



Επιστημονικό Σωματείο,
Έτος Ίδρυσης 1982, έδρα:
Κάνιγγος 27, 106 82 Αθήνα
(Ένωση Ελλήνων Χημικών)
<http://archaeometry.org.gr>

**ΟΙΚΗΤΙΚΟ
ΣΥΜΒΟΥΛΙΟ:**

Μ. Καπαρού (πρόεδρος),
Α. Οικονόμου (αντιπρόεδρος),
Ε. Κουλουμπή (γενική
γραμματέας),
Μ. Παπαγεωργίου (ταμίας),
Ε. Φιλιππάκη (μέλος),
Ι. Μπασιάκος (μέλος),
Γ. Φακορέλλης (μέλος)

Πληροφορίες:

Γ. Φακορέλλης (σύνταξη,
επιλογή ύλης)

E-mail: yfacorel@uniwa.gr

Scientific Association, Year
of Establishment 1982,
Headquarters: Kaniggos 27,
106 82 Athens (Association
of Greek Chemists)
<http://archaeometry.org.gr>

BOARD:

Μ. Kaparou (president),
Α. Oikonomou (vice-
president),
Ε. Kouloumbi (general
secretary),
Μ. Papageorgiou (treasurer),
Ε. Philippaki (member),
Ι. Bassiakos (member),
Υ. Facorellis (member)

Information:

Υ. Facorellis (editor)

E-mail: yfacorel@uniwa.gr

Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Ιούλιος 2023 -

**Abundance of knowledge does not teach men to be
wise.**
(Heraclitus)

Newsletter of the Hellenic Society of Archaeometry

- July 2023 -

Nr. 268

ΠΙΝΑΚΑΣ ΠΕΡΙΕΧΟΜΕΝΩΝ – TABLE OF CONTENTS

ΣΥΝΕΔΡΙΑ – CONFERENCES/WORKSHOPS

| | |
|--|---------|
| Conference on Cultural Heritage and New Technologies, Vienna, November 15 th -17 th | page 5 |
| International Symposium on Archaeometry - Save the Date! 27-31 May 2024 in Melbourne, Australia | page 6 |
| XXVI Conference, ROME, Italy, Rome, 7-10 November 2023, "Sala del Chiostro" -Sapienza University of Rome | page 7 |
| 20 th International Aegean Conference, HYDOR: Water Resources and Management in the Aegean Bronze Age, Amsterdam, 12-16 June 2024 | page 9 |
| RAA2023-New Early Registration and Payment Deadline | page 11 |
| Second Latin American Radiocarbon Conference (CLARa), Museo del Templo Mayor, Mexico City, 4 - 8 September 2023 | page 13 |
| 6 th International Conference on Innovation in Art Research and Technology – InART2024, Oslo, 4-7 June 2024 | page 14 |
| The British Association for Near Eastern Archaeology (BANEA) 2024 Conference, University of Glasgow, 3-5 January 2024 | page 15 |
| International conference on Ancient Science, Tel Aviv, July 19, 2023 | page 17 |

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ – JOB VACANCIES/FELLOWSHIPS

| | |
|--|---------|
| Radiocarbon pretreatment technician at ORAU | page 19 |
| PHD positions available @ uncampania ITALY | page 20 |
| Job vacancies: Research Scientist Microscopist and Research Technician, Rijksmuseum, Amsterdam | page 21 |
| Steinmetz Family Foundation Museum Fellows - Agora/Makriyannis Wing and Corinth (2 positions) | page 22 |
| Research Specialist - MIni CARbon DAting System (MICADAS) | page 24 |
| Technology Driven Sciences: (Tech4Culture), 5 PhD scholarships | page 25 |
| Positions available on Earthquake Engineering, Beyond Sustainability and Structural Health Monitoring (PhD Students) | page 26 |

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

Πρόσκληση φοίτησης στο νέο Διεθνές Μεταπτυχιακό Πρόγραμμα Σπουδών

«Protection of Cultural Heritage and Monuments of Nature from the Effects of Climate Change» page 27

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

FIELD SAMPLING for Laboratory Analysis in Archaeology, Evi Margaritis, Artemios Oikonomou, Efthymia Nikita and Thilo Rehren (Eds) page 30

The Human Brain in Ancient Egypt - A Medical and Historical Re-evaluation of Its Function and Importance, by Sofia Aziz page 33

Ancient Container Technologies from Eastern to Western Asia, Edited by Olivier P. Nieuwenhuys[†], Reinhard Bernbeck & Koen Berghuijs page 34

The scent of ancient magic, by Britta K. Ager page 35

A group attribution method for lead isotope data in geologically-diverse environments - Southwest Silk Road paper page 37

Continuous evolvment of constant diet in the 3rd–1st millennium BCE southern Levant: Macro-botanical proxies from Tell eṣ-Şâfi/Gath, by Suembikya Frumin, Aren M. Maeir, Ehud Weiss page 39

ΕΙΔΗΣΕΙΣ - NEWS RELEASE

Tiny 12,000-year-old bird bone flutes found in Israel, by Raffi Berg page 40

Pillars used to decipher Phoenician language reunited after 240-years, by Daniel Tihm page 41

Did this archaeological discovery expand the Greek empire's history? page 43

Village garbage man helped unearth ancient bronze statues in Tuscany, by Alvise Armellini page 44

Embalming Facilities Discovered at Famous Egyptian Site, by Matt Hrodey page 46

Archaeologists discover 4,300-year-old copper ingots in Oman page 48

Scapel, Forceps, Bone Drill: Modern Medicine in Ancient Rome, by Franz Lidz page 50

Kubbat Ḥamuḍ Shalgham: Turnip and Swiss Chard Chowder, Iraqi Style, by Nawal Nasrallah page 53

Virgil quote found on fragment of Roman jar unearthed in Spain, by Sam Jones page 56

Divers are about to pull a 3,000-year-old shipwreck from sea page 58

Tunisia's Carthage Museum Gives Preview of Expanded Renovation page 60

Stunning Greek Mosaics Uncovered in Syria, by James Ssengendo **page 61**

Israeli Archaeologists Find Enigmatic 2,500-year-old Burials in the Desert,
by Ariel David **page 63**

ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS
CONFERENCE ON CULTURAL HERITAGE
AND NEW TECHNOLOGIES, VIENNA,
NOVEMBER 15TH-17TH

For the attention of the ICOMOS National Committees,

we are pleased to forward to you and your members an invitation to this year's Conference on Cultural Heritage and New Technologies in Vienna, November 15th-17th.

Please find attached information concerning the conference, as well as further information on a call for papers relating to said conference!

Best wishes from Vienna

Cultural Heritage as a Resource - Technologies for the Paradigm Shift in Archaeology, Conservation and Education

This year's CHNT will be looking at how to change the way we perceive and handle upcoming challenges and crises while focusing on archaeology and cultural heritage as a resource. The need for technological foundations, resources and education to allow for a digital interaction with cultural heritage assets, raises questions about the impact on workflows, distribution of knowledge, ethics, the digital divide and authenticity. The International Conference on Cultural Heritage and New Technologies provides a platform for exchanging views on the Cultural Heritage protection agenda. The focus is primarily on interdisciplinary cooperation between experts with a strong interest in the application of new technologies in the field of cultural heritage.

The CHNT Committee invites you to submit a contribution in the form of a long abstract that relate to a specific session (lecture of max. 20 minutes) or round table (short talks of about 5 to 10 minutes). In addition, you can participate in various panels and workshops.

Please find further information online: www.chnt.at/call-for-papers/

The Call is open from April 15 to June 15, 2023

ICOMOS Austria

a: Karlsplatz 13, A-1040 Wien

e: office@icomos.at

w: www.icomos.at

INTERNATIONAL SYMPOSIUM ON ARCHAEOLOGY - SAVE THE DATE! 27-31 MAY 2024 IN MELBOURNE, AUSTRALIA

The **International Symposium on Archaeology (ISA)**, hosted by the University of Melbourne will be **27th - 31st May 2024**. Please put it in your calendar and start thinking about posters and papers!

The ISA integrates archaeology and natural sciences on all types of objects and materials related to human activity, focusing on developing and promoting scientific techniques to better understand cultural heritage materials, landscapes and environments.

Since the ISA biennial meetings began in the 1960s, this is the first time that the ISA will be held in Australia, as a partnership with the [Australasian Research Cluster for Archaeological Science \(ARCAS\)](#) and the University of Melbourne. The symposium is an opportunity to showcase your research to a broad audience, find out the latest archaeological science developments from international colleagues, and make new connections.

ARCAS has an ongoing relationship with **The Society for Archaeological Sciences (SAS)**, who will be providing sponsorship the symposium.

The conference organisers welcome additional partnerships and sponsorships for this fantastic event.

We look forward to seeing you there!

Please see our website at www.isa2024.melbourne for preliminary info, with further details to come!

Dr Rebekah Kurpiel
Director, La Trobe Archaeology Research Partnerships
Martin Building Rm 146 | La Trobe University
Bundoora | Wurundjeri Woi-wurrung Country | VIC 3086
T: +61 3 9479 1385 | M: 0403 165 203 | E: r.kurpiel@latrobe.edu.au

Pronouns: she/her

I live and work on unceded Wurundjeri Woi-wurrung Country. This statement is to acknowledge and pay respect to the Wurundjeri Elders and community as well as those from all First Nations in Australia and around the world.

XXVI CONFERENCE, ROME, ITALY, ROME, **7-10 NOVEMBER 2023, "SALA DEL** **CHIOSTRO“ -SAPIENZA UNIVERSITY OF** **ROME**

THE AIV XXVI CONFERENCE approaches the issues associated with materials and processing, in the research and manufacturing communities. The four-day Conference promotes a multidisciplinary environment to encourage a crossfertilization between attendees on emerging technologies. We cordially invite you to participate to the 26th edition of AIV Conference that will offer the opportunity to present and discuss your recent advances in vacuum science and technology and related fields.

You are kindly invited to register for the conference and submit your contribution at <https://www.aiv.it/it/aiv-xxvi-conference>

Sessions

- **Surface Engineering: thin films and nanomaterials** (Synthesis of multifunctional surfaces, Interface design, nanostructured coatings, nanosized electronics, energy harvesting, biotechnology and bio-medical research surfaces for applications in harsh environments)
- **Innovation in Vacuum technology: advances in measurements, gas analysis, pumping and large systems** (Particle accelerators, large interferometers and energy research)
- **Nuclear Fusion Technology** (Latest developments on running and planned fusion experiments)
- **Additive and Smart Manufacturing: Materials, Technologies and Applications** (Exploiting additive manufacturing, Materials and processes, Design for additive manufacturing, Next generation of additive manufacturing technologies)
- **Energy Transition: Energy production, Storage and Environment** (New technologies, systems and devices for energy conversion, storage and power consumption reduction)
- **Cultural Heritage (CH): Conservation and Diagnostics** (Surface characterization, Restoration, Innovative materials and nanotechnology for CH, Machine learning and AI for CH)
- **Innovative technologies for precision agriculture and models for sustainable nutrition** (Digital farming, mobile and in-field devices, sensors, customized robotics, transforming and sustainable food production, nutrition security, sustainable food profiling models, modeling methodology)
- **Company Presentations** (Spotlight Your Company's Innovations at the 2023 AIV Conference)

Scientific Committee

Andrea LAMBERTI Politecnico di Torino (Chair)

Vittorio MORANDI CNR-IMM Bologna
Fabrizio PIRRI Politecnico di Torino & IIT
Andrea ROSSI Istituto Nazionale di Ricerca Metrologica
Marco ROSSI Sapienza Università di Roma
Luciano SCALTRITO Politecnico di Torino
Antonio TERRASI Università di Catania
Giuseppe FIRPO Università di Genova
Mariano ANDERLE AIV & CNR-ISTP
Michele MURA Saes Group
Stefano LETTIERI CNR-ISASI Napoli
Sergio FERRERO Politecnico di Torino
Matteo COCUZZA Politecnico di Torino /CNR-IMEM
Paolo OSSI Politecnico di Milano
Giorgio SPERANZA Fondazione Bruno Kessler
Andrea LIEDL Laboratori Nazionali di Frascati-INFN
Stefano LUPI Sapienza Università di Roma
Mario ROCCA Università di Genova
Sebastiano TRUSSO CNR-IPCF Messina
Samuele DAL BELLO Consorzio RFX Padova
Fabrizio GIORGIS Politecnico di Torino
Francesco FRACASSI Università di Bari

Organizing Committee

E. Vassallo CNR-ISTP Milano, G. Melis Politecnico di Torino, M. Fincato Consorzio RFX Padova

Organizing Secretary

Angela Riggio, Mail segreteria@aiv.it, M +39 348 5465168, www.aiv.it

**20TH INTERNATIONAL AEGEAN
CONFERENCE, HYDOR: WATER
RESOURCES AND MANAGEMENT IN THE
AEGEAN BRONZE AGE, AMSTERDAM, 12-16
JUNE 2024**

Dear colleagues,

We remind you that the 20th International Aegean Conference is scheduled to take place in Amsterdam, from 12-16 June 2024:

HYDOR: Water Resources and Management in the Aegean Bronze Age

Robert Laffineur, Gert Jan van Wijngaarden, Jan Paul Crielaard, Joost Crouwel, Jan Driessen, Jill Hilditch

Water is arguably the most important substance of human life. However, in comparison to other liquids such as oil and wine, it has received relatively little attention in the study of the Aegean Bronze Age. The drainage of Lake Copais and the rerouting of a river at Tiryns indicate that knowledge on water engineering was present in Mycenaean society. Likewise, the water system in the Minoan Palace at Knossos indicates an awareness of the importance of hygiene and water provision.

The twentieth International Aegean Conference will be held in Amsterdam, a city situated in a riverine delta below the sea level. We will focus on different aspects of water and its effects on Aegean Bronze Age societies and are inviting scholars to share their recent research on:

- * Drinking water (storage, transport, vessels etc.)
- * Water provision (wells, springs, piping, drainage etc.)
- * Waterscapes (use of rivers, lakes, lagoons etc.)
- * Water flora and fauna
- * Water as an environmental threat (Tsunamis and floods)
- * Water works (dams, dykes and river flows)
- * Water in Aegean art and material culture
- * Water transport (boats, ships and harbors)
- * Etcetera

We invite you to submit a proposal for papers by sending an abstract of ca 150 words to the e-mail address below. Papers at the conference will be of 15-20 minutes duration and the proceedings will be published in the Aegaeum series. You are requested to send suggestions to give a paper to e-mail address below before 1 July 2023. The deadline for abstracts is 1 September 2023.

HYDORconference@gmail.com<mailto:HYDORconference@gmail.com>

Robert Laffineur
Gert Jan van Wijngaarden
Jan Paul Crielaard
Joost Crouwel
Jill Hilditch



RAA2023-NEW EARLY REGISTRATION AND PAYMENT DEADLINE

Dear Raman Enthusiasts!

The deadline for the early registration and payment for the 11th International Conference on the Application of Raman Spectroscopy in Art and Archaeology (RAA2023) is approaching!

The early registration and payment is until Sunday, July 2, 2023. From Monday, 3 July, 2023 the late registration and payment fee will be applied.

The registration and payment for the presenting authors is until Sunday, July 9, 2023. No other extension will be applied after that date. Only after the successful registration and payment of the fee the abstracts can be included in the RAA2023 conference programme and as a consequence in the RAA2023 book of abstracts.

The presenting authors that are planning not to attend the conference are kindly asked to contact the organizing committee by email to raa2023@ugent.be.

Please, note that in order for your registration and payment to be valid you must receive two mails (either in your regular mailbox or your spam/junk folder). More details are provided here: [Registration and payment | RAA 2023 \(ugent.be\)](#).

The co-authors and/or participants that want to attend the complete scientific and social programme of the RAA2023 conference must register and pay a conference fee.

On behalf of the organizing and scientific committees of the 11th International Conference on the Application of Raman Spectroscopy in Art and Archaeology (RAA2023).

The Chairs of RAA2023

Dr. Anastasia Rousaki, Ghent University, Ghent, Belgium

&

Dr. Eleni Kouloumpi, The National Gallery-Alexandros Soutsos Museum, Athens, Greece

 2023 - 11th International Conference on the Application of Raman Spectroscopy in Art and Archaeology



**SECOND LATIN AMERICAN RADIOCARBON
CONFERENCE (CLARA), MUSEO DEL
TEMPLO MAYOR, MEXICO CITY, 4 - 8
SEPTEMBER 2023**

Registration is now open for the CLARa2 conference in Mexico City:

Conference site: <https://clara2.fisica.unam.mx/en/home>

Registration page: <https://clara2.fisica.unam.mx/en/registration>

The Second Latin American Radiocarbon Conference (CLARa) is organized by the National Laboratory of Accelerator Mass Spectrometry (LEMA) at the Institute of Physics (IF) of the National Autonomous University of Mexico (UNAM), in collaboration with the Directorate of Archaeological Salvage (DSA) of the National Institute of Anthropology and History (INAH) and the CDMX Mixed Tourism Fund.

Event Address: Museo del Templo Mayor, Mexico City

Time: 4 to 8 September 2023

**6TH INTERNATIONAL CONFERENCE ON
INNOVATION IN ART RESEARCH AND
TECHNOLOGY – INART2024, OSLO, 4-7 JUNE
2024**

Welcome to the 6th International Conference on Innovation in Art Research and Technology – InART2024 – in Oslo 4-7 June 2024.

For more information about the conference and the conference's topics, please, visit our website [InART2024 Conference - Museum of Cultural History](#)

Read here about guidelines and submission [Important dates and abstracts - Museum of Cultural History](#)

All welcome!

Angeliki Zisi
Archaeological Conservator
Kulturhistorisk Museum
Oslo

THE BRITISH ASSOCIATION FOR NEAR EASTERN ARCHAEOLOGY (BANEA) 2024 CONFERENCE, UNIVERSITY OF GLASGOW, 3-5 JANUARY 2024

[Register here](#)

The University of Glasgow is proud to host the 2024 BANEA annual meeting on the 3-5th January 2024.

Registration

Early Bird Registration, priced at £80 (£35 student/unwaged), will be available at banea24.org until Friday 1st September, at which point prices will increase to £95/45. A 3-course conference dinner will take place on the 3rd January, after the Keynote and a reception, and is priced at £55. Places are limited to 40 for the dinner on a first come first served basis.

If you are unsure whether you are currently a member of BANEA, please contact the BANEA membership secretary to enquire at y.heffron@ucl.ac.uk

Grants for expenses are available for eligible applicants at <https://www.banea.org/conference-grants>

Themes

Organised around Archaeological and heritage practice in Southwest Asia: towards equitable futures, the conference will foreground archaeology's role and responsibilities in climate change discourse; the discipline's colonial inheritances and legacies, and strategies for addressing and mitigating them; and equitable and sustainable archaeological, cultural heritage, and community engagement practice. A keynote speech from Rozhen Kamal Mohammed-Amin will tackle issues related to these themes.

Paper submissions

Paper submissions for the main sessions should be sent in the form of ca.250 word abstracts to neil.erskine@glasgow.ac.uk by Friday 6th October and should indicate a preferred session topic.

If paper acceptance is a requirement of your visa to travel to the UK and is needed urgently, please make this clear in your email and the committee will respond as soon as possible.

Paper submissions for workshops should be made directly to the relevant session chair.

Sessions and workshops

full abstracts [here](#)

Main sessions

1. Archaeological fairness
2. Landscape
3. Digital archaeologies
4. Field reports
5. Foodways
6. Social worlds

Workshops

Achaemenid Environments: Agenda-setting economy, landscape, environmental and bioarchaeological archaeologies of the Achaemenid Empire

Organiser: Catherine M. Draycott, catherine.draycott@durham.ac.uk

The Archaeology and Cultural Heritage of Iraq and the Kurdistan Region

Organisers: Claudia Glatz, Claudia.Glatz@glasgow.ac.uk, and Daniel Calderbank

Big Dig Energy: Gendered practices and internalised patriarchy in archaeological fieldwork in West Asia

Organiser: Yağmur Heffron, y.heffron@ucl.ac.uk

Dialogues Across Landscapes: New Challenges to Practicing Landscape Archaeology in Western Asia

Organisers: Dan Lawrence, dan.lawrence@durham.ac.uk, Claudia Glatz, Jennie Bradbury, and Ömür Harmanşah

When is Urban, Really? Looking Back, Moving Forward – Exploring temporalities of Late Chalcolithic Mesopotamia in the present: A workshop celebrating historic innovations in early urban archaeology, and tackling current challenges to the field

Organiser: Ailbhe Nic Thoirealaigh, a.turley.1@research.gla.ac.uk

Whose Heritage Is it? A Discussion on Community Engagement and Local Counter-narratives in Archaeology of Southwest Asia

Organiser: Yasaman Nabati, y.nabati-mazloumi.1@research.gla.ac.uk

INTERNATIONAL CONFERENCE ON ANCIENT SCIENCE, TEL AVIV, JULY 19, 2023

We are delighted to invite you to an international conference on ancient science.

The conference will be held on July 19, Wednesday, between 9:00–18:00 at Tel Aviv University (Gilman 496) and will also be broadcast on Zoom.

The conference will deal with ancient science in four sessions: Egypt, Mesopotamia, Greece, and Judea.

We would be delighted if you could attend. Please register through the link below.

Conference on Ancient Science
July 19, 2023, | 9:00 - 18:00
Gilman 496, Tel Aviv University

Program

9:00 – 9:30 Gathering

Opening | Eshbal Ratzon (Tel Aviv University)

9:30 – 11:00 First session: Egypt | Deborah Sweeney (Tel Aviv University) Sarah Symons (McMaster University):
Observational Techniques in the Ramesside Star Clock of the Egyptian New Kingdom

Andreas Winkler (Freie Universität Berlin):
Astronomy and Astrology in Demotic Elaborate Horoscopes

Tanja Pommerening (speaker) / Annette Imhausen (Universität Marburg / GoetheUniversität Frankfurt am Main):
New Ways to Think about Egyptian Science

11:00 – 11:30 Break

Greetings | Rachel Gali Cinamon (Dean of Humanities, Tel Aviv University)

11:30 – 13:00 Second session: Mesopotamia | Amir Gilan (Tel Aviv University) Wayne Horowitz (Hebrew University):
Infinity and Big Numbers in the Ancient Near East

Susanne M. Hoffmann (Universität Jena):
Reconstructing Babylonian Constellations

Yigal Bloch (Bible Lands Museum Jerusalem):
Applied Astronomy, Shifting Geography: Assyrian Court Scholars and Their Practical Interpretation of Babylonian Astronomical Tradition

13:00 – 14:00 Lunch break

14:00 – 15:30 Third session: Greece | Shaul Katzir (Tel Aviv University) Barbara Sattler (Ruhr-Universität Bochum):

Apeiron in Zeno, Aristotle and Euclid

Marco Vespa (Hebrew University):

How to Do Things with Words: Etymology as a Heuristic Tool in the Construction of Aristotle's Anatomical Discourse

Orna Harari (Tel Aviv University):

Finitism and Hero of Alexandria's Alternative Geometrical Constructions: A Possible Explanation

15:30 – 16:00 Break

16:00 – 18:00 Fourth session: Judea | Dalit Rom-Shiloni (Tel Aviv University) Noga Ayali-Darshan (Bar Ilan University):

A Polemical Cosmogony: The Doxologies in the Book of Amos and Ancient Near Eastern Cosmogonies

Naomi Hadad (Tel Aviv University):

A New Edition of 4Q319: A Calendrical-Sectarian Scroll

Eshbal Ratzon (Tel Aviv University):

Calendrical Lexicography in Ancient Judaism

Jonathan Ben-Dov (Tel Aviv University):

Sundials from Second Temple Judah and the Jewish Diaspora in their Intellectual Context

Closing | Eshbal Ratzon (Tel Aviv University)

We would appreciate it if you register:

<https://docs.google.com/forms/d/e/1FAIpQLScv67u01HZq2nm5S19ax3sHD6L0B8aIoM1zO75EkEFvMDT7NA/viewform>

To join the conference via Zoom, please click: <https://tau-ac-il.zoom.us/j/81559219134>.

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS
RADIOCARBON PRETREATMENT
TECHNICIAN AT ORAU

Dear all,

The Oxford Radiocarbon Accelerator Unit is currently advertising for a radiocarbon pretreatment technician. Please circulate to anyone you think might be interested. Applications are due 12:00 noon on 26 June, 2023 and details are available at the following link.

<https://archit.web.ox.ac.uk/job-vacancies#collapse4243711>

Best wishes,

Rachel

Dr Rachel Wood
Director
Oxford Radiocarbon Accelerator Unit (ORAU)

PHD POSITIONS AVAILABLE @ UNICAMPANIA ITALY

Dear Colleagues,

Please find at the following link:

(https://www.unicampania.it/RipartizioniFS/RAG/Dottorati_di_Ricerca/39/Bando_39_ciclo_EN.pdf) the call to apply for 6 PhD positions dedicated to foreigners (i.e SCHOLARSHIPS RESERVED for graduates of international Universities) for the Doctoral course in Mathematics, Physics and Engineering Applications at the Mathematics and Physics Department of UniCampania "L. Vanvitelli". The application **deadline is July 6th 2023**.

We are glad to offer research opportunities in Isotope research (both stable and radioactive) and applications to Cultural Heritage and Environmental Sciences (Contact: Prof. Fabio Marzaioli: fabio.marzaioli@unicampania.it ; Prof. Mauro Rubino: mauro.rubino@unicampania.it). We invite the potential candidates to contact one of us before submitting the application.

Best regards,

Fabio Marzaioli

Prof. Fabio Marzaioli, Ph.D

Associate Professor in Applied Physics

Università degli Studi della Campania “Luigi Vanvitelli”

Department of Mathematics and Physics

Tel: +390823274661/4814 int 28

Fax: +390823274605

Head of Accelerator Isotope Ratio Mass Spectrometry Services

Delegate for the DMF-PoLaR (Research Laboratory Pole)

Plos One Academic Editor

‘The scientist does not study nature because it is useful to do so. He studies it because he takes pleasure in it, and he takes pleasure in it because it is beautiful. If nature were not beautiful it would not be worth nothing, and life would not be worth living’ Henry Poincaré (1908)

JOB VACANCIES: RESEARCH SCIENTIST MICROSCOPIST AND RESEARCH TECHNICIAN, RIJKSMUSEUM, AMSTERDAM

The Conservation & Science Department of the Rijksmuseum, Amsterdam, seeks experienced and team-oriented candidates to fill the following positions:

Research Scientist Microscopist (*36 hours per week*)

Your main responsibilities:

Microscopic and spectroscopic research, including sample preparation, for Operation Night Watch and other projects;
Manage and maintain microscopic equipment;
Translate research findings to colleagues, the general public and peers;
Manage interns and supervise PhD and Post-Doc researchers.

For more information about the job and how to apply, please visit the museum's website:
www.werkenbijhetrijksmuseum.nl/en/vacancy-rijksmuseum/...

Research Technician (*36 hours per week*)

Your main responsibilities:

Providing technical-strategic advice to head of department;
Analysing and resolving technical problems;
Procurement and maintenance of equipment;
Managing maintenance contracts and budgets;
Familiarity with current laws and regulation.

For more information about the job and how to apply, please visit the museum's website:
www.werkenbijhetrijksmuseum.nl/en/vacancy-rijksmuseum/...

Annelies van Loon
Paintings Research Scientist
Rijksmuseum
Amsterdam

STEINMETZ FAMILY FOUNDATION **MUSEUM FELLOWS -** **AGORA/MAKRIYANNIS WING AND** **CORINTH (2 POSITIONS)**

The ASCSA is announcing the call for applications for two museum education fellowships in Greece:

Steinmetz Family Foundation Museum Fellow, Agora Excavations and Makriyannis Exhibition Wing <https://www.ascsa.edu.gr/about/staff/positions-available#SteinmetzAthens> - Position in Athens, Greece Steinmetz Family Foundation Museum Fellow, Corinth Excavations <https://www.ascsa.edu.gr/about/staff/positions-available#SteinmetzCorinth> - Position in Corinth, Greece Deadline for applications is July 15, 2023.

Steinmetz Family Foundation Museum Fellow, Agora Excavations and Makriyannis Exhibition Wing Thanks to a grant from the Steinmetz Family Foundation, the American School of Classical Studies at Athens (ASCSA) is fortunate to invite applications for a one-year fellowship in museum education and collections management starting September 1, 2023, with the possibility of a one-year extension at the School's discretion. The Steinmetz Family Foundation Museum Fellow in Athens will, in collaboration with the Director and staff of the Athenian Agora, design and implement educational resources for use online and on-site at the Agora Excavations. The Fellow will also assist with exhibitions for the Makriyannis Wing at the American School of Classical Studies at Athens.

The educational resources from the Agora Excavations delivered through this grant advance knowledge of Greece in all periods by bridging the gap between the research conducted by archaeologists and the teaching of the past in the classroom both locally and globally. Lesson plans, online programs, and on-site programs, give students worldwide access to the stories and artifacts of generations of people who lived in Athens, one of the longest continuously settled communities in human history and the home of the world's first democracy.

Term:

September 1, 2023-August 31, 2024 (with possibility of renewal until August 31, 2025)

Stipend:

\$35,000 USD annual stipend (paid quarterly), plus waived membership fees. The fellow will also have \$2,000 available to fund travel required for carrying out duties of the position (not for moving expenses); costs will be reimbursed against receipts. Room and board costs are to be covered from the stipend.

For more description, and about how to apply, see the attached PDF or link to more online here <https://www.ascsa.edu.gr/about/staff/positions-available#SteinmetzAthens>.

Steinmetz Family Foundation Museum Fellow, Corinth Excavations Thanks to a grant from the Steinmetz Family Foundation, the American School of Classical Studies at

Athens (ASCSA) has been fortunate to have a Museum Education Fellow at the Corinth Excavations since October 2014. Once again, the ASCSA invites applications for a one-year fellowship in museum education and collections management starting September 1, 2023, with the possibility of a one-year extension at the School's discretion. The Steinmetz Family Foundation Museum Fellow will, in collaboration with the Associate Director, design and implement educational resources for use online and on-site at Corinth Excavations. The Fellow will also assist in collections management work in the excavation storerooms to record and catalog artifacts.

The educational resources from Corinth Excavations delivered through this grant advance knowledge of Greece in all periods by bridging the gap between the research conducted by archaeologists and the teaching of the past in the classroom both locally and globally. Lesson plans, online programs, and on-site programs, give students worldwide access to the stories and artifacts of generations of people who lived in Corinth, a crossroads of culture for thousands of years.

Term:

September 1, 2023-August 31, 2024 (with possibility of renewal until August 31, 2025)

Stipend:

\$25,000 USD annual stipend (paid quarterly), plus waived membership fees and half-board and full room at Hill House, in Corinth. The fellow will also have \$2,000 available to fund travel required for carrying out duties of the position (not for moving expenses); costs will be reimbursed against receipts.

For more description, and about how to apply, see the attached PDF or link to more online here <https://www.ascsa.edu.gr/about/staff/positions-available#SteinmetzCorinth>.

Questions? Questions related to the Agora Excavations should be addressed to JKP@ascsa.edu.gr; questions related to the Makriyannis Wing should be addressed to bwescoa@ascsa.edu.gr. Questions related to the position in Corinth should be addressed to Ioulia Tzonou at itzonou.corinth@ascsa.edu.gr.

American School of Classical Studies at Athens

321 Wall Street

Princeton, NJ 08540-1515

Email: programs@ascsa.org

Website: <https://www.ascsa.edu.gr/>

Connect with the ASCSA

facebook.com/ASCSAthens/ <http://facebook.com/ASCSAthens/>

• twitter.com/ASCSAthens <http://twitter.com/ASCSAthens>

• instagram.com/ascsathens/ <http://instagram.com/ascsathens/>

RESEARCH SPECIALIST - MINI CARBON DATING SYSTEM (MICADAS)

Dear Colleagues,

The Keck Carbon Cycle Accelerator Mass Spectrometer at the University of California, Irvine (KCCAMS/UCI) is expanding its radiocarbon measurement facility by adding a new branch based on a MICADAS spectrometer and peripherals. The new instrumentation will be used to measure the isotopic composition and amount of carbon on several types of samples to study the carbon cycle as well as climate change solutions on land ecosystems and the atmosphere. To support the new branch, we are offering an early career position. But senior scientists will be considered as well. Pay level will be commensurate with qualifications and experience. Feel free to write directly to me at gdossant@uci.edu, if you have any pressing questions. This position is still open.

Further information about the position can be found at the link
<https://recruit.ap.uci.edu/JPF08137>

Research Specialist - MIni CARbon DAting System (MICADAS)
University of California, Irvine is hiring. Apply now!
recruit.ap.uci.edu

Sincerely,

Dr. Guaciara Macedo dos Santos
Research Project Scientist

TECHNOLOGY DRIVEN SCIENCES: (TECH4CULTURE), 5 PHD SCHOLARSHIPS

The call is open until 7 July, 2023, at 12:00 noon (Central European Time).

Funded by the Next Generation EU and the Italian Ministry of Research is a PhD programme that involves humanities, digital sciences, physics, biology, chemistry, and geology.

This call invites PhD project proposals from candidates who • are interested in developing an interdisciplinary research profile suitable for future career perspectives in the academic and non-academic sectors • are ready to commit themselves to a well-structured training programme both in hard and soft sciences and with a specific focus on development of personal, professional and entrepreneurial skills.

Your project proposal should be related on a wide range of research topics:

• Archaeometric approaches for the investigation of inorganic materials • Computational and quantitative methods • Conservation sciences • Cultural Heritage • Digital Humanities • Environmental science • Geoarchaeology • Public Archaeology

Are you interested in working on your own research project in an interdisciplinary environment and learning transferable skills suitable for the academic, private and public sector?

We are looking for: innovative doctoral projects We offer: 3-year full-time PhD scholarship plus a € 2,000 yearly research budget

How to apply: Candidates have to identify potential mentors among a list of 19 research topics bound to doctoral scholarships listed in the Program Information

Sheet/Annex 1 available by clicking on the PhD Program “Technologies for Culture Heritage (Tech4Culture)” at the following link:

https://www.dottorato.unito.it/do/home.pl/View?doc=Bando_XXXIX_ciclo.html

POSITIONS AVAILABLE ON EARTHQUAKE ENGINEERING, BEYOND SUSTAINABILITY AND STRUCTURAL HEALTH MONITORING (PHD STUDENTS)

The Historical and Masonry Structures ([HMS](#)) group of the Institute for Sustainability and Innovation in Structural Engineering ([ISISE](#)), University of Minho, Portugal, plans to open up to three PhD student positions (duration of the contract planned for 3 years).

The positions will focus on (i) Seismic assessment of the out-of-plane behavior of masonry structures, (ii) Development and validation of New European Bauhaus indicators for Cultural Heritage projects (Sustainable, Beautiful, Inclusive) and (iii) Vibration-based damage-identification methodologies for post-earthquake assessment of historic masonry structures.

(i) Seismic assessment of the out-of-plane behavior of masonry structures:

Necessary qualifications: MSc degree in Civil Engineering or Earthquake Engineering. A strong background in structural dynamics and masonry structures with a passion for experimental analysis, numerical modelling, code-based assessment, or similar qualifications, would be considered an asset.

(ii) Development and validation of New European Bauhaus indicators for Cultural Heritage projects (Sustainable, Beautiful, Inclusive):

Necessary qualifications: MSc degree in Architecture, Civil Engineering or similar. A good understanding of sustainability assessment tools (e.g. BREEAM®, LEED® or SBTool) or resilience tools (e.g. REDI or City Resilience Index), or similar qualifications, would be considered an asset.

(iii) Vibration-based damage-identification methodologies for post-earthquake assessment of historic masonry structures:

Necessary qualifications: MSc degree in Civil Engineering, Earthquake Engineering or similar. A strong background in structural dynamics and experience in non-destructive and/or destructive testing, structural health monitoring, programming, or similar qualifications, would be considered an asset.

Students completing their MSc degree in the next months are invited to demonstrate their interest in the position.

If interested, please send your résumé with a copy of the BSc and MSc certificates to Dr. Alberto Barontini (albe.barontini@gmail.com), indicating the topic of your interest, until July 30th (23:59 Lisbon time / WEST). If your MSc certificate is not yet issued, please provide your current course certificate and GPA.

Please feel free to share this announcement.

Paulo B. Lourenço

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

ΠΡΟΣΚΛΗΣΗ ΦΟΙΤΗΣΗΣ ΣΤΟ ΝΕΟ ΔΙΕΘΝΕΣ ΜΕΤΑΠΤΥΧΙΑΚΟ ΠΡΟΓΡΑΜΜΑ ΣΠΟΥΔΩΝ «PROTECTION OF CULTURAL HERITAGE AND MONUMENTS OF NATURE FROM THE EFFECTS OF CLIMATE CHANGE»

Αξιότιμες κυρίες / Αξιότιμοι κύριοι,

Σας ενημερώνουμε για την προκήρυξη εισαγωγής μεταπτυχιακών φοιτητών για το ακαδημαϊκό έτος 2023-2024 στο Διεθνές και Διαθεματικό Πρόγραμμα Μεταπτυχιακών Σπουδών «**Protection of Cultural Heritage and Monuments of Nature from the Effects of Climate Change**» που έχει διαμορφωθεί από κοινού μεταξύ της Σχολής Εφαρμοσμένων Τεχνών και Βιώσιμου Σχεδιασμού του **Ε.Α.Π.** και της **Ακαδημίας Αθηνών** μέσω του Κέντρου Ερεύνης Φυσικής της Ατμοσφαιρας και Κλιματολογίας. Το πρόγραμμα είναι πλήρως εξ αποστάσεως και διδάσκεται με την πλέον καταξιωμένη μεθοδολογία που προσφέρει το Ελληνικό Ανοικτό Πανεπιστήμιο. Η διάρκειά του είναι κατ' ελάχιστο διετής, προσφέροντας 120 ECTS και η γλώσσα διδασκαλίας είναι η αγγλική και απονέμει τον τίτλο του Master of Science (M.Sc.).

Στόχος του προγράμματος είναι η εις βάθος μελέτη θεμάτων που αφορούν στον μετριασμό και την προσαρμογή των επιπτώσεων της κλιματικής μεταβολής στα μνημεία της φύσης και της πολιτιστικής κληρονομιάς παγκοσμίως. Συγκεκριμένα, τα γνωστικά αντικείμενα στα οποία εστιάζει το Π.Μ.Σ. αφορούν πρωτευόντως στις επιστήμες της αρχαιολογίας, της συντήρησης έργων τέχνης και μνημείων, της κλιματολογίας και του περιβάλλοντος, της γεωλογίας, της τηλεμετρίας και των δορυφορικών εφαρμογών, στις επιστήμες μηχανικών και στην αρχιτεκτονική.

Οι γνώσεις σε συνδυασμό με την παιδεία και την εμπειρία που θα προκύψει από το συνδυασμό θεωρητικής και τεχνολογικής κατάρτισης των μεταπτυχιακών επιστημόνων, θα διευρύνουν τον ορίζοντα επαγγελματικής ενασχόλησής τους, ενώ παράλληλα δίνουν το προβάδισμα στους συμμετέχοντες να είναι οι **πρώτοι σε εξειδίκευση σε ένα πολυεπιστημονικό κλάδο που αφορά την προστασία της πολιτιστικής και φυσικής κληρονομιάς** σε όλο τον πλανήτη, δεδομένου ότι διεθνώς αντίστοιχα Π.Μ.Σ. είναι ελάχιστα χωρίς να υπάρχει και η έμφαση στην κλιματική αλλαγή και τις επιπτώσεις της όπως στο προκείμενο Π.Μ.Σ.

Τα πλεονεκτήματα του προσφερόμενου Προγράμματος Μεταπτυχιακών Σπουδών μπορούν να συνοψισθούν στα εξής:

- Φοίτηση στην έδρα του κάθε φοιτητή/ριας με καθηγητές που έχουν **αξιολογηθεί** από την Ακαδημαϊκή Επιτροπή Εποπτείας του προγράμματος.
- **Ευελιξία ωραρίων** μελέτης και επιλογής έντασης φοίτησης.

- **Μικρός αριθμός φοιτητών ανά καθηγητή**, ενισχύοντας την εκπαιδευτική διαδικασία.
- Δυνατότητα δευτερεύουσας εξειδίκευσης προστασίας και προσαρμογής σε έναν από τους τρεις παρακάτω τομείς (minors): **α) Κινητή πολιτιστική κληρονομιά, β) Μνημεία και αρχαιολογικοί χώροι, γ) Μνημεία της φύσης και ιστορικά τοπία.**
- Επαγγελματικές προοπτικές: Το πτυχίο του Ε.Α.Π. είναι **ισοδύναμο** με όλα τα πτυχία Α.Ε.Ι. της χώρας και το μεταπτυχιακό αποτελεί **απαραίτητο προσόν** ώστε να μπορούν να διεκδικήσουν οι απόφοιτοί του θέσεις ευθύνης στον δημόσιο αλλά και ιδιωτικό τομέα, βελτιώνοντας ταυτόχρονα τις προοπτικές εξέλιξής τους σε όποιον χώρο εργασίας εργάζονται.
- Δυνατότητα φοίτησης σε τομέα αιχμής.

Η διάρθρωση του προγράμματος είναι η εξής:

| Θεματική ενότητα | Τίτλος | Γνωστικά αντικείμενα |
|---------------------------|---|--|
| 1^ο έτος | | |
| CCC50 | Cultural and Natural Heritage | Introduction to heritage and heritage protection. International policies, principles and legislation. Historical review and theoretical approaches to heritage protection. Research tools and technological innovation in heritage protection, management and interpretation. Examples of heritage analysis and environmental issues |
| CCC51 | Introduction to climate change | Introduction to climatology. Major climate and pollution parameter changes. Extreme events linked to climatic change. Geological impacts of climate change. Synergistic phenomena |
| CCC52 | Material science | Introduction to material science. Diagnostic technologies for material failure. Material ageing. Archaeometry |
| 2^ο έτος | | |
| CCC60 | Telematics and metrics | Ground-based metrics and telematics. Satellite-based metrics and telematics. GIS mapping. Passive and active remote sensing technologies |
| CCC61 | Resilience Strategies for Moveable Heritage (Επιλογής) | Effects of climate change impacts on collections and storage facilities. Technologies and techniques to identify problems and failures on moveable heritage. Monitoring collections and storage facilities. Adaptation and mitigation strategies for moveable heritage |
| CCC62 | Resilience Strategies for Monuments and Archaeological Sites (Επιλογής) | Vulnerability of buildings and structures of cultural interest to climate change. Technologies and techniques to identify problems and failures on built heritage. Monitoring monuments and archaeological sites. Adaptation and mitigation strategies for monuments and archaeological sites |
| CCC63 | Resilience Strategies for Natural and | Climate change impacts on natural and historic landscapes. Technologies and techniques to |

| Θεματική ενότητα | Τίτλος | Γνωστικά αντικείμενα |
|------------------|---|--|
| | Historic Heritage Landscapes (Επιλογής) | identify potential problems in natural heritage and historic landscapes. Monitoring of heritage landscape. Adaptation and mitigation strategies for natural heritage and historic landscapes |
| CCCMT | Master's Thesis | |

Περισσότερες πληροφορίες μπορείτε να βρείτε στην ιστοσελίδα:

<https://www.eap.gr/education/postgraduate/annual/protection-of-cultural-heritage-and-monuments-of-nature-from-the-effects-of-climate-change/>.

Πληροφορίες για την πρόσκληση μπορείτε να βρείτε εδώ:

<https://www.eap.gr/2023/06/20/πρόσκληση-για-την-εκδήλωση-ενδιαφέρο-4/>

Η υποβολή αιτήσεων φοίτησης πραγματοποιείται έως 31/08/2023.

Σας ευχαριστούμε για την προσοχή σας και παρακαλούμε για τη δημοσίευση της παρούσης.

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

FIELD SAMPLING FOR LABORATORY ANALYSIS IN ARCHAEOLOGY, EVI MARGARITIS, ARTEMIOS OIKONOMOU, EFTHYMIA NIKITA AND THILO REHREN (EDS)

The Cyprus Institute, Nicosia, Cyprus 2023

ISBN 978-9925-7759-4-1

FOREWORD

The application of methods from the natural and environmental sciences to archaeology has become common practice in many excavations and research projects, world-wide. Numerous research groups, both *ad hoc* in universities or museums and those situated in more long-term centres dedicated to one or more branches of archaeological science, devote their skill, experience and infrastructures using scientific methods to address archaeological research questions. At the same time, the number of archaeological fieldwork projects is ever-increasing, both for research and driven by ongoing development. The pressures of daily work, and the physical separation of field-based and laboratory-based archaeologists often prevent the level of communication and practical interaction that one would like to see, in order to ensure a seamless transmission of experience and skill between the field and the lab. This Handbook aims to help bridge this gap in the daily practice of archaeological fieldwork and lab-based research. There are, of course, numerous handbooks of archaeological science, of chemistry for archaeology, and even whole textbooks of specific branches within the archaeological sciences; these offer detailed explanations of how the science works, and how to do the labwork. However, we felt that few of these were addressing the daily needs of the field-based archaeologist who may be confronted with an unexpected find, and needs to brush up quickly on the practicalities of how to document and sample finds for future analysis in a lab.

And there is something else, too, to consider. So far, science-based archaeological research and postgraduate training have been heavily concentrated at museum laboratories and university departments in central and northern Europe, the US, Canada and Australia, while relatively few such research hubs exist in the EMME region, a region of vast archaeological richness and fast-growing populations. As a result, much of the professional practice has been developed within the financial, structural, ecological and archaeological reality of these ‘global northern’ countries – relatively few archaeological sites, stable institutions, strong economic frameworks, and a deep pool of human talent with access to well-established research centres and universities. The reality in the wider EMME region is the polar opposite: the region is drowning in archaeology, has few and often fragile and permanently understaffed institutions, and generally rather stretched economies. Thus, the benchmarks of the global north are not really applicable for the daily reality here.

The research potential of the region in archaeology and cultural heritage is enormous, ranging through the full spectrum of human occupation from the Palaeolithic to the recent past, while the scientific potential of such material can only be reached through the use of techniques and methodologies that require dedicated expertise. This Handbook hopes to offer an accessible and practical guide for colleagues working in the field, focussing on the practical steps that often mark the beginning of a larger journey. Steps that can be done without all the heavy kit and high-end expertise that characterises so much of modern science – initial steps which are absolutely essential as sampling protocols and form the basis for any subsequent work!

Archaeological Science research at The Cyprus Institute is focussing on primary production activities in the widest sense, from important foodstuffs such as olive oil and wine to basic metals such as copper and iron, and ceramics, and how the production and long-distance exchange of these goods is reflected in the osteobiographies of the humans engaged in these activities. Within this broad field, we aspire to contribute to the shaping of disciplinary practice in the EMME and beyond. To do this, we joined forces with the KU Leuven and the University of Cambridge, two leaders in archaeological science, and received generous funding from the European Commission under the H2020 framework. Our project *Promised* – Promoting Archaeological Sciences in the Eastern Mediterranean, Grant Agreement 811068, ran from 2018 to 2022, and facilitated a large number of key activities, including supporting three international summer schools in Cyprus for emerging and mid-career researchers from the EMME region, two conferences (ICAS-EMME 2 and 3), and numerous training, mentoring and outreach activities. As part of our ambition to support the wider archaeological community in the EMME region to benefit from archaeological science, we humbly present this handbook as one of the outputs of *Promised*.

Evi Margaritis, Efthymia Nikita, Artemios Oikonomou and Thilo Rehren, with special thanks to Patrick Degryse and Cyprian Broodbank

CONTENTS

Archaeobotanical remains: sampling and processing in the field

Maltas, T., Tsirtsis, K. & Margaritis, E.

Anthracology: from the field to the laboratory

Ntinou, M. & Mavromati, A.

A field guide for collecting archaeological samples for starch grain analysis

Garcva-Granero, J. J.

Phytoliths: field and laboratory methods

Tsartsidou, G.

Zooarchaeology

Hadjikoumis, A. & Spyrou, A.

Sampling, collecting and sorting microfaunal remains from archaeological excavations

Papayianni, K.

Preservation and sampling of fish, shell and other invertebrate remains

Theodoropoulou, T.

Sampling archaeological remains for isotopic analyses

Vaiglova, P.

Sampling for ancient biomolecular data: DNA, proteins and lipids from specific archaeological sample types

Macleod R., Evans M., Sistiaga A., et al.

Minimizing data loss when excavating human skeletal remains

Nikita, E., et al.

Non-skeletal human remains in graves: a primer for dental calculus and parasites field sampling

Radini, A.

Micromorphology of archaeological soils and sediments: field and laboratory methods

Gkouma, M. & Karkanias, P.

Sampling and *in situ* chemical analysis of stone raw materials for provenance

Moutsiou, T. & Charalambous, A.

Ground stone tools. An integrated approach of use-wear and residue analysis

Lucarini, G. & Mutri, G.

Non-invasive procedures in pigment analysis

Gasanova, S. & Oikonomou, A.

Portable XRF as a guiding tool for sampling in archaeometallurgy

† Georgakopoulou, M. & Martín-Torres, M.

Urban micro-metallurgy: from the field to the lab

Rehren, Th. & Liu, S.

Sampling for ceramic analysis

Dikomitou Eliadou, M. & Kiriati E.

Handling glass: from the field to the lab

Oikonomou, A. & Rehren, Th.

Sampling guidelines in luminescence dating

Polymeris, G. S.

Conservation of architectural materials

Chlouveraki, S.

Squeezing out hard materials

Mertzani, M.

Sampling inorganic materials for chemical (elemental and isotopic) analysis

Degryse, P. & Rademakers, F

THE HUMAN BRAIN IN ANCIENT EGYPT - A MEDICAL AND HISTORICAL RE- EVALUATION OF ITS FUNCTION AND IMPORTANCE, BY SOFIA AZIZ

Archaeopress Egyptology 45

ISBN

Paperback: 9781803274775

Digital: 9781803274782

Paperback, Includes PDF

£20.00

PDF eBook (personal use)

£9.99

PDF eBook (institutional use)

£20.00

This volume provides a medical and historical re-evaluation of the function and importance of the human brain in ancient Egypt. The study evaluates whether treatment of the brain during anthropogenic mummification was linked to medical concepts of the brain.

Contents

Chronology ;

Chapter 1: Introduction ;

Chapter 2: Literature review ;

Chapter 3: A re-evaluation of mummification & treatment of the brain ; Chapter 4: Trauma care and neurosurgery in Ancient Egypt ; Chapter 5: Palaeopathological evidence of cranial surgery ; Chapter 6: Conclusion ; Appendix A ; Appendix B: Book of the Dead: Spell 30b (Faulkner, 2010) ; Appendix C: Book of the Dead: Spell 166: Spell for a headrest (Faulkner, 2010) ; Appendix D ; Bibliography

Sofia Aziz is an independent researcher on the medicine and mummification procedures of the ancient Egyptians. She holds an MSc in Biomedical Egyptology from the KNH Centre, University of Manchester, a BSc Hons in Human Sciences and a Certificate in Egyptology [...]

Please visit the site:

<https://www.archaeopress.com/Archaeopress/Products/9781803274775>

ANCIENT CONTAINER TECHNOLOGIES
FROM EASTERN TO WESTERN ASIA,
EDITED BY OLIVIER P. NIEUWENHUYSE†,
REINHARD BERNBECK & KOEN
BERGHUIJS

2023 Paperback

ISBN: 9789464270518 | Hardback ISBN: 9789464270525

Imprint: Sidestone Press Academics

Format: 210x280mm

286 pp.

Language: English

45 illus. (bw) | 52 illus. (fc)

Keywords: archaeology; prehistory; ancient Near East; late neolithic; West Asia; ceramics; container technology | download cover

DOI: 10.59641/f5j9068h

Contents

About the author/editor

Across Western Asia, the astonishing increase in the availability of durable ceramic containers in the seventh millennium BCE had significant societal repercussions – so much so that vital social, economic, and symbolic activities became dependent upon the availability of pottery containers. These early ceramic containers, however, established themselves alongside flourishing pre-existing container traditions, with vessels made in a wide range of materials including clay, bitumen, basketry, leather, wood, and stone. How did prehistoric people respond to the emergence of containers as a key factor in their lives?

Building on Olivier Nieuwenhuysen's rich scholarly legacy, this volume brings together 18 papers by leading scholars in the field of container technology, discussing cases from eastern Asia to Africa, but with a focus on prehistoric Western Asia. Looking not just at pottery but also explicitly beyond, the contributions consider and address the cross-overs of different kinds of raw materials for containers and their crafting; the multiplicity of temporal scales in the production, use and discard of pottery; the social anchoring of vessels' use and deposition as evident in their specific contexts; and local as well as regional variations in early pottery.

Please visit the site: <https://www.sidestone.com/books/containers-of-change> [Go there to read online for free and price range]

THE SCENT OF ANCIENT MAGIC, **BY BRITTA K. AGER**

Ann Arbor: University of Michigan Press, 2022.

Pp. 239

ISBN 9780472133024

BMCR 2023.06.22

Review by Christina Aamodt, Independent researcher, Thessaloniki, Greece.

caamont@gmail.com

The volume addresses the connection between magic and scent in the Greco-Roman world (800 BCE to 600 CE). Magic in Antiquity was an important recourse for people coping with the difficulties of their lives, as various kinds of evidence, both literary texts, such as spells, curses, and healing charms, and objects, such as lead curse tablets, attest. Indeed, magic in Antiquity has been approached mainly through the examination of textual evidence and artifacts associated with it. In the present book the author's aim is to highlight a neglected aspect of ancient magic that transcends this traditional approach, namely the contribution of scent in the materialization of magic performance and in securing its efficacy.

In the Greco-Roman world odor was often associated with magic, since scent could turn magic into something tangible by marking its presence. The association of the two, however, appears to be a more widespread human phenomenon, as the anthropological parallels used by the author indicate. Smell in ancient cult would be used in a number of ways, such as to distinguish sacred from profane, indicate or induce the presence of the god, enhance the experience of the divine, set the magician in the right mindset, or serve as a means to control the will of gods and harm enemies. Indeed, scent was often equated with power, the power to alter circumstances, to control people and gods. In order to investigate the complex ways through which scent and magic interrelate in Antiquity, the author combines evidence from the ancient literary sources, from anthropological parallels, and from the insights offered by the “anthropology of the senses”, a theoretical approach that developed in the 1980s and defined sensing as a cultural act. As such, the perception of scent and its associations are culturally defined and therefore indicative of the social and ideological structure of the society itself.

The book consists of six chapters and an epilogue. Chapter 1 (“The Breath of the Leopard: Scent of Magic”) reviews the research related to the sense of smell from an anthropological, sociological, and philological point of view, and it sets the theoretical framework of the analysis that will follow. It also addresses briefly the concept of magic (the definition of which, however, does not consist the primary aim of the author) and states the aims of the book.

Chapter 2 (“Fragrant Panacea: Scent and Power”) examines the association of scent with power in the Greco-Roman world. Scent, either aromatic or foul-smelling, was considered an indicator of the manifestation of magic or a means through which the efficacy of magic spells was secured.

Chapter 3 (“Scent in the Magical Papyri”) investigates the use of scent in the magical papyri of Greco-Roman Egypt, in creating an ambience, a sensescape, that would facilitate the practice of magic and enhance its experience by magicians, for example by inducing altered states of consciousness.

Chapter 4 (“Perfumed Enchantments: The Smell of Witches’ Magic”) turns to literary sources to examine the ways ancient writers associated scent with female witchcraft, as well as the sociocultural inferences of these associations that reflected contemporary views of gender and power. At the core of these associations lies the notion that women have the power to control men’s minds through the use of alluring perfumes, a practice that in essence alludes to the danger of female plotting. The author also examines well known witches that appear in ancient literature, such as Medea and Circe, in order to demonstrate the fine line that exists between the medicinal use of herbs, perfumes, and magic spells.

Chapter 5 (“Rot and Roses: The Smell of Witches”) is a fascinating account of the differences between ancient Greek and Roman witches, through the examination of the scent of their bodies, as constructed by ancient authors, such as Horace, which in their minds was tightly connected to their social status. Roman witches, therefore, at least in the Augustan period, were envisaged as old, ugly, lower class, and foul-smelling, serving as a symbol of civil chaos and corruption and in this way underlining the social and cultural connotations often attributed to the female body.

Chapter 6 (“Scented Space, Scenting Space”) looks at the way scent was employed by magicians as a means of transferring the efficacy of magic to a space or an object. Finally, in the Epilogue (“The Scent of Ancient Magic”) the author underlines the value of the ambiguity of scent as a sign, which allows it to be interpreted in different ways according to personal experiences.

The author draws from ancient literature, ancient medicine, and sensory studies so as to highlight the possibilities that such sensory studies offer to the reconstruction of ancient magic and ritual, in ways that broaden and enrich our understanding of the subject. As the author remarks, sensing and interpreting odors is culturally constructed and therefore can reveal sociocultural attitudes and preconceptions. Therefore, the value of the analysis offered by the author is not limited to the association of scent with cult practice and magic in the Greco-Roman world per se. It also concerns the insight provided in relation to the sociocultural factors that often underlie specific notions and perceptions regarding this interrelation between scent and magic, such as the aforementioned symbolic connection between foul-smelling Roman witches and societal disruption or that between female seduction and bewitchment. The author demonstrates a deep understanding of her subject and analyses her arguments in a coherent and well-organized way, while the usefulness of applying the theoretical perceptivity of sensory studies is apparent throughout the book. The book is a fascinating read and an important contribution, not just to the study of Greco-Roman magic but also to the reconstruction of Greco-Roman cultures, and it fills in a gap in the research on the subject.

Please visit the site: <https://bmcr.brynmawr.edu/2023/2023.06.22/>

A GROUP ATTRIBUTION METHOD FOR LEAD ISOTOPE DATA IN GEOLOGICALLY- DIVERSE ENVIRONMENTS - SOUTHWEST SILK ROAD PAPER

Dear friends and colleagues,

These many past years, I have observed with admiration Prof. Erez Ben-Yosef's prodigious productivity (IIRC, after having had the pleasure to meet him at the IAMS Summer School in 2004!). I have never posted similar, largely as I thought the general archaeomet community wouldn't be interested in a farflung corner of Eurasia. That sentiment probably holds true but with this paper I wish to stimulate discussion on how we detect groups of artefacts/sites/populations in large geochemical datasets, particularly those for lead isotopes. Of course, this subject is hardly new but, with respect to Prof. Killick's et al.'s 2020 paper, 'Geological constraints on the use of lead isotopes for provenance in archaeometallurgy', here is our effort, titled, "A Partial Prehistory of the Southwest Silk Road: Archaeometallurgical Networks along the Sub-Himalayan Corridor" - <https://doi.org/10.1017/S0959774323000185> - fresh off the e-press today - also here (https://www.researchgate.net/publication/371702061_A_Partial_Prehistory_of_the_Southwest_Silk_Road_Archaeometallurgical_Networks_along_the_Sub-Himalayan_Corridor).

Our methodology is by no means perfected but we reached a point where we wanted to disseminate. Please note that our methodology is specifically designed for Southeast Asia, a region with high geological diversity, no (*zero*) publicly-accessible geological lead isotope data but a fairly consequent archaeological LI database (n = ca. 1300). With a Southwest Silk Road topic, we had to integrate with southern Chinese provinces (Yunnan, Guangxi and immediate neighbours), with extremely high geological diversity, significant geological LI datasets, but rather less dense archaeological LI study. I decided to define regional LI consistency parameters based upon known prehistoric production systems in Laos and Thailand, and then we processed the regional Bronze Age (ca. 1200 - 500 BC) datasets using the Leuven community detection algorithm. This was done following Miljana Radivojević's and Jelena Grujić's 2018 paper, 'Community structure of copper supply networks in the prehistoric Balkans: An independent evaluation of the archaeological record from the 7th to the 4th millennium BC', which used elemental data from SE Europe (for low diversity reasons as Killick et al. 2020 describe) with the similar Louvain method, whereas we use LI data from SE Asia.

I have attended enough archaeometallurgy/archaeometry conferences and read enough papers over the years not to expect to get a free pass on this... So, let it begin! I am not capable of responding to detailed mathematical questions on Leuven etc, so I have put Dr Simon Carrignon (<https://www.arch.cam.ac.uk/staff/dr-simon-carrignon>), who is, in copy.

Yours sincerely,

Oli Pryce

Dr T. O. Pryce

Chargé de Recherche/Associate Professor

UMR 7065 IRAMAT

Centre National de la Recherche Scientifique

(LAPA, IRAMAT, NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191

Gif-sur-Yvette France)

<https://iramat.cnrs.fr/user/oliver.pryce/>

<https://www.researchgate.net/profile/Oliver-Pryce-2>

Director of the French Archaeological Mission in Myanmar

Director of the Southeast Asian Lead Isotope Project



**CONTINUOUS EVOLVEMENT OF
CONSTANT DIET IN THE 3RD–1ST
MILLENNIUM BCE SOUTHERN LEVANT:
MACRO-BOTANICAL PROXIES FROM TELL
ES-SÂFĪ/GATH, BY SUEMBIKYA FRUMIN,
AREN M. MAEIR, EHUD WEISS**

Journal of Archaeological Science: Reports Volume 50, August 2023, 104091

Abstract

This study employs new macrobotanical evidence to discuss agricultural developments at the site of Tell es-Safi/Gath through Early Bronze Age II-III to Iron Age IIB periods. This was the time period of the Canaanite, Philistine and Judahite cultures' development, flourishing and falls, a time of droughts and war, appearance of fortified cities and their abandonment, and resettling. We studied species' turnover over time, from the humid Early Bronze II-III to the dry final phase of the Late Bronze Age and then to the humid Iron Age II. We propose that the diet stability and changes in the fertile zone of southern Levant are evident through the macrobotanical data. Cultural developments are mirrored in the list of crops, yet the dominance of wheat is continuous. The results suggest a continuity in the human culture and the sustainable type of agriculture in this region throughout the Bronze and Iron Ages.

Please visit the site:

<https://www.sciencedirect.com/science/article/abs/pii/S2352409X23002663?via%3Dihub>

EΙΔΗΣΕΙΣ - NEWS RELEASE

TINY 12,000-YEAR-OLD BIRD BONE FLUTES **FOUND IN ISRAEL,** **BY RAFFI BERG**

The flutes produced sounds like the call of birds of prey.

Tiny bones from prehistoric birds found at a birdwatching site in northern Israel have been identified as 12,000-year-old flutes, researchers say.

Seven wing bones from coots and teals were found to have holes bored into them, which mimicked the sound of birds of prey when tested on replicas.

It is thought this could have been used to scare waterfowl, making them easier to catch as flocks took flight.

Another theory is that the flutes could have also been played for music.

The specimens were found at Eynan/Ain Mallaha site in the Huleh Valley, wetlands used by millions of birds traveling between Europe, Asia, and Africa during their annual migrations.

Eynan/Ain Mallaha is a settlement site from the Natufian period of hunter-gatherer communities in the Levant region.

According to the findings published in the Nature Science Report journal, one of the theories suggests hunters positioned near the waterfowl used the flutes to imitate the call of birds of prey, especially the Eurasian Sparrowhawk and the Common Kestrel.

When the predators appeared, the waterborne birds would have taken off in different directions, giving the hunters a better chance of catching them.

"One of the flutes was discovered complete," Dr Laurent Davin of the Hebrew University of Jerusalem, and Dr Khalaily said in a joint statement. "So far as is known it is the only one in the world in this state of preservation."

Please visit the site: <https://www.bbc.com/news/world-middle-east-65853740>

PILLARS USED TO DECIPHER PHOENICIAN LANGUAGE REUNITED AFTER 240-YEARS, BY DANIEL TIHN

They were first mentioned in 1694 as part of the Ġan Frangisk Abela collection

Two ancient Maltese pillars have been reunited for an exhibition in Abu Dhabi after being apart for 241 years.

Commemorating the anniversary of the 50-year diplomatic relationship between Malta and the United Arab Emirates, the pillars, also known as Cippi, carry great historical value as they were once used to decipher Phoenician script, Heritage Malta said on Friday.

According to the Merriam-Webster dictionary, Cippi are small pillars that are usually inscribed and were used in ancient Rome and Greece as gravestones or landmarks.

Dating back to the second century BC, this pair of ornamental Cippi sit upon rectangular bases which, for both pillars, carry the same inscription in Phoenician with an ancient Greek translation below it.

The reunited Cippi tell the story of two brothers making a sacred offering to the Phoenician God Melqart, Heritage Malta said.

The agency explained that while it is unclear when the Cippi were first discovered, they were first mentioned in 1694 as part of the Ġan Frangisk Abela collection, they said. But, back then, they had yet to be fully translated as the Phoenician language had not been totally deciphered.

In 1782, French epigraphist Abbot Jean-Jacques Barthélemy cracked the Phoenician code when copies of the inscriptions were sent to France for academics and scholars to look at.

Just like the Rosetta Stone which became a household name after it was used to help crack Egyptian hieroglyphics in the 1800s, the Cippi now had their own claim to fame.

So in 1782, as thanks to the French, Grand Master de Rohan of the order of St John gifted one of the Cippi to the Académie des Inscriptions et Belle-Lettres in Paris where the transcriptions were deciphered, Heritage Malta said.

82 years later, the gifted Cippi was transferred to the Louvre Museum in Paris while its counterpart remained in Malta, eventually ending up on display at the National Museum of Archaeology in Valletta.

Finally reunited after 241 years, the Cippi are currently on display at the Louvre in Abu Dhabi, where cultural talks and presentations are explaining their historical and archaeological significance.

Speaking at the launch of the exhibition, Maltese Ambassador to the UAE Maria Camilleri Calleja emphasised how the recoupling of the pillars is a sign that, with effort and dialogue, there are always ways to bring each other closer.

Heritage Malta CEO Noel Zammit echoed a similar sentiment, focusing on the relationship between Malta and the UAE and how both nations have continued to strengthen their cultural diplomacy over the years.

“Additionally, this marks the first time that Heritage Malta is partnering with the Louvre Abu Dhabi, and it is hoped that this collaboration will foster a promising future for the relationship between the two entities,” he said.

Daniel Tihn is a journalist and a film critic.

Please visit the site: <https://timesofmalta.com/articles/view/pillars-used-decipher-phoenician-language-reunited-240years.1035365>



DID THIS ARCHAEOLOGICAL DISCOVERY EXPAND THE GREEK EMPIRE'S HISTORY?

The discovery of ancient tools in an ancient Greek city may have taught archaeologists more about human evolution.

A recent archaeological discovery may rewrite the history of the Greek empire as we know it. Megalopolis, a recently uncovered prehistoric Greek city, reveals new insights into generations of Greek society never before identified.

The discovery of stone tools revealed that the ancient Greek society may have existed for even longer, Greek City Times reported on Friday. Megalopolis is known for its mythical connection and is renowned for many archaeological sites. Some others that lay on the southern Peloponnese peninsula include Mycenae, Olympia, and Pylos.

The discovery of ancient tools from the lower Palaeolithic period was the result of a five-year global project led by experts at the American School of Classical Studies in Athens alongside experts from the Greek Culture Ministry. This discovery revealed that the society living in Megalopolis, the oldest-known archaeological site in the country, existed nearly 700,000 years prior.

The tools found, however, are estimated to be anywhere from 300,000 to 3.3 million years old. Various extinct species like of giant deer, elephants, hippopotamus, rhinoceros, and a macaque monkey were believed to have been hunted, according to evidence on the tools.

The stone tools resemble stone flakes dating back to the stone tool industry of the Lower Paleolithic age. This discovery reveals the oldest hominin presence currently known in the nation and widens the scope of the history of the Greek empire.

What role did these ancient tools play?

The tools were believed to be used for butchering animals, along with processing wood and plant matter. Archaeologists were excited by this discovery in the Megalopolis region, believing it can uncover new details on migration to Europe as well as human evolution overall.

This discovery not only opened up Greek history significantly but depicts the ancient city as a crucial resource in the region, truly defining it as a center of the ancient world.

Please visit the site: <https://www.jpost.com/archaeology/article-745227> [Go there for pix]

VILLAGE GARBAGE MAN HELPED UNEARTH ANCIENT BRONZE STATUES IN TUSCANY, BY ALVISE ARMELLINI

One of Italy's most remarkable archaeological finds in decades goes on show this month - Etruscan and Roman statues pulled from the mud in Tuscany thanks in part to the intuition of a retired garbage man.

About two dozen bronze statues from the third century BC to the first century AD, extracted from the ruins of an ancient spa, will go on display in Rome's Quirinale Palace from June 22, after months of restoration.

When the discovery was announced in November, experts called it the biggest collection of ancient bronze statues ever found in Italy and hailed it as a breakthrough that would "rewrite history".

The statues were found in 2021 and 2022 in the hilltop village of San Casciano dei Bagni, still home to popular thermal baths, where archaeologists had long suspected ancient ruins could be discovered.

Initial attempts to locate them, however, were unsuccessful.

Digging started in 2019 on a small plot of land next to the village's Renaissance-era public baths, but weeks of excavations revealed "only traces of some walls", San Casciano Mayor Agnese Carletti said.

Then former bin man and amateur local historian Stefano Petrini had "a flash" of intuition, remembering that years earlier he had seen bits of ancient Roman columns on a wall on the other side of the public baths.

The columns could only be seen from an abandoned garden that had once belonged to his friend, San Casciano's late greengrocer, who grew fruit and vegetables there to sell in the village shop.

When Petrini took archaeologists there, they knew they had found the right spot.

"It all started from there, from the columns," Petrini said.

Emanuele Mariotti, head of the San Casciano archaeological project, said his team was getting "quite desperate" before receiving the tip that led to the discovery of a shrine at the centre of the ancient spa complex.

The statues found there were offerings from Romans and Etruscans who looked to the gods for good health, as were the coins and sculptures of body parts like ears and feet also recovered from the site.

One of the most spectacular finds was the "scrawny boy" bronze, a statue about 90 cms (35 inches) high, of a young Roman with an apparent bone disease. An inscription has his name as "Marcius Grabillo".

"When he appeared from the mud, and was therefore partially covered, it looked like the bronze of an athlete ... but once cleaned up and seen properly it was clear that it was that of a sick person," said Ada Salvi, a Culture Ministry archaeologist for the Tuscan provinces of Siena, Grosseto and Arezzo.

Salvi said traces of more unusual offerings were also recovered, including egg shells, pine cones, kernels from peaches and plums, surgical tools and a 2,000-year-old lock of curly hair.

"It opens a window into how Romans and Etruscans experienced the nexus between health, religion and spirituality," she said. "There's a whole world of meaning that has to be understood and studied."

MORE TREASURES TO BE FOUND

The shrine was sealed at the beginning of the fifth century AD, when the ancient spa complex was abandoned, leaving its statues preserved for centuries by the warm mud of the baths.

Excavation will resume in late June. Mariotti said "it is a certainty" that more will be found in the coming years, possibly even the other six or 12 statues that an inscription says were left behind by Marcius Grabillo.

"We've only just lifted the lid," he said.

After the Rome exhibition, the statues and other artefacts are to find a new home in a museum that authorities hope to open in San Casciano within the next couple of years.

Petrini hopes the treasures will bring "jobs, culture and knowledge" to his 1,500-strong village, which is struggling with depopulation like much of rural Italy.

But he is reluctant to take credit for their discovery.

"Important things always happen thanks to several people, never thanks to only one," he said. "Never."

Please visit the site: https://apple.news/Ad_2FCw3ASnGejpVJrZ1hNw [Go there for pix and video]

EMBALMING FACILITIES DISCOVERED AT FAMOUS EGYPTIAN SITE, BY MATT HRODEY

Archaeologists have revealed yet more about Saqqara, the sweeping Ancient Egyptian burial complex.

Saqqara, the sprawling burial complex to the south of Cairo, is a UNESCO World Heritage Site layered with thousands of years of Egyptian history. Not only does it have more than a dozen pyramids, it boasts numerous other tombs, courts and halls – and archaeologists keep discovering more.

In May 2023, government officials announced the unearthing of two new tombs and two facilities once used for embalming.

Ancient Egypt and Mummification

The new embalming facilities date to about 2,400 years ago and contain stone beds where the embalmers placed deceased Egyptians to undergo mummification. At the ends of the beds, the scientists found gutters, as well as clay pots to hold organs and viscera, and various other instruments, including linens and natron salt. During the mummification process, all moisture was removed from the body, to stop decomposition.

One workshop appeared to have been used to embalm animals, a process for which Saqqara is well-known. Underground passages at the site contain thousands of ibis mummies dating to about 300 B.C. Elsewhere, archaeologists have found mummified cats, which the Egyptians believed brought good fortune to their owners. They also built a tomb at Saqqara for sacred bulls, a place now called The Serapeum.

Ancient Tombs at Saqqara

The year-long excavation also uncovered two new tombs that are significantly older than the embalming workshops and date back 4,400 and 3,400 years, to the fifth and 18th pharaonic dynasties, respectively. They belonged to two priests named Ne Hesut Ba and Men Kheber, who joined the countless other kings, and Egyptians of note, buried at the site.

Ne Hesut Ba served as head of scribes and priest of the gods Horus and Maat, and his tomb walls were covered with scenes of daily life, farming and hunting.

Men Kheber also served as a priest, and his tomb contained depictions of himself in the form of rock carvings and a 3-foot-tall alabaster statue.

Just the Latest Saqqara Discovery

Archaeologists have fielded project after project in Saqqara in recent years, discovering 59 new mummies, seven new tombs and thousands of wooden figurines in the process.

The wonders of Saqqara span much of Ancient Egyptian history, during which its proximity to the ancient city of Memphis ensured plenty of new tombs and pyramids. The first, the step pyramid built by Djoser – part of the Third Dynasty – stands as the oldest stone building in the world. The site contains more than a dozen others, many of which are badly crumbling.

The earliest tombs lie in the northern part of the site, in the early dynastic cemetery, where large mud-brick tombs called mastabas date back about 4,900 years. Wonders to behold, Egypt hopes these ancient sites will increase tourism, which has seen a recent decline from COVID-19.

Please visit the site: <https://www.discovermagazine.com/the-sciences/embalming-facilities-discovered-at-famous-egyptian-site> [Go there for pix]

ARCHAEOLOGISTS DISCOVER 4,300-YEAR- OLD COPPER INGOTS IN OMAN

A tip from the local population had led the archaeologists from Frankfurt to the area near the city of Ibra in Oman, where they found several settlements. Irini Biezeveld and her fellow doctoral researcher Jonas Kluge were staying in the country in the east of the Arabian Peninsula for six weeks of field research under supervision of the Ministry of Heritage and Tourism of Oman in the North Sharqiyah Governorate.

They documented the buildings visible to them, then dug test pits in the ground. Their aim was to date the settlements by means of any charcoal finds they might discover there. That was when something green appeared: a lump of copper, corroded on the outside, consisting of three individual ingots in the shape of a round cone.

"A find like this is extremely rare," says private lecturer Dr. Stephanie Döpfer, the academic supervisor of the two doctoral candidates. The residents presumably left the find, which weighs 1.7 kilograms, behind by mistake when they abandoned the settlement—for whatever reason that was.

The settlement identified by Biezeveld and Kluge dates from the Early Bronze Age (about 2600-2000 BC). During this period, the territory of present-day Oman was one of the most important producers of copper for ancient Mesopotamia in modern-day Iraq, as well as the Indus culture in what are now Pakistan and India. It was only here that copper ore occurred on a larger scale.

Cast into copper ingots, it was a coveted commodity, as documented not least by cuneiform texts from Mesopotamia. Since copper ingots were usually further processed to make tools and other objects, they are only rarely unearthed in archaeological excavations. All the more surprising was the discovery of several such ingots in the Early Bronze Age settlement.

The copper ingots have a plano-convex shape typical for the period, which was formed by pouring the molten copper into small clay crucibles. Through the discovery of the copper ingots, it is possible to learn more about the role of Oman in interregional trade relations during the Early Bronze Age, as well as about the metal processing technologies already known at that time.

Smelting copper requires a lot of combustible material, which was likely to have been a major challenge in a region as arid and low in vegetation as Oman. How people in the Early Bronze Age handled their limited resources and whether it was possible for them to use these sustainably are questions to be answered in the further course of the project.

Several pottery sherds of 'black-slipped jars', large storage vessels of the Indus culture that were also discovered there, also corroborate that the newly discovered village was in close exchange and contact with the Indian subcontinent. It seems that even a small, rather rural settlement in Central Oman was part of a system of interregional trade and exchange of goods.

Please visit the site: <https://phys.org/news/2023-06-archaeologists-year-old-copper-ingots-oman.html>

SCALPEL, FORCEPS, BONE DRILL: MODERN MEDICINE IN ANCIENT ROME, BY FRANZ LIDZ

A 2,000-year-old collection of medical tools, recently unearthed in Hungary, offer insight into the practices of undaunted, much-maligned Roman doctors.

Doctors are generally held in high regard today, but Romans of the first century were skeptical, even scornful, of medical practitioners, many of whom ministered to ailments they did not understand. Poets especially ridiculed surgeons for being greedy, for taking sexual advantage of patients and, above all, for incompetence.

In his “Natural History,” Pliny the Elder, the admiral and scholar who died in 79 A.D. while trying to rescue desperate villagers fleeing the debris of Mt. Vesuvius, endeavored to speak out against the medical profession “on behalf of the senate and Roman people and 600 years of Rome.” Their fees were excessive, their remedies dubious, their squabbling insufferable. “Physicians gain experience at our peril and conduct their experiments by means of our deaths,” he wrote. The epitaph on more than one Roman tombstone read: “A gang of doctors killed me.”

Medical remedies have improved since those times — no more smashed snails, salt-cured weasel flesh or ashes of cremated dogs’ heads — but surgical instruments have changed surprisingly little. Scalpels, needles, tweezers, probes, hooks, chisels and drills are as much part of today’s standard medical tool kit as they were during Rome’s imperial era.

Archaeologists in Hungary recently unearthed a rare and perplexing set of such appliances. The items were found in a necropolis near Jászberény, some 35 miles from Budapest, in two wooden chests and included a forceps, for pulling teeth; a curet, for mixing, measuring and applying medicaments, and three copper-alloy scalpels fitted with detachable steel blades and inlaid with silver in a Roman style. Alongside were the remains of a man presumed to have been a Roman citizen.

The site, seemingly undisturbed for 2,000 years, also yielded a pestle that, judging by the abrasion marks and drug residue, was probably used to grind medicinal herbs. Most unusual were a bone lever, for putting fractures back in place, and the handle of what appears to have been a drill, for trepanning the skull and extracting impacted weaponry from bone.

The instrumentarium, suitable for performing complex operations, provides a glimpse into the advanced medical practices of first-century Romans and how far afield doctors may have journeyed to offer care. “In ancient times, these were comparatively sophisticated tools made of the finest materials,” said Tivadar Vida, director of the Institute of Archaeology at Eötvös Loránd University, or ELTE, in Budapest and leader of the excavation.

Two millennia ago Jászberény and the county around it were part of the Barbaricum, a vast region that lay beyond the frontiers of the Empire and served as a buffer against

possible outside threats. “How could such a well-equipped individual die so far from Rome, in the middle of the Barbaricum,” mused Leventu Samu, a research fellow at ELTE and a member of the team on the dig. “Was he there to heal a prestigious local figure, or was he perhaps accompanying a military movement of the Roman legions?”

Similar kits have been found across most of the Empire; the largest and most varied was discovered in 1989 in the ruins of a third-century physician’s home in Rimini, Italy. But the new find is described as one of the most extensive collections of first-century Roman medical instruments known. Until now, the oldest was thought to be a trove of objects dug up in 1997 at a burial site in Colchester, England, that date to around 70 A.D., very early in the Roman occupation of Britain. The most renowned set turned up in the 1770s at Pompeii’s so-called House of the Surgeon, which was buried under a layer of ash and pumice during the eruption of Mount Vesuvius.

Colin Webster, a classics professor at the University of California, Davis, and president of the Society for Ancient Medicine and Pharmacology, said the discovery illustrated the porousness of cultural boundaries in the ancient world. “Medicine has long been one of the most active vectors for intercultural exchange,” he said. “And this finding certainly helps show the physical evidence of these dynamics.”

The Romans had high hopes for their medical experts. In his treatise “De Medicina,” or “On Medicine,” the first-century Roman encyclopedist Aulus Cornelius Celsus mused that “a surgeon should be youthful or at any rate nearer youth than age; with a strong and steady hand that never trembles, and ready to use the left hand as well as the right; with vision sharp and clear.” The surgeon should be undaunted and empathetic but unmoved by a patient’s screams of pain; his greatest desire should be to make the patient well.

A majority of these undaunted Roman physicians were Greek, or at least speakers of the Greek language. Many were freedmen or even slaves, which may account for their low social standing. The man buried in the Hungarian necropolis was 50 or 60 when he died; whether he actually was a medical practitioner is unclear, researchers said, but he probably was not a local.

“Studying medicine was only possible, at the time, in a large urban center of the empire,” Dr. Samu said. Doctors were peripatetic and medical traditions varied by territory. “Ancient medical writers, such as Galen, advised that physicians should travel to learn about diseases that were common to certain areas,” said Patty Baker, former head of archaeology and classics at the University of Kent in England.

Would-be surgeons were encouraged to apprentice with recognized doctors, study at large libraries and listen to lectures in such far-flung places as Athens and Alexandria, a hub of anatomical learning. For firsthand experience in treating combat wounds, medics frequently interned in the army and gladiatorial schools, which might explain the presence of medical tools in the Barbaricum.

“There were no licensing boards and no formal requirements for entrance to the profession,” said Lawrence Bliquez, emeritus archaeologist at the University of Washington. “Anyone could call himself a doctor.” If his methods were successful, he attracted more patients; if not, he found another career.

Surgeries included many performed in the body's orifices to treat polyps, inflamed tonsils, hemorrhoids and fistulas. Beside trepanning, the more radical surgeries included mastectomy, amputation, hernia reduction and cataract couching. "Surgery was a male domain," Dr. Bliquez said. "But there were certainly many female midwives, so who can say they knew nothing about surgery, especially as it pertains to gynecology."

Contrary to myth, cesarean sections did not enter medicine until long after Julius Caesar's birth in 100 B.C. The Romans did, however, practice embryotomy, a surgery by which a knife was used to cut the limbs from an infant while it was stuck in the birth canal. "A hook was used to withdraw the limbs, torso and head from the birth canal once they had been cut," Dr. Baker said. "It was a gruesome procedure used to save the life of a mother."

Surgery was often the last resort of all medical treatments. "Any of the tools found in the Barbaricum grave could have caused death," Dr. Baker said. "There was no knowledge of sterilization or germ theory. Patients were likely to die of sepsis and shock."

The tool-laden grave was discovered last year at a site where relics from the Copper Age (4500 B.C. to 3500 B.C.) and the Avar period (560 to 790 A.D.) had been found on the surface. A subsequent survey with a magnetometer identified a necropolis of the Avars, a nomadic peoples who succeeded Attila's Huns. Among the rows of tombs, the researchers uncovered the man's grave, revealing a skull, leg bones and, at the foot of the body, the chests of metal instruments. "The fact that the deceased was buried with his equipment is perhaps a sign of respect," Dr. Samu said.

That is not the only possibility. Dr. Baker said that she often cautioned her students about interpreting ancient artifacts, and asked them to consider alternative explanations. What if, she proposed, the medical tools were interred with the so-called physician because he was so bad at his practice that his family and friends wanted to get rid of everything associated with his poor medical skills? "This was a joke," Dr. Baker said. "But it was intended to make students think about how we jump to quick conclusions about objects we find in burials."

Please visit the site: <https://www.nytimes.com/2023/06/13/science/archaeology-ancient-rome-medicine.html> [Go there for pix and caps]

KUBBAT ḤAMUD SHALGHAM: TURNIP AND SWISS CHARD CHOWDER, IRAQI STYLE, BY NAWAL NASRALLAH

An ancient Babylonian recipe for cooking turnips survived in one of the three cuneiform tablets dating from around 1700 BC.

THIS IS A SUBSTANTIAL DISH of a creamy vegetable soup with meat-filled rice dumplings, which can be served as a main meal. The name is a combination of *kubba* (the filled dumplings), *ḥāmud* (sour)—on account of the lemon juice used—and *shalgham* (turnips). It nourishes and satisfies with its harmonious flavors, exciting textures, and a welcoming aroma that says this is home. Admittedly, it is not easy getting people all excited about the humble turnip, let alone the prehistorically giant chard leaf, but I do hope that my enthusiasm toward them will prove to be contagious, because they are really worth trying—quietly tasty and a good-for-you kind of food. And they have been around in Iraq from time immemorial, even etymologically. In the ancient Akkadian, language of the Babylonians and Assyrians, turnip was called *laptu*, from which the Arabic *lift* was derived (the present-day Iraqi dialectal *shalgham* for turnip was derived from the medieval Persian loan word, *sh/saljam*). Regarding the chard, its Arabic name, *silq*, was derived from the Akkadian *silqu*, which designated the beetroot and the chard.

What is really fascinating is that an ancient Babylonian recipe for cooking turnips survived in one of the three cuneiform tablets dating from around 1700 bc. They were discovered in the early twentieth century on the site of ancient Babylon (see Jean Bottéro, *The Oldest Cuisine in the World*, 2004). The best preserved of these tablets contains twenty-five recipes of stews written in a telegraphic style. One of them uses cultivated turnips with no meat, in addition to water, onion, arugula, cilantro, and Persian shallots (*Allium stipitatum*). Toward the end of cooking, the dish is flavored, enriched, and thickened with the addition of bulb leeks (*Allium porrum*) mashed with garlic, and bread crumbs mixed with blood (later prohibited by both Judaism and Islam). The Babylonian stew dishes most probably reflected the kind of daily fare offered to the elite household members for their nourishment and sustenance—as we still do today. Evidently the turnips were deemed important enough to be included in this high-cuisine collection of recipes.

As we move further in history, we learn more about these two vegetables. In the medical opinion of the medieval physicians and botanists, for instance, who followed the tenets of the Galenic theory of the four humors, prevalent at the time, both chard and turnip were valued as an effective cure for cold-related ailments, on account of their hot and humid properties. They were also held in high regard for increasing blood and semen, and were said to work as aphrodisiacs.

In the medieval kitchens, they were used in the most delicious of ways, based on the two medieval cookbooks that survived from Baghdad. Chard, for instance, as described in the thirteenth-century *Kitāb al-Ṭabīkh* (Cookbook), by al-Baghdadi, was boiled and mixed with drained yogurt and garlic, and served as a side dish. Turnips were cooked in white

sauce, as described in the tenth-century *Kitāb al-Ṭabīkh*, by Ibn Sayyār al-Warrāq. The dish, this time over, was richly thickened with crushed chickpeas, ground almonds, milk, and rice. Meatballs made with lean meat pounded into paste were thrown into the simmering pot. This is not quite dissimilar, I dare say, to how we continued to cook the turnips.

In Iraq today, *Kubbat ḥāmud shalgham* is a winter treat because both turnips and chard are available in that season only; and as in medieval times, we also swear by their power to soothe cold symptoms. Interestingly, the traditional Jewish Iraqi version of it replaces the turnips with another ancient root vegetable, the beet. There is no satisfactory reason for why this is so. However, it is my suspicion that this was a culinary tradition that the Babylonian Jews of Baghdad preserved from their continual presence in the region from ancient times. In the previously mentioned Babylonian stews, there is indeed a meat stew cooked with beets, the first documented borscht dish, which might have been later adopted by the Jews.

In the pre-food-processor times, making this elaborate soup was indeed a labor of love, what with all the pounding and grinding of rice and meat for the dumplings. Nowadays, it is only a matter of minutes to make it, and with some planning, the dish can be enjoyed fuss-free, such as preparing the stuffing the day before. Optionally, you may skip the dumplings; cook the soup only and perhaps drop in some meatballs, like the medieval Baghdadi cooks used to do.

Making the kubba filling

1½ pounds lean ground meat
3 tablespoons oil
2 medium onions, finely chopped
1½ teaspoons salt
½ teaspoon each of black pepper and allspice, with a bit of chili pepper, to taste
¼ cup each of chopped parsley, slivered and toasted almonds, and currants or raisins

Put meat and oil with ¼ cup water in a large skillet and let cook on medium-high heat; stir occasionally, breaking down meat lumps, until liquid is almost gone, about 10 minutes. Stir in the rest of the ingredients, and continue cooking and occasionally stirring on medium heat until onion looks translucent and all moisture evaporates, about 10 minutes. Set it aside to cool.

Making the kubba balls (about 16, size of a mandarin each)

12 ounces lean beef, ground
2 cups (12 ounces) rice flour
1 teaspoon salt
½ teaspoon black pepper
about 4 tablespoons water

Mix ground beef, rice flour, salt, and pepper. In three batches process the mix in a food processor, adding water through the spout, a tablespoon for each batch, or a bit more if mixture looks dry. A ball of dough should start forming and revolving within 2 to 3

minutes. Repeat until all is done. The final dough will be pinkish in hue, pliable, and of medium consistency.

Make the kubba balls by taking a piece of the dough, the size of a golf ball, flatten it into a thin concave disc—you need to make it as thin as you possibly can to avoid ending up with tough kubba. Put about 1 heaping tablespoon of the filling in the middle, gather the ends to close it, and roll it into a ball between the palms. Remember to handle the dough with slightly moistened fingers. If, while shaping, the dough tears at a place, take a small piece of the dough, flatten it between your fingers, slightly wet the torn area, and patch it. Put the finished pieces on a tray, in one layer, until the soup is ready.

Making the soup

1 medium onion, chopped

2 tablespoons oil

3 medium turnips (about 1 pound), peeled and cut into 1-inch cubes

4 to 5 big Swiss chard leaves with the stalks (about 3 cups chopped)

1 teaspoon crushed coriander seeds

½ teaspoon turmeric

½ cup rice soaked in water for 30 minutes and pulsed with the water in a food processor

1½ teaspoons salt ½ teaspoon black pepper ¼ cup lemon juice (or to taste), plus ½ teaspoon sugar

In a large pot, sauté the onion in oil until it starts to soften. Fold in turnips and chard, about 5 minutes. Fold in the rest of the ingredients, and pour in hot water or broth to cover them by about 5 inches. Mix well, and stir in the pulsed rice. Bring the pot to a boil, and then reduce heat to medium-low and simmer, covered, until turnip is tender and soup starts to thicken slightly, about 20 minutes. While simmering, stir the pot several times.

Drop in the prepared balls of kubba, stir the pot carefully, and let it boil gently for 20 minutes until the dumplings cook, and serve.

Nawal Nasrallah is an independent scholar specializing in the history and culture of Arab food. Her published works include *Delights from the Garden of Eden* (2013) and English translations of medieval Arabic cookbooks by Brill: *Annals of the Caliphs' Kitchens*, by Ibn Sayyar al-Warraq; *Treasure Trove of Benefits and Variety at the Table*; and *Best of Delectable Foods and Dishes from al-Andalus and al-Maghrib*.

Please visit the site: <https://www.worldliteraturetoday.org/2023/may/kubbat-hamud-shalgham-turnip-and-swiss-chard-chowder-iraqi-style-nawal-nasrallah>

VIRGIL QUOTE FOUND ON FRAGMENT OF ROMAN JAR UNEARTHED IN SPAIN, BY SAM JONES

Excerpt from the Georgics was carved into vessel used for olive oil 1,800 years ago.

A tiny fragment of a Roman jar that once held olive oil, produced in what is now southern Spain, has left archaeologists delighted, puzzled and “saucer-eyed” after they deciphered a quote from the ancient poet Virgil that was cut into its clay by an unknown but erudite hand 1,800 years ago.

The highly unusual find, thought to be the first time a literary quotation has been discovered on a Roman amphora, was turned up by researchers from the universities of Córdoba, Seville and Montpellier who were excavating a site in the town of Hornachuelos, in Andalucía’s Córdoba province, seven years ago.

While the ceramic vessels were routinely engraved with information relating to producers, quantities and taxes, the 6cm by 8cm shard appeared to contain an unusual amount of text.

“We thought it might be something quite exceptional because you hardly ever get more than a line or two of engravings on an amphora,” said Iván González Tobar, an archeologist on the project, which was funded by the Labex Archimède research institute in Montpellier, France, part of Paul Valéry University.

“This one had four or five lines. While we didn’t understand it, we thought it was quite special.”

Subsequent examinations by Latin experts determined that the fragment bore a quote from Virgil, best known as the author of the epic Latin poem the Aeneid.

“To be honest, it took a while because there were some spelling mistakes that held us back from seeing what it was straight away,” said González Tobar, who is now an archaeologist at the University of Barcelona. “But we did eventually get there.”

One of his colleagues, Antònia Soler i Nicolau, thought she recognised the quote – and indeed she did. It turned out to be from the first section of Virgil’s second major work, the Georgics: “[Earth] once changed the/Chaonian acorn for the plump wheat-ear/And mingled with the grape [your newfound gift].”

As far as González Tobar and his colleagues are aware, the fragment is the first time that a line from literature has turned up on a clay vessel.

“There are quite a lot of bricks that have been found with texts from Virgil on them because we think they’d been used for teaching before being used for building,” said González Tobar. “But nothing’s been found on amphorae.”

Given the fragment was found in a rural area where much of the olive oil sent to Rome was produced and bottled, the team thinks Virgil’s agriculturally themed Georgics may have struck the engraver as more fitting than the heroics of the Aeneid.

The researchers’ key theory, as published in the Journal of Roman Archeology, is that the verses, written on the lower part of the amphora, were never really intended to be seen.

They believe the author may have been a skilled labourer or perhaps even a child worker at the factory where the amphora was manufactured. In any case, the lines make it clear that whoever scratched the letters into the clay was more educated than such workers are traditionally supposed to have been.

“We really can’t say for sure why the lines were written, but we do know that they appear on a part of the amphora that wouldn’t have been seen,” said González Tobar.

“Maybe a worker there wanted to show them to a colleague – they could have been done by an adult or a child. What we do know is that this was done inside an amphora factory, and that the lines were probably written from memory.”

According to the journal article – written by González Tobar, Soler i Nicolau and Piero Berni Millet – the small, learned fragment that lay in the Andalusian earth for almost two millennia will be “of exceptional interest for archaeologists, epigraphists, and philologists of [colloquial] Latin”.

Please visit the site: <https://www.theguardian.com/science/2023/jun/21/virgil-quote-found-on-fragment-of-roman-jar-unearthed-in-spain>

DIVERS ARE ABOUT TO PULL A 3,000-YEAR- OLD SHIPWRECK FROM SEA

The sewn boat of Zambratija, which sank off the coast of Croatia, has endured the test of time remarkably well. Despite being composed of over 12 meters in length, the boat's preservation is surprisingly good, with a remarkable 7 meters still intact.

A joint team consisting of researchers from the Center Camille Jullian (CNRS/AMU) and the Archaeological Museum of Istria (Pula, Croatia) will closely examine this sunken vessel.

It dates back to the period between the late 12th century BCE and the late 10th century BCE, making it the oldest known completely hand-sewn boat in the Mediterranean.

The construction of this boat involved meticulous craftsmanship, with workers using pliable fibers to stitch together wooden pieces.

The Centre Camille Jullian (CCJ) in France, affiliated with the CNRS, described the wreck as having architectural and construction characteristics, strake assembly techniques, and a hull waterproofing system that are unparalleled in the Mediterranean region.

Additionally, the CCJ stated that due to these distinctive architectural elements, the specific assembly methods used, and the dating, the Zambratija boat can be considered as the epitome of one of the sewn boat construction traditions observed in the Adriatic.

While similar techniques were utilized worldwide, both before and after the introduction of metal components, the Zambratija boat is exceptional due to its status as a rare surviving example of the "ancient naval tradition" specific to the Istria and Dalmatia regions, as stated by the French National Center for Scientific Research (CNRS).

In 2008, local fishermen reported the presence of the vessel, prompting marine archaeologists to commence their study of the boat.

Since its discovery, researchers have been evaluating the possibility of removing it from the water, and the process of removal is scheduled to commence on July 2.

Divers will handle the boat fragments with great care, relocating each piece to a specially designed support structure. Once the boat is on land, the team will proceed with its reconstruction and initiate a detailed examination.

During the initial analysis, they will strive to establish a more precise dating for the vessel, identify its materials, and gain further insights into the woodworking techniques employed.

The CNRS emphasized the need for meticulous handling when dealing with such significant artifacts, stating in a press release that every step of the process must be approached with the utmost care.

Following the removal of the boat fragments, experts from the CCJ and the Archaeological Museum of Istria, located in Pula, Croatia, will reconstruct the boat in a three-dimensional manner. The researchers will focus on identifying the fibers utilized for sewing and examining the woodworking techniques employed.

Ultimately, the goal is to showcase the vessel in a future maritime history museum planned for Pula, Croatia, as reported by Aristos Georgiou of Newsweek.

Please visit the site: <https://archaeologymag.com/2023/06/3000-year-old-shipwreck-zambratija/> [Go there for pix]

TUNISIA'S CARTHAGE MUSEUM GIVES PREVIEW OF EXPANDED RENOVATION

A temporary exhibition will give visitors a sneak peak at Tunisia's expanded plans to renovate the shuttered national museum at the world heritage site in Carthage, Rome's ancient rival.

The museum's rich collection comprises more than 100,000 pieces from the ancient city's Punic, Roman, and Byzantine eras to the 20th century. However, it has been closed since 2018 because of structural instability and the pieces will not be on display before the museum's official reopening scheduled for the end of 2026.

But until October, history lovers will be able to view a dozen of the museum's mosaics and immerse themselves in the renovation plans entrusted to German firm Bez+Kock Architekten.

They are the winners of the "very first international architecture competition ever organised in Tunisia", Ghada Jellali, an architect working on the museum's renovation, told AFP on Tuesday.

"At the onset of the project in 2019, it was only planned to renovate two rooms for 3.5 million euros (\$3.8 million), but an assessment showed that it was impossible without addressing the rest of the buildings," Jellali said.

With European Union support, the project budget has climbed to 12 million euros, along with other foreign funding dedicated to the development of tourism and crafts at the Acropolis of Byrsa, the ruins of an ancient citadel which the museum was built upon in the northern suburbs of Tunis.

Work on the site is expected to start in June 2025.

Pauline Lecoite of Expertise France, a French public agency coordinating the technical work, says the site will be "rid of buildings from the '90s devoid of historical interest and in an advanced state of disrepair".

At the project's completion, the museum will have three times more exhibition space (2,200 square metres) than before.

Please visit the site: <https://www.barrons.com/news/tunisia-s-carthage-museum-gives-preview-of-expanded-renovation-bfa6189f>

STUNNING GREEK MOSAICS UNCOVERED **IN SYRIA,** **BY JAMES SSENGENDO**

A rare and stunning mosaic panel depicting Greek scenes has recently been uncovered in the Homs province of Syria. Experts say it dates back to the Roman era.

Syrian state news agency SANA reported that archeologists unearthed the sizeable mosaic panel constructed 1,600 years ago in the city of al-Rastan, adding that “the panel has no parallel in the world”.

The Syrian Directorate of Antiquities noted that it was found in an area previously held by the opposition forces of Syria.

Dr. Humam Saad, director of excavation studies and the archaeological mission in al-Rastan, said that the discovery actually took place in 2018. But the Syrian opposition forces who controlled the Homs province meant that archeologists could not uncover it earlier.

However, with the return of Bashar Assad’s regime forces, archaeologists finally received access. This allowed them to reveal the mosaic, which has a length of 20 meters and a width of 6 meters.

Archaeologists still believe there is a possibility of finding more remains under the mosaic.

The uncovered Mosaic features two main scenes. One depicts soldiers carrying swords with shields seen with the names of Greek leaders who took part in the Trojan War. The war was a legendary conflict between the ancient Greeks and the people of Troy more than 2,000 years ago.

The second is a portrayal of Neptune (Greek Poseidon), the Ancient Roman/Greek god of the sea, and 40 of his mistresses.

Around the 12th century BC when the rift between the ancient Greeks and the people of Troy began, the Trojan prince Paris abducted Helen, wife of king Menelaus of Sparta.

When Menelaus demanded her return, the Trojans refused. In turn, Menelaus persuaded his brother Agamemnon to lead an army against Troy.

The Greeks ravaged Troy’s surrounding cities and countryside for nine years. The city held out nonetheless, being well-fortified and commanded by Hector and other sons of the royal household.

On the 10th and final year of war, the Greeks had the brilliant idea to build a large hollow wooden horse and hide a select force of men inside. The Greeks pretended to sail away,

and the Trojans pulled the horse into their city as a victory trophy. In this manner, they entered the city of Troy and won the war

A long-held argument about whether the battle actually took place is still raging. Nevertheless, there is enough evidence indicating its truth. Unfortunately, however, no one has ever found the giant wooden horse.

The reality of the battle now justifies all the stories spread about the war. This includes the tale of Achilles. The great ancient Greek warrior was invulnerable because his mother dipped him in the River Styx while a child. Yet according to ancient Greek mythology, he was left vulnerable at the part of the body by which she held him; his left heel. Greek Mosaic in Syria “complete and rarest of its kind”

Dr. Saad said “It is not the oldest of its kind, but it’s the most complete and the rarest,” “We have no similar mosaic,” referring to the significance and uniqueness of the unearthed mosaic.

He also told the press that “What is in front of us is a discovery that is rare on a global scale.”

Furthermore, he stated, the images are “rich in details, and includes scenes from the Trojan War between the Greeks and Trojans”.

In Ancient Greek and Roman mythology, the Greek demigod hero Hercules slayed Hippolyta, queen of the Amazons, in one of his 12 labours. That finding apparently connects with history.

Saad further added, “We can’t identify the type of the building, whether it’s a public bathhouse or something else, because we have not finished excavating yet.”

Prior to the armed conflict in Syria, there had not been significant excavation efforts in the city of al-Rastan, despite its historical significance in the country, Saad said.

He added that “Unfortunately, there were armed groups that tried to sell the mosaic at one point in 2017 and listed it on social media platforms.”

Please visit the site: <https://greekreporter.com/2023/06/26/ancient-mosaics-syria-greek-roman/> [Go there for pix]

ISRAELI ARCHAEOLOGISTS FIND ENIGMATIC 2,500-YEAR-OLD BURIALS IN THE DESERT, BY ARIEL DAVID

Dozens of people, possibly all female, were found in an elaborate tomb in the middle of the Negev desert, nowhere near any ancient settlements. Was the goddess of crossroads involved?

Israeli archaeologists have been left scratching their heads over the discovery of a large tomb containing dozens of skeletons, many of them women, who were buried more than 2,500 years ago in the midst of the Negev desert, at an ancient crossroad far from any known settlements at the time.

The dead were buried with care and were honored ritually by burning incense, the archaeologists deduce. They were left with a “salad” of artifacts originating in distant places ranging from southern Arabia to the Western Mediterranean. Questions remain over whence these people came and why they ended up in a grave in the middle of nowhere.

As often happens with archaeological discoveries in Israel, this one too began with a salvage dig ahead of construction work. In this case a water pipeline was being laid near Tlalim, a kibbutz in the heart of the Negev desert some 30 kilometers south of the city of Be’er Sheva. When two clearly human-made piles of stones emerged along the planned water line in 2021, archaeologists assumed they were tumuli, modest burial mounds often associated with local nomadic tribes and generally dated to the Early and Intermediate Bronze Ages, that is, more than 4,200 years ago.

“As we kept digging we understood that this was not something so common, but something from a later period and much larger,” says Martin David Pasternak, an Israel Antiquities Authority archaeologist who led the excavation.

What finally emerged were two carefully constructed burial chambers separated by a courtyard, with ceilings supported by large, rectangular pillars. Inside the largest chamber, the archaeologists have counted at least 50 bodies. Seven more skeletons were found in the smaller chamber.

Pasternak called in Dr. Tali Erickson-Gini, an IAA expert on ancient desert cultures in the Levant, and together they reported their preliminary findings in June in Tel Aviv: *Journal of the Institute of Archaeology of Tel Aviv University*.

In their paper, the two archaeologists caution that much more research needs to be done to understand the site, but they offer some early data and theories on the nature of this enigmatic burial ground. Because of its apparent importance, the tomb has been preserved and restored for further study, as opposed to being sacrificed for that pipeline.

Radiocarbon dating of the remains is still pending but the many artifacts unearthed in the tomb are typical of the late Iron Age to the early Persian Period, which means around 2,600 to 2,500 years ago.

To put this in context, this is the period during which the Babylonians conquered the Levant – including Jerusalem and Judah in 586 B.C.E. – only to be replaced a few decades later by the Persian Empire.

We don't know for sure if the Tlalim tombs were used over this entire period, part of it or whether they housed people who died all in a single event, Pasternak says. However, some of the skeletons were found in articulation, while others were crumpled up in piles. This is typical of ancient burials that were periodically reopened to receive more dead, with older bones being pushed to the side to make space for fresh bodies, which suggests that the site may have been used for a prolonged time, he says.

Dark ash patches inside the tomb and in the courtyard outside it may have been caused by ritually burning incense, which also suggests multiple funerary ceremonies.

Arabian elements

The initial analysis of the remains indicates that the deceased included many adult women. A full anthropological study is still in the works, so the archaeologists don't know for sure if this was an all-female grave, but the nature of the artifacts certainly point to a strong female presence.

Weapons, a common find in ancient tombs, were largely absent from the Tlalim burials, with the exception of two arrowheads, Pasternak and Erickson-Gini report. The funerary offerings included rare alabaster vessels and stone incense burners, which appear to have been ritually broken as part of the burial rites, the archaeologists say. (They know this because the objects all seem to have been cracked by a single blow in the middle after use).

Jewelry was also abundant: copper bracelets and numerous beads made from carnelian and polished stones; bone rings made from the metapodials of camels; pendants made from large, fist-sized cowrie shells from the Red Sea, as well as Phoenician and Egyptian scarabs.

“The finds represent a salad of cultures,” Pasternak tells Haaretz. There was a small cooking pot with a stamped handle typically found in late Iron Age Judah that appears to have also been used to burn incense and a few other small, portable ceramic vessels that point to connections with Edom, Moab and Phoenicia.

Other objects include a faience amulet of the Egyptian god Bes, protector of women and children; a cylinder seal with cobras; a multi-face glass pendant believed to be from Phoenician colonies in the western Mediterranean, and a copper fibula (brooch) associated with the burial of women in southern Europe, Erickson-Gini notes.

It is a truism in archaeology that “pots don't always equal people,” meaning in this case that the women didn't necessarily come from all these places, and may have acquired

these objects through trade. Still, the artifacts may provide some clues to the identities of the women and what they might have been doing in the Negev, Erickson-Gini says.

While there are some lonesome Persian forts nearby, they belong to a slightly later period, and there are no known towns nearby from the time of the burials, she notes. The region is sufficiently well surveyed that we would know if there were ruins of an ancient settlement in the vicinity, she says.

It is also unlikely that the burials were made by local nomadic tribes, who usually didn't invest so much in building graves and wouldn't leave such a rich assemblage of artifacts, she says.

“There is a strong southern Arabian element here,” the archaeologist says. “We don't have good parallels for these tombs in our region but there are similar communal tombs near Dubai, in Oman and there are possibly burials of this kind in Yemen, though not much has been excavated or published there due to the current conflict.”

The alabaster vessels and the incense burners are also typical of southern Arabia, as is the incense itself, which was brought to the Levant through the Negev by caravans of Arabian traders traveling through the desert. The discovery of a small set of scales and stone weights, probably used to weigh incense, silver or other precious metals, also links the Tlalim burials to the world of traders in frankincense and myrrh.

The burials may be connected to Qedarite traders who operated in northern Arabia and the Negev in this period or to the Minaeans, a people who hailed from an ancient kingdom in modern-day Yemen, Pasternak and Erickson-Gini suggest.

Still, the Negev is a long way away from southern Arabia, so why were the bodies buried here? And why is it mostly (or all) women?

The location and the varied provenance of the artifacts found with the bodies suggests that the women were not from Arabia itself. But they may have been headed there, the archaeologists speculate.

Wives, or sacred prostitutes?

We can't rule out that they were the victims of a disease outbreak, or of a single ambush on the perilous desert roads. In fact a mass grave linked to such a massacre later in the Hellenistic period was indeed found at Ein Ziq, to the south of Tlalim. But there the bodies included men, women and children, mostly buried haphazardly, while at Tlalim great care and ritual seem to have been taken to send off the dead, plus, as mentioned, the site seems to have been used over a prolonged period of time.

The full anthropological report should provide more data on the age and sex of the bodies, as well as whether there are any signs of a violent death on any of the skeletons. But for now it does seem more likely that these were people who died on the roads at different times and for some reason were buried at this location.

As for the identity of the women entombed at Tlalim, Erickson-Gini suggests they may have been enslaved people, bought at different locations on the Levantine coast, who

were being brought to Arabia. The trafficking of women from the Levant to Arabia is attested in Minaean inscriptions from Yemen and other ancient texts, she says. This might explain the diverse provenance of their possessions.

“Many of these artifacts may have ended in the hands of women who were indeed coming from Arabia, but we think there is enough historical evidence to suspect these were foreign women who were being taken to Arabia,” she tells Haaretz.

Once there, the women were likely intended to be taken as wives and concubines, or possibly to serve as sacred prostitutes in temples in the area. Ritual prostitution is well attested in ancient times, for example in one of the third century B.C.E. Zenon Papyri, which tells of a woman who was bought in Ammon (today’s northern Jordan) and was being transported to Jaffa to be a temple prostitute there, Erickson-Gini notes. The Bible too claims that ritual prostitution was practiced even in the Temple in Jerusalem, until being banned by King Josiah (2 Kings 23:7) in the seventh century B.C.E., almost at the very end of the First Temple Period.

The idea that the Tlalim women may have been trafficked as ritual prostitutes is partly supported by the unusual presence of large cowrie shells in the tomb. In antiquity, small cowries were often used by women as fertility talismans, but shells of this size are usually found in cultic contexts, like the Temple of the Winged Lions at Petra, which was known to have been dedicated to a female goddess, and in a temple in the port of Bereniki on the east coast of Egypt, Erickson-Gini says.

The location of the Tlalim burial might also point to female-oriented ritual practices, she adds. While it’s in an isolated area, the tomb is located at an important junction between the ancient trade roads that led south to Arabia and to the Arava Valley and Edom in the east, the archaeologist notes. Ancient religions often associated crossroads with divine feminine powers and ritual activities, she says. The Bible calls a crossroads em-haderech, mother of roads, and describes it as a spot where pagans conducted divination (Ezekiel 21:26), while, in the classical world, Hecate was the Greek goddess of crossroads and magic.

These are all fascinating theories, but Pasternak and Erickson-Gini acknowledge that it will take much more research to verify them and, hopefully, fully unravel the many secrets of this desert burial.

Please visit the site: <https://tinyurl.com/vr3f6tcb> [Go there for pix]
