object-oriented and museum studies. Due to the program's improved focus and defined goals, students will now be able to complete a master's degree in 12 to 18 months.

Graduate students in the field of archaeology or working on archaeological topics within other fields (such as anthropology, classics, history of art or Near Eastern studies) can become part of CIAMS by participating in seminar series. Students in good standing with the institute will be eligible to apply for research funding through CIAMS; an annual prize will be given for the best Ph.D. dissertation and master's thesis. As additional funds are raised, the institute plans to expand its support for these and other activities, Manning said.

### **Graduate archaeology study a growing field**

In the past five years, the number of graduate students in the field of archaeology or working on archaeological topics at Cornell has surged, with some already garnering impressive achievements.

Jeffrey Leon, a Ph.D. student in the field of classics, for example, has won a Wenner Gren Foundation Dissertation Fieldwork Grant for his project on Minoan Crete. And Catherine Kearns, also in the field of classics, has won a Fulbright U.S. Student Grant to work on early Iron Age Cyprus at the Cyprus American Archaeological Research Institute in Nicosia, Cyprus.

Eventually the Cornell Institute of Archaeology and Material Studies (CIAMS) hopes to give this growing graduate population a place of their own, CIAMS Director Sturt Manning said.

"The new Landscapes and Objects Laboratory (in McGraw Hall) is a striking success in quickly becoming home to many of our graduate students, but already it's too small for the number of anticipated students next year," Manning said.

Linda B. Glaser is staff writer for the College of Arts and Sciences.

**Please visit the site:**

<http://www.news.cornell.edu/stories/Feb13/ArchaeologyInstit.html>

## **BULGARIAN ARCHAEOLOGISTS UNCOVER MAJOR ROMAN THERMAE**

A Bulgarian team of archaeologists have discovered well-preserved remains of a Roman bath in the ancient Bulgarian town of Sozopol.

The news was revealed by National Museum of History director Bozhidar Dimitrov.

"The team, led by Sozopol Archaeology Museum director Dimitar Nedev has made the discovery as part of its digs in the area in front of Sozopol's fortress walls," said the historian.

According to Dimitrov, the thermae building is 18 meters long and features an intricate water supply systems as well as numerous pools of various sizes.

"Except for Roman baths in Hissarya and Varna, this is the best-preserved Roman bath in Bulgarian lands," added he.

Dimitrov expressed satisfaction at the string of discoveries made in Sozopol, which he said will make an attractive open-air exhibit once archaeological works are completed.

Sozopol, founded by Greek colonists in the 5th century BC on what is now Bulgaria's southern Black Sea coast, is now a popular resort town.

**Please visit the site: [http://www.novinite.com/view\\_news.php?id=147946](http://www.novinite.com/view_news.php?id=147946)**

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## **COLLECTION OF GRAECO-ROMAN TOMBS UNCOVERED IN ALEXANDRIA BY CHANCE, A GRAECO-ROMAN CEMETERY HAS BEEN DISCOVERED IN AL-QABARI DISTRICT IN ALEXANDRIA, BY NEVINE EL-AREF**

During routine archaeological survey at an area known as the "27 Bridge" in Al-Qabari district, one of Alexandria's most densely populated slum areas, archaeologists stumbled upon a collection of Graeco-Roman tombs.

Each tomb is a two-storey building with a burial chamber on its first floor. The tombs are semi-immersed in subterranean water but are well preserved and still bear engravings.

Mohamed Abdel Meguid, head of Alexandria's Antiquities Department, explained that the tombs are part of a larger cemetery known as the "Necropolis" (or City of the Dead) as described by Greek historian Strabo when he visited Egypt in 30BC. According to Strabo, the cemetery included a network of tombs containing more than 80 inscriptions, while each tomb yielded information about burial rituals of the Hellenic period.

The newly discovered collection of tombs, Abdel Meguid pointed out, is a part of the western side of the cemetery that was dedicated to the public and not to royals or nobles. The tombs are empty of funerary collections or mummies, corpses, skeletons or even pottery.

"This is a very important discovery that adds more to the archaeological map of Alexandria," Minister of State for Antiquities Mohamed Ibrahim said, adding that the discovery would allow scientists to decipher more about the history of ancient Alexandria and would also add another tourist destination to the city.

Ibrahim said that this and similar excavations were conducted as part of archaeological inspections routinely carried out at the request of constructors who purchased the land. According to Egyptian law, every piece of land should be subject to archaeological inspection before it can be claimed as a free zone for construction.

The area was previously subject to archaeological survey in 1998 when Alexandria governorate decided to build Al-Qabari Bridge over Abdel-Qader Hamza Street in the district.

Excavation at the time uncovered more than 37 tombs, among which a very distinguished tomb bearing a coffin in the shape of a bed, commonly known as the wedding bed. On top of it was a red sheet and two pillows.

Please visit the site: <http://english.ahram.org.eg/News/64798.aspx>

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