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# Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

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## **ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS**

# **ITINERANT COURSE ON STONE CONSERVATION, LISBON, 2012, MAY 7TH-18TH**

**Candidatures: October 31st, 2011**

**Deadlines**

**Selection candidates: December 31st, 2011**

### **1. INTRODUCTION**

Under the framework of the EU project CHARISMA: “Cultural Heritage Advanced Research Infrastructures: Synergy for a Multidisciplinary Approach to Conservation/Restoration”, an itinerant course on stone conservation is to be prepared and implemented in different parts of the European territory.

The first venue will take place in Lisbon, in the course of 2012 and subsequent venues will follow in other countries.

The course will address subjects ranging from stone materials to conservation methods and products, from the preparatory steps to the implementation phases of conservation interventions, and will aim at providing the students with modern concepts and updated knowledge on the most relevant aspects of this discipline.

The teachers come from different CHARISMA partners and will include additional external invited lecturers.

### **2. PARTNERS AND LECTURERS**

#### **Partners:**

**LNEC** – Laboratório Nacional de Engenharia Civil (National Laboratory of Civil Engineering) – Lisbon, Portugal

**CHARISMA** Project – Cultural Heritage Advanced Research Infrastructures: Synergy for a Multidisciplinary Approach to Conservation/Restoration

**LRMH** – Laboratoire de Recherche des Monuments Historiques, Champs-sur-Marne, France

**OPD** – Oppificio delle Pietre Dure, Firenze, Italy

**ICVBC** - Institute for Conservation and Promotion of Cultural Heritage, Firenze, Italy

#### **Lecturers :**

**JDR** - José Delgado Rodrigues, Geologist, LNEC.

**JMM** - João-Manuel Mimoso, Mechanical Engineer, LNEC.

**DC** - Dória Costa, Geologist, LNEC.

**TG** - Teresa Gonçalves, Civil Engineer, Research Officer, LNEC.

**EC** - Ema Coelho, Civil Engineer, LNEC.

**MM** - Mary Mun, Civil Engineer, LNEC.

**AFP** - Ana Ferreira Pinto, Civil Engineer, IST-ICIST, Technical University of Lisbon.

**IPF** - Isabelle Pallot-Frossard, Art Historian, LRMH.

**VVB** - Véronique Vergès-Belmin, Geologist, LRMH.

**JDM** - Jean-Didier Mertz, Geologist, LRMH,

**DP** - Daniela Pinna, Biologist, OPD.

**SB** - Susanna Bracci, Chemist, ICVBC.

**MJN** - Maria João Neto, Art Historian, University of Lisbon.

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### **3. OBJECTIVES**

The course aims at contributing to raise the level of conservation interventions in the European Cultural Heritage by providing to the scientific researchers and professional conservator-restorers the opportunity to learn with international experts and to update knowledge on the major subjects relevant for their activity.

Conservation scientists and conservator-restorers are the target public of the course.

Students will have learning material and tutorial learning at their disposal.

### **4. APPLICATION REQUIREMENTS AND SELECTION CRITERIA**

#### **For all the candidates:**

Graduation in Conservation-Restoration, Geology, Biology, Chemistry, Physics, and Engineering are accepted. Candidates with other graduations may be accepted in a case-by-case basis. Master and PhD degrees will be weighted higher.

Candidates shall submit a motivation letter referring, namely, their expectations and the impact they anticipate the course may have in their careers.

Candidates shall submit a brief CV with information on their past and present occupations, and on the published materials as authors or co-authors. A brief description of the present employer institution/firm shall accompany the CV.

Candidates shall submit an extended abstract on a case-study or a research project in which he/she had been involved. The document shall not have more than 3000 words. This abstract will serve as a basis for the homework report mentioned below and for the course final presentation.

A reasonable knowledge of written and spoken English is required.

#### **Selection of candidates:**

A numerus clausus of 20 is foreseen. A minimum of 12 is necessary to deploy the course. Selection will be made on the basis of the following criteria: i) educational background; ii) specific education and training in conservation; iii) age; iv) motivation letter; v) quality of the extended abstract; vi) potential of the candidate to disseminate knowledge; vii) professional experience in conservation-restoration or research in conservation sciences.

Should more than 20 candidates apply, preference to cover distinct provenances will be taken into consideration.

#### **Homework and tutorial learning**

Students shall bring a draft of a report that might serve as a basis for their final presentation. The draft is to be progressively improved, if necessary, during the learning process with the help of the lecturers. A tutorial period at the end of each working day is allocated for this purpose.

Students will have 15 minutes each in Module 8 to make their presentations in a Power Point format.

### **5. LANGUAGE AND TECHNICAL REQUIREMENTS**

The course official language is English.

Students shall carry their own laptop.

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### **6. SECURITY AND LEGAL REQUIREMENTS**

Students shall provide for their own VISA entrance in the country, if applicable.

Students shall provide for their own insurance and health care.

### **7. CERTIFICATE**

A certificate will be granted to all participants that have fulfilled the course requirements, namely the attendance to all the course sessions (one period absence, maximum, allowed), and a successful presentation.

### **8. VENUE AND LOGISTICS**

The course will be held at:

National Laboratory of Civil Engineering

Av. Brasil, 101

1700-060 Lisbon

Portugal

Students will have access to the LNEC meals facilities at the same rates as LNEC personnel.

Students shall wear their identification badge all the time when inside LNEC premises.

**Travel and accommodation arrangements are the students' own responsibility.**

**The course will be free of registration fee.**

### **9. COURSE DIRECTORS AND CONTACTS**

#### **Scientific coordinator:**

José Delgado Rodrigues

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#### **LNEC representative:**

João-Manuel Mimoso

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#### **Logistic assistance to students:**

Dória Costa

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### **10. GENERAL LAYOUT**

#### **WEEK 1**

##### **Monday to Friday Saturday**

**9:00 – 12:30** Lectures

Lunch

**14:00-17:00** Lectures

**17:00-18:00** Tutorial

Field visit

#### **WEEK 2**

##### **Monday Tuesday Wednesday Thursday Friday**

**9:00 – 12:30** Lectures Lectures Lectures

Students

presentations

Closing. Awarding

of certificates

Farewell lunch

**14:00-17:00** Lectures Lectures

**17:00-18:00** Tutorial Tutorial

Students  
presentations  
Students  
presentations

## **11. CONTENTS AND LEARNING TOPICS**

### **SUMMARY:**

- Module 1 - Reception of students and introduction to the course
- Module 2 - Introduction to conservation theory and principles
- Module 3 - Stone as a building material. Genesis, properties, in-work performance
- Module 4 - Deterioration mechanisms & degradation forms. Intrinsic & extrinsic factors of decay
- Module 5 - Diagnosis, testing & documenting
- Module 6 - Conservation measures & treatments
- Module 7 - Case-studies
- Module 8 – Students presentations

### **LEARNING TOPICS:**

#### **Introduction to conservation theory and principles**

- Introduction to key-concepts of conservation.
- The international context and charters.
- Stone in Cultural Heritage; from simple objects to masterpieces; from isolated elements to large constructions; from rock art to decorated surfaces.
- Basic steps in conservation interventions. From diagnostics to practice.
- Historical context of the object and conservation concepts to follow.
- Multidisciplinary and interdisciplinary requirements.
- Residing and attributed values of the object.

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#### **Stone as a building material. Genesis, properties, in-work performance**

- Rocks in their geological context. Igneous, sedimentary and metamorphic rocks.
- Rock-forming minerals.
- Overview of the main physical and mechanical properties of stone.
- Pore space. Pore-shaped and fissure-shaped voids as a distinctive factor.
- Performance of stone in man-made constructions. Overview and typical examples.

#### **Deterioration mechanisms & degradation forms. Intrinsic & extrinsic factors of decay**

- Alteration in natural environments. Decay in man-made constructions.
- Introduction to the terminology of degradation forms. The ICOMOS glossary.
- Deterioration mechanisms.
- Intrinsic factors. Mineralogic composition, porosity, permeability and other physical properties.
- Decay of carbonate rocks. General and specific features. Limestones and marbles.
- Decay of silicate rocks. General and specific features. Sandstones, granites and other igneous rocks.
- Formation of black crusts and swelling as paradigmatic decay mechanisms.
- Patinas and gilding layers. Polychromy.
- External factors of decay. Monitoring of climatic parameters.
- The role of water. Rising damp. Salts as major decay agents.
- Biodeterioration.

#### **Diagnosis, testing & documenting**

- Assessing the stone condition.



- Designing of a diagnostic project.
- Laboratory versus onsite testing. Testing standards.
- Destructive versus non-destructive testing.
- Sampling. Limitations of direct sampling. Significance of spot samples. Overcoming sampling limitations.
- Overview of most common physical tests.
- Introduction to petrographic, chemical and physico-chemical characterization.
- Documentation: a required process in all the intervention phases.
- Survey and mapping as specific documenting tools.

### **Conservation measures & treatments**

- Introducing the conservation practice: cleaning, consolidation and surface protection as typical intervention operations.
- Deciding on the conservation actions: from the problem identification to the implementation of actions.

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- Defining and monitoring cleaning operations: why and what to clean. Selecting and adapting the cleaning tools to the local specificities. Values to be preserved. Harmfulness as a major issue.

Traditional and modern cleaning technologies.

- Desalination. Principles and practical issues.
- Deciding on and recommending protection actions. Testing and selecting water repellents.

Antigraffiti.

· Mechanical, physical, and chemical methods to control the biological growth. Evaluation of the efficiency of the methods. Prevention of biological growth. Use of mixtures of biocides and water-repellents or consolidants.

- Deciding on and recommending consolidation actions. Testing and selecting consolidation products. Consolidation of carbonate stones. Consolidation of granite-type stones. Marbles and their specificities.

· Repair mortars. Lime, cement, and pozzolanic mortars. Working principles and typical properties. Functional interaction and induced damage in stone elements.

- Compatibility issues. Broad and strict significances in compatibility.

· Maintenance actions.

### **Case studies**

- From diagnostic to practice. Formulation of repair programmes based on sound ethical and practical considerations.

· The 8-phases model of conservation interventions.

- Contact with relevant case-studies on different materials, depicting current as well as specific problems, aiming at getting the necessary awareness on practical methodologies in conservation interventions.

### **Students presentations**

· Students shall prepare a report on a case-study or on a research project, where he/she has participated actively, to serve as a basis for their final presentation. The report is to be progressively improved, if necessary, during the learning process with the help of the lecturers. A tutorial period at the end of each working day is allocated for this purpose.

· Students will have 15 minutes each in Module 8 to make their presentations in a Power Point format.

- Students are to be prepared to answer questions on their presentations.

## TUTORIAL

Resident and invited lecturers will be available during the tutorial period to work with the students in the preparation of their presentations.

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## 12. CALENDAR

### Day 1

#### Monday

#### Lecture Topics Lecturers

**09:00** Registration.

**10:00** Welcome session. Introduction to the course facilities. Introducing students and teachers.

**JMM; JDR;**

#### CHARISMA

#### 11:00 Break

**11:30** Explaining the course layout. Introducing the working mode of “Module 8 – Students presentations”

**JDR;**

**12:00** Introduction to conservation of Cultural Heritage items. Theory and practice. **IPF**

#### 12:30 Lunch

**14:00** Historical context of the object. Residing and attributed values. **IPF**

**15:30** Basic steps in conservation interventions. Multidisciplinary and interdisciplinary requirements.

**JDR**

#### 16:00 Break

**16:30** Conservation and Art History. The international context and charters. **MJN**

#### 17:30 Tutorial

### Day 2

#### Tuesday

#### Lecture Topics Lecturers

**09:00** Stone in Cultural Heritage. Diversity, uniqueness, and complexity of heritage items.

**JDR; JMM**

**10:00** Rocks in their geological context. Igneous, sedimentary and metamorphic rocks. Rock-forming minerals.

**JDR**

#### 11:00 Break

**11:30** Overview of the main physical and mechanical properties of stone. **JDR**

#### 12:30 Lunch

**14:00** Pore space. Description and measurement. Hydric properties. **JDM**

**15:00** Drying of porous materials. **TG**

#### 16:00 Break

**16:30** Performance of stone in man-made constructions. Overview and typical examples.

**JDR**

#### 17:30 Tutorial

### Day 3

#### Wednesday

#### Lecture Topics Lecturers

**09:00** Sandstones. Properties and performances. Clay swelling. **JDM**

**10:00** Carbonate stones. Properties and performances. **JDR; AFP**

**11:00 Break**

**11:30** Granites and other igneous rocks. Properties and performances. **JDR; DC**

**12:30 Lunch**

**14:00** Structural problems and remedial measures. **MM**

**15:00** Seismic and other natural hazards. **EC**

**16:00 Break**

**16:30** Alteration in natural environments. Intrinsic factors **JDR**

**17:30 Tutorial**

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**Day 4**

**Thursday**

**Lecture Topics Lecturers**

**09:00** Degradation in man-made constructions. Introduction to the terminology of degradation patterns. The ICOMOS glossary.

**VVB**

**10:00** Impact of atmospheric pollution on stone: sulphation, black crusts. **VVB**

**11:00 Break**

**11:30** Decay of carbonate stones. **JDR**

**12:30 Lunch**

**14:00** Decay of silicate stones. **DC**

**15:00** Nature of natural and artificial patinas, introduction to the technology and degradation of stone polychromy.

**VVB**

**16:00 Break**

**16:30** External factors of decay. Climatic parameters. **JMM**

**17:30 Tutorial**

**Day 5**

**Friday**

**Lecture Topics Lecturers**

**09:00** Salts as major decay agents. Sampling and testing for salts. **TG**

**10:00** Assessing the stone condition. Designing of a diagnostic project. Lab versus field tests. Sampling and its limitations in heritage items.

**JDR**

**11:00 Break**

**11:30** Current physical lab and field tests. **AFP; JDR**

**12:30 Lunch**

**14:00** Introducing the conservation practice: cleaning, consolidation and surface protection as typical intervention operations. Documenting the different intervention phases.

**JDR**

**14:30** Defining and monitoring cleaning operations. Efficacy and harmfulness. **JDR**

**15:00** Diversity of cleaning techniques and their impact on stone surface parameters: water absorption, colour, roughness...

**VVB**

**16:00 Break**

**16:30** Desalination. Theory and working principles. **VVB**

**17:30 Tutorial**

**Day 6**

## Monday

### Lecture Topics Lecturers

**09:00** Desalination. Materials and application procedures. **VVB**

**10:00** History of a catastrophe. Desalination of Notre Dame la Grande, Poitiers. **VVB**

**11:00 Break**

**11:30** Cleaning of polychromed surfaces. **SB; DP**

**12:30 Lunch**

**14:00** Chemical products in conservation. Brief introduction. **SB**

**15:00** Testing and selecting consolidation products. General aspects. **JDR**

**16:00 Break**

**16:30** Testing consolidants in porous stones. **AFP**

**17:30 Tutorial**

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## Day 7

### Tuesday

#### Lecture Topics Lecturers

**09:00** Testing consolidants in fissured stones. **DC**

**10:00** Surface protection with water repellents and antigraffiti. Testing and selection procedures.

**DC**

**11:00 Break**

**11:30** Biodeterioration and its treatment. **DP**

**12:30 Lunch**

**14:00** Biocides. Lab and field studies. Environmental issues. **DP**

**15:00** Repair mortars. Lime, cement, and pozzolanic mortars. Working principles and typical properties.

**TG**

**16:00 Break**

**16:30** From diagnostic to practice. The 8-phases model of conservation interventions. Compatibility issues. Broad and strict significances in compatibility.

**JDR**

**17:30 Tutorial**

## Day 8

### Wednesday

#### Lecture Topics Lecturers

**09:00** Jerónimos Monastery and Porta Especiosa case-studies **JDR**

**10:00** Evora and Oporto cathedrals case-studies **DC**

**11:00 Break**

**11:30** Case-studies in plastering and rendering mortars **TG**

**12:30 Lunch**

**14:00** Students presentations

**16:00 Break**

**16:30** Students presentations

## Day 9

### Thursday

#### Lecture Topics

**09:00 - 18:00** Students presentations

## Day 10

### Friday

**Lecture Topics**

**10:00** Awarding of certificates

**11:00** Closing

**12:30** Farewell Lunch

Please visit the site: [http://dl.dropbox.com/u/18684629/CHARISMA\\_stone\\_course\\_march16.pdf](http://dl.dropbox.com/u/18684629/CHARISMA_stone_course_march16.pdf)

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**ΠΡΟΣΚΛΗΣΗ ΥΠΟΒΟΛΗΣ ΕΡΓΑΣΙΩΝ,**  
**ΔΕΥΤΕΡΟ ΔΙΕΘΝΕΣ ΣΥΜΠΟΣΙΟ,**  
**ΕΠΙΣΤΗΜΗ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑ ΣΤΑ**  
**ΟΜΗΡΙΚΑ ΈΠΗ, 30 ΑΙΩΝΕΣ**  
**ΈΜΠΝΕΥΣΗΣ ΣΕ ΚΑΘΕ ΠΕΔΙΟ**  
**ΑΝΘΡΩΠΙΝΗΣ ΓΝΩΣΗΣ ΚΑΙ**  
**ΠΟΛΙΤΙΣΜΟΥ, ΣΥΝΕΔΡΙΑΚΟ ΚΕΝΤΡΟ**  
**ΙΟΝΙΟΥ ΑΚΑΔΗΜΙΑΣ, 30 ΣΕΠΤ.–3 ΟΚΤ.**  
**2012, ΚΕΡΚΥΡΑ**

Ως συνέχεια του επιτυχημένου πρώτου ομότιτλου Συμποσίου (Αρχαία Ολυμπία, Αύγουστος 2006), το παρόν Συμπόσιο αποβλέπει να συνενώσει ερευνητές, μελετητές και σπουδαστές από το ευρύ πεδίο των επιστημών που αναφέρονται στα Ομηρικά Έπη, σε ένα οικείο, συναδελφικό, και παραγωγικό περιβάλλον στην παρουσίαση καινούργιων ευρημάτων από την απέραντη επιστημονική και τεχνολογική γνώση που περιέχεται στα αρχαιότερα έπη του Δυτικού Κόσμου.

**ΘΕΜΑΤΑ ΤΟΥ ΣΥΜΠΟΣΙΟΥ**

Φυσικοί, μηχανικοί και θετικοί επιστήμονες γενικά, ως επίσης και φιλόλογοι, γλωσσολόγοι, ιστορικοί της επιστήμης και της τεχνολογίας, προσκαλούνται να παρουσιάσουν εργασίες που καταδεικνύουν τη βαθιά και συνεχή επίδραση των Ομηρικών Επών στον παγκόσμιο πολιτισμό και την κουλτούρα.

Δεκτές για παρουσίαση είναι πρωτότυπες, αδημοσίευτες εργασίες πάνω σε όλες τις πλευρές των επιστημονικών θεμάτων που αναφέρονται στα Ομηρικά Έπη. Ιδιαίτερη έμφαση δίνεται στα μέρη της Οδύσσειας που αναφέρονται στην Φαιακία, η οποία, κατά τον Schliemann, είναι η νήσος Κέρκυρα, τόπος του Συμποσίου.

Ο πίνακας περιεχομένων των πρακτικών του Πρώτου Συμποσίου, που βρίσκεται στην ιστοσελίδα, είναι χρήσιμος οδηγός για πιθανά θέματα, Υλικά και Κατασκευές, Όπλα, Επικοινωνίες, Μηχανές και Τεχνητή Νοημοσύνη, Ιατρική, Γεωλογία και Γεωμηχανική, Χλωρίδα και Πανίδα, Ναυσιπλοΐα, Πολιτιστικό Περιβάλλον, Γεωγραφία κλπ.

**ΠΡΟΕΔΡΙΑ ΤΟΥ ΣΥΜΠΟΣΙΟΥ**

Ομότιμος Καθηγητής Στέφανος Α. Παϊπέτης, Τμήμα Μηχανολόγων και Αεροναυπηγών Μηχανικών του Πανεπιστημίου Πατρών, ειδικός στα Προηγμένα Σύνθετα Υλικά, και ήδη ασχολούμενος με την αρχαία επιστήμη και τεχνολογία, ιδιαίτερα της ομηρικής εποχής και οργανωτής πλήθους επιτυχημένων σχετικών συνεδρίων επί σχετικών θεμάτων ([paiPETIS@mech.upatras.gr](mailto:paiPETIS@mech.upatras.gr)).

**ΠΑΡΟΥΣΙΑΣΕΙΣ**

Επίσημες γλώσσες του Συμποσίου είναι αγγλικά και ελληνικά. Εργασίες στα ελληνικά πρέπει να συνοδεύονται και από την αγγλική τους μετάφραση. Χρόνος παρουσίασης

είναι 15 λεπτά συν 5 για συζήτηση. Θα είναι διαθέσιμοι προβολείς διαφανειών και power-point ως και σύστημα βίντεο VHS.

#### ΠΡΑΚΤΙΚΑ

Μόνο εργασίες με ένα τουλάχιστον συγγραφέα ως εγγεγραμμένο σύνεδρο θα περιληφθούν στα Πρακτικά, τα οποία, αν οι οικονομικές συνθήκες το επιτρέψουν, θα εκδοθούν αγγλικά και ελληνικά.

#### ΟΔΗΓΙΕΣ ΠΡΟΣ ΣΥΓΓΡΑΦΕΙΣ

Για κάθε εργασία σε πρώτη φάση, υποβάλλεται περίληψη τουλάχιστον 200 λέξεων και, μετά την έγκρισή της, το πλήρες χειρόγραφο. Περιλήψεις και πλήρη χειρόγραφα διαβιβάζονται μέσω ηλεκτρονικού ταχυδρομείου στην Προεδρία του Συμποσίου γραμμένα κατά προτίμηση σε μια πρόσφατη έκδοση του Microsoft Word για PC. Το τελικό κείμενο πρέπει να έχει μέγεθος 8-10 σελίδων και να είναι διαμορφωμένο κατά τις οδηγίες που δίνονται στον ιστότοπο. Πρέπει να δηλώνεται η προτίμηση για παρουσίαση προφορική ή αναρτημένη (poster), καθώς και πρόταση κατάλληλου τίτλου συνεδρίας.

#### ΠΡΟΘΕΣΜΙΕΣ

Αναγγελία Συμποσίου 1 Ιουν. 2011  
Υποβολή περιλήψεων 1 Σεπτ. 2011  
Έγκρισης περιλήψεων 30 εκ. 2011  
Υποβολή τελικού κειμένου 1 Μαρτ. 2012  
Έγκριση τελικού κειμένου  
Remission of fees

#### ΤΕΛΗ ΣΥΜΜΕΤΟΧΗΣ

Σύνεδροι: €200  
Μεταπτυχιακοί φοιτητές: €100  
Προπτυχιακοί φοιτητές: €50  
Συνοδά άτομα: €50  
Πληροφορίες για την καταβολή των τελών κλπ. λεπτομέρειες στην ιστοσελίδα του συμποσίου.

#### ΤΟΠΟΣ ΤΟΥ ΣΥΜΠΟΣΙΟΥ

Το κτίριο της Ιονίου Ακαδημίας, μια ενετική δομή σχήματος Γ, ευρισκόμενο σε ένα από τα ωραιότερα σημεία της πόλης, πρωτοχρησιμοποιήθηκε ως στρατώνας. Το 1824, κατά την αγγλική Προστασία, έγινε η έδρα της Ιονίου Ακαδημίας, του πρώτου ελληνικού Πανεπιστημίου, το οποίο, για ανεξήγητους λόγους, καταργήθηκε αμέσως μετά της Ένωση της Επτανήσου με την Ελλάδα το 1864. Σήμερα στεγάζει υπηρεσίες του Ιονίου Πανεπιστημίου και χρησιμοποιείται ως Συνεδριακό Κέντρο.

#### Η ΝΗΣΟΣ ΚΕΡΚΥΡΑ

Η νήσος Κέρκυρα, ευρισκόμενη στο Β άκρο της χώρας σε απόσταση 18 περίπου ναυτικών μιλίων από την ηπειρωτική Ελλάδα, είναι περίφημη για τις φυσικές ομορφιές και την κουλτούρα της, βλ. [www.kerkyra.gr](http://www.kerkyra.gr) και [www.corfu.gr](http://www.corfu.gr). Το τέλος Σεπτεμβρίου έχει ακόμη λιακάδα με μέση θερμοκρασία 22°C και μέση υγρασία 52% .

#### ΔΙΑΜΟΝΗ

Στην Κέρκυρα υπάρχουν ξενοδοχεία κάθε κατηγορίας σε τιμές προσιτές εκτός τουριστικής σαιζόν σε απόσταση βαδίσματος από το κέντρο της πόλης και το κτίριο της

Ιονίου Ακαδημίας. Πληροφορίες στον ιστότοπο του Συμποσίου. Κρατήσεις, όχι αργότερα από τις 30 Ιουλίου 2012 στο γραφείο *Charitos Travels* στη διεύθυνση:  
[mania.charitos@charitotravel.gr](mailto:mania.charitos@charitotravel.gr)

#### ΤΑΞΙΔΙ ΓΙΑ ΚΕΡΚΥΡΑ

Αεροπορικώς: Η Κέρκυρα συνδέεται με τακτικές πτήσεις προς πολλές ελληνικές και ευρωπαϊκές πόλεις. Οδικά από την Κεντρική Ευρώπη, μέσω της Α14 προς Bari, και στην Από το εσωτερικό, με αυτοκίνητο ή λεωφορείο προς Ηγουμενίτσα και προς Κέρκυρα. Από την Πάτρα (214 χλμ. Ν της Αθήνας) είτε οδικώς είτε με οχηματαγωγό κατ' ευθείαν προς Κέρκυρα.

#### ΕΠΙΣΤΗΜΟΝΙΚΗ ΕΠΙΤΡΟΠΗ

Καθηγ. Γ. Βαρουφάκης (Ελλάς)  
Καθηγ. Γ. Βατίστας (Καναδάς)  
Καθηγ. Marco Ceccarelli (Ιταλία)  
Καθηγ. Ι. ελλής (Ελλάς)  
Καθηγ. Teun Koetsier (Ολλανδία)  
Καθηγ. Β. Κωστόπουλος (Ελλάς)  
Καθηγ. Ηλίας Μαριολάκος (Ελλάς)  
Καθηγ. Χ. Ξανθουδάκης (Ελλάς)  
Καθηγ. Α. Σ. Παϊπέτης (Ελλάς)  
Καθηγ. Σ. Παπαμαρινόπουλος (Ελλάς)  
Καθηγ. . Πολύζος (Ελλάς)  
Καθηγ. Θεοδόσιος Π. Τάσιος (Ελλάς)  
Καθηγ. Θ. Χόνδρος (Ελλάς)  
Δρ. Michael Wright (Ην. Βασίλειο)  
κ.ά

#### Οργανωτές

- Πανεπιστήμιο Πατρών
- Ιόνιο Πανεπιστήμιο
- Εταιρεία Μελέτης Αρχαίας Ελληνικής Μυθολογίας
- Ινστιτούτο Πολιτισμού και Ποιότητας Ζωής
- Εταιρεία e-RDA
- Ιόνιον Φως, Πολιτιστικό Ινστιτούτο

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- Υπουργείο Πολιτισμού της Ελλάδας (?)
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- Περιφέρεια Δυτικής Ελλάδας (?)
- Περιφέρεια Ιονίων Νήσων (?)
- Διεθνής Ομοσπονδία για την Προαγωγή της Επιστήμης Μηχανών και Μηχανισμών

Ιστότοπος: <http://www.homst2.upatras.net>

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S. A. Raipetis, DipEng, DIC, PhD  
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**Scientia vincere tenebras**

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**ANNUAL MEETING OF THE**  
**GEOLOGICAL SOCIETY OF AMERICA,**  
**MINNEAPOLIS, MINNESOTA, 9-12**  
**OCTOBER 2011**

The annual meeting of the Geological Society of America will be held in Minneapolis, Minnesota from 9-12 October 2011.

Please consider submitting an abstract to session **T133: Tectonics and Civilization**

Tectonics trumps civilization all too often, as painfully clear during the past year, during the past decade, and during the past many millennia. Yet tectonics provides the geomorphic setting and climate for habitation, as well as the resources for refinements to society. Neither tectonics nor civilizations are static. But in their interaction, tectonics lays the ground rules. That is clear from the geologic and archaeological record - we call for papers discussing this interaction, past and present, from all areas of geology and geophysics.

The abstract deadline for the meeting is 26 July. Abstracts can be submitted online here:  
<http://gsa.confex.com/gsa/2011AM/cfp.epl>

Floyd McCoy – University of Hawaii – Windward  
Karl Wegmann – North Carolina State University

\*\*\*\*\*

Floyd W. McCoy  
Professor in Geology, Geophysics & Oceanography  
University of Hawaii - Windward  
Graduate Faculty, Geology & Geophysics  
University of Hawaii - Manoa  
<http://www.wcc.hawaii.edu/facstaff/mccoy-f>

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# **GC46: PYROGENIC CARBON: MODERN CYCLING AND PALEOENVIRONMENTAL APPLICATIONS”, 2011 FALL AGU MEETING, DEC 5-9**

Dear Colleague,

We are pleased to announce that a session entitled, “GC46: Pyrogenic Carbon: Modern cycling and Paleoenvironmental applications”, will be held at the 2011 Fall AGU meeting (Dec 5-9). This session is intended to encourage a dialogue between the modern fire, paleofire and black carbon research communities to highlight recent advances in the quantification, characterization and biogeochemical cycling of pyrogenic carbon and feature its paleoenvironmental interpretation. **We hope you will join us. Please pass this on to other who might be interested.**

Sincerely,  
Siddhartha Mitra, Cathy Whitlock, and Andrew Zimmerman

ABSTRACT SUBMISSION: June 8-**Aug 4 2011**.

DISCOUNTED REGISTRATION FEE: Opens mid-July.

MEETING WEBSITE: <http://sites.agu.org/fallmeeting>

SESSION TITLE: GC46: Pyrogenic Carbon: Modern cycling and Paleoenvironmental applications

SESSION DESCRIPTION: Recent advancements in the analysis of pyrogenic carbon have increased our understanding of biomass burning and the variable nature of its residues. For example, black carbon (BC) has been shown to vary in lability and composition. Charcoal and BC distributions reveal that past fires and carbon sequestration were affected by variations in climate, landscape processes, and human activity. The goal of this session is to bring together scientists from the fire science and BC communities with the hopes of finding a common language. This session will highlight recent advances in the quantification, characterization and biogeochemical cycling of pyrogenic carbon and feature its paleoenvironmental interpretation.

## CONTACTS

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## ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

# EUROPEAN PROJECT ON MATHEMATICAL SCIENCES IN THE ANCIENT WORLD (SAW)

It is my pleasure to inform you that the European Research Council granted a project on Mathematical Sciences in the Ancient World (SAW) to a team led by Karine (Principal Investigator), with Agathe Keller and me as co-Directors.

This project will run between 2011 and 2016. The Web page of the project is online at <http://www.sphere.univ-paris-diderot.fr/spip.php?rubrique57&lang=en>.

For the moment, we are launching two calls for propositions:

- a PhD scholarship on cuneiform mathematics  
[Consult next posting]
- a post-doctoral scholarship on mathematics in ancient China.

All information concerning the applications can be found at <http://www.sphere.univ-paris-diderot.fr/spip.php?article359>.

Thank you for giving full publicity to these two calls. Feel free to contact me for any further information.

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## *INTERNET SITES*

# **ARCANE PROJECT: SYNCHRONIZING CULTURES AND CIVILIZATIONS OF THE ANCIENT NEAR EAST AND THE EASTERN MEDITERRANEAN IN THE THIRD MILLENNIUM BC**

The ultimate goal of the ARCANE project is to produce a reliable relative and absolute chronology of the entire Near East based on the synchronization of regional chronologies for the third millennium BC.

“Third millennium” is a conventional designation corresponding, in fact, to the period called by archaeologists the “Early Bronze Age”. In current terminology, the Early Bronze Age begins during the course or with the end of the fourth millennium, and its end may occur at the beginning of the second millennium, depending on the area. Hence, the chronological focus of the project is the third millennium BC, but the time span considered may infringe more or less on the preceding and following millennia.

Within this long time span, the project intends to review all aspects of the material culture, together with the artistic manifestations, the historical and epigraphic records and the various methods of dating (mainly C14, but also thermo-luminescence, thermo-remanence, dendrochronology, etc.).

Its geographical scope covers the entire Eastern Mediterranean and Near Eastern area, from Egypt to Iran and from Cyprus and Anatolia to the Arab-Persian Gulf.

Within this large territory, the study approach is regional: the aim of the project is first and foremost to achieve the establishment of regional archaeological sequences which will be ultimately synchronized in order to obtain a synthetic view of the Eastern Mediterranean and Near Eastern chronology. Hence the title of the project.

For working purposes, twelve regions have been isolated (see map) on the basis of a preliminary archaeological analysis discussed during the workshops organized in Pisa and Paris. These regions are: Southern Levant (SL), Northern Levant (NL), Cyprus (CY), Aegean (AG), Western & Central Anatolia (WA), Eastern Anatolia (EA), Middle Euphrates (ME), Jezirah (JZ), Tigridian Region (TG), Central Mesopotamia (CM), Southern Mesopotamia (SM), and Western Iran (WI). These regions constitute the operational framework of the Regional Groups.

However, since several archaeological data cannot be treated at a regional level and necessitate a wider treatment, the project has also a transregional, or transversal, dimension: the critical examination of radiocarbon dates, art historical studies, as well as epigraphic and historical evidence need to be considered in a broader framework.

They constitute, therefore, the focus of additional research groups, called the Transversal Groups.

Please visit the site: <http://ancientworldonline.blogspot.com/2011/07/arcane-project.html>

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## **JORDAN GETS A “MEGA” ARCHAEOLOGICAL DATABASE DETAILED CATALOGUE OF OVER 12,000 SITES IS NOW ONLINE, AND IRAQ IS NEXT, BY GAETANO PALUMBO**

Jordan is a country with an extremely rich archaeological heritage. Many sites, like Petra and Jerash (Gerasa), are internationally renowned, but there are dozens more that could attract visitors if they were well presented and run. And then there are thousands of others whose value to the scientific and research communities are poorly appreciated due to the lack of precise information. In the early 1990s Jordan was one of the first countries to adopt a computerised system for cataloguing its archaeological assets. That system, known as Jadis (Jordan Antiquities Database and Information System), was relatively simple, without a graphical user interface, but capable nonetheless of providing information on over 9,000 archaeological sites, gathering the data from hundreds of excavation reports archived at the Department of Antiquities in Amman.

However, the database was unable to provide information on the status of conservation at any given site. Furthermore, Jadis only identified a site by means of a dot, making it impossible for researchers to know the exact “footprint”, an essential factor when evaluating the potential impact of new constructions or activities incompatible with the monument’s conservation. Since 2007 the Getty Conservation Institute (GCI) and the World Monuments Fund (WMF) have been working with Jordan’s Department of Antiquities to develop a new programme based on an open-source GIS (geographic information system) web system, which uses Google Earth as a cartographic base. The Middle East Geodatabase for Antiquities (Mega), now consultable online at [www.megajordan.org](http://www.megajordan.org), contains information on around 12,500 archaeological sites. Besides marking out the perimeters of every site on a relief map of the terrain, the database further allows users to pinpoint the presence of specific elements within the site such as buildings, epigraphic or decorative features, and in theory also the position of every find, as well as the cultural and chronological framework to which every element belongs.

The other important aspect of the project is the methodology used for data gathering on the ground, from mapping and GPS to the evaluation of the conditions of the sites and the risks to their integrity. The system, now fully functional, will allow the Department of Antiquities to better manage the cataloguing system and, thanks to up-to-date information, prevent potential damage to the country’s archaeological heritage. Looking ahead, the system will also make it possible to identify zones that have yet to be fully explored archaeologically, directing new research efforts there, and will become a precious tool of knowledge for all those who have an interest in the history and archaeology of the Middle East.

The GCI and the WMF are now involved in the development of Mega-Iraq, a program with an architecture and an interface similar to Mega-Jordan, that will soon allow the



State Board of Antiquities and Heritage in Baghdad to catalogue the country's thousands of archaeological sites, historic centres and buildings.

The writer is Program Director, North Africa, the Middle East, and Central Asia at the World Monuments Fund.

Please visit the site: <http://www.theartnewspaper.com/articles/Jordan-gets-a-%E2%80%9Cmega%E2%80%9D-archaeological-database/24318>

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## **ANCIENT NEAR EASTERN SITES ON GOOGLE EARTH**

Some 2500 ANE sites have been collected and most of their locations have been critically controlled in the freely downloadable ANE.kmz.

When Google Earth (free download at [earth.google.com](http://earth.google.com)) is installed on a computer, ANE.kmz can be opened. ANE.kmz serves as an alphabetical index of sites with a placemark on the satellite images of Google Earth for each ANE site. Free download from [www.anst.uu.se/olofpede/Links](http://www.anst.uu.se/olofpede/Links) ANE.kmz was started in 2008 with a presence on the web and has been continually updated with more sites and better interpretations, so please try to use the latest, updated versions.

ANE.kmz covers excavated and often also unexcavated sites in all countries of ANE, but is presently somewhat more intensive for main parts of Iraq and Syria. Large and medium sized tells are mostly included, but the smallest sites are less well represented.

Olof Pedersen

[Olof.Pedersen@lingfil.uu.se](mailto:Olof.Pedersen@lingfil.uu.se)

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

# **WHERE ON EARTH IS ITHACA?: A QUEST FOR THE HOMELAND OF ODYSSEUS, CEES H. GOEKOOP**

Bryn Mawr Classical Review 2011.07.29

Cees H. Goekoop, *Where on Earth is Ithaca?: A Quest for the Homeland of Odysseus*.  
Delft: Eburon Academic Publishers, 2010. Pp. 187.

ISBN 9789059723443. \$29.50.

Reviewed by Henrique Modanez de SantAnna, University of Brasilia  
([henriquemodanez@gmail.com](mailto:henriquemodanez@gmail.com))

Since 1900 contemporary scholars have been struggling to answer the questions of whether Odysseus' Ithaca can be found and whether it even actually existed. The first steps were taken by William Dörpfeld, whose excavations on Ithaca were largely financed by a wealthy Dutch gentleman, Adrian Goekoop. After the latter's death, his younger widow, Suzanne Goekoop, continued the project and financed a promising Greek archaeologist, Spyridon Marinatos, in order to pursue what had already become a "family interest" in the land of Odysseus. Although Marinatos did not find Ithaca, his theory that Kephallenia, rather than Ithaca, was Odysseus' island, combined with numerous archaeological discoveries (for instance, royal tombs and jewelry), provided what would appear to be the starting point for Cees Goekoop's work. The author is thus acting as the heir to a family tradition of funding academic research that aims, as the author himself says in the Preface (p.9), to rival Schliemann's discovery of Troy. Goekoop, however, decided to cast light on the subject by carefully reading Homer's poems, particularly the *Odyssey*. In short, he decided to solve the mystery of where Ithaca is by examining Homer's description of the Greek landscape, which the author considers to be very accurate.

The first chapter, "Homer and Ithaca" (pp.15-32), confirms the expectation that the author is trying to appeal to a wide range of readers, since it contains an introduction to Homer's poems, the Trojan War and "the question of Ithaca". Besides this very short "introduction to Homer", Goekoop's main premise is that "what Homer says about geography and landscape has remained relatively unexplored" (p.16). This leads the author to two assumptions: first of all, that there was a single Homer; secondly, that Homer described Ithaca and its surroundings precisely, which the author believes he had to do in order to hold his audience. In Goekoop's own words, "he could not afford to create a fictional landscape" (p.31).

The second chapter, "The dispute among Homeric experts" (pp.33-80), presents the debate among researchers about where Ithaca is, from ancient times to theories put forward after the Second World War. Goekoop first points out that Herodotus and Thucydides are "as silent as the grave when it comes to Ithaca". Things are not that different with Strabo or Pausanias: Strabo thought the Ithaca of his time was Homeric Ithaca; Pausanias, "the great traveler and observer of the places and monuments of the

ancient Greek world”, ignored the Ionian islands, probably because he never visited them. Moving forward to modern times, Goekoop summarized the debate from the nineteenth century to the decades after the Second World War: the ideas of William Gell, William Martin Leake, Rudolf Hercher, William Ewart Gladstone, Joseph Partsch, Heinrich Schliemann, Wilhelm Dörpfeld, Victor Bérard, Carl Wilhelm Vollgraf, Adriaan Eliza Herman Goekoop (who stated that Homeric Ithaca must have been located on Kephallenia), Lord Rennell of Rodd and Dr. J. Goekoop are put into perspective. The author, however, concludes that “no convincing results have been achieved, nor have any sound arguments been presented” (p.79). The question of Ithaca’s location thus remains, and Goekoop thinks the answer is to be found in a more accurate reading of Homer’s clues to Ithaca’s correct location. That is why passages from the forty-eight books that comprise the Iliad and the Odyssey are carefully analyzed in chapter four, “Homeric passages analysed” (pp.81-128). The basis for his argument is optimistic: Homer, being a single poet, “described the Greek geography as accurately as he could” (p.81) – which seems plausible, considering that he had to capture an audience that was well-informed about the topography of Greece and its surroundings. Finally, but still very importantly, although man – not geography – is the central element in the epic, Ithaca remains crucial, particularly in the sense of the homeland.

The fourth chapter, “Where on Earth is Homer’s Ithaca” (pp.129-168), draws on the idea that the passages Homer devotes to geography and topography are all quite consistent. One of the strongest supports for this argument is that the “distances between known locations are realistic” (p.129). This would help to locate Ithaca if the names of the four islands Homer describes (Doullichion, Zakynthos, Samos and Ithaca) corresponded to present-day reality. Also, the fact that Homer uses many adjectives for Ithaca, but never “the word “nèsos” (island) all the while including Ithaca ‘among the isles’”, might lead us to view Ithaca not as an island but as a part of an island. (p.164). From this argument Goekoop conclude that Erissos, the northern peninsula of Kephallenia, “resembles Homeric Ithaca in any detail when the position, size and features of the landscape are taken into account” (p.164).

Among other interesting conclusions (e.g. the location of many ‘Homeric islands’), Goekoop states that there was one poet, one Homer, who had a respectable knowledge of the geography and topography of the places he wrote about, and that there is a consistent image of Ithaca in the Odyssey. The book casts light on controversial issues involved in locating Ithaca and from a close reading of Homer’s poems offers an answer that is innovative for the study of ancient geography and topography.

Please visit the site: <http://bmcr.brynmawr.edu/2011/2011-07-29.html>

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## **ELIXIR: A HUMAN HISTORY OF WATER, BY BRIAN FAGAN**

Elixir: a Human History of Water  
by Brian Fagan  
384 pp, Bloomsbury, £20

Tim Martin admires Elixir by Brian Fagan, a lively study of water that reaches back into prehistory.

By Tim Martin

In Elixir, the anthropologist and archaeologist Brian Fagan sets himself a daunting task: to examine the history of mankind's interaction with water, the most common substance on Earth but, as we now know, a disturbingly finite resource.

It's a story that ranges from prehistoric furrow irrigation, through the intricate waterworks of the South American civilisations and the public engineering of the Roman Empire, to the age of steam and the mechanical pump.

But it also takes in the variety of mystical and social roles given to water by human society before its "secularisation" in the modern age: whether it be the complex water-bureaucracy of the Mayans, Bali's Agama Tirta or Religion of the Water, or farms in Kenya, where, as a proverb dictates, "whoever has a channel has a wife".

Fagan acknowledges early that it is impossible to "visit the history of humans and water along a simple chronological track", as many features of water management in the ancient world were shared by many cultures, surviving in places into the present day. Instead, he chooses to approach the topic anecdotally, tackling a variety of broad themes: gravity and how to exploit it, the role of ritual in ancient water management, sustainability and the lessons of the past and so on. It's an approach that plays both to his greatest strengths as a writer and historian, but also to some unfortunate weaknesses.

In addition to his solid research, he has unearthed a variety of entertainingly off-piste anecdotes. A chapter on Mesopotamian earthworks may include an account of the Assyrian king Sargon II, who "leapt from rock to rock like an ibex, then sat down on a rock and had a cold drink": a discussion of the qanat, an ancient irrigation system that involves digging sloped tunnels into water-bearing hills, may throw up an Iranian proverb observing that "snake charmers, lion tamers and qanat diggers very seldom die in their beds".

Elsewhere, he finds a first-century Roman water commissioner considering how glorious his aqueducts look beside the "idle Pyramids" and the "useless works of the Greeks", or the medieval Cistercian Bernard de Clairvaux rhapsodising about the River Aube swirling into his grounds "as though to greet the monks and apologise for not having come in its entirety".

These stories provide welcome glimpses of humanity in a narrative spanning centuries. If some of Fagan's larger accounts feel compressed – pre-modern China is dispensed with

in 21 pages, for example, as is the Roman Empire – perhaps that’s inevitable in a book with so much ground to cover.

Less successful is the baffling insistence on dramatic arrangement, as Fagan opens several chapters with effortful panoramic vistas of his own: “A summer dawn unfolds a thousand years ago, flecks of grey on the eastern horizon.” “The Euphrates valley, twelve thousand years ago, early summer. The young girl and her mother sit by the riverbank in the warm afternoon sun.” “Northern Iraq, 7,000 BCE: Grey clouds, heavy with rain, hang low over the mountains.”

The moments when this creative impulse really gets out of hand – “The mother remembers her grandmother telling her of better days, when oak forests covered the valley floor” – are pop archaeology at its most tiresome. And Fagan’s own interjections are scarcely better, veering between unbuttoned waffle (“A merciful gift from God – these words resonated in my mind as I dunked my salt-encrusted head under a garden faucet after an afternoon sail”) and travel-supplement cliché (“Rowing in a Victorian skiff down the Thames River from Oxford to London is one of the great civilised pleasures of modern life”).

The book’s conclusions are broadly optimistic, if occasionally uneven. “I refuse to think of water as a commodity like electricity, gravel or oil,” Fagan writes, before, pages later, recommending the proper pricing of water (as “like oil, water is a commodity that will be the subject of market forces”) and the “reordering of financial priorities” towards water management.

Desalination, he says, is “no panacea”: instead we should learn the lessons of history, where “local water schemes, decisions about sharing and management made by kin, family and small communities” allowed people to live off even the driest parts of the Earth for centuries.

Such cautious predictions may offer just another opinion to add to the growing clamour over the future of our planet’s water, but Fagan’s grasp of where we’ve been can’t be faulted. And few would argue that a “studied caring and reverence” for this elixir of life is more necessary than ever.

**Please visit the site:**

**<http://www.telegraph.co.uk/culture/books/bookreviews/8637678/Elixir-A-Human-History-of-Water-by-Brian-Fagan.html>**

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## **BLOOD LUST: THE EARLY HISTORY OF TRANSFUSION, BY HOLLY TUCKER**

Medea, the sensual and ravishing sorceress of Greek mythology, enters the royal chambers. Knife in hand, she commands the servants to bring her an old sheep. Plunging her knife into the animal, she bleeds it nearly dry and then casts the limp sheep into a bubbling cauldron.

Its feeble bleating is soon replaced by the frolicking leaps of a young lamb. In this marvelous spectacle, Medea has demonstrated her ability to transfuse life to the dead and dying.

Her husband's enemy, the elderly and bedridden King Pelias, is next.

Medea turns impatiently to the king's daughters, who hover in a trance, drugged by the witch's herbs and humbled by her otherworldly powers. "Why do you hesitate and do nothing?" the enchantress snaps, "Go, now. Draw your swords and drain out his old blood, so that I may fill his veins with young blood."

Slowly, the women approach their father, who looks up at them with trusting eyes. Then, like ravenous beasts, they pounce. Mimicking Medea's brutal and precise cuts, the daughters deftly slice open Pelias's veins and drain them dry. Medea flees the scene, smug in the success of her deception.

Rivers of blood run throughout human history—its wars, its violence, its science. Medea is but one ancestor to an infamous cast of characters—some fictional, some real, all chilling and terrifying—who remind us of blood's inextricable connections to life, love, revenge, and, above all, competition and power. Long before Bram Stoker's *Dracula*, Anne Rice's *Vampire Lestat*, or television's *True Blood*, acts of blood lust spiraled in stories told and retold.

For the Ancient Greeks, blood was a magical elixir. Pliny the Elder (AD 23-79), one of the great historians of the Roman Empire, described the mad rush of spectators into arenas to drink the blood of fallen gladiators. Centuries later, Marsilio Ficino (1433-1499) similarly promoted drinking young blood as a means for the elderly to regain their youthful vigor.

Blood transfusion is itself infused with brutality and legendry. By some accounts, the first transfusion was performed on Pope Innocent VIII in 1492; some claimed that he was transfused with or—at the very least—had drunk the blood of Jewish boys. While skeptical historians rightly doubt that there is much truth behind this politicized papal story, what is certain is that where power and conflict are, blood stories are never far behind.

Initially, natural philosophers, as the first scientists were called, were only able to imagine transfusion's possibilities but could not persuade themselves to attempt the procedure. The German physician Andreas Libavius speculated in the late sixteenth century that it could indeed be possible to transfer the blood of a healthy person into a sick one "to bring him the fountain of life and drive away all languor." Yet he closed his

treatise (*Appendix necessaria syntagmatis arcanorum chymicorum*) with the firm conclusion that only a charlatan would be foolish enough to meddle in such unseemly experimentation.

If it was hard to imagine putting blood in, it was because much of early medicine was centered on taking blood out. Since Antiquity, medical practitioners had subscribed to the idea that health and ill-health were a direct reflection of the fluids, or "humors," in the body. When illness struck, it was a sign that the humors were out of balance. And the quickest way to remedy was the imbalance was through bloodletting.

William Harvey's discovery of blood circulation in 1628 shifted in dramatic ways how blood was understood. His discovery did not abolish the notion of humors, which would continue well into the 19th century. But Harvey's theory of circulation (and it was initially just that, a theory) paved the way for natural philosophers to begin imagining the possibility of putting things into veins and arteries for the first time.

Men like Christopher Wren, Thomas Willis, and Robert Boyle soon began injecting dogs with a variety of fluids—water, milk, beer, wine, opium—in order to test Harvey's claims. And by the 1660s, both the Royal Society and the French Academy of Sciences began performing canine-to-canine transfusion trials with varying levels of success.

There was a dizzying intensity to these experiments. Natural philosophers and physicians were not only eager to explore the possibilities of transfusion; their blood experiments were at the forefront of what was, anachronistically speaking, something of a cold war for scientific dominance in late 17th century Europe. To excel in science meant to solidify the glory of one's country at a time of significant instability in the region.

In 1667, member of the English Royal Society and the French Academy of Sciences were caught by surprise when a young, upstart French physician named Jean-Baptiste Denis performed the first animal-to-human transfusion. To the consternation of all, Denis transfused a feverish young boy with the blood of a lamb. The boy survived. The transfusionist then tried the lamb-blood procedure on a robust butcher—likely the same butcher who provided him with the sheep for the first experiment. He, too, survived. Emboldened, Denis plucked a mentally-ill man off the streets of Paris and performed a series of blood transfusions.

Soon, the madman Mauroy was dead—and Denis was accused of murder.

In the dramatic court case that followed, the Court determined that Mauroy had indeed been murdered—not by the transfusion itself, but by a cabal of physicians who wanted desperately to put an end to transfusion. Transfusion, some feared, gave science a means to engineer new animal-human hybrids. Would humans now begin to bark?  
Or dogs become philosophers?

For some, there was little to be worried about when it came to blood transfusion. The philosopher René Descartes ("I think therefore I am") had made the convincing argument of mind-body dualism. Both animal and human bodies were little more than machines. The only thing that differentiated humans from animals was that they had the ability to speak, think, and reason. And these capacities were incorporeal; they were not connected



to the body. If this were indeed the case, then transfusing the blood of one species into the body of another would be—once again anachronistically speaking—little more complicated than changing the oil in a car.

But what if Descartes was wrong? What if the soul resided in the body? Worse, what if the soul lived in the blood itself? The very idea was frightening to some. Frightening enough to lead them to take matters into their own hands.

In response to these controversies, the Court ruled that no further transfusions could take place without the express approval of the Paris Faculty of Medicine. In so doing, the Court placed a de facto ban on the procedure. The very men who plotted to kill Mauroy and to frame Denis were highly influential members of the Faculty of Medicine. And the Faculty had made its opposition to the theory of blood circulation and, by extension, blood transfusion abundantly clear. Transfusion research was over, and it would not re-emerge for another 150 years.

As the historian N.S.R. Maluf once wrote, "it is probably fortunate that blood transfusion took a nap for over one and a half centuries. Ignorance of antiseptics, asepsis, and immunology—all 19th century discoveries—would have resulted in countless disasters." This is likely true.

But in the earliest battles for blood's dominance, one thing is nonetheless certain...Medea would have been proud.

Images: top: Blood transfusion from animal to human, bottom: Blood transfusion (both in Public Domain, rights free, National Library of Medicine).

About the Author: Holly Tucker (blog, Twitter) is author of *Blood Work: A Tale of Medicine and Murder in the Scientific Revolution* (W.W. Norton). She is Associate Professor in the Center for Medicine, Health & Society and the Department of French & Italian at Vanderbilt University.

The views expressed are those of the author and are not necessarily those of Scientific American.

**Please visit the site:** <http://www.scientificamerican.com/blog/post.cfm?id=blood-lust--the-early-history-of-tr-2011-07-12>

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THE COMMUNICATIVE POTENTIAL OF THERAN MURALS IN LATE BRONZE AGE AKROTIRI: APPLYING VIEWSHED ANALYSIS IN 3D TOWNSCAPES (pages 247–272) ELEFThERIA PALIOU Article first published online: 15 JUL 2011 | DOI: 10.1111/j.1468-0092.2011.00368.x

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# **ΝΕΟΛΙΘΙΚΟΣ ΠΟΛΙΤΙΣΜΟΣ** **ΑΝΑΖΗΤΩΝΤΑΣ ΑΝΘΡΩΠΙΝΑ ΙΧΝΗ** **ΜΕΣΑ ΣΤΟ ΝΕΟΛΙΘΙΚΟ ΠΕΡΙΒΑΛΛΟΝ** **ΑΝΑΤΟΛΗΣ ΚΑΙ ΔΥΣΗΣ**

Κύριος Συγγραφέας: [Καραλή, Λίλιαν](#)

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## **Σύντομη περιγραφή**

Το βιβλίο είναι η πρώτη συγκροτημένη προσπάθεια στην ελληνική βιβλιογραφία για την κατανόηση της Νεολιθικής Εποχής στον λεγόμενο Παλαιό κόσμο. Η Νεολιθικοποίηση, η οποία θεωρείται ως μία από τις σημαντικότερες «επαναστάσεις» στην ιστορία του ανθρώπου, είναι μια περίπλοκη διαδικασία, της οποίας οι πρώτες εστίες εντοπίζονται στην Μέση Ανατολή. Εξετάζεται το εντυπωσιακό φαινόμενο της Νεολιθικοποίησης στην Ευρώπη, στην άγνωστη Βόρειο Αφρική, στη μυστηριώδη Μέση και στην ανεξερεύνητη Απω Ανατολή με ιδιαίτερη έμφαση στην Ελλάδα. Παρουσιάζονται διαφορετικές πτυχές του κάθε πολιτισμού, ο ξεχωριστός χαρακτήρας κάθε θέσης, ο τρόπος με τον οποίο το περιβάλλον, το ανάγλυφο και η γεωγραφία επηρέασαν την επιβίωση του ανθρώπου και την εξέλιξη του νεολιθικού τρόπου ζωής και υπογραμμίζονται πιθανές ομοιότητες ή διαφορές από τόπο σε τόπο, με στόχο την προσέγγιση του τρόπου διάδοσης του Νεολιθικού πολιτισμού. Το βιβλίο συνδυάζει παλαιά και νέα βιβλιογραφία, νεότερες και παραδοσιακές απόψεις έχοντας ως στόχο την προσέγγιση της Νεολιθικής πραγματικότητας, όπως αυτή δηλώνεται αποσπασματικά μέσα από την αδιάψευστη μαρτυρία των αρχαιολογικών ευρημάτων, των αρχαιοπεριβαλλοντικών καταλοίπων και των συγχρόνων μεθοδολογικών προσεγγίσεων και εργαστηριακών αναλύσεων.

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A Different Configuration for the Quarter-Rudders on the Khufu I Vessel (c.2566 BC), and Egyptian Methods of Mounting Quarter-Rudders and Oars in the 4th and 5th Dynasties Samuel Mark Article first published online: 23 JUN 2011 | DOI: 10.1111/j.1095-9270.2011.00325.x

## **Abstract**

The cargo of marble blocks off Capo Bianco was dated to the Roman period. New sampling and analysis has identified Carrara marble, and also Rosso di Francia and Portargento, which strongly suggests a post-medieval date. This leads to the suggestion that nearby finds dating between the second half of the 18th century and the first half of the 19th may come from the same ship, perhaps sailing from France and Liguria to deliver stone in southern Italy. This is rare evidence of the post-medieval marble trade and demonstrates the importance of archaeometric analysis for the interpretation of wrecked cargos.

Underwater Investigation on a Marble Cargo Wreck at Capo Bianco near Isola di Capo Rizzuto, Crotona, Italy Carlo Beltrame, Lorenzo Lazzarini and Salvatore Medaglia Article first published online: 23 JUN 2011 | DOI: 10.1111/j.1095-9270.2011.00318.x

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Please visit the site: <http://tinyurl.com/3dnc8uo> [Go there for links]

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**LATE PLEISTOCENE/EARLY  
HOLOCENE SEAFARING IN THE  
AEGEAN: NEW OBSIDIAN HYDRATION  
DATES WITH THE SIMS-SS METHOD,  
JOURNAL OF ARCHAEOLOGICAL  
SCIENCE 38 (2011) 2475-2479**

N. Laskaris, A. Sampson, F. Mavridis, I. Liritzis

**A B S T R A C T**

Archaeological evidence regarding the presence of obsidian in levels that antedate the food production stage could have been the result of usage or intrusion of small obsidian artifacts from overlying Neolithic layers. The new obsidian hydration dates presented below employing the novel SIMS-SS method, offers new results of absolute dating concordant with the excavation data. Our contribution sheds new light on the Late Pleistocene/Early Holocene exploitation of obsidian sources on the island of Melos in the Cyclades reporting dates c. 13th millennium - end of 10th millennium B.P.

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**WHEN THE WORLD'S POPULATION  
TOOK OFF: THE SPRINGBOARD OF THE  
NEOLITHIC DEMOGRAPHIC  
TRANSITION, JEAN-PIERRE BOCQUET-  
APPEL, SCIENCE 29 JULY 2011: VOL. 333  
NO. 6042 PP. 560-561 DOI:  
10.1126/SCIENCE.1208880**

CNRS (National Center for Scientific Research), UPR2147 and EPHE (Practical School of High Studies), 44, rue de l'Amical Mouchez, Paris 75014, France. E-mail: [jean-pierre.bocquet-appel@evolhum.cnrs.fr](mailto:jean-pierre.bocquet-appel@evolhum.cnrs.fr)

**ABSTRACT**

During the economic transition from foraging to farming, the signal of a major demographic shift can be observed in cemetery data of world archaeological sequences. This signal is characterized by an abrupt increase in the proportion of juvenile skeletons and is interpreted as the signature of a major demographic shift in human history, known as the Neolithic Demographic Transition (NDT). This expresses an increase in the input into the age pyramids of the corresponding living populations with an estimated increase in the total fertility rate of two births per woman. The unprecedented demographic masses that the NDT rapidly brought into play make this one of the fundamental structural processes of human history.

<http://www.sciencemag.org/content/333/6042/560> [Go there for download]

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**<sup>14</sup>C DATING OF A FINAL NEOLITHIC-  
EARLY BRONZE AGE TRANSITION  
PERIOD SETTLEMENT AT AGHIOS  
IOANNIS ON THASSOS (NORTH  
AEGEAN), RADIOCARBON, VOL 53, NR  
1, 2011, P 21–37**

Y Maniatis, S Papadopoulos

**ABSTRACT**

The transitional period known as the Final Neolithic-Early Bronze Age in Greece, falling in terms of absolute dates within the 4th millennium BC, is an obscure and enigmatic period. Few sites in northern Greece or the southern Balkans have produced evidence of 4th millennium BC occupation, and the sites that do are mainly concentrated in the last third of the 4th millennium toward the beginning of the EBA. This paper presents archaeological evidence and radiocarbon dates from a site that covers part of the gap, Aghios Ioannis on Thassos, the northernmost Aegean island. It is a coastal site of seasonal occupation and most probably depended on organized animal husbandry plus hunting and fishing activities. From the first excavations in 1996, there was evidence that the site was occupied during the Final Neolithic to the beginning of the Early Bronze Age. The <sup>14</sup>C dates obtained fall towards the end of the 4th millennium if not closer to the middle. The presence of human activity in this last part of the 4th millennium “gap” on Thassos is by itself an interesting discovery that enlarges our knowledge for this obscure period and is of environmental and cultural significance.

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## **EΙΔΗΣΕΙΣ - NEWS RELEASE**

# **RECENT FINDS AT ASWAN, LUXOR AND ALEXANDRIA**

Heritage

Bridging those gaps

Monuments and artefacts uncovered during the past archaeological season in Aswan, Luxor and Alexandria have led to significant breakthroughs in understanding Egypt's ancient history, Nevine El-Aref reports

Almost 700,000 years ago, early humans began leaving traces of their wanderings in the land that is now Egypt. Much later Egypt, alongside its neighbour Mesopotamia, became the first cradle of human civilisation. Over the course of its history it witnessed the rise and fall of the kingdoms of ancient Egypt, the rise of the Greek and Roman empires, the establishment of the Coptic and Islamic periods and the colonial era -- first under France, then Great Britain -- until it finally regained independence.

Although discoveries over the length and breadth of Egypt have helped write the country's ancient history, several pieces of the jigsaw are still missing.

During this archaeological season from January to May, major discoveries carried out in the Hamdulab area on Aswan's west bank, Karnak temples in Luxor and Al-Baron in the Semouha district of Alexandria have helped fit missing pieces into the puzzle.

At Naga Al-Hamdulab, on the west bank of the Nile to the north of Aswan, a team made up of archaeologists -- from Yale University, the University of Bologna and the Provinciale Hogeschool of Limburg under the leadership of Maria Carmela Gatto and Antonio Curci, along with an international research team from Egypt, the United States and various European organisations -- has been conducting excavations for the last seven seasons. The project was set up to survey and rescue the archaeology of the region between Aswan and Kom Ombo in the southern part of Upper Egypt.

While proceeding with their work, the archaeologists located the oldest epigraphic and digital record ever found. It depicts a royal scene featuring a king wearing the crown of Upper Egypt.

Half a century ago, a part of this epigraphy was found near Naga Al-Hamdulab by Egyptian Egyptologist Labib Habachi. Gatto said, however, that this new and thorough study had brought to light a previously unknown but important early-dynastic cycle of royal images, also with an early hieroglyphic inscription. The site has been partially damaged in recent years, but reconstruction in drawings and digital images of the main panel have been possible thanks to new digital methodologies and to the availability of Habachi's photographs, which are now in Chicago House in Luxor.

Minister of State for Antiquities Zahi Hawass pointed out that these images and the short inscription, which were carved about 3200 BCE at the dawn of the dynastic period, were



the earliest record of a royal Jubilee complete with all the elements known from later evidence: an Egyptian ruler wearing a recognisable crown of Egypt, and the royal court, "the following of Horus" as it was known in early dynastic accounts such as the Palermo Stone.

"The Naga Al-Hamdulab scenes are unique," Hawass said. He added that the scenes showed a link between the predynastic ritual Jubilee in which images of power -- predominately boats and animals -- were the chief elements, and the royal Pharaonic Jubilee, in which the image of the human ruler dominated events.

Gatto wrote in her archaeological report that the Naga Al-Hamdulab cycle of images could be said to show the emergence of the ruler as supreme human priest and incarnate manifestation of human and divine power. It is the last of the old nautical Jubilee cycles of the Predynastic Period, and the first of the Pharaonic cycles over which the king, wearing the regalia of kingship -- here the oldest form of the White Crown -- presides. She noted that it was also the first of such images with a hieroglyphic annotation. That text referred to a vessel of the "Following", probably the "Following of Horus", and may therefore be the earliest record of tax collection we have from Egypt, and the first expression of royal economic control over Egypt and most probably also Nubia.

Mohamed El-Beyali, the director of Aswan and Nubia monuments, said that the Naga Al-Hamdulab cycle of images probably dated from about 3200 BCE, corresponding to the late Naqada period. This, in other words, was the time between the Scorpion King (owner of tomb Uj at Abydos), the first king of Dynasty Zero, and Narmer, the first ruler of the First Dynasty. The discovery is so important that it is already figuring in a new documentary series currently being screened on the German satellite television channels ARTE and ZDF, and will soon be available worldwide.

At Karnak temples on Luxor's east bank, the scene is different. A team from the French-Egyptian Centre for the Study of the Karnak Temples (CFEETK) has discovered the wall that once enclosed the New Kingdom temple of the god Ptah and a gate dating back to the reign of Pharaoh Shabaka of the 25th Dynasty (712-698 BCE).

Christophe Thiers, director of the Ptah temple programme at Karnak, said the epigraphic, architectural and photographic surveys had brought about some very interesting results regarding the history of the monument. Excavations were mainly led on the remains of the first enclosure wall linked to the first Ptolemaic gate. This stage of the work, Thiers said, aimed at determining the chronological relationship between the last enclosure wall of the temple and the southern structures, especially the remains of an important gate in front of which still remain two black granite bases of columns.

Thiers added that close to this enclosure wall the team found a fifth and sixth century Coptic settlement.

Even though robbers had disturbed the area by digging huge pits, the team uncovered parts of mud-brick walls that pre-dated the New Kingdom temple to Ptah. The contours of this structure were unclear, as it had been destroyed to build the temple.

Mansour Boraik, director of Luxor monuments, said the restoration and conservation programme centred on the loose blocks, which were in a very poor state of preservation, and that when possible the blocks would be replaced on the walls.

Restoration has also started on the main gates of the Shabaka and Ptolemaic eras. An important part of the work was to remove an older attempt at restoration with black cement, to consolidate the stones and to apply new mortar. The work inside the courtyard and the chapels is focussing on the painted reliefs, which are being cleaned and consolidated.

Nadia Licitra of the University of Paris IV led the excavations on the Treasury of Pharaoh Shabaka, located in the northern part of the Amun-Re enclosure. The main colonnade was unearthed a long time ago, but recent excavations have revealed some stone elements including doorjambs, lintels and cavetto cornices belonging to a door and to a niche. These were engraved with very well-preserved, blue-painted inscriptions in the name of Shabaka.

This season, the excavation area was extended westwards where a Ptolemaic building was uncovered, partially built upon another East-West sandstone gate to the Treasury. On both sides of the two doorjambs, the Pharaoh is depicted offering the justice sign of Maat to the god Amun-Ra. The red and blue colours, which are still preserved, have been consolidated.

Dominique Velballe, professor at the archaeology department at the Sorbonne, says French restorers are now carrying out comprehensive work to reconstruct the temple and open it to the public next year. She describes Shabaka's gate, which is decorated with paintings and is very well preserved, as a very distinguished gate that once closed off the jewellery hall of the Pharaoh.

South of Alexandria in Semouha, an Egyptian archaeological mission working at Al-Baron has discovered the first ever Roman civil basilica to be found in the region. It was located on top of a Ptolemaic temple dedicated to the Alexandrian triad of deities: Isis; Serapis and Harpocrates. This temple was one of two temples found in the so-called province of Usis that the Roman historian Strabo mentioned on his visit to Alexandria in 24 AD. The team has also unearthed a number of terracotta statues.

Director of Alexandria antiquities Mohamed Mustafa says two parallel rows of granite and limestone blocks, as well as parts of granite pillars were also found.

"These ruins give the impression that it could once be part of a larger building dating to the Roman period," Mustafa said. He added that early investigations revealed that it could have been a court, a club, or a building used for trading activities.

Osama El-Nahas, head of the excavation mission, said that unearthing a number of terracotta statues onsite, featuring the goddess Isis breastfeeding her son Harpocrates, and the god Serapis, without stumbling upon any religious objects, suggested that the edifice was a Roman civil basilica.

The archaeologists also found a number of clay lamps decorated with human figures and ancient deities. The most outstanding object is a lead statue depicting a soldier riding his

horse. Some ovens were also found, as well as a number of clay vessels filled with human bones. Studies of the bones revealed that they dated from the sixth century AD and belonged to people aged between 25 and 30 years.

"This is a unique discovery for Alexandria," Hawass said, adding that it was the first time that a civil basilica had been found in Alexandria and that it confirmed that the area of Al-Baron was the one mentioned by Strabo as Usis. "Now is the time to expand excavations in order to uncover the Usis province," he said.

Please visit the site: <http://weekly.ahram.org.eg/2011/1056/heritage.htm> [Go there for pix]

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## **MYSTERIES OF THE COPPER HOARD,** **BY YADIN ROMAN**

Fifty years have passed since Pessah Bar-Adon discovered, in a cave in the Judean Desert canyon of Nahal Mishmar, the biggest hoard of ancient artifacts ever found in the Land of Israel: 429 copper objects, wrapped in a reed mat. Five decades and dozens of academic papers after their discovery, the enigma of how and why these 6,000-year-old ritual objects ended up in a remote cave in the Judean Desert is still unsolved.

The Forum for the Research of the Chalcolithic Period, "a group of academics interested in this prehistoric age", according to Dr. Ianir Milevski (Israel Antiquities Authority), gathered on June 2 at the Israel Museum in Jerusalem in order to commemorate the fiftieth anniversary of the discovery of the most important find from this period: the Nahal Mishmar copper hoard. After a day of presenting new insights pertaining to the copper objects, the conference wrapped up with a discussion on the source of the items in the cave and the reason they were hidden there. The debate emphasized what has remained unsolved after 50 years of research: while it is widely accepted that the hoard is an assembly of ritual objects, there still is no agreement or plausible reason as to where the objects came from and why they were stashed away.

### Rebels in the Desert

The treasure was found while looking for something completely different. In 1947, Bedouins from the Ta'amireh tribe, who roamed the Judean Desert, discovered ancient parchments hidden in the caves of the sheer cliffs of the canyons leading down to the Dead Sea. Once it was discovered that these brittle parchments could bring in money when sold to dealers in Bethlehem and Jerusalem, the Bedouins turned into avid archaeologists, scouring the desert caves in search of ancient scrolls.

In the 1950s, new scrolls sold to the dealers in Bethlehem, which was part of Jordan at the time, led archaeologists working in Jordan to discover letters and other artifacts in Nahal Murabba'at, south of Qumran, where the Dead Sea Scrolls had been found. As more pieces of ancient scrolls began to appear in the antiquities market, it was clear that some of them were coming from the Israeli side of the Judean Desert. The desert border between Israel and Jordan was a straight unmarked line on the map, inaccessible to vehicles. The Bedouins, even if they had heard of the newly set-up border, did not recognize it and crossed over freely from side to side.

Immediately after the War of Independence, Prof. Eliezer Sukenik, the dean of Israeli archaeologists and the father of Yigael Yadin, discussed the need to survey the caves on the Israeli side of the Judean Desert. Sukenik had purchased the first three complete Dead Sea Scrolls on the eve of the War of Independence and his son would later purchase the four remaining complete scrolls in New York. The year that Sukenik died, 1953, the first, impromptu Israeli desert cave survey was conducted.

The initiative came from a report by Uri Shoshani, a hiker and archaeology buff, who informed Yohanan Aharoni, then inspector of antiquities in the Judean Desert, of evidence that Bedouins were poking around a cave in the cliffs of the Nahal Hever canyon, south of Ein Gedi. Aharoni gathered a few volunteers who hiked to the canyon.

After hiking up the ancient Essenes Ascent from Nahal Arugot, they reached the desert plateau above the canyon. At the edge of the cliff, they discovered a Roman camp and 50 meters below it, in the 250-meter-high cliff, the entrance to the cave that Shoshani had told them about. Scaling the cliffs, the expedition entered the cave to find empty Jordanian cigarette packs, left behind by the Bedouins.

On a cliff top on the other side of the canyon, Aharoni could make out the remains of another Roman camp. Two years later, after a vehicle track had been laid out to the plateau above the canyon cliffs, Aharoni returned to check the southern cliff. With the aid of rope ladders, he climbed down the cliff into the inaccessible cave and discovered 40 human skeletons scattered in the cave's various halls, together with jars, plates, ropes, mats, baskets, and cooking utensils both from the time of the Bar Kokhba revolt in the second century CE and from the Chalcolithic Age. Further discoveries in the desert would illuminate the events following the failed second century Bar Kokhba rebellion against Rome. After the rebels' final defeat at Betar, many of them sought refuge in the caves of the Judean Desert. The Romans pursued them to the desert and upon discovering the cave refuges, built camps above them so that the besieged rebels had the choice of dying at the hands of the Romans or dying of thirst and hunger in a cave.

In 1960, parchments from a new source began to appear on the market. These new finds were traced to the Nahal Ze'elim canyon, in the southern part of the Judean Desert. Aharoni set out again, finding not only more bones and skulls of fighters from the time of Bar Kokhba at this new destination, but also a few Greek papyri that turned out to be purchase orders for Bar Kokhba's army, a collection of arrow heads from the time of the rebellion, and, the most exciting find yet: two delicate leather parchments inscribed in Hebrew with the verses from the Book of Exodus (13:1-16) that are written on tefillin.

The find thrilled the archaeological community. In the early days of the State of Israel, evidence from earlier times of Jewish independence, and especially such uniquely Jewish remains, were of national importance. The will to find more, especially ancient documents in Hebrew, before they fell into Bedouin hands, brought the Hebrew University of Jerusalem, the Israel Exploration Society, and the Israel Defense Forces together to field a well-equipped, well-manned expedition to the caves of the Judean Desert.

“Operation Judean Desert” was divided into four camps led by Nahman Avigad, Aharoni, Yadin, and Pessah Bar-Adon. An outsider, Bar-Adon was chosen because of his intimate knowledge of the desert and its ways. A scion of an ultra-Orthodox family from Poland, he had arrived in Israel in 1925, at the age of 18. At first, he worked in road construction and studied Eastern studies and Judaism at the Hebrew University of Jerusalem. Wishing to understand why all the ancient leaders of Israel were shepherds, he set out to live with the Bedouins, as a Bedouin, in Jordan and Syria. From 1929, he was active in Jewish defense. In 1939, he married an American writer, Dorothy Kahan, who had settled in the Land of Israel and died prematurely 11 years after their marriage. Even though he too wanted to be a writer, Bar-Adon was drawn to archaeology, digging in Beit She'arim and Tel Beit Yerah before he was invited to lead one of the teams in the Judean Desert operation.

Over 100 volunteers and 80 soldiers participated in the operation, which had at its disposal camping and cliff-scaling equipment, army all-terrain vehicles, generators, and

field equipment. During the last week of March 1960, the teams set up camp. For the next two weeks, they surveyed and excavated their designated canyon sites. Yadin's team brought in the most dramatic finds. The cave in Nahal Hever, which Aharoni had previously searched, now was brightly lit with the aid of a generator, revealing a group of human skeletons that had been placed in baskets. Their clothes had survived in the dry desert air and some of them were covered in tallitot (prayer shawls). Near them were a basket full of bronze utensils, taken from a Roman temple by Bar Kokhba's forces, and, in a crevice in the cave, a bunch of letters written by Bar Kokhba himself, who, it turned out, titled himself "the president of Israel."

The dramatic finds spurred the archaeologists on to another two weeks' search the next spring. In March 1961, the teams returned to the caves they had worked in the previous year. Again the most famous find was Yadin's in the cave in Nahal Hever. This time, his team found a leather bag with 35 documents in Greek, Aramaic, and Hebrew in another niche in the cave. The documents belonged to a wealthy Jewish matron and businesswoman from the second century CE. They included her marriage certificates, property deeds, and more. When the Roman legionnaires arrived in Ein Gedi after the rebellion, she fled to the cave, with the leaders of the Ein Gedi community, and died there.

Meanwhile, Bar-Adon returned to the canyon of Nahal Mishmar. In a cave at the bottom of the canyon, he found 10 Chalcolithic graves together with cloth that had survived for 6,000 years. But something drew him back to the large cave that he had explored the previous year on the cliff above the great waterfall of the Mishmar Canyon. When he failed to find anything of significance in it, the expedition leaders demanded that he focus his efforts on another canyon. Bar-Adon refused. The next day, a student and a soldier removed a stone slab in a corner of the cave, finding underneath it, wrapped in a reed mat, the biggest ancient copper hoard ever found in the world: 429 amazingly crafted pieces from the Chalcolithic Age, including 200 maces, numerous crowns, cornets, picks, and wands beautifully decorated with images of ibexes, gazelles, vultures, and more. Almost everything was copper, though there were also few others made of haematite and five items in the shape of sickles and pockmarked with a series of uniform holes that were made out of hippopotami ivory.

A year later, Bar-Adon returned again to the Nahal Mishmar Canyon, this time with an expedition he had organized himself. Even though he discovered a few more caves, he did not find any more dramatic finds.

"The find thrust him into the exposure and publicity of national and international fame," Bar-Adon's son, Doron, who was with him during the excavations, wrote in a book he put together about his father, "now he received from abroad the professional and scientific assurances that he had sought so much, a balm to his frustrations and depressions, which were a permanent feature of his inner soul."

For the following 23 years, until his death, the Judean Desert and the enigmatic copper hoard would haunt Bar-Adon. Again and again, he returned to the Judean Desert, searching caves and excavating ancient sites.

“He kept on hoping,” his son writes, “aspirations that had in them the cravings of a gambler, believing that he could find more Dead Sea scrolls or maybe the lost treasures of the Temple of Jerusalem. His archaeological imagination knew no bounds.”

At the conference at the Israel Museum, Doron Bar-Adon reflected, “His soul did not rest. The copper hoard was his inspiration and an enigma, it called out to him, drew him to it, connected with his soul. In his final years, he abandoned his archaeological work and focused on writing a complex literary work of hundreds and hundreds of written pages that he called, ‘In the Desert.’ It was a story about Bedouins and prophets, believers and heretics, divinity and hell.”

### Sodom and Gomorrah

The people who had made the mysterious copper objects were discovered by chance in 1929 by two Catholic priests looking for Sodom and Gomorrah. Alexis Mallon and Robert Koepfel, of the Pontifical Biblical Institute in Jerusalem, set out for the Dead Sea in 1929 in order to find the remains of Sodom and Gomorrah, whose destruction is recounted in Genesis 19:24-25. Not far from the northern shores of the Dead Sea, east of the Jordan River, they came across a few low mounds called Tuleilat el-Ghassul and started digging. Their excavations (and later excavations from 1967 onwards) revealed four villages had been built at the same spot in four different periods. The first village dated from the end of the Neolithic Period, the fifth or sixth millennium BCE. The last settlement on the site was from the beginning of the fourth millennium BCE, which was the end of the Chalcolithic Age. The village had a sophisticated agricultural system based on small plots of irrigated fields whose outlines still can be seen today in the arid flats of the southern Jordan Valley.

The houses of these people, who would be called Ghassulians, were square, one-roomed structures built of sundried mud bricks. The most dramatic remains, for which Tuleilat el-Ghassul would become famous, were found in the houses from the third settlement on the site. The walls of these structures were plastered repeatedly over the years and covered with amazing drawings of strange stars, winged monsters, mysterious symbols, dragons, masks, and a procession of beautifully dressed people, who were wearing masks and holding utensils in their hands. “Sodom and Gomorrah Found,” the New York Times trumpeted in the headline of the article recording the discovery of Tuleilat el-Ghassul.

Between 4,500 and 3,800 BCE, the Ghassulian culture spread throughout the country, from Beersheba to the Golan. It was an innovative culture that existed when metallurgy was just beginning. This was when, on one hand, the secret of smelting and creating new forms in copper was discovered and, on the other hand, the amazing lost-wax technique developed. The Ghassulian coppersmiths mastered this technique, fashioning beautiful, delicate copper objects. These early coppersmiths even learned how to mix copper with other elements in order to create different shades of copper with different qualities. The coppersmiths were revered as people of special talents, maybe even a semi-divine caste that could take rocks of the earth and breath life into them as new forms.

The Ghassulians also developed the ability to manufacture secondary products. For example, they planted olive trees and then made olive oil. They might even have been the first vintners, planting grapes to make wine. In addition, they made butter and cheese, wove mats and baskets from reeds, and produced colorful clothes with patterned designs.

The most characteristic trait of the Ghassulians, one which was unique to their culture, was the custom of second burial in central cemeteries. The deceased was initially interred near his house or village. After the body had decomposed, the bones were gathered into ossuaries and reburied in these central cemeteries, which were in caves and special underground structures.

“The key to understanding the hoard,” according Prof. Isaac Gilead of Ben-Gurion University of the Negev, “is to try and decipher the beliefs of the Ghassulians. And the key to their beliefs, like all prehistoric and early cultures, is the ceremony.” Ceremonies are a basic structure of the human DNA, they have been around for over 30,000 years. It is a trait from the days before human societies took on their “modern” trappings. From the earliest of times, when a need arose to understand the inexplicable, to be able to cope with the course of fate or nature, a ceremony was enacted. The ceremony created magic, which was imbedded in an object or a place. The magic was powerful enough to manipulate the force needed in order to make something better, to give protection, or to attack an enemy.

Ceremonies were and still are a group activity. They include trance-like manifestations by people who can easily slip into a different state of being and lead the group into that state. The Bible describes the activities of prophets, leaders, and kings with the words, “the spirit of the Lord is upon him.” An important ceremony in Ghassulian society was, without doubt, the second burial. Others were periodical gatherings in the village and at selected sites where people from a wider area could meet.

The Ghassulians and their amazing culture would eventually vanish from the face of the earth. Their villages were abandoned, not destroyed. A new, completely different human culture developed after them in the Bronze Age. It was during the Bronze Age that ceremonies, magic, and faith became organized. Gods became manifest, their spirit, statue, and image lived in temples, and a new caste developed of intermediaries – be they priests, prophets, pharaohs, or rulers – who knew the will of the gods and could manipulate their powers. During the Bronze Age structured and stratified religion was invented.

#### The Empty Temple

In 1956, Aharoni discovered a Chalcolithic temple on a small plateau above the spring at Ein Gedi. Structures were not found around the temple precinct so it was assumed that this was not a place where people lived, but a pilgrimage site. Following the discovery of the treasure in Nahal Mishmar, Bar-Adon and others assumed that the religious artifacts in the hoard originated in that temple.

When the priests were forced to abandon the temple – just like the Ghassulians had abandoned their villages – they wrapped the holy objects in a mat and hid them in the cave in Nahal Mishmar, where the objects would be safe until the priests could come back to reclaim them, scholars hypothesized. But the Ghassulian disaster was so great that nobody survived, nobody ever returned, and the hidden hoard was forgotten.

This theory, however, has been questioned for 50 years. First of all, the hoard is Ghassulian, a period that today, with more accurate Carbon-14 dating, is presumed to have been before the year 4,000 BCE. The Ein Gedi temple, on the other hand, is later, dating to the period between 4,000 BCE and 3,150 BCE.



In 2005, Prof. Yuval Goren, of Tel Aviv University, proved that the copper utensils in the hoard were made in the vicinity of the Judean Desert. Studying the petrography of small particles of ceramic material that had stuck to the utensils during the lost wax process of casting them, he discovered that the material was local. This put an end to the debate over whether the objects had been made elsewhere by a more advanced culture or cast locally.

Goren, in an article published in 2008, claimed that the utensils were made at the Ein Gedi temple. He theorized that a caste of copper smiths, who knew the secret of lost-wax casting, served at the temple and produced the objects over hundreds of years. Goren attributed the fact that no traces of smelting had been found around the temple to archaeological mishaps: the kilns just have not yet been found. Further excavations around the temple would lead to discoveries of copper smelting and casting activity.

“There is no proof of the existence of temples during the Ghassulian times,” says Gilead, who is sure that the concept of a temple had not yet been invented. And even if they were temples, the two structures identified as temples from the Ghassulian period – one in Gilat in the Negev and the other at Ein Gedi – have been dated to a few hundred years later. The structure at Gilat, Gilead concedes, could have been a local shrine, but nothing that resembles what is considered a temple today.

The copper vessels, Gilead says, only can be from one place: the Ghassulian villages discovered around modern Beersheba. “There we have evidence of smelting and have even found objects that are similar to those found in the hoard,” he says.

“Hoards were buried in other places around the world,” he notes, emphasizing that the reason for doing so usually was not the need to take flight. Ancient religious artifacts, embodied with magical spells, can have good or evil qualities. One interesting trait of the copper in the hoard is the large amount of arsenic mixed in with the copper. This gave the copper additional attributes of color and smoothness. But even though arsenic is a natural mineral, exposure to large doses of it – by, for example, breathing its fumes while heating it – can harm the nervous system. Symptoms of arsenic exposure include tremors, headaches, and numbness, all of which induce a kind of other state of being that was associated with the Ghassulian beliefs. People also could die as the result of exposure to arsenic. Maybe the amount of this poisonous mineral is the clue to the nature of the objects: they were made in order to harm enemies, to conjure up powerful and potent forces.

But, maybe many years later, the evil power of the objects was no longer needed and a ceremony to get rid of them was enacted. After being wrapped in an ancient mat (the mat is much older than the objects), they were taken out to the wilderness, to the area of the natural caves overlooking the Dead Sea since caves were believed to be special, divine places in the ancient world. They were then carefully disposed of, tucked away under a slab of stone so that they would do harm no more. The distance from Beersheba to Nahal Mishmar is not great; it actually is the nearest place where desert caves can be found.

The Scapegoat

Four thousand years would pass before secondary burials in ossuaries were practiced again in this area. This occurred during the time of the Second Temple period in the Jewish commonwealth. This also was when the high priest in Jerusalem would enact a ceremony every year on the Day of Atonement to magically transfer the sins of the whole year to a young goat and the hapless animal would be led out to the desert and thrown over a cliff to its death.

During the last years of his life, Bar-Adon became fascinated with the ancient ceremony of the scapegoat. In hundreds of written pages, he wrote about “the young goat in the desert,” describing in detail the ceremony of leading the scapegoat out to the desert, to its death, and inventing a tale of the goat’s miraculous delivery at the last moment by God.

“There were once gods,” the scapegoat says in Bar-Adon’s story. “They were trees, and stones, the sun, and the moon. Sacrifices were made to them, animal and even human. And there were heretics, who did not believe in the gods. The heretics were clever and invented an invisible god, one that resided in heaven. This god commanded that his will be done and managed to mislead the believers. He built a temple, instead of prayer, roofs that covered the mountains and the valleys. God created intermediaries, who were, presumably, much nearer to his divine presence.”

It is tantalizing to think that Second Temple Judaism and the Ghassulians maybe had more in common than just the concept of secondary burial. Jewish beliefs developed from the desert. God made his divine presence known in the desert, the Israelite character was forged in the desert, together with the ancient beliefs and traditions. For the early Israelites copper was divine metal. Moses staff was fashioned from it, Nechushtan – the image of a copper snake, was fashioned in the desert to cure the people of snake bites (it is the symbol of healing and doctors to this day), Solomon's temple was plated with copper, had two copper pillars standing at its entrance, and had a huge copper basin – the Sea of Copper – standing in the courtyard in front of it. All of these objects, the Bible relates, were cast in the desert, just like the divine copper objects of the Ghassulians.

Dr. Milevski has suggested time ago that perhaps the iconography and secondary burials of the Ghassulians reflect the notion that birth, death and rebirth were cyclical related. Burial ceremonies during the Chalcolithic should follow these beliefs. Maybe there is also a connection between the tradition of the scapegoat, the ceremony of getting rid of sins and evil in the desert (and not only in the desert), and the beliefs of the ancient Ghassulians. The scapegoat ceremony is magic from very long ago, maybe the same magic that brought about the hiding of the copper hoard in the cave in Nahal Mishmar. Could it be that Bar Adon, after years of living in the desert and searching its caves, had sensed this and devoted the last years of his life to delving in to the meaning of the scapegoat ceremony?

The connection between the copper hoard and the scapegoat, the ceremony of getting rid of sins and evil in the desert, is magic from very long ago. It dates to the days before religion, echoing in those hidden filaments of the soul that belong to that other state of being that is buried in each and every one of us.

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## **CONFIRMED: ALL NON-AFRICAN PEOPLE ARE PART NEANDERTHAL**

The evidence has been mounting for years that early humans and Neanderthals interbred, but now it's pretty much a certainty. Part of the X chromosome found in people from outside Africa originally comes from our Neanderthal cousins.

It's kind of amazing to think that, as recently as just a few years ago, the scientific consensus was that humans and Neanderthals were completely separate species and probably didn't interbreed. Since then, a ton of new evidence has come to light to change that position, and now new research from Damian Labuda of the University of Montreal more or less completes this big reversal.

Neanderthals, one of the last extant hominid species other than our own, left Africa somewhere between 400,000 and 800,000 years ago and settled mostly in Europe until they went extinct 30,000 years ago. Early modern humans left Africa about 80,000 to 50,000 years ago, meaning they overlapped with Neanderthals in time and place for at least 20,000 years. On an evolutionary time scale, that's not a ton of time, but could it be enough to leave lasting evidence of human/Neanderthal interbreeding?

According to Dr. Labuda, the answer is an emphatic "yes." Back in the early '00s, he and his team had identified a particular piece of DNA in the human X chromosome that seemed out of place with everything else, and they wondered whether it might have originated from a non-human source.

That answer came with the first sequencing of the Neanderthal genome last year. Dr. Labuda compared 6,000 chromosomes from all over the world to the corresponding part of the Neanderthal sequence. With the exception of people from sub-Saharan Africa - whose ancestors would have been unlikely to come into contact with Neanderthals, since their territories didn't overlap - every chromosome featured evidence of the Neanderthal sequence.

That even includes particularly far-flung groups of humans like native Australians, who are thought to have reached the island continent by as far back as 40,000 years ago. For that sequence to show up even in such geographically isolated groups, it suggests that there was a lot of interbreeding between the two hominid species, and that pretty much all ancient humans that left Africa passed through Neanderthal territory and had close interaction (read: a ton of sex) with their evolutionary cousins.

Please visit the site: <http://io9.com/5822357/confirmed-all-non+african-people-are-part-neanderthal>

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## **ANCIENT SARCOPHAGUS UNEARTHED NEAR ROME**

Archaeologists have discovered an ancient Roman sarcophagus in the central Italian Lazio region surrounding Rome. It is the second sarcophagus discovered during a dig being coordinated by the University of Michigan. The sarcophagus was uncovered in the area of Lazio believed to be the site of the ancient Roman city of Gabii, located 18 kilometres east of Rome. Both sarcophagi - coffins typically adorned with sculptures or inscriptions - are made of lead and are believed to date from the 1st or 2nd century AD. The first sarcophagus was unearthed in 2009 by archaeologists working on the same dig, the 'Gabii Project', which began in 2007. According to the site director, archaeologist Anna Gallone, the two sarcophagi are examples of a unique funeral rite found in Gabii. The team of archaeologists gleaned information about Gabii during a 2007-2008 surface survey of the city, which was once a rival of ancient Rome.

**Please visit the site:**

<http://www.adnkronos.com/IGN/Aki/English/CultureAndMedia/?id=3.1.2206054175>

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# **OLYMPIA HYPOTHESIS: TSUNAMIS BURIED THE CULT SITE ON THE PELOPONNESE PROFESSOR ANDREAS VÖTT PRESENTS NEW RESULTS OF GEOMORPHOLOGICAL AND GEOARCHEOLOGICAL INVESTIGATIONS ON THE SEDIMENTARY BURIAL OF OLYMPIA**

Olympia, site of the famous Temple of Zeus and original venue of the Olympic Games in ancient Greece, was presumably destroyed by repeated tsunamis that travelled considerable distances inland, and not by earthquake and river floods as has been assumed to date. Evidence in support of this new theory on the virtual disappearance of the ancient cult site on the Peloponnesian peninsula comes from Professor Dr Andreas Vött of the Institute of Geography of Johannes Gutenberg University Mainz, Germany. Vött investigated the site as part of a project in which he and his team are studying the paleotsunamis that occurred along the coastlines of the eastern Mediterranean over the last 11,000 years. According to his account, the geomorphological and sedimentological findings in the area document that Olympia and its environs were destroyed by tsunami impact. The site of Olympia, rediscovered only some 250 years ago, was buried under a massive layer of sand and other deposits that is up to 8 meters deep.

"Both the composition and thickness of the sediments we find in Olympia do not go with the hydraulic potential of the Kladeos River and the geomorphological inventory of the valley. It is highly unlikely that this could have been the work of this creek," states Vött. To date, it has been assumed that the cult site was finally destroyed by an earthquake in 551 AD and later covered by flood deposits of the Kladeos River. In this scenario, however, it remains mysterious how the tiny Kladeos that passes by could first have buried Olympia under several meters of sediment, only to subsequently get incised by 10 to 12 meters down to the flow level used in ancient times. Working in collaboration with the local Ephorate for Classical Antiquities, the German Archaeological Institute, and colleagues from the universities of Aachen, Darmstadt, Freiburg, Hamburg, and Cologne, Vött and his team examined the location using geomorphological and gearcheological methods and techniques.

The results indicate that Olympia was repeatedly hit by catastrophic floods during its history resulting in the site being buried under huge masses of sediment. The presence of mollusc and gastropod shells and the remains of abundant micro-organisms such as foraminifera are clear evidence of a marine origin of the sediment. The sediments were obviously transported inland at high velocity and high energy, reaching Olympia although the site lies some 33 meters above sea level. The most probable explanation is that tsunami waters overflowed the narrow range of hills between Olympia and the sea through low-lying saddles.

"In earlier times, Olympia was not 22 kilometers away from the sea as it is today. Back then, the coastline was located eight or perhaps even more kilometers further inland," explains Vött. In his scenario, tsunamis came in from the sea and rushed into the narrow Alpheios River valley, into which the Kladeos River flows, forcing their way over the saddles behind which Olympia is located. The cult site was thus flooded. Vött assumes that the flooding decreased only slowly because the outflow of the Kladeos through the Alpheios valley was blocked by incoming tsunami waters and corresponding deposits. The analysis of the various layers of sediments in the Olympia area suggests that this scenario came true on several occasions during the last 7,000 years. It was during one of the more recent of these events in the 6th century AD that Olympia was finally destroyed and buried.

The Olympia tsunami hypothesis is further supported by the fact that high-energy sediments of undoubtedly tsunamigenic origin were found on the seaward side of the hill range and these deposits are identical to those in Olympia itself. Vött points out that "the sediments around Olympia have the same signature as the tsunamite in the lower Alpheios valley." Vött says that the cause of Olympia's destruction could not have been an earthquake because in this case the fallen fragments of the columns of the Temple of Zeus would directly lie on top of each other, but in fact they are "floating" in sediment. All the sedimentological, geochemical, geomorphological, and geoarcheological findings obtained by the study support the new and sensational hypothesis that Olympia was destroyed by tsunamis. Detailed analyses of associations, origin, and age of microfauna as well as geochronological studies are currently in progress. Results are expected soon.

Tsunamis are well known from the eastern Mediterranean and are mainly the result of extensive seismic activities along the Hellenic Arc.

Here, the African plate is being subducted by the Eurasian plate, repeatedly triggering major earthquakes that are followed by tsunamis.

The most recent mega-tsunami in the Mediterranean occurred in 1908 related to an earthquake in the Straits of Messina in southern Italy, devastating the neighboring coastal region, more than 100,000 people were killed. A 30 meter-high tsunami wave was recorded in the southern Aegean in 1956. "The evaluation of historical accounts has shown that in western Greece there is one tsunami every eight to eleven years on average," specifies Vött.

Professor Dr Andreas Vött is specialized in paleotsunami and geoarcheological research in the Mediterranean. In September 2011, he will be presenting the Olympia tsunami hypothesis at an international academic conference in Corinth in Greece. Before coming to Johannes Gutenberg University Mainz in October 2010, Vött was professor of Physical Geography with a focus on Quaternary Research and Geoarcheology at the Institute for Geography at the University of Cologne. As professor of Physical Geography/Geomorphology at Mainz University, Vött also heads the Natural Hazard Research and Geoarcheology teaching and research section. His research also comprises aspects of coastal geomorphology such as sea level fluctuations during the Holocene, but also the spatial effects of human-environment interactions over the past millennia. Vött's work is coordinated with that of the JGU research center "Geocycles" and the Cluster of Excellence "Earth and the Anthropocene" (ERA), which has been invited to submit a full proposal for funding in the second phase of the German Excellence Initiative.

Please visit the site: <http://www.uni-mainz.de/eng/14389.php>

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## **GERONISOS ISLAND OFFERS INSIGHT INTO ANCIENT PILGRIMS, BY PATRICK DEWHURST**

ANCIENT pilgrims to the “Symbolically charged” Geronisos island might have celebrated rites of passage with a diet rich in liquids, soups, and strained foods, dancing and clay gifts to Apollo, according to the latest excavations.

The theories about First Century BC visitors to the ‘Holy Island’, which lies just off the coast of Paphos, emerged after a four week dig by 17 archaeologists from New York University, the communications and works ministry and the department of antiquities.

In early Byzantine times, a Christian basilica was built atop Geronisos, a partner to the three basilicas that sit just opposite on the mainland at Ayios Georgios tis Peyeias.

Excavations have established that the island may have been regarded as a holy - or at least symbolically charged pilgrimage site – ever since the prehistoric period, and the findings give a fascinating insight into the pilgrims’ daily life.

Among the findings were stone tools, a large jar, or pithos, a female figurine, and a bead that was deliberately placed in a pit with ash during the early Chalcolithic period, around 3,800 B.C.

The excavation report said: “It is possible that the pithoi were used to collect rainwater from the roof of a building that rose from these foundations, as water was very scarce on this island that had no springs or wells.”

According to chief excavator, Professor Joan Breton Connelly, findings from around the first century B.C. suggest families may have brought their young sons out to Geronisos for special rites of maturation.

A circular platform unearthed in recent seasons may represent a dance floor, used for boys’ choral dancing - an integral part of education in Greek antiquity.

Recovered Ostraka (inscribed pot shards) also show the writing exercises of children learning their Greek letters, suggesting that a school for boys may have been part of the sanctuary operations.

Many of these items were found near the dining and sleeping rooms of the pilgrimage facilities’ domestic quarters, which were a focal area for this year’s digs.

The report said: “There was extensive robbing of Hellenistic ashlar blocks from Geronisos during the early Byzantine period, no doubt for the building of the three great Christian basilicas on the mainland at Ayios Georgios.”



“Much of this season’s work focused on the careful digging and analysis of robbing trenches and the sorting out of phases for the Hellenistic construction and the Byzantine robbing of walls.”

Architect Richard Anderson continued his massive work of preparing a 3-D digital survey of all architectural remains on Geronisos, using a total station laser theodolite.

Wind and sea erosion of the cliff edges of Geronisos makes survey and mapping of the island’s remains all the more urgent.

Mariusz Burdajewicz of the Warsaw Museum undertook the drawing of all small stone architectural members recovered from Geronisos, as part of the ongoing efforts to document the full architectural footprint of the island.

**Please visit the site: <http://www.cyprus-mail.com/history/geronisos-island-offers-insight-ancient-pilgrims/20110708>**

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## **FIRST-AID KIT IN SHIPWRECK REVEALS MILLENNIA-OLD PRACTICES, BY NICK SQUIRES**

Institute first-aid kit found on a 2000-year-old shipwreck has provided a remarkable insight into the medicines concocted by ancient physicians to cure sailors of dysentery and other ailments.

Medicines found inside a wooden chest included pills made of ground-up vegetables, herbs and plants such as celery, onions, carrots, cabbage, alfalfa and chestnuts - all ingredients referred to in classical medical texts.

The tablets, which have miraculously survived being under water for more than two millennia, also contain extracts of parsley, nasturtium, radish, yarrow and hibiscus.

They were found in 136 tin-lined wooden vials on a 15m-long trading ship which was wrecked about 130BC off the coast of Tuscany.

Scientists believe they would have been used to treat gastrointestinal complaints suffered by sailors such as dysentery and diarrhoea.

"It's a spectacular find. They were very well sealed," said Dr Alain Touwaide, from the Smithsonian Conservation Biology Institute in Washington DC.

"The plants and vegetables were probably crushed with a mortar and pestle - we could still see the fibres in the tablets. They also contained clay, which even today is used to treat gastrointestinal problems."

The pills are the oldest-known archaeological remains of ancient pharmaceuticals.

They would have been taken with a mouthful of wine or water, or may have been dissolved and smeared on skin to treat inflammation and cuts.

Historians believe the presence of the medicine chest suggests that the ship may have had a doctor on board, or at least someone trained in rudimentary first aid.

The chest also contained spatulas, suction cups and a mortar and pestle.

The vessel was transporting amphorae of wine, glassware, ceramics and oil lamps when it sank in 18m of water between the Italian mainland and the island of Elbe.

"We still don't know whether it was Roman or Greek or Phoenician, nor do we know whether it was a long-distance trading ship operating throughout the Mediterranean or a coastal vessel," said Touwaide.

He said the discovery showed that medical knowledge contained in ancient Greek texts, and later in the writings of Roman scholars such as Pliny, was being put into practise in the Roman Empire.

The ship was discovered off the port of Piombino in 1974 and the wooden medicine box was found in 1989, but it is only now that scientists have been able to use DNA-sequencing technology to analyse the contents of the pills.

Gino Fornaciari, a paleo-pathologist from Pisa University, said: "As well as understanding how the ancient Romans treated each other, we are learning more about what illnesses they suffered from."

**Please visit the site:**

[http://www.linkedin.com/news?viewArticle=&articleID=625640603&gid=815227&type=member&item=61315232&articleURL=http%3A%2F%2Fwww.nzherald.co.nz%2Fmedicine%2Fnews%2Farticle.cfm%3Fcid%3D255%26objectid%3D10737289&urlhash=PEZs&goback=.gde\\_815227\\_member\\_61315232](http://www.linkedin.com/news?viewArticle=&articleID=625640603&gid=815227&type=member&item=61315232&articleURL=http%3A%2F%2Fwww.nzherald.co.nz%2Fmedicine%2Fnews%2Farticle.cfm%3Fcid%3D255%26objectid%3D10737289&urlhash=PEZs&goback=.gde_815227_member_61315232)

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## **TECHNOLOGY TO THROW NEW LIGHT ON ANCIENT ARTIFACTS**

New technology which makes it possible to study the finer details of some of the world's greatest historical artifacts has been developed by computer scientists and archaeologists at the University of Southampton in conjunction with academics at the University of Oxford.

Dr Kirk Martinez at the University of Southampton's ECS -- Electronics and Computer Science and the team have developed two Reflectance Transformation Imaging (RTI) systems to capture images of documentary texts and archaeological material. The systems takes 76 pictures of artifacts with the light in different positions, then creates a new type of RTI image. The viewer can then move the virtual light anywhere and focus on the detail.

"Hewlett Packard Research Laboratories invented this technology a few years ago and it has been used sporadically around the world," said Dr Martinez. "What we have done is develop the technology so that it is fast enough to be usable every day in a museum situation where you have lots of objects that need scanning. "

During the course of the project, the teams scanned 100 clay tablets, most of which were typically about 5,000 years old.

"If you really wanted to look at a picture to investigate fine details at the moment without this technology, you would be hard pressed to see any detail on current archive photos -- and may need to rephotograph," said Dr Martinez.

The RTI technology systems developed by the project will allow researchers to study documentary and other artifacts remotely in great detail without being restricted by fixed lighting angles. The result will be to ensure that high-quality digital versions of these materials can be consulted by scholars worldwide.

This technology is currently being used in the Ashmolean Museum in Oxford and it has recently been tested in the British Museum and in the National Gallery.

The software developed for these systems will be available open source online this autumn together with a guide to making your own system.

The system can be viewed on You Tube at:

<http://www.youtube.com/user/ecsnews#p/a/u/1/Kqi-85U2zYs>

The 12-month Reflectance Transformation Imaging (RTI) System for Ancient Document Artefacts was funded by the Arts and Humanities Research Council's Digital Equipment and Database for Impact.

The academic team members are: Dr Graeme Earl, Dr Kirk Martinez and PhD student, Philip Basford, University of Southampton and Professor Alan Bowman, Dr Charles Crowther and Dr Jacob Dahl, University of Oxford.

Please visit the site:

<http://www.sciencedaily.com/releases/2011/07/110720085511.htm>

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## **TEAM UNEARTHS FIRST ROMAN-ERA BASILICA IN EGYPT**

Egyptian officials say archaeologists have unearthed the first basilica erected in the Mediterranean port city of Alexandria.

Antiquities authorities say the basilica is dated to the Roman era and was built on the ruins of a temple from the Ptolemaic reign that ended with the death of Cleopatra.

A statement Thursday says two parallel rows of granite and limestone pillars suggest the basilica was a social site that was also used for trade and judicial matters.

It says several statues of the Ancient Egyptian goddess Isis — one showing her breast-feeding — and others of the Graeco-Egyptian god Serapis also have been unearthed during five months of excavations that ended in May when archaeologists hit underground water.

**Please visit the site:**

<http://www.google.com/hostednews/ap/article/ALeqM5gvpLdL3Y7I7XtpBurhEc8y3t1Zww?docId=cdcd69ef4f5544c0b972b25f5262cac4>

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## ANALYZING THE DEAD SEA SCROLLS' PROVENANCE

Cultural Analysis: Scientists think that X-ray fluorescence could identify the geographical origin of these ancient texts

Sarah Everts

An X-ray fluorescence analytical technique may help scholars settle a decades-long archaeological debate: Were the multitude of Dead Sea Scroll texts written near the Dead Sea or just stored in caves nearby?

This technique could provide an answer without harming the valuable Hebrew documents that have been degrading rapidly since their discovery in the 1940s and 50s, its developers say.

The debate over the Scrolls' origins has filled "books and books," because they mark an important milestone in Jewish history, says Ioanna Mantouvalou, a physicist at Berlin's Technical University, in Germany. But scholars have been understandably unwilling to resolve the debate with destructive scientific techniques, she adds.

Mantouvalou and her colleagues, including Ira Rabin at Germany's Federal Institute for Materials Research and Testing in Berlin, developed a non-invasive technique to determine the origin of the parchment on which most of the Scrolls were written.

Ancient writers produced parchment by soaking animal skin in water.

Because water in different parts of the world has characteristic bromine-to-chlorine ratios, the researchers wondered whether they could easily measure this ratio in the Scrolls' parchments and thus provide a geographical fingerprint. Indeed, the team found that portable X-ray fluorescence spectrometers could quantify the ratio in a non-destructive manner (Anal. Chem., DOI: 10.1021/ac2011262).

The researchers used the analytical technique to study about 25 different Dead Sea Scroll texts and plan to publish these results in the next few months.

Related ACS Journals

3D Micro-XRF for cultural heritage objects – new analysis strategies for the investigation of the Dead Sea Scrolls Anal. Chem., DOI: 10.1021/ac2011262  
<http://pubs.acs.org/cen/img/89/i28/apaart092524.jpg>

DEAD SEA MYSTERY The bromine-to-chlorine ratio in the parchment of the Dead Sea Scrolls may help scholars pinpoint the texts' geographical origin.  
Chemical & Engineering News ISSN 0009-2347 Copyright © 2011 American Chemical Society

Please visit the site: <http://pubs.acs.org/cen/news/89/i28/8928scene1.html>

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## **5,200 YEAR-OLD ROCK DRAWINGS OF EARLIEST ANCIENT EGYPTIAN CELEBRATIONS UNEARTHED**

Egypt's Antiquities Authority says archaeologists have unearthed a 5,200-year-old rock drawing depicting a royal festival during Ancient Egypt's earliest dynasty.

The ministry says the scenes were part of a series of rock drawings featuring hunting, fighting and celebrations along the banks of the Nile River.

Antiquities chief Zahi Hawass said in a statement Monday the scenes represent the first unearthing of a complete drawing of a royal festival during Dynasty Zero, when the earliest foundations of Ancient Egyptian culture are believed to have been formed.

A joint U.S.-Italian expedition team discovered the unique drawings in the southern city of Aswan, a hub of archaeological treasures.

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**Please visit the site: <http://www.archaeologydaily.com/news/201107076857/5200-year-old-rock-drawings-of-earliest-Ancient-Egyptian-celebrations-unearthed.html>**

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## **THE DISCOVERY OF AN ANCIENT HARBOR ON THE RED SEA PROVES ANCIENT EGYPTIANS MASTERED OCEANGOING TECHNOLOGY AND LAUNCHED A SERIES OF AMBITIOUS EXPEDITIONS TO FAR-OFF LANDS, BY ANDREW CURRY**

The scenes carved into a wall of the ancient Egyptian temple at Deir el-Bahri tell of a remarkable sea voyage. A fleet of cargo ships bearing exotic plants, animals, and precious incense navigates through high-crested waves on a journey from a mysterious land known as Punt or “the Land of God.” The carvings were commissioned by Hatshepsut, ancient Egypt’s greatest female pharaoh, who controlled Egypt for more than two decades in the 15th century B.C. She ruled some 2 million people and oversaw one of most powerful empires of the ancient world.

The exact meaning of the detailed carvings has divided Egyptologists ever since they were discovered in the mid-19th century. “Some people have argued that Punt was inland and not on the sea, or a fictitious place altogether,”

Oxford Egyptologist John Baines says. Recently, however, a series of remarkable discoveries on a desolate stretch of the Red Sea coast has settled the debate, proving once and for all that the masterful building skills of the ancient Egyptians applied to oceangoing ships as well as to pyramids.

Archaeologists from Italy, the United States, and Egypt excavating a dried-up lagoon known as Mersa Gawasis have unearthed traces of an ancient harbor that once launched early voyages like Hatshepsut’s onto the open ocean. Some of the site’s most evocative evidence for the ancient Egyptians’ seafaring prowess is concealed behind a modern steel door set into a cliff just 700 feet or so from the Red Sea shore. Inside is a man-made cave about 70 feet deep. Lightbulbs powered by a gas generator thrumming just outside illuminate pockets of work: Here, an excavator carefully brushes sand and debris away from a 3,800-year-old reed mat; there, conservation experts photograph wood planks, chemically preserve them, and wrap them for storage...

Please visit the site: <http://discovermagazine.com/2011/jun/02-egypts-lost-fleet-its-been-found>

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## **EGYPTIAN TOMB MYSTERY MAY BE WORLD'S FIRST PROTRACTOR, BY JO MERCHANT**

The bizarre object to the right was found in the tomb of an ancient Egyptian architect. For over 100 years, it has languished while archaeologists debated its function.

Now, a physicist has thrown her hat into the ring, arguing that it is the world's first known protractor. The intriguing suggestion – which has drawn scepticism from archaeologists – is based on the numbers encoded within the carvings on its surface.

The architect Kha helped to build pharaohs' tombs during the 18th dynasty, around 1400 BC. His own tomb was discovered intact in 1906 by archaeologist Ernesto Schiaparelli in Deir-al-Medina, near the Valley of the Kings. Among Kha's belongings were measuring instruments including cubit rods, a levelling device that resembles a modern set square, and what appeared to be an oddly shaped empty wooden case with a hinged lid.

Schiaparelli thought this last object had held another levelling instrument. The museum in Turin, Italy, where the items are now exhibited identifies it as the case of a balancing scale.

But Amelia Sparavigna, a physicist at Turin Polytechnic, suggests that it was a different architectural tool – a protractor. The key, she says, lies in the numbers encoded in the object's ornate decoration, which resembles a compass rose with 16 evenly spaced petals surrounded by a circular zigzag with 36 corners.

Sparavigna says that if the straight bar part of the object were laid on a slope, a plumb line would reveal its inclination on the circular dial (as illustrated in this graphic).  
Significant numbers

The fraction of one-sixteenth features in a calculus system the Egyptians used, says Sparavigna, and they also identified 36 star groups called the decans, which later formed the basis of a star clock. She suggests the object was "a protractor instrument with two scales, one based on Egyptian fractions, the other based on decans".

But Kate Spence, an archaeologist at the University of Cambridge who specialises in ancient Egyptian architecture, is not convinced and maintains the object is simply a decorative case. She says that unlike those on known measuring instruments, the markings in question are not particularly accurate: "When the Egyptians want to be precise, they are." She says the Egyptians tended to define angles by measuring the two sides of a rectangle, and that no similar instrument is known.

**Please visit the site: <http://www.newscientist.com/article/dn20748-egyptian-tomb-mystery-may-be-worlds-first-protractor.html>**

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## **2,800 YEAR-OLD LION STATUE** **DISCOVERED AT TELL TAYINAT IN** **TURKEY**

There's breaking news from the site of Tell Tayinat, in Turkey. A team of archaeologists led by Tim Harrison, from the University of Toronto, have discovered a beautifully carved stone lion that dates back around 2,800 years. It stands nearly four feet tall and appears to be roaring.

Local media in Turkey have reported on it and the Turkish website Haberler has a video of the lion being moved. The project website also has a few low-res images of the lion. I was hoping to do a major story for Live Science but the team isn't ready quite yet to talk about the discovery with english language media.

Tayinat had been re-settled 3,200 years ago, at a time when cities and civilizations across the Middle East were reeling from an invasion of people from the Aegean known to us as the "Sea People."

The team has been excavating a temple at Tayinat that dates to this time and presumably this is where the lion was found.

The lion dates back to a time when Tayinat would have been the capital of a small independent kingdom, possibly called Palastin. In 738 BC this kingdom came to an end when the Assyrians under Tiglath-pileser III conquered the city and incorporated it into their empire.

It should be noted that in the 1930's archaeologist Robert Braidwood excavated at Tayinat and found lion statues of his own.

Please visit the site: <http://www.unreportedheritagenews.com/2011/07/2800-year-old-lion-statue-discovered-at.html>

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## **RELIEF FOUND IN W TURKEY SHOWS CHARIOT RACE IN ANCIENT TIMES**

A relief depicting a 2,000-year-old chariot race scene and new gladiator names has been discovered at an archeological dig in Muğla, proving the area was an important center for sporting events.

“We have found a block with a relief of a chariot race scene,” said Professor Bilal Söğüt, head of the excavation from Pamukkale University. “The chariot race scene provides us information on cultural and sporting activities. The chariot race relief also gives us considerable characteristic details of the carts and harness of that period.”

Ongoing excavations in the ancient city of Stratonikeia located in the Aegean province of Muğla are producing many interesting chariot race scenes. The city was established in the third century B.C., and later became part of ancient Greece and Rome.

An excavation team of 45 students and academics from seven universities, as well as 30 workers, found other blocks with reliefs of chariot race scenes in 2009.

“The one we found now and the former blocks must belong to different structures in size and location,” said Söğüt. “Chariot races organized in funeral ceremonies and sporting events were very important in the ancient period. We come across such figures on ceramics and structures often.”

“We also found new gladiator names in the recent excavations. We know that gladiators lived in this area and their graves are here,” he said. “A group of gladiators’ tombs are exhibited at the Muğla Museum.

We believe Stratonikeia was an important area for gladiators. We believe we will find a structure where gladiators performed shows. But we don’t know yet where it is.”

Meanwhile, a research and development project team from the Education Ministry has also initiated a project called “Who Doesn’t Know the Past, Won’t Have a Future; So Teach Through History.”

“The project aims to introduce the environment to teachers and students and create historical consciousness,” Söğüt said, noting that the project had received funding of 49,550 euros as part of a learning program.

Excavations at Stratonikeia are continuing throughout the summer.

**Please visit the site: <http://www.hurriyetdailynews.com/n.php?n=relief-shows-chariot-race-in-ancient-times-2011-07-27>**

## **STRATONIKEIA'S ARENA**

Archaeologists unearthed a 2,000-year-old arena used for gladiator games in Muğla's Yatak district, once the site of the ancient city Stratonikeia. Dr. Bilal Söğüt, a professor in the department of archaeology of Pamukkale University and the head of the excavation, said, “We know gladiators lived in this time period, and we know their graves are here.”

Dr. Söğüt said they first unearthed the blocks of the racing arena in 2009, when they were studying the city's northern gate. “Finding the arena was a very important development,” Söğüt said. “We will be able to learn details such as what harnesses were like.” The excavation is being carried out by a team of 30 archaeologists and 45 faculty members and students, Söğüt said.

**Please visit the site:**

[http://www.todayszaman.com/newsDetail\\_getNewsById.action?load=detay&newsId=251820&link=251820](http://www.todayszaman.com/newsDetail_getNewsById.action?load=detay&newsId=251820&link=251820)

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## **A MUSEUM OF ANCIENT MOSAICS RECENTLY OPENED IN GAZIANTEP, TURKEY, BY MURAD SEZER**

On display at the Zeugma Mosaic Museum are mosaics depicting Greek and Roman mythology recovered from archaeological excavations at Zeugma, a nearby site on the Euphrates River that in the ancient world was an important crossroads of major trade routes. The antiquities reflect the taste of the town's elite as well as popular culture in the second and third centuries A.D.

Major recovery work began after artifacts, suspected to have been vandalized, appeared in museums and private collections, and when a proposed dam threatened to flood the area.

The collection includes a portrait of a young girl with striking eyes, found in a large reception room of a Roman house. The overall mosaic was found severely damaged by the looters, but "Gypsy Girl" (above; probably a maenad, a female follower of Dionysus) was left largely intact, said Kutal Gorkay, associate professor at Ankara University and director of the Zeugma archaeological excavations.

The museum, which opened in late May, was sporadically closed for installation work. Its hours are Tuesday to Sunday from 9 a.m. to 5 p.m.

**Please visit the site:**

**<http://intransit.blogs.nytimes.com/2011/07/20/in-turkey-a-home-for-ancient-mosaics/>**

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## **IN PALESTINIAN CITY, DIGGERS UNCOVER BIBLICAL RUIN, BY MATTI FRIEDMAN**

NABLUS, West Bank (AP) — Archaeologists unearthing a biblical ruin inside a Palestinian city in the West Bank are writing the latest chapter in a 100-year-old excavation that has been interrupted by two world wars and numerous rounds of Mideast upheaval.

Working on an urban lot that long served residents of Nablus as an unofficial dump for garbage and old car parts, Dutch and Palestinian archaeologists are learning more about the ancient city of Shekhem, and are preparing to open the site to the public as an archaeological park next year.

The project, carried out under the auspices of the Palestinian Department of Antiquities, also aims to introduce the Palestinians of Nablus, who have been beset for much of the past decade by bloodshed and isolation, to the wealth of antiquities in the middle of their city.

"The local population has started very well to understand the value of the site, not only the historical value, but also the value for their own identity," said Gerrit van der Kooij of Leiden University in the Netherlands, who co-directs the dig team.

"The local people have to feel responsible for the archaeological heritage in their neighborhood," he said.

The digging season wrapped up this week at the site, known locally as Tel Balata.

The city of Shekhem, positioned in a pass between the mountains of Gerizim and Eibal and controlling the Askar Plains to the east, was an important regional center more than 3,500 years ago. As the existing remains show, it lay within fortifications of massive stones, was entered through monumental gates and centered on a temple with walls five yards (meters) thick.

The king of Shekhem, Labaya, is mentioned in the cuneiform tablets of the Pharaonic archive found at Tel al-Amarna in Egypt, which are dated to the 14th century B.C. The king had rebelled against Egyptian domination, and soldiers were dispatched north to subdue him. They failed.

The city also appears often in the biblical narrative. The patriarch Abraham, for example, was passing near Shekhem when God promised to give the land of Canaan to his descendants in the Book of Genesis.

Later, Abraham's grandson Jacob was camped outside the walls when a local Canaanite prince raped his daughter, Dinah. Jacob's sons sacked the city in vengeance. The body of Jacob's son Joseph was brought from Egypt hundreds of years later by the fleeing Israelites and buried at Shekhem.

Two millennia ago, the Romans abandoned the original site and built a new city to the west, calling it Flavius Neapolis. The Greek name Neapolis, or "new city," later became enshrined in Arabic as Nablus. In Hebrew, the city is still called Shekhem.

Nablus has since spread, and ancient Shekhem is now surrounded by Palestinian homes and car garages near the city's eastern outskirts.

One morning this week, a garbage container emitted smoke from burning refuse not far from the remains of the northwestern city gate in a curved wall built by skilled engineers around 1600 B.C.

A visitor can walk through the gate, passing through two chambers before emerging inside the city. From there it is a short walk to the remains of the city's temple, with a stone stele on an outdoor platform overlooking the houses below.

The identity of the city's residents at the time remains unclear. One theory posits that they were Hyksos, people who came from northern Syria and were later expelled from Egypt. According to the Bible's account, the city was later Canaanite and still later ruled by Israelites, but archaeology has not corroborated that so far, van der Kooij said.

A German team began excavating at the site in 1913, with Nablus under the control of the Ottoman Turks. The dig was interrupted by World War I but resumed afterward, continuing sporadically into the 1930s under British rule. Much of the German documentation of the dig was lost in the Allied bombings of WWII.

American teams dug at the site in the 1950s and 1960s, under Jordanian rule. Israel conquered Nablus, along with the rest of the West Bank, in the 1967 Mideast war.

Over the years, the site fell into disrepair. The neglect was exacerbated after the first Palestinian uprising in the late 1980s, when Nablus became a center for resistance to Israeli control.

Its condition further deteriorated after the second, more violent, uprising erupted in 2000, drawing Israeli military incursions and the imposition of roadblocks and closures that all but cut the city off from the outside world. In recent years, with the Western-backed Palestinian Authority increasingly asserting security control over the cities of the West Bank, Israel has removed some roadblocks and movement has become more free.

Visitors to Nablus are still rare, but the improvements helped convince the archaeologists that the time had come to resume work.

The new excavations and the establishment of the archaeological park are a joint project of the Palestinian Tourism Ministry, the Dutch government and UNESCO. The project began last year and is scheduled to end with the opening of the park in 2012.

In Israel, archaeology, and especially biblical archaeology, has long been a hallowed national pursuit traditionally focused on uncovering the depth of Jewish roots in the land. For the Palestinians, whose Department of Antiquities was founded only 15 years ago, the dig demonstrates a growing interest in uncovering the ancient past.



The department now has 130 workers and carries out several dozen rescue excavations every year on the sites of planned building projects in areas administered by the Palestinian Authority, said Hamdan Taha, the department's director. Ten ongoing research excavations are being conducted with foreign cooperation.

All of the periods in local history, including that of the biblical Israelites, are part of Palestinian history, Taha said.

Digs like the one in Nablus, he said, "give Palestinians the opportunity to participate in writing or rewriting the history of Palestine from its primary sources."

**Please visit the site: <http://tinyurl.com/45x2g9l> Go there for pix**

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## **2-HORNED ALTAR FOUND IN ANCIENT GAT, BY DAVID WILLNER**

Rare - and unprecedented in Israel - a 2-horned Philistine altar is unearthed in Tel es Safi (Gat of the Philistines).

The simple setting belies its significance. Here, in the eastern coastal plain a find of immense significance has been uncovered. The ancient Philistine's - those sea-faring folks from the Aegean shores have sent another strong indication as to their origin. A 2-horned altar - unknown until now in ancient Israel/Canaan, has been discovered by Prof. Aren Maier of Bar Ilan University.

Maier has been digging in Tel es Safi for over 15 years - and this may prove to be the most important find yet from a site that limits its digging season to just 4 weeks. Four weeks, because the real work of archaeology comes in the analysis, research, and publishing of the finds that has been the bane of many excavators that have come before.

The altar, believed to be the largest (9th c. BCE) monolithic altar yet found in the country (Beersheva has a larger altar - but it is made up of multiple stones) is striking in that it seems either unfinished or simply designed to function with 2 horns - and not the more common 4.

Tune in to the LandMinds show on Wednesday July 27th to hear Prof. Maier discuss this important find. Or you can download the podcast right here on the Foundation Stone website after the show airs.

In the meantime, you can also check out Aren's blog about the find, here.

Finally, if you really need more on this emerging story, I'm posting a short interview with Amit Dagan (the area supervisor of the find) here - it's in Hebrew.

David Willner and Barnea Levi Selavan are co-Hosts of the LandMinds show on Israel National News, airing Wednesdays from 5-7pm Israel time. You can contact them at [info@foundationstone.org](mailto:info@foundationstone.org).

**Please visit the site: <http://www.foundationstone.org/> Go there for pix and for link Radio**

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## **ARCHEOLOGISTS DISCOVER CHURCH REMAINS IN TURKISH ANCIENT CITY**

Archeologists have unearthed remains of a church in an ancient city in the Mediterranean province of Isparta, head of the team said on Monday.

Associate Professor Mehmet Ozhanli, the head of Suleyman Demirel University's Archeology Department who heads excavations in the ancient city of Pisidian Antioch, said they had discovered remains of a church during their excavations.

"We have found the remains of a three-nave church one and a half meters below the surface," Ozhanli told AA correspondent.

Ozhanli said the building was constructed as a Pagan temple, however it was converted to a church after the spread of Christianity.

"This is the fifth church we have brought to daylight in this ancient city," Ozhanli said.

Ozhanli said this recently found church was also below the Men Temple, and the number of churches in the area rose to six.

"This indicates that this area was an important center for Christianity, and it was the capital of Pisidia," Ozhanli said.

Pisidian Antioch (also called Antioch-of-Pisidia) was a major Roman colony that was visited by St. Paul on his First Missionary Journey.

Pisidian Antioch marked an important turning point in Paul's ministry, as the city became the first to have a fully Gentile Christian community.

Situated on the southern foothills of the Sultan Mountains, Pisidian Antioch was spread over seven small hills in a manner reminiscent of Rome. The city was founded in the early 3rd century BC by the Seleucid dynasty.

It was one of 15 different cities named "Antioch" after several members of the family with the name Antiochus. The original settlers of the new Hellenistic city came from Magnesia on the Meander, a town near the Aegean coast.

The inhabitants of Antioch at this time were a mixture of Roman veterans and their families, descendents of the earlier Hellenistic settlers, and people of Phrygian and Pisidian background. Several of the Romans from Antioch became members of the Senate.

Around 50 AD, Paul and Barnabas visited the city and established a Christian community. The city continued to prosper in the 2nd and 3rd centuries, and in 295 AD it became the capital of Pisidia, a new province created by Diocletian. The theater was enlarged and anew agora and porticoes were built.

Antioch was the seat of the bishops of Pisidia, including Bishop Optimus who attended the Council of Constantinople in 381. There is no evidence of any churches before the 4th century, and Christians were actively persecuted under the governor of Pisidia in the early 4th century, Valerius Diogenes. But by the end of the 4th century, when persecution had ceased, Antioch had between one and three church buildings.

Archaeological interest in Pisidian Antioch has been ongoing since its re-discovery in 1833 by British Chaplain F.V.J. Arundell.

Please visit the site: <http://www.worldbulletin.net/?aType=haber&ArticleID=76651>

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## **DOUBTS OVER AUTHENTICITY OF 'ANCIENT CHRISTIAN' BOOKS BY KEVIN CONNOLLY**

In the cool living room of a stone-built house in Northern Israel I might just have held in my hands the keys to the ancient mysteries of Christianity.

And then again, I might not have.

With the blinds shuttered against the glare of the midday sun my host, Hassan Saeda, lays out a collection of extraordinary books which he says are about 2,000 years old.

Flowing of hair and neat of beard, he bears a distracting resemblance to an illustration of Christ from an old children's Bible. It lends the scene an air of extra gravity.

The books - bindings, pages, covers and all - are made entirely of various metals.

They are inscribed - or engraved, stamped or embossed - with various simple pictures and writing in a variety of languages including Greek and Old Hebrew.

And they are astonishingly heavy. Some are no larger than a credit card but some are the size of large-format modern paperbacks. The largest that I handled probably weighed 4 or 5kg (about 10lbs).

You can see why the publishing industry was eventually won over by the flexibility and portability of paper.

Family heirloom?

But that is where the supply of undisputable concrete fact about the collection - which some people refer to as the "Lead Codices" - more or less runs out.

Mr Saeda, for example, says the books have been in his family for 120 years, after his grandfather discovered them in a cave.

Other people who have met him to discuss the books say he found or bought them in Jordan within the last five years and smuggled them into Israel.

Mr Saeda is sticking to the current version of his story in which he acknowledges that many experts who have seen the metal volumes consider them to be fakes.

His faith is undimmed.

"I spent so much time and so much money to prove these are real. There are a lot of professors and one of them told me that I'm living in a fantasy.

My answer to him was: 'I think you got old and your eyes don't see anything.' I took my book and went away. Many professors say it's a fake. Why? I don't know why. But this is a real book."

Mysticism and magic swirl in the dark air as Mr Saeda enlarges on the possibilities he sees in the codices.

They might contain the real story of the destruction of the Jewish Second Temple by the Romans, he says.

Or they could fill the gaps in our knowledge of the early Christian movement. They might even hold the key to universal happiness.

If they are real, that is.

The 'True Cross'

The Holy Land is one of the homes of archaeology. Indeed for years, one of the main purposes of the science was to search for tangible evidence that would prove the truth of the stories of the Bible.

And there has always been money in it too.

There are enough pieces of the "True Cross" in circulation to make a wooden aircraft carrier. And enough nails to put it together.

British taxpayers will wince at the thought that a king of England once paid 100,000 gold coins for the "real" crown of thorns from the New Testament.

There are stories of not one but several foreskins of Jesus which have been recovered, sold and venerated and of the feathers of the wings of the Archangel Michael being preserved in Pennsylvania.

For every seller, it seems there is a buyer.

So I went to see Lenny Wolfe, an antiquarian who lives and trades in Jerusalem and who painted a gripping picture of a Middle East antiques market where the unwary and the inexperienced tread at their peril.

Factories in Syria knock out fake antiquities to order and every month brings new stories of caves in the remote valleys of Jordan where golden treasures are hidden that will change the way we see the world.

Mr Wolfe has seen the lead codices and decided not to invest. He is a philosopher as well as a trader, interested in the foibles which inspire people to seek out antiquities which may well be fake and to pin their hopes on them.

Or, as he put it: "The greater, the more sensational the story, the more the chances of it being real are miniscule. I'm very interested in the behavioural or anthropological aspects of the antiquities trade."

Mr Wolfe is writing a book, entitled Forgeries and Controversies in Biblical Archaeology. "There are enough controversies and forgeries to make this a lengthy tome," he says.

Golden rule

Joe Zias, an anthropologist who served for 25 years as a senior curator at the Israel Antiquities Authority, is equally sceptical.

The golden rule in archaeology, he says, is simple - when you hear extraordinary claims, ask for extraordinary proof.

Mr Zias says the world of archaeology has changed since Hollywood gave us first Indiana Jones and then the Da Vinci code.

No longer is the archaeologist a nerdy toff with a shovel and a Shorter Oxford Dictionary of Latin. Suddenly he or she, is a swashbuckling figure solving the sinister mysteries of antiquity.

They are still searching for the Holy Grail of course - except that now the Holy Grail is not just the find itself but a story of danger and adventure in the process of searching that secures you a deal for a book or a documentary.

Joe Zias says the odds are always against any such finding turning out to change the way we look at ancient history as the Dead Sea Scrolls once did.

He says he has seen many people bringing artefacts to his museum during his quarter-century as a curator, but the only genuine one was a fragment of Byzantine pottery found by a tourist on Mount Sinai.

"It wasn't going back to the time of Moses, but in 25 years that's the only thing I ever saw that was authentic," he says.

Now there are those who believe - just as Mr Saeda does - that the Lead Codices are genuine and that they hold important secrets about the ancient world.

But the search for truth in the Holy Land has been littered with fakes and forgeries for hundreds of years and when great claims are made for a new discovery, the burden of proof lies with the finders. And the burden is a heavy one.

Please visit the site: <http://www.bbc.co.uk/news/world-middle-east-14251461> [Go there for pix]

## DECODING EGYPTIAN PAPYRI

Oxford University wants help decoding Egyptian papyri Oxford University is asking for help deciphering ancient Greek texts written on fragments of papyrus found in Egypt.

Hundreds of thousands of images have gone on display on a website which encourages armchair archaeologists to help catalogue and translate them.

Researchers hope the collective effort will give them a unique insight into life in Egypt nearly 2,000 years ago.

Project specialist Paul Ellis said: "Online images are a window into ancient lives."

The collection is made up of papyri recovered in the early 20th Century from the Egyptian city of Oxyrhynchus, the so-called "City of the Sharp-Nosed Fish".

At the time the city was under Greek rule. Later the Romans settled the area.

The papyri contain literature, letters and even a story about how Jesus Christ cast out demons.

Missing masterpieces

Scholars have been studying the Oxyrhynchus collection for more than 100 years and have already rediscovered many lost works that went missing during medieval times.

They have found masterpieces by the ancient Greek poet Sappho and dramatists Menander and Sophocles.

Many of the documents the public can see on the site have not been read for more than 1,000 years.

But although they are written in Greek, visitors to the website do not have to have any knowledge of the language in order to use an online tool to help analyse the fragments.

One letter, written in 127 AD, which has already been translated is from a grandmother called Sarapias asking that her daughter is brought home so that she can be present at the birth of her grandchild.

Project director Dr Dirk Obbink said: "We aim to transcribe as much as possible of the original papyri, and then identify and reconstruct the text."

"No single pair of eyes can see and read everything. From scientists and professors to school students and ancient enthusiasts, everyone has something to contribute - and gain."

**Please visit the site: <http://www.bbc.co.uk/news/uk-england-oxfordshire-14289685>**