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(Ένωση Ελλήνων Χημικών)
<http://archaeometry.org.gr>

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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Ιούνιος 2023 -

**Make a habit of two things: to help; or at least to
do no harm. (Hippocrates)**

Newsletter of the Hellenic Society of Archaeometry

- June 2023 -

Nr. 267

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ΣΥΝΕΔΡΙΑ - CONFERENCES/WORKSHOPS

8TH SYMPOSIUM OF ARCHAEOLOGY, HELLENIC SOCIETY FOR ARCHAEOLOGY, ATHENS, OCTOBER 17- 20, 2023, BYZANTINE AND CHRISTIAN MUSEUM, 2ND CIRCULAR

The Symposium

The Hellenic Society for Archaeology (HSA) is pleased to announce that the 1st Circular for the organization of the 8th Symposium of Archaeology, entitled "*Archaeology beyond Analysis: Interpretive Approaches*," to be held at the [Byzantine and Christian Museum](#), has already attracted the research interest of an important number of Greek and international experts, from both the field of Natural Sciences and Archaeology. The updated important dates and instructions for participation in the Symposium are set as follows:

Important Dates and Relevant Information

Friday, June 16, 2023: Deadline for abstract submission.

Monday, July 17, 2023: Notification of acceptance of abstracts for presentation (oral/poster).

Thursday, August 31, 2023: Early registration (full): €120 / Students: €70. The benefits included in the full registration are listed below.

Friday, September 1- 10 September: The cost of full registration will be €150 and €100, respectively.

Please note that **the payment of one registration per paper is mandatory before 10th September, 2023**. Special arrangements will be made in the case of submitting more than one (1) paper by the same participant. **In case of failing to complete payment, the paper(s) will not be included in the Symposium's scientific program.**

Costs for simple attendance

The registration fee for those who will not be contributing to the Symposium with a paper/poster has been decided as follows:

One-day attendance: €30 (conference material, coffee breaks included).

Two-day attendance or more: €60 (conference material, coffee breaks included).

Simple attendance without registration is free of charge (conference material, coffee breaks NOT included).

A certificate of attendance/participation will be provided only upon registration.

Friday, September 15, 2023: Announcement of the scientific program.

Tuesday, October 17, 2023: Launch of Symposium's proceedings. Welcome reception at the Byzantine and Christian Museum.

Friday, October 20, 2023: Conclusion of Symposium's proceedings.

Sunday, December 31, 2023: Deadline for submission of full papers for publication in the Symposium's Proceedings.

Please note that all payments must be made through money transfer/deposit to Piraeus Bank. Beneficiary Name: Hellenic Society for Archaeometry, **IBAN GR36 0171 8560 0068 5614 5565 719, SWIFT-BIC: PIRBGRAA**. The depositor is responsible for any bank charges. It is **MANDATORY** to consider adding the justification, which should be in capital letters and include the depositor's "FULL NAME" and the indication "SYMPOSIUM HSA". The cost of full registration includes the right to attend the Symposium, the right to present one paper, a folder with stationery and other relevant material, coffee breaks, lunch breaks, as well as the book of abstracts in digital format. **Additional cost applies for participation in the Symposium's dinner, which will be announced in due course.**

The payment of the registration fee for registered attendance can be made during the registration period at the Symposium.

More relevant information (author guidelines and submission for publication in the Symposium Proceedings, cost of participation in the dinner and relevant details, final scientific program) will be announced in the forthcoming 3rd Circular, as well as on the website of the HSA <http://www.archaeometry.org.gr>.

Preliminary Program Tuesday 17 Oct.	Wednesday 18 Oct.	Thursday 19 Oct.	Friday 20 Oct.
08:30-09:30 Registration	08:30-09:30 Registration	08:30-09:30 Registration	08:30-09:30 Registration
09:30-11:30 <i>Absolute dating/ Palaeoenvironment</i>	09:30-11:30 <i>Inorganic materials</i>	09:30-11:30 <i>Geophysical Prospection and Geoarchaeology</i>	09:30-11:30 <i>Conservation Science</i>
11:30-12:00 Coffee break	11:30-12:00 Coffee break	11:30-12:00 Coffee break	11:30-12:00 Coffee break
12:00-14:00 <i>Absolute dating/ Palaeoenvironment</i>	12:00-14:00 <i>Inorganic materias</i>	12:00-14:00 <i>Geophysical Prospection and Geoarchaeology</i>	12:00-14:00 <i>Young researchers</i>
14:00-15:30 <i>Lunch break and poster session I</i>	14:00-15:30 <i>Lunch break and poster session II</i>	14:00-15:30 <i>Lunch break and poster session III</i>	14:00-15:30 <i>Lunch break and poster session IV</i>
15:30-17:30 <i>Digital Methods in Cultural Heritage</i>	15:30-17:30 <i>Open thematic session</i>	15:30-17:30 <i>Biomaterials and organic residues</i>	15:30-17:30 <i>Young researchers</i>
17:30-20:00 <i>Welcome reception to Symposium attendees</i>	17:30-19:30 <i>Bridges in Archaeometry Round Table</i>	20:30- <i>Symposium Dinner Awards, Honorary Distinctions</i>	17:30-17:50 <i>Symposium's Conclusions</i>

(Closed Session)

The Scientific Committee

- Prof. Ph. Betancourt (Temple University)
- Prof. S. Bogiatzis (University of West Attica)
- Dr. H. Brecoulaki (National Research Foundation)
- Prof. J. Henderson (Nottingham University)
- Dr. D. Ignatiadou (National Archaeological Museum)
- Prof. G. Karapanagiotis (Aristotle University of Thessaloniki)
- Dr. P. Karkanas (Wiener Laboratory ASCSA)
- Dr. A.-G. Karydas (INP, NCSR "Demokritos")
- Prof. V. Kassianidou (University of Cyprus)
- Dr. E. Kyriatzi (Fitch Laboratory, British School at Athens)
- Prof. D. Makris (University of West Attica)
- Prof. Marcos Martín-Torres (University of Cambridge)
- Assoc. Prof. E. Margariti (The Cyprus Institute)
- Prof. V. Melfos (Aristotle University of Thessaloniki)
- Assoc. Prof. E. Nikita (The Cyprus Institute)
- Prof. I. Papadatos (National and Kapodistrian University of Athens)
- Dr. N. Papadimitriou (Kanellopoulos Museum)
- Prof. V. Perdikatsis (Technical University of Crete)
- Dr. E. Photos-Jones (Scottish Analytical SAA)
- Prof. Th. Rehren (The Cyprus Institute)
- Prof. A. Sarris (University of Cyprus) • Prof. Dr. K. Sporn (German Archaeological Institute) • Prof. G. Tsokas (Aristotle University of Thessaloniki)
- Prof. P. Vandenabeele (Ghent University)
- Prof. S. Valamoti (Aristotle University of Thessaloniki)
- Prof. N. Zacharias (University of Peloponnese)

The Hellenic Society for Archaeometry aspires to realize another important Symposium on Archaeometry, worthy of its brilliant tradition.

The Organizing Committee:

Dr. M. Kaparou, N.C.S.R. "Demokritos"
Dr. A. Oikonomou, N.C.S.R. "Demokritos"
Dr. E. Kouloumpi, National Gallery
Dr. M. Papageorgiou, The American College of Greece
Dr. I. Bassiakos, N.C.S.R. "Demokritos"
Prof. Y. Facorellis, University of West Attica
Dr. E. Filippaki, N.C.S.R. "Demokritos"

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

Dear all,

The Organizing committee of **InART2024- 6th International Conference on Innovation in Art Research and Technology**, to be held in **Oslo** on **4-7 June 2024**, is happy to announce that the **call for abstract** is now **open**. Contributions can be submitted through the online system available at the conference website: <https://www.khm.uio.no/english/research/inart2024/important-dates-and-abstracts/index.html>

In the same web-page you will also find other useful information and instructions.

The **deadline** for abstract submission is **31 October 2023**.

For any question, please contact us at contact-inart2024@khm.uio.no

We are looking forward to welcoming you to Oslo in 2024.

on behalf of the organizing committee,

Lavinia de Ferri

Important information

Possibility of attending online

Presentations must be given in person, online attendance is possible only for nonpresenting attendants

Book of Abstract with ISBN index

A Focus point of the European Physical Journal Plus will be associated to InART2024:
Advances and Innovation in Heritage Science

Important dates

Abstracts submission: 30 May 2023-31 October 2023

Notification to authors: 16 January 2024

Early registration deadline: 16 January-03 April 2024

Please check the conference website for details about the abstracts template and submission system.

Every presenting author will be allowed to submit a **maximum of two** contributions, of which only **one** can be an **oral** contribution.



WORLD OF IRON AT 10 CONFERENCE,
NOVEMBER 2023, BRITISH INSTITUTE IN
EASTERN AFRICA, NAIROBI

Dear all,

There are still some places remaining for presentations at the **World of Iron at 10** conference, to be held at the British Institute in Eastern Africa in Nairobi in November 2023.

We have therefore extended the deadline for abstracts to the **12th June**.

The webpage with further details can be found at <https://biea.ac.uk/the-world-of-iron-at-10/>

The Abstract Submission Form can be found at <https://biea.ac.uk/forms/>

We encourage research on iron from any period (ancient to modern), and from anywhere in the world.

Full and partial funding is available to support participation in some instances. Requirements can be indicated on the Abstract Submission form.

We look forward to receiving your abstracts!

Please reach out to us at iron@biea.ac.uk with any questions.

With best wishes from Jane Humphris and Thilo Rehren, on behalf of the Scientific Committee

**SPPC2023, 2023 SYMPOSIUM ON
PALAEOONTOLOGICAL PREPARATION AND
CONSERVATION 6TH SEPTEMBER 2023 AT
THE UNIVERSITY OF LINCOLN, UK, CALL
FOR ABSTRACTS**

Hi everyone,

This is a call for abstracts for the 2023 Symposium on Palaeontological Preparation and Conservation **6th September 2023 at the University of Lincoln, UK**

[#sppc2023](#) will take place at the Minerva Building, Lincoln UK, in conjunction with the Symposium on Vertebrate Palaeontology and Comparative Anatomy. Platform presentations will take place in the morning, with time during tea break and lunch for delegates to view posters.

Abstracts will be considered on any topic of earth science conservation or preparation – including all work undertaken to prepare palaeontological, mineralogical or other geological material for research, teaching, storage, display, etc.

We are planning to have a virtual element for people who cannot attend in person.

Presentations from previous years can be viewed at www.geocurator.org/events/102-sppc/.... For further details of #SPPC2023 as they become available, please check <https://www.svpca.org/>.

Abstracts should be no more than 250 words plus one image, and submitted to sppc@geocurator.org before 5pm, 15th June 2023.

Please state if the abstract is for a poster or platform presentation.

Best wishes,

Lu
(on behalf of the SPPC Committee)

**CULTURAL HERITAGE AS A RESOURCE,
TECHNOLOGIES FOR THE PARADIGM
SHIFT IN ARCHAEOLOGY, CONSERVATION
AND EDUCATION, VIENNA, NOVEMBER 15-
17, 2023**

The International Conference on Cultural Heritage and New Technologies provides a platform for exchanging views on the Cultural Heritage protection agenda. Discussion among colleagues from a wide range of disciplines is a major focus of the event. During the conference the latest approaches to the research, management and monitoring of world heritage sites, cultural assets and archaeological monuments will be presented. 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.

A call for papers is posted at <https://chnt.at/call-for-papers/>.

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ –
JOB VACANCIES/FELLOWSHIPS

SENIOR IMAGING SCIENTIST AT LOUVRE
ABU DHABI, UAE

Company Description

Louvre Abu Dhabi is a new cultural beacon, bringing different cultures together to shine fresh light on the shared stories of humanity.

In March 2007, the government of United Arab Emirates and France formed an unprecedented partnership for cultural exchange, and the highlight of this was the establishment of Louvre Abu Dhabi on Saadiyat Island. The partnership combines the UAE's bold vision of cultural progression and openness, with France's expertise in the world of art and museums.

Louvre Abu Dhabi champions cultural achievements from prehistory to the present day. The galleries are not separated by geography but set in chronological order, the aim is to encourage respect, curiosity, learning and self-reflection.

Opportunity

Louvre Abu Dhabi is looking to appoint a **Senior Imaging Scientist** to join the Research Laboratory to perform radiography, CT scanning of cultural heritage objects and research aimed at understanding, preserving, and interpreting objects from the museum diverse collection in collaboration with curators, conservators, and other museum staff. The laboratory has been operational for a year and a half, and the radiography/CT scanning room is currently under construction and should be available by the end of 2024. The new scientist will follow the construction of this new facility and then lead its involvement in laboratory projects.

Key duties include:

- Conduct radiography and CT scanning of museum objects to contribute as part of collaborative projects to the broader study of works of art, study aging and deterioration processes of materials.
- Carry out all radiography and CT scanning studies of the laboratory and work closely with researchers performing other imaging studies such as technical photography, MA-XRF, hyperspectral imaging. This includes both data acquisition and data processing.
- Responsible for the maintenance of all the radiography and CT scanning equipment of the laboratory.
- Maintain excellent records of research and analysis, contribute to the management and archiving of scientific data. Communicate research results through written reports, museum publications, journal publications and conference presentations aimed at the scientific community and art conservation practitioners.

- Foster understanding and assimilation of scientific information among curators, conservators, collection managers, museum engineers, educators, other staff and the general public.
- Instruct and supervise interns, Master and PhD students in radiography and CT scanning projects.

Required Qualifications & Experience

- PhD in physics, radiology, or any other relevant field.
- 7+ years' experience in radiography, CT scanning and other advanced complimentary analytical or data-processing techniques applied to cultural heritage in a museum environment.
- Demonstrated ability to show initiative and resourcefulness in handling difficult and unusual analytical and technical problems.
- A working cross-cultural knowledge of art, art history, artists' materials and techniques, and routine art conservation practices is desirable.
- Excellent writing and verbal communication skills in English, knowledge of one or more foreign languages, in particular Arabic or French, is an added value.
- Record of peer-reviewed research and publications in cultural heritage science or in conservation-related themes and topics.
- Ability to effectively disseminate and communicate the work of conservation science to non-technical audiences, including the general public.
- Strong interest in collaborative and multi-disciplinary research and ability to work collaboratively with conservators, curators, collections management staff, museum educators, academic scientists, scientists from other museums is essential.
- Demonstrated organizational skills with a high attention to detail.

Salary Range

30,000-33,000 AED/month full-time (Emirati Dirhams)

If you are interested in this position, please send a cover letter detailing your vision for the position, a CV including references, and three relevant publications to careers@louvreabudhabi.ae

Elsa Bourguignon
Research Laboratory Unit Head
Louvre Abu Dhabi

AZRIELI FELLOWSHIPS IN ISRAEL

The Azrieli International Postdoctoral Fellowship has officially launched the Call for Applications for the 2024?25 academic year. We would like to emphasize that the fellowship is open to applicants from all around the world.

The fellowship provides significant funding, academic programming, and support to 24 international postdoctoral researchers, enabling them to carry out research in exact sciences, life sciences, humanities, and social sciences at eligible Israeli academic institutions. The value is approximately ILS 188,000 per year, which includes funds reserved for research and travel.

The online application system is set to open on September 1, 2023. Please find below the full information for the application process. We would appreciate your assistance in circulating this call to all relevant parties.

- Call for Applications

<https://azrielifoundation.org/the-azrieli-international-postdoctoral-fellowship-call-for-applications/>

- Fellowship Guidelines

<https://azrielifoundation.org/wp-content/uploads/2023/05/Guidelines-2024-25-Final-1.pdf>

Please do let us know if you have any questions.

WILKINSON-MCKENZIE INTERNATIONAL RESEARCH GRANT IN ANCIENT HISTORY AND ARCHAEOLOGY 2023

Applications are invited from scholars of all nationalities and ages for two post-doctoral grants of up to £500 to assist academic projects in any area of research pertaining to the Mediterranean or Middle East, from antiquity to the contemporary period. Subjects considered for grants include Bible, archaeology, architecture, history, manuscripts, numismatics, epigraphy, cartography, art, statuary, texts, fabrics, mortuary and funerary practices, and many more.

For information and the application form, please consult: <https://wmirg.org/>

The deadline for applications is 20 November 2023.

Candidates will be informed of the outcome by 20 December 2023. Previous winners may not re-apply.

The grant should be used within ten months of the award, with a report on the successful applicant's use of the grant sent to info@wmirg.org by 20 October 2024.

Further questions may be sent to enquiries@wmirg.org.

**POSTDOCTORAL FELLOW IN STABLE
ISOTOPE STUDIES, NTNU- NORWEGIAN
UNIVERSITY OF SCIENCE AND
TECHNOLOGY, TRONDHEIM, NORWAY**

We are pleased to announce a Postdoctoral Fellow in Stable Isotope Studies at NTNU-
Norwegian University of Science and Technology in Trondheim, Norway.

Please follow the link: <https://www.jobbnorge.no/en/available-jobs/job/245549/postdoctoral-fellow-in-stable-isotope-studies>

Postdoctoral Fellow in Stable Isotope Studies (245549) | NTNU – Norwegian University
of Science and Technology (jobbnorge.no)

The deadline for submission is June 25th 2023.

The fellowship will begin at the latest by Oct. 1st 2023

Med vennlig hilsen / kind regards

Bente Philippsen

Leder for NLD – Førsteamanuensis / Leader of the NLD – Associate Professor
Nasjonallaboratoriene for datering / The National Laboratory for Age
Determination
NTNU Vitenskapsmuseet
Norges teknisk-naturvitenskapelige universitet (NTNU)



RESEARCH ASSOCIATE OR RESEARCH SPECIALIST POSITION AT WOODS HOLE OCEANOGRAPHIC INSTITUTION

The National Ocean Sciences Accelerator Mass Spectrometry (NOSAMS) facility at the Woods Hole Oceanographic Institution (WHOI) is seeking a Research Associate or Research Specialist for the maintenance, development, and operation of two 14C Accelerator Mass Spectrometry (AMS) systems.

Further information about the position can be found at the link below: <https://careers-whoicims.com/jobs/2015/research-associate/job?hub=8&mobile=false&width=1090&height=500&bga=true&needsRedirect=false&jan1offset=-300&jun1offset=-240>

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

1ST SUMMER SCHOOL OF THE HSA, 17- 21/7, NCSR ‘DEMOKRITOS’ AND THE FITCH LABORATORY OF THE BRITISH SCHOOL OF ATHENS

Dear members and friends of the Hellenic Society for Archaeology,

We are pleased to share with you the Program of the 1st Summer School of the HSA, to be held on 17- 21 in the premises of NCSR ‘Demokritos’ and the Fitch Laboratory of the British School of Athens. You will also find attached the registration form.

Kindly note that no more than 20 applicants can be registered.

We would appreciate if you forwarded the present to anyone interested.

Sincerely yours,

The HSA Board



Θερινό Σχολείο | Ελληνική Αρχαιομετρική Εταιρεία
Summer School | Hellenic Society for Archaeometry

Φόρμα εγγραφής | [Registration form](#)

Όνομα | [Name](#):

Επίθετο | [Surname](#):

Προπτυχιακός/ή φοιτητής/τρια | [Undergraduate student](#)

Μεταπτυχιακός/ή φοιτητής/τρια | [Postgraduate student](#)

Υποψήφιος/α διδάκτορας | [PhD Candidate](#)

Μεταδιδακτορικός/ή ερευνητής/τρια | [Post doctoral researcher](#)

Επαγγελματίας | [Professional](#)

Ερευνητικά ενδιαφέροντα | [Research interests](#):

Email:

Τηλέφωνο επικοινωνίας | [Phone number](#):

Διατροφικοί περιορισμοί | [Dietary restrictions](#):

Πληρωμή διδάκτρων | [Registration fees payment](#): Ηλεκτρονική κατάθεση | [Electronic bank transfer](#)

Σε δύο δόσεις* | [In two installments*](#)

Τα δίδακτρα περιλαμβάνουν πιστοποιητικό παρακολούθησης, πληροφοριακό υλικό, USB, καθημερινό γεύμα και καφέ | [Registration fees include participation certificate, informative material, USB, everyday lunch and coffee.](#)

Είναι υποχρεωτική η καταβολή των διδάκτρων μέχρι τις 25 Ιουνίου 2023 | [It is compulsory to pay the registration fees until 25 June 2023.](#)

*Στην περίπτωση καταβολής του ποσού σε δύο δόσεις απαιτείται καταβολή της πρώτης δόσης μέχρι τις 25 Ιουνίου 2023 | [In the case you chose to pay the registration fees in two installments it is compulsory to pay the first installment until 25 June 2023.](#)

Οι πληρωμές κατατίθενται στην **Τράπεζα Πειραιώς, GR8801720090005009108605320, SWIFT-BIC: PIRBGRAA**. Ο καταθέτης βαρύνεται με τα έξοδα της τράπεζάς του. Η αναγραφή αιτιολογίας είναι ΑΠΑΡΑΙΤΗΤΗ και πρέπει να περιλαμβάνει με κεφαλαία γράμματα το ονοματεπώνυμο του καταθέτη και την ένδειξη **ΘΕΡΙΝΟ ΣΧΟΛΕΙΟ ΕΑΕ** | [All payments must be made through an electronic money transfer to Piraeus Bank. GR8801720090005009108605320, SWIFT-BIC: PIRBGRAA. The depositor is responsible for any bank charges. It is MANDATORY to consider adding the justification, which should be in capital letters and include the depositor's "FULL NAME" and the indication "SUMMER SCHOOL HSA".](#)

PROGRAM Monday 17/07/2023	Tuesday 18/07/2023	Wednesday 19/07/2023	Thursday 20/07/2023	Friday 21/07/2023
09:30-10:00		<p>Welcome The archaeological question / Task assignment M. Papageorgiou</p>		<p>Visit at the Fitch Laboratory, British School at Athens</p>
10:00-11:20	<p>Ancient mines and ores I. Bassiakos Archaeometallurgy E. Filippaki</p>	<p>Brief introduction: Fitch laboratory and its approach to Ceramic Analysis E. Kiriati Ceramic petrology (theory) S. Menelaou</p>	<p>Micromorphology and archaeological interpretation M. Gkouma</p>	<p>Painting materials and techniques I E. Kouloumpi</p> <p>Data analysis EXCEL, Origin, Statistical packages use N. Kladouri, K. Tsampa</p>
11:20-11:40	Coffee break	Coffee break	Coffee break	Coffee break
11:40-13:00	<p>Iron in ancient Greece M. Roggenbucke</p>	<p>Elemental analysis of ceramics (theory) C. Gardner, N. Müller</p>	<p>C14 dating and dendrochronology Y. Facorellis</p>	<p>Painting materials and techniques II G. Mastrotheodoros</p> <p>Preparation of 10-minute presentations</p>
13:00-15:00	Lunch break	Lunch break	Lunch break	Lunch break
15:00-16:20	<p>Vitreous materials and Mycenaean glass M. Kaparou Glass from 1st millennium BC until Late Antiquity Theory, History and Technology A. Oikonomou</p>	<p>Ceramic petrology (practical) S. Menelaou</p>	<p>Absolute dating with luminescence- Palaeoenvironment and prospects over climate change E. Tsakalos</p>	<p>X-ray Spectrometry in Cultural Heritage I (theory) A. G. Karydas</p> <p>Presentations</p>
16:20-16:40	Coffee break	Coffee break	Coffee break	Coffee break
16:40-18:00	<p>Digital archaeometry and New Technologies for the management Cultural Heritage sites: An overview of case studies N. Zacharias</p>	<p>Elemental analysis of ceramics (practical) C. Gardner, N. Müller</p>	<p>Sampling, handling and treatment for dating G. Polymeris</p>	<p>X-ray Spectrometry in Cultural Heritage II (practical) K. Tsampa</p> <p>Presentations</p>
Social events		Welcome drink		Social event

INTERNET SITES

MUSEUM OF STONE TOOLS

Colleagues may be interested in a newly opened virtual museum - the Museum of Stone Tools (<https://stonetoolsmuseum.com/>).

MoST is an open-access research and teaching resource based on 3D models of stone tools, created and curated by Prof. Mark Moore (University of New England, Australia). MoST has a global coverage, including examples from SW Asia, and incorporates stone tools produced from the Lower Paleolithic up until modern times.

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

PETROGRAPHIC STUDIES OF LATE BRONZE AGE POTTERY FROM HALA SULTAN TEKKE, BY CYPRUS PAULA WAIMAN-BARAK, TERESA BÜRGE, AND PETER M. FISCHER

Abstract

Petrographic analysis of ceramics allows for the high-resolution distinction between locally-produced ceramics and imports and provides a more comprehensive understanding of ancient production and exchange patterns. This paper analyses Cypriot-produced tablewares of the Late Bronze Age at Hala Sultan Tekke, a major trading hub in the eastern Mediterranean, focusing on the transition from Late Cypriot (LC) IIC to LC IIIA (c. 13th to mid-12th century BCE). In this study, a wide range of tablewares were analysed, with a particular focus on Cypriot-produced plain ware (Plain White Hand- and Wheel-Made; PWHM/PWWM) and painted wheel-made fineware (White Painted Wheel-Made Ware; WPWM), using petrography to determine their mineralogical composition, production technique, and provenance. In addition, reference samples were collected and experimentally fired to identify potential raw materials in the Circum-Troodos Sedimentary Succession region, with additional basaltic soil samples collected from the slopes of the Troodos.

The results show that there was a local production at Hala Sultan Tekke of Aegean-type painted and unpainted finewares in LC IIC. The adaptation of Aegean technologies, shapes and decoration patterns, sometimes in combination with traditional Cypriot characteristics, became prevalent in the local production of tableware in LC IIIA until the city was abandoned around the mid-12th century BCE. Evidence for coastal imports, e.g. from the wider Larnaca Bay region, the Famagusta Bay and western Cyprus, particularly painted wheel-made fineware bowls from LC IIIA, reveal new economic patterns and supply chains that emerged after the decline of interregional trade in the eastern Mediterranean around 1200 BCE.

Please visit the site:

<https://www.sciencedirect.com/science/article/pii/S2352409X23002134> is this
downloadable article

METALLOGRAPHY, MICROSTRUCTURE AND ANALYSIS

Following is a list of articles in the Archaeometallurgy special issue. Several of the articles are Open Access, and these are labeled as such. For the other articles, I have included a “SharedIt” link, which should enable non-subscribers to access a read-only version of the article.

Online Table of Contents: [Metallography, Microstructure, and Analysis | Volume 12, issue 2 \(springer.com\)](#)

Special Issue: Archaeometallurgy

Patricia Carrizo, Omid Oudbashi

Content type: Guest Editorial

Published: 14 April 2023

Pages: 169 - 170

Metallographic Investigation of the Bronze Sword from Vértesszőlős

*Szilvia Gyöngyösi, Géza Szabó, Péter Barkóczy
& Julianna Cseh*

Open Access

Published: 23 February 2023

Pages: 171 - 186

Investigations on Copper Cast Cakes, Sickle Fragments and a Spout Axe of the Hoard Find from Drassburg/Burgenland

Roland Haubner, Susanne Strobl

Open Access

Published: 24 February 2023

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Investigation of the Manufacturing Technology of Complex Copper Alloy Late Roman Coins (240 AD to 395 AD) Using Archaeometallurgy Techniques

Constantina Vlachou-Mogire

SharedIt Link: <https://rdcu.be/dcbEh>

Published: 03 April 2023

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Archaeological Silver Embrittlement and Fracture Mechanics Applications

R. J. H. Wanhill

SharedIt Link: <https://rdcu.be/dcbEE>

Published: 06 April 2023

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Archaeometallurgical and Comparative Study of Material Characterization and Qualities of Two Profiles of Historical Argentine Railways of Different Gauges and Their Fixing Elements

Patricia S. Carrizo, Miguel Franetovich, Cristian Aguilera, Rubén Lepez & Pablo Bárbaro

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Lead-Glazed Ceramic Fragments: Intentional Glazing or Metallurgical Accident?

S. Klein, S. Fischer-Lechner, C. Berthold, J. Sessing, T. Kirnbauer, M. Zeiler & W. Essling-Wintzer

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Litharge from El Centenillo and Fuente Espi: A Geochemical and Mineralogical Investigation of Spanish Silver Processing in the Sierra Morena

P. Krause, S. Klein C. Domergue, Chr. Berthold & N. Jöns

Open Access

Published: 28 April 2023

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A Technical Examination of the Corrosion and Microstructural Features of Copper Alloy Artifacts from the Byzantine Period at Khirbet Yajuz, Jordan

Ahmad N. Abu-Baker

SharedIt Link: <https://rdcu.be/dcbFR>

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Early Efforts to Smelt Iron in Central Anatolia: Analysis of Iron Artefacts from the Bronze Age in Kaman-Kalehöyük

N. Kucukarslan, T. Ota, K. Kobayashi, E. Nakamura & S. Omura

Open Access

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Study of Pieces of the Ensenada de Barragán Fort Historical Museum by Non-destructive Testing

T. Ringuelet, I. Pérez Galetta, M. Rossi, J. E. Grau, J. L. Sarutti, R. W. Gregorutti

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[Geochemical Link Between Slag Inclusion and Hammerscale, a Potential New Tool to Better Understand the Iron Supply of an Archaeological Workshop](#)

Jean Rodier, Vincent Serneels

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[Archeometrical Study of Metallic Remains from “La Ulaña” Archeological Site](#)

J. Setién, M. Cisneros

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[Greek and Roman Copper Alloy Coins \(Fifth Century BC—Third Century AD\): from Microstructures to Manufacturing Process](#)

Alexandre BODET

SharedIt Link: <https://rdcu.be/dcbGA>

Published: 27 March 2023

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[Correction to: Greek and Roman Copper Alloy Coins \(Fifth Century BC—Third Century AD\): from Microstructures to Manufacturing Process](#)

Alexandre BODET

SharedIt Link: <https://rdcu.be/dcbGE>

Content type: Publisher Correction

Published: 24 April 2023

Pages: 370 - 371

Scott Henry

ASM Internationa

ON THE LIST OF RISING & SETTING STARS IN ASTROLABE B

We are pleased to announce the publication of a new article in the Cuneiform Digital Library Journal <<https://cdli.mpiwg-berlin.mpg.de/articles/cdlj>>:

cdlj2023:1 Cifola, B. and S. M. Hughey. A New Perspective on the List of Rising and Setting Stars in Astrolabe B. <<https://cdli.mpiwg-berlin.mpg.de/articles/cdlj/2023-1>>

Authors should note that a LaTeX template for article submissions is available on Overleaf (links below). Submitting in LaTeX using our template will speed up the publication time, but submissions are still welcome in Word or PDF formats.

- CDLJ template: <<https://www.overleaf.com/read/cjdymndndcs>>
- CDLB template: <<https://www.overleaf.com/read/mbbtsyfcqpvx>>

On behalf of the CDLJ,

Laura Hawkins (Managing Editor) & Jacob L Dahl (Editor-in-Chief)

EΙΔΗΣΕΙΣ - NEWS RELEASE

IS THIS FUNGUS BEHIND THE PHARAOH'S CURSE ON KING TUT'S TOMB?

Many people died after visiting King Tut's tomb in Egypt. What exactly happened, and how does it involve the Aspergillus fungus?

The tomb of the 19-year-old pharaoh who ruled ancient Egypt from 1323-1332 BCE was discovered by British archaeologist Howard Carter and has since become one of Egypt's most popular archaeological attractions.

Tourists from all over the world come to the Valley of the Kings on the Nile's west bank to see the tomb. To this day, it remains surprisingly intact, decorated with frescoes, statues and the gilded sarcophagus containing the original mummy of King Tut.

But all of this beauty is shrouded by a curse. The curse of the pharaohs.

George Herbert the 5th Earl of Carnarvon, a British nobleman who financed the search for and excavation of the tomb of Tutankhamen in the Valley of the Kings, died in April 1923, just five months after the discovery of the tomb. This sparked rumors about the "curse of the pharaohs," also known as the "mummy's curse."

The exact details surrounding his death at the age of 56 are vague, but mostly center around either pneumonia or blood poisoning.

Many say he died from something like a mosquito bite, but others suggest it could have been related to the fungi and spores found in damp and dark areas like graves. These are known as Aspergillus.

What is Aspergillus?

Aspergillus is the general name for diseases caused by the Aspergillus fungus. It's a fungal pathogen that causes aspergillosis, which sees bodily tissues, mostly the lungs, become infected with fungi.

According to the US Centers for Disease Control and Prevention, most people breathe in Aspergillus spores every day and never get sick. However, if someone is immunocompromised, it can lead to sinusitis, coughing up blood and pneumonia.

In an article published in The Lancet journal in the early 2000s, Sharif and Tariq El-Tawil suggested the theory that Carnarvon may have been infected with Aspergillus from the tomb when he died is correct. This is despite the fact that he only became sick several months after the tomb was opened.

The Tawils claimed that Aspergillus spores can stay dormant in people's lungs for extended periods of time before symptoms begin to manifest.

"it is conceivable that Lord Carnarvon was indeed symptom-free for the 5 months after his first ingress into the tomb in November, 1922," they wrote.

"On March 17, 1923, The Times of London reported that Lord Carnarvon suffered from 'pain as the inflammation affected the nasal passages and eyes.' This description is consistent with invasive aspergillus sinusitis with local extension to the orbit."

This isn't the first time fungi have been linked to the deaths from people who opened royal tombs.

An article from 2015 described the opening of the tomb of Casimir IV Andrew Jagiellon, the king of Poland, in 1973.

The king was buried in the tomb in 1492. Many of the researchers who opened the crypt in the Wawel Cathedral in Krakow ended up developing health problems and several of them later died.

Researchers investigating their deaths concluded that fungi were the cause.

To figure this out, the authors took a look at the crypt fungi ecosystem, taking samples from a cemetery and burial chapel in Poland. There, they found high concentrations of mold in the air, which provided the deadly fungi with the right temperature and humidity for them to grow.

In another article published at the time, Sir Arthur Conan Doyle suspected that it was placed in tombs deliberately to punish grave robbers.

But what about the other deaths of those who opened King Tut's tomb?

American financier George J. Gould died of pneumonia in 1923 after visiting the tomb. Radiologist Sir Archibald Douglas-Reid died of an unknown illness in 1924 after visiting the tomb. Further, another member of the expedition died from arsenic poisoning.

Were these deaths related to a pathogen lurking in King Tut's grave? Even to this day, there's still no solid evidence to prove any theory.

Please visit the site: <https://www.jpost.com/archaeology/article-744222> [Go there for pix]

AT 9,400 YEARS OLD, ÇATALHÖYÜK IS ONE OF THE OLDEST BUILDINGS STILL STANDING UP TO 8,000 PEOPLE ONCE LIVED IN THIS MIND-BLOWING NEOLITHIC SETTLEMENT, BY TOM HALE

Dating around 9,400 years old, Çatalhöyük in present-day Turkey is home to some of the earliest surviving buildings ever built by human hands.

The many archeological levels of Çatalhöyük suggest that human activity started around 7,400 BCE and was maintained for over 2,000 years, according to UNESCO.

The only known site that's older than this ancient proto-city settlement is Göbekli Tepe, which was built around 11,500 years ago. Both of these sites are located in modern-day southern Turkey, although they were likely built by two very different cultures.

This time period was a crucial chapter of the human story when people transitioned from nomadic hunter-gatherer groups to establishing agriculture. Archeologists generally believe that the organization and wealth of materials needed to build this kind of settlement could only be achieved after a society has mastered agriculture.

“Today we know that Çatalhöyük was not the earliest or the largest farming community in Anatolia and the Levant; however, it was a major participant in the cultural and economic changes that swept across the Near East in the Neolithic Period. Its strategic location in Anatolia made it a bridgehead for the spread of the Neolithic way of life to Europe and beyond,” explains UNESCO.

The site is described as a “streetless settlement of houses clustered back to back with roof access into the buildings.” This stands in comparison to Göbekli Tepe, which is thought to have primarily served as a temple used for ceremonies.

It's a vast settlement, covering around 34 acres. Given this size, researchers believe it could have been home to a population of 3,000 to 8,000 people.

Animals clearly had considerable significance in the city. Animal bones in the area suggest that animals were domesticated here, mainly sheep and goats. Many of the walls are also covered in beautiful paintings that depict all kinds of paintings flesh-eating wild beasts.

Artworks of women are also common. One of the most impressive is the so-called Seated Woman of Çatalhöyük, a stunning baked-clay model of a nude female sitting on a throne, which has two hand rests in the shape of big cats. Scholars have previously interpreted the figure as a fertile Mother Goddess in the process of giving birth, although others believe it depicts an elderly local woman of high social status.

Çatalhöyük was first discovered in 1958 by a team led by British archeologist James Mellaart. After becoming entangled in a number of forgery scandals, Mellaart was banned from Turkey and research at the site was put on ice until the 1990s.

Thanks to the wealth of research that's unfolded here, archeologists have built up a pretty decent picture of this magnificent place. Nevertheless, the ancient walls of this settlement still burst with mystery and intrigue.

Please visit the site: <https://www.iflscience.com/at-9400-years-old-catalhoyuk-is-one-of-the-oldest-buildings-still-standing-69109> [Go there for pix]

ANCIENT TOILETS UNEARTHED IN JERUSALEM REVEAL A DEBILITATING AND SOMETIMES FATAL DISEASE, BY KATIE HUNT

The Iron Age users of two ancient toilets in Jerusalem were not a healthy bunch, according to an analysis of poop samples from the 2,500-year-old latrines.

Researchers found traces of dysentery-causing parasites in material excavated from the cesspits below the two stone toilets that would have belonged to elite households in the city. Back then, Jerusalem was a vibrant political and religious center in the Assyrian empire and home to between 8,000 and 25,000 people.

It's the earliest known evidence of a disease called *Giardia duodenalis*, although the infection, which causes diarrhea, abdominal cramps and weight loss, had previously been identified in Roman-era Turkey and in medieval Israel.

“Dysentery is spread by faeces contaminating drinking water or food, and we suspected it could have been a big problem in early cities of the ancient Near East due to overcrowding, heat and flies, and limited water available in the summer,” said Dr. Piers Mitchell, lead author of the study that published Thursday in the scientific journal *Parasitology* and an honorary fellow at the University of Cambridge's Department of Archaeology, in a statement.

Most of those who die from dysentery caused by *Giardia* today are children, and chronic infection in kids can lead to stunted growth, impaired cognitive function and failure to thrive.

Ancient poop is a rich source of information for archaeologists and has revealed an Iron Age appetite for blue cheese, a mystery population on the Faroe Islands and the discovery that the builders of Stonehenge feasted on the internal organs of cattle.

Archaeologists excavating the latrines took samples from sediment in the cesspit beneath each toilet seat.

They found one seat south of Jerusalem in the neighborhood of Armon ha-Natziv at a mansion excavated in 2019. It likely dates from the days of King Manasseh, who ruled for 50 years in the mid-seventh century BC. Made of limestone, the toilet has a large central hole for defecating and an adjacent hole likely for male urination.

The other toilet seat studied, similar in design, was excavated in the Old City of Jerusalem at a seven-room building known as the House of Ahiel, which would have been home to an upper-class family at the time.

The eggs of four types of intestinal parasites — tapeworm, pinworm, roundworm and whipworm — previously had been identified in the cesspit sediment. But the

microorganisms that cause dysentery are fragile and extremely hard to detect, according to the new study.

To overcome this problem, the team used a biomolecular technique called ELISA in which antibodies bind onto proteins uniquely produced by particular species of single-celled organisms.

The researchers tested for Entamoeba, Giardia and Cryptosporidium: three parasitic microorganisms that are among the most common causes of diarrhea in humans — and behind outbreaks of dysentery. Tests for Entamoeba and Cryptosporidium were negative, but those for Giardia were repeatedly positive.

The Middle East was the region of the world where humans first created settlements, learned to farm and domesticate animals, and where the first large towns and cities sprang up. Cities such as Jerusalem likely would have been hot spots for disease outbreaks, and illnesses would have spread easily by traders and during military expeditions, according to the study.

“While they did have toilets with cesspits across the region by the Iron Age, they were relatively rare and often only made for the elite,” the study noted.

“Towns were not planned and built with a sewerage network, flushing toilets had yet to be invented and the population had no understanding of existence of microorganisms and how they can be spread.”

Please visit the site: <https://www.cnn.com/2023/05/25/middleeast/ancient-toilets-disease-scn/index.html> [Go there for pix]

MYSTERIOUS WHITE, POWDERY SUBSTANCE FOUND INSIDE 3,000-YEAR- OLD RUINS IN ARMENIA ISN'T WHAT IT SEEMS NEWS, BY JENNIFER NALEWICKI

Piles of a mysterious white, powdery substance found inside the ruins of a 3,000-year-old building in Armenia are a culinary historian's dream — the remnants of ancient flour.

A Polish-Armenian team of archaeologists made the discovery while working at an archaeological site in the town of Metsamor, in western Armenia, last fall. Upon identifying the flour and excavating several furnaces, the team realized that the ancient structure once served as a large bakery. The dustings of the ancient flour were sprinkled throughout the dirt-cloaked ruins, including on several furnaces, according to Science in Poland, a Polish news website jointly run by independent media and the government.

"Upon first glance, it looked like ashes," Krzysztof Jakubiak, a professor of archaeology at the University of Warsaw who led the excavation, told Live Science. "We knew it was something organic and collected about four to five sacks' worth of the material."

After conducting a chemical analysis, the team determined that the substance was wheat flour used to bake bread. They estimated that, at one time, approximately 3.5 tons (3.2 metric tons) of flour would have been stored inside the 82-by-82-foot (25 by 25 meters) building, which contained two rows of 18 wood columns supporting a reed roof with wood beams. Researchers estimate that the bakery was operational between the 11th and ninth centuries B.C. during the early Iron Age, according to Science in Poland.

"This is one of the oldest known structures of its kind in Metsamor," Jakubiak said. "Because the structure's roof collapsed during a fire, it shielded everything, and luckily, the flour survived. It's astounding; under normal circumstances, everything should be burned and gone entirely."

Before the building became a bakery, Jakubiak said, it was possibly "used for ceremonies or meetings, and then was turned into storage."

Although not much is known about Metsamor's ancient inhabitants, since they didn't have a written language, researchers do know that the fortified city became part of the biblical kingdom of Urarat (also spelled Urartu) after being conquered by King Argishti I in the eighth century B.C. Prior to this, it would have covered 247 acres (100 hectares) and was once "surrounded by temple complexes with seven sanctuaries," according to Science in Poland.

Previous excavations at Metsamor revealed a walled settlement with a cemetery containing 100 burials. Although many of the tombs were empty, likely due to looting, one tomb held several gold pendants and around 100 jewelry beads, according to The Miami Herald.

Please visit the site: <https://www.livescience.com/archaeology/mysterious-white-powdery-substance-found-inside-3000-year-old-ruins-in-armenia-isnt-what-it-seems>

METROPOLITAN MUSEUM OF ART **SIGNALS MAJOR SHIFT IN ITS APPROACH** **TO CONTESTED ANTIQUITIES**

Decision Follows Growing Number of Seizures, Investigations, and Prosecutions Targeting Its Collections

The Antiquities Coalition welcomes statements from the Metropolitan Museum of Art (the Met) committing to new policies and practices on ancient art and artifacts, including a recognition from Director Max Hollein that “Whatever unlawfully entered our collection, should not be in our collection.” The pledges mark a reversal from the Met’s earlier stance, which largely resisted calls to probe looted and stolen pieces within the institution’s walls. The Antiquities Coalition has been at the forefront of these requests, urging the museum to take “strong, concrete, and immediate action” in response to recent scandals, joining such varied voices as law enforcement, investigative journalists, activists, and even comedians like John Oliver.

The Met’s plan, announced May 9 in The New York Times, includes hiring a provenance research team of four experts to audit its holdings, as well as forming a committee of 18 curators, conservators, and others to review all legal and ethical guidelines. The museum would also work to “convene thought leaders, advocates and opinion makers” in the field. These efforts align with specific recommendations outlined by the Antiquities Coalition, such as launching a task force, building capacity in provenance research, strengthening best practices, and using the institution’s platform both to raise awareness of the problem and to find solutions. Once implemented, these steps could set a new global standard, given the Met’s position as the largest and most visited art museum in the Western hemisphere.

Hollein, the Met’s Director, specifically committed to “broaden, expedite and intensify research into all works that came to the museum from art dealers who have been under investigation.” He estimated this number would total several hundred objects or more. A recent exposé from the International Consortium of Investigative Journalists (ICIJ) revealed that at least 1,109 pieces in the museum’s catalog have close ties to individuals indicted or convicted of antiquities crimes—309 of which remained on display. It is not clear whether the latter items are the priorities to which Hollein referred, but the Met has 1.5 million works in its total collection, which span some 5,000 years of human history.

The Antiquities Coalition appreciates that the Met and its leadership are listening to public calls to strengthen transparency and due diligence. The institution, with an endowment of \$3.3 billion and an annual budget of around \$300 million, can and should be the gold standard in the United States and even the world. Concrete actions like those announced this week would go far to making that goal a reality.

Please visit the site: <https://theantiquitiescoalition.org/metropolitan-museum-of-art-signals-major-shift-in-its-approach-to-contested-antiquities/>

DESERT MONOLITHS REVEAL WORLD'S OLDEST ARCHITECTURAL PLANS, BY PRIYANKA RUNWAL

Engravings found in Jordan and Saudi Arabia appeared to match nearby ancient megastructures known as desert kites as seen from above.

Massive prehistoric stone structures found in desert landscapes from Saudi Arabia to Kazakhstan have baffled archaeologists for decades. Each can stretch for up to a few miles, and resembles a kite with tail strings in overall shape.

Recent studies have built a consensus that the so-called desert kites were used to trap and kill wild animal herds. But how ancient hunters conceived — and perceived — these grandiose structures has remained a mystery. The kites, in their entirety, are “only visible from the air,” said Rémy Crassard, an archaeologist at the French National Center for Scientific Research. “Even with our modern ways of envisaging our landscape, it’s still difficult for us archaeologists, scientists, scholars to make a proper map.”

Dr. Crassard and his colleagues were overjoyed in 2015 when they found two stone monoliths with precise depictions of nearby desert kites in Jordan and Saudi Arabia. Engraved between 7,000 and 9,000 years ago, these representations are by far the oldest known to-scale architectural plans recorded in human history, the team reported on Wednesday in the journal PLOS ONE. They also highlight how carefully planned the desert kites may have been by the ancient peoples who relied on them.

“It’s mind-blowing,” Dr. Crassard said, “to know and to show that they were able to have this mental conceptualization of very large spaces and to put that on a smaller surface.”

Over the last decade, as part of a project called Globalkites, Dr. Crassard and his colleagues have used satellite imagery to identify more than 6,000 desert kites of various shapes and sizes across the Middle East and West and Central Asia. Other researchers have uncovered stone engravings depicting these man-made enigmas while doing surveys and excavations.

At first, they noted the presence of three defining kite features. There were “tail strings,” which represent more or less contiguous lines of stones. These converge into a walled enclosure resembling the kite’s “body.” And along the body’s edges, pits had been dug. Archaeologists suspect that groups of animals such as gazelles followed these stone lines or were chased along them before being funneled into the enclosure, where hunters killed the animals, and used the strategically placed pits to trap those attempting to escape.

Very quickly, the team recognized that these engravings matched the shape and structure of kites seen nearby. In Southeastern Jordan, for example, the tail lines of kites curve as they converge into enclosures — a peculiarity also visible on the engraved stone.

“When we look at the satellite and aerial images that we take in the field, it’s like a drawing of the actual kites in this area,” said Mohammad Tarawneh, an archaeologist at Al-Hussein Bin Talal University in Jordan and an author of the study.

Mathematical models, too, indicated that the kites in the Jordan-Saudi region where the team worked were the closest match when researchers compared the geometry of the two engravings with a total of 69 kites from a variety of regions. Shape comparisons with such nearby kites also revealed that the depictions were to scale. The researchers inferred the ages of the engravings by using geological dating tools to determine how long ago the corresponding local kite structures were built.

What remains unknown is whether these depictions were prepared as blueprints to aid in the construction of the kites, or served as maps for hunters. The engravings could also be symbolic commemorations of the desert kites, which may have been an important part of the cultural identity of the ancient peoples who made and used them, said Wael Abu-Azizeh, an archaeologist with The French Institute of the Near East in Jordan and an author of the study.

Yorke Rowan, an archaeologist at the University of Chicago who was not involved in the study, said the engravings cited in the paper are a great find. He called it remarkable that people on the ground were precisely depicting things that can only be seen fully from above today. Finding this mental mastery of space opens a new window into the minds of these ancient hunters.

Please visit the site: <https://www.nytimes.com/2023/05/17/science/ancient-architecture-desert-kites.html>

THE EARLIEST RECORDED KISS GOES BACK AT LEAST 4,500 YEARS TO MESOPOTAMIA, BY MARK JOHNSON

Researchers cite clay tablets and other materials that push back evidence of kissing by about 1,000 years

When was the first kiss? Recent papers have suggested that romantic or sexual kissing began 3,500 years ago in what is now India. But a new review paper in the journal *Science* says that this style of kissing is also mentioned in clay tablets from Mesopotamia that predate the Indian texts by about a thousand years.

Danish husband and wife researchers Troels Pank Arboll and Sophie Lund Rasmussen stress that “the behavior did not emerge abruptly or in a specific society, but appears to have been practiced in multiple ancient cultures,” including Egypt.

Arboll and Rasmussen note that “the act of kissing may have played a secondary and unintentional role throughout history” by enabling disease-causing microorganisms to spread from one mouth to another. But the kiss, they write, “cannot be regarded as a sudden biological trigger” that led to societies being deluged by pathogens.

The two researchers launched on their search for the earliest kiss last summer while discussing a paper on the ancient DNA of the herpes simplex virus 1 at the dinner table. The herpes paper had noted a shift in the transmission of the virus during the Bronze Age (2,000 to 700 B.C.), “potentially linked” to new cultural practices “such as the advent of sexual-romantic kissing.”

New? Bronze Age? Really?

“I said to Sophie that I knew we had something older. And then I started digging a bit into that,” said Arboll, an assistant professor of Assyriology at the University of Copenhagen who studies ancient accounts of medical diagnoses, prescriptions and healing rituals.

“We’re a very nerdy couple,” explained Rasmussen, an ecologist at the University of Oxford’s Wildlife Conservation Research Unit (WildCRU) and Aalborg University in Denmark.

Arboll had little trouble finding accounts of kissing from Mesopotamia written in both the Sumerian and Akkadian languages. He and Rasmussen noted too a calcite sculpture in the British Museum called the “Ain Sakhri Lovers,” which was found in caves near Bethlehem and is estimated to be about 11,000 years old.

“It had been known for decades in my field,” Arboll said of the written accounts of kissing from Mesopotamia.

“The thing about Assyriologists,” Rasmussen said, “is they like to argue with each other, but they don’t really talk to other people.”

That could explain why some experts adopted India as the place of origin for kissing, though Arboll has a different theory: “I think one of the sources they cite are manuals like the Kama Sutra,” he said, referring to texts estimated to have been published between 2,400 and 1,700 years ago. “That’s obviously very appealing for discussing sexual behavior, I imagine.”

In her 2011 book “The Science of Kissing: What Our Lips Are Telling Us,” Sheril Kirshenbaum reported the earliest literary evidence for human kissing “dated back to India’s Vedic Sanskrit texts around 1500 B.C.” But she’s convinced the behavior goes back much further in history.

“We see so many similar behaviors across the animal kingdom — including in our closest relatives, like bonobos,” she said. “I suspect our species has been kissing for as long as we’ve been on Earth.”

There may have been practical reasons for humans to kiss, Rasmussen said. “I came across research suggesting that the purpose of kissing, why it could have evolved, is that it serves as an opportunity to evaluate your partner,” she said. “If you kiss somebody with poor teeth, they tend to have bad breath.”

Kissing may have allowed couples to bond and strengthen their relationship. “And of course also for sexual arousal,” said Rasmussen. “So when you want to mate and pass on your genes, it’s very convenient.”

Enjoying a romantic kiss outside the confines of marriage appears to have been frowned upon by the Mesopotamians. Arboll and Rasmussen came across the story of a married woman “almost led astray by a kiss from another man.” Worse, kissing someone who was not supposed to be sexually active, such as a priestess, they write, “was said to deprive the kisser of the ability to speak.”

Such prohibitions may have had the unintended benefit of protecting the good health of the kiss-deprived. The Danish researchers point out kissing’s likely role in spreading herpes simplex virus 1, Epstein-Barr virus and human parvovirus B19, which causes a rash. Such pathogens, the authors wrote, “can infect humans through a range of different transmission routes, including saliva, making any act of kissing a potential means of spreading infection.”

To date, though, science has had relatively little to say about kissing, according to Kirshenbaum, an academic specialist at Michigan State University.

A scientific literature search for “kiss” or “kissing” sends you through funky territory before you ever encounter two sets of lips. PubMed’s search engine begins with the KISS1 gene and its product kisspeptin, and proceeds to a cellular process called kiss-and-run. Google assumes that in seeking the “earliest known kiss,” you hope to find the earliest publicity photo of the rock band Kiss, or the earliest known Kiss tribute band.

“Here’s something that touches all of us,” Kirshenbaum said, “yet science has barely scratched the surface of it.”

The human fascination with kissing history comes as no surprise to Laura Weyrich, an associate professor of anthropology at Pennsylvania State University who co-authored one of the studies cited by the Danish researchers. Her paper, published in Nature in 2017, examined DNA from the dental plaque of Neanderthals and used it to infer information on their behavior, diet and disease.

Weyrich's study noted that humans and Neanderthals may have traded microbes, which could have happened through the sharing of food or water sources — or through kissing.

In some interviews about the Neanderthal paper, Weyrich dispensed with the term “kissing” in favor of the more earthy alternative, swapping spit, and “biologically, it really is swapping spit,” she said.

Never let it be said that scientists lack romance.

There is some debate among researchers about whether kissing began in one place and spread or had “numerous independent origins,” as Arbol and Rasmussen write.

“My hunch is that kissing arose or was discovered amongst elite in complex societies (hierarchical, market systems with writing) and diffused outward,” William Jankowiak, a professor of anthropology at the University of Nevada at Las Vegas, wrote in an email.

The practice of kissing, he said, was in keeping with “the elite pursuit of pleasure.”

Please visit the site: <https://www.washingtonpost.com/science/2023/05/18/kissing-history-mesopotamia/>

“PROTO-RAMS”: PIECING TOGETHER THE EARLY HISTORY OF NAVAL RAM DEVELOPMENT, BY STEPHEN DECASIEN

The naval ram was the predominant weapon of navies throughout much of antiquity, playing a decisive role in many consequential confrontations such as the Battle of Salamis (480 BCE) and the Battle of Actium (31 BCE). It continued to play a crucial role in Mediterranean seafaring until shipbuilding techniques changed with the decline of trade and naval warfare around the middle of the 6th century CE, primarily due to the fall of the Western Roman Empire. But where did the naval ram come from? Its origins and early history remain a heated topic of debate among scholars. Given the limited corpus of archaeological, iconographical, and textual evidence, opinions vary on what can be considered a ram or ram-bearing vessel. Even so, we can reasonably divide ram development into three main phases or categories: bow projections, proto-rams, and three-bladed waterline rams (Fig. 1).

The development of the ram likely had its origins in the earliest bow projections in the eastern Mediterranean, followed by a few hundred years of various ram innovations or what scholars often refer to as “proto-rams”. This proto-ram period, dating from roughly 850 to 540 BCE, saw the invention of ram-like projections at the warship’s bow, such as bronze coverings, sheathing, boar’s heads, and various ram-like structures lacking three blades. From the 540s BCE and into the early years of the Peloponnesian War (431 to 404 BCE), there was a transition period and introduction of the three-bladed waterline ram.

By the Greek Geometric period (ca. 900 – 700 BCE), the bow projection became a more prominent part of ship design as indicated in early warship depictions. Iconographic evidence shows that during this period warships had acquired a fully developed cutwater (Fig. 3). This cutwater extended the length of the keel past the stem, reinforced the joint between the keel and the stem with a curving timber, and produced a more hydrodynamic bow. There is some debate among scholars as to whether these depictions indicate cutwaters, rams, or both.

For example, Frederick van Doorninck suggests that the warship on a fibula dated to the 850s BCE indeed indicates a ram (Fig 4). He acknowledges that the existence of a long, massive, and slender bow projection in and of itself should not be the standard for determining what represents a warship ram. However, based on a close examination of the fibula and the stylistic differences between warship representations of the same period, van Doorninck concludes that it is indeed the earliest depiction of a ram.

But if the 850 BCE fibula represents a ram, then it was a highly ineffective ram. These early proto-rams would have been on warships that were still using the laced construction method of shipbuilding. Laced construction is useful at holding the planks of the hull together, though it is unlikely they could maintain the stresses of a ramming attack from a similar ship or ram an opponent successfully. The proto-ram depicted on the fibula must have been a cutwater sheathed in copper or bronze. By the Late Geometric period the Greeks could create copper or bronze sheathing for warships, but there is a lack of

evidence of large-scale bronze casting during this period, which means these proto-rams would have been of weaker quality and strength compared to later cast-bronze rams. Therefore, if the proto-ram depicted on the fibula was used as a weapon, then ramming during the 9th century BCE would have been a dangerous affair and likely only done in rare defensive maneuvers.

To judge by the representation of warships found in Neo-Assyrian media, such as a wall painting from Til Barsib and a relief from Kouyunjik, ramming in the 8th and 7th centuries BCE remained problematic (Figs. 5 and 6). Like the 9th century example, the proto-rams in these depictions must have been sheathed or a light cast bronze encasing nailed to the cutwater. They were likely pointed and ended in a single sharp blade or were conical in fashion with a rounded end. These proto-rams would have been ineffective at ramming a warship, even one built in the laced construction method. A pointed ram is meant to penetrate an enemy's hull, but there is a chance of the attacking ship getting its ram stuck in the opponent. Another factor is the lateral force of ramming a warship broadside or amidships, which could bend or break the ram off the warship entirely. If stuck or broken, the attacking warship would be exposed to boarding or become swamped. As observed by Shelley Wachsmann, when ramming warships still lacked additional strengthening, it was anyone's guess as to which of the two ships was more likely to sink first. As such, it is likely that these early rams were meant primarily for defensive and only occasionally for offensive attacks.

It was not until the end of the 7th century BCE that an effective offensive proto-ram was introduced. The first blunt-ended boar's head rams with their squared off ends are depicted on various painted Greek vases (Fig. 7). The boar's head ram covers the entirety of the cutwater and terminates in a blunt or bulbous upturned end, counter to the previous pointed ram which ended before the rounding of the stem and culminated with a sharp end. The blunted end of the boar's head ram made it a more effective ramming weapon as it would be less likely to be lodged in an enemy's vessel. It also provided penetrative and horizontal damage to the hull planking rather than a piercing hole. The introduction of the boar's head ram coincided with the transition and use of pegged mortise-and-tenon joinery in shipbuilding in the Aegean.

The combination of extensive use of pegged mortise-and-tenon joinery in ship construction, large-scale lost-wax bronze casting, and the invention of larger warships in the 6th century BCE all led to the introduction of the three-bladed waterline ram. This new ram design could penetrate the hull while separating the planks of the enemy's warship along the horizontal axis (Fig. 8). The three-bladed waterline ram was first likely used in naval warfare sometime after the 540s BCE and became the standard ram design during the Greco-Persian Wars and into the early years of the Peloponnesian War.

Despite the thousands of warships that were built and hundreds of naval battles that occurred in antiquity, no single ramming warship has ever been discovered intact. The only physical evidence found directly related to ancient warships are approximately 31 three-bladed waterline rams, such as the Athlit ram (Fig. 9). Only two archaeologically attested rams, the Turin and Kanellopoulos artifacts, may be of the proto-ram style; however, both artifacts were found and donated to their respective museums without context, making it difficult to date them (Fig. 10). With continual advances in underwater archaeology, there is hope that we can find further early examples with good contexts in

the future, enabling us to understand fully the development of this pivotal and enduring instrument of ancient maritime warfare.

Stephen DeCasien is a Ph.D. candidate in nautical archaeology at Texas A&M University.

A special thanks to Shelley Wachsmann for encouraging and guiding this research topic.

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Please visit the site: <https://www.asor.org/anetoday/2023/05/naval-ram-development>
[Go there for lots of pix and figs]

IN ANCIENT EGYPT, SEVERED HANDS WERE SPOILS OF WAR, BY FRANZ LIDZ

Archaeologists offer a new explanation for one of the century's grislier finds, "a carefully gathered collection of hands" in a 3,500-year-old temple.

Aristotle called the hand the "tool of tools"; Kant, "the visible part of the brain." The earliest works of art were handprints on the walls of caves. Throughout history hand gestures have symbolized the range of human experience: power, tenderness, creativity, conflict, even (bravo, Michelangelo) the touch of the divine. Without hands, civilization would be inconceivable.

And so the discovery in 2011 of the bones of a dozen right hands, at a site where the ancient Egyptian city of Avaris (today known as Tell el-Dab'a) once stood, was particularly unsettling. The remains were unearthed, most with palms down, from three shallow pits near the throne room of a royal palace. The hands, along with numerous disarticulated fingers, were most likely buried during Egypt's 15th dynasty, from 1640 B.C. to 1530 B.C. At the time, Egypt's eastern Nile Delta was controlled by a dynasty called the Hyksos, which means "rulers of foreign countries."

Although the Hyksos were described by the Ptolemaic Egyptian historian Manetho as "invaders of an obscure race" who conquered the region by force, recent research has shown that they descended from people who had immigrated peacefully over centuries from southwest Asia, now Israel and the Palestinian territories. Eventually, a few rose to power as the Hyksos, basing their power in Avaris.

The Hyksos are widely believed to have introduced the Egyptians to the horse and chariot, glass-working and all sorts of weaponry, including battle axes and composite bows. A recent study published in the journal *Nature* proposes that the Hyksos had a custom known as the Gold of Valor, which involved taking the hands of enemy combatants as war trophies.

The ritual seems to have become standard practice in Egypt, with soldiers returning from combat and presenting the dismembered right hands of defeated foes to their pharaoh or military commander.

"The amputations were a safe means to count slain enemies," said Manfred Bietak, an archaeologist at the Austrian Academy of Sciences who collaborated on the paper. "They also made the dead enemy incapable of raising his hand again against Egypt in the Netherworld."

Tomb inscriptions and temple reliefs describe the gruesome public ceremony, but the new study, conducted by a German and Austrian research team and drawn from an analysis of skeletal remains, offers the first physical evidence of it.

"Painstaking work was done on the surgical nature of the amputations," said Kara Cooney, a professor of Egyptian art and architecture at the University of California, Los

Angeles. “Flesh and nails are still attached to the hands, providing more information for a carefully gathered collection of hands.”

In 2011, the fragile appendages were hardened with an acetone-soluble glue so that they could be removed from the ground in a block of plaster cast. Poorly preserved, the hands could not be genetically sampled; Julia Gresky, a paleopathologist from the German Archaeological Institute in Berlin, determined their biological sex using a noninvasive measure that compares the length of the index finger with the length of the ring finger.

“The ring fingers of males tend to be longer than their index fingers,” Dr. Gresky said. “The opposite is usually true for females.”

Uncovering the Past, One Discovery at a Time

Underwater: A submerged island discovered by marine archaeologists off the coast of Florida once held a quarantine hospital and cemetery for those stationed at Fort Jefferson, a Civil War-era military fortress.

Down the Drain: Archaeologists have recovered a trove of forgotten ring stones from an 1,800-year-old bathhouse in England.

Obsidian Cliff: The use of X-ray technology on the Yellowstone landmark’s prized stone is helping researchers reveal the travels and migration of people thousands of years ago.

Burial Site in England: Archaeologists have uncovered an ancient coffin in Leeds that could help to shed light on the end of Roman Britain and the establishment of Anglo-Saxon kingdoms.

Although some critics consider the tool simplistic and unreliable, Dr. Gresky is confident that at least 11 of the 12 hands were male. “Those 11 hands were large and robust,” she said. “The 12th was much smaller and possibly female. I’m quite optimistic that a woman was attached.”

Dr. Cooney notes that there are no records of women being soldiers in ancient Egypt. “This was a male sphere of action,” she said. However, Egyptian texts from the reign of Rameses III, from about 1186 B.C. to 1155 B.C., indicate that there were women in the Libyan Army.

All of the bones dug up in Avaris were fully formed but showed no signs of age-related degeneration, suggesting that the hands had belonged to individuals roughly between the ages of 14 and 30. Some Egyptologists had theorized that the dismemberment was a barbaric punishment for criminals, but Dr. Gresky said the location, level of care and perhaps the positioning of the severed hands argued for war trophies.

Salima Ikram, an Egyptologist at the American University in Cairo who was not involved in the project, said that the new analysis “raises interesting questions about the origins of traditions showing dominance over enemies, not only in Egypt, but throughout the ancient world.”

‘Fish in baskets’

The ancient Egyptians are venerated for their achievements in art, architecture, and technology. But their brutal tradition of maiming criminals and adversaries predates the

Hyksos by more than a millennium. Perjurers were sometimes disciplined by slicing off their ears and noses; insurgents, by impaling the bodies at the ribs until death. The Narmer Palette, a ceremonial engraving that dates to the time of the unification of Upper and Lower Egypt about 5,000 years ago, shows the beheading and mutilation of what were apparently rival chieftains.

On one side of the palette, King Narmer holds a mace aloft in his right hand while with his left he yanks a kneeling captive by the hair. “The smiting motif would have been a public display of King Narmer’s power over his enemy, smashing the skull to bloody bits,” Dr. Cooney said.

On the reverse side, the king inspects rows of bound, decapitated corpses with their heads between their legs, and their castrated penises atop their heads. “Dismemberment was anathema to the ancient Egyptians, who wanted their bodies whole for a materialized afterlife existence,” Dr. Cooney said.

A relief in the mortuary temple of Rameses III, at Medinet Habu, shows the pharaoh standing on a balcony after a victory not far from heaps of his enemies’ severed phalluses (12,312, according to one translation of zealous army scribes) and hands (24,625). In the temple of Amun at Karnak, a chronicle of a 13th century B.C. battle details prisoners being brought back to the pharaoh Merneptah with “donkeys before them, laden with uncircumcised penises of the Land of Libya, with the hands of [every] foreign land that was with them, as fish in baskets.” If the tally of fatalities is to be believed, the Egyptians collected the penises of 6,359 uncircumcised enemy dead and the hands of 2,362 circumcised enemies. “The stink must have been awful, and thus the ‘fish in baskets’ comment,” Dr. Cooney said.

The wrong hand

Except for especially heinous offenses such as robbing the tombs of pharaohs, the severing of hands was a rare punishment in ancient Egypt, which is why Dr. Bietak said it was unlikely that the hands found in Avaris were from criminals. But such severings were a relatively common theme in military scenes of the New Kingdom, which began in the 16th century B.C. and lasted for nearly 500 years.

Dr. Bietak, who has led excavations at Tell el-Dab’a since 1966, said that the Egyptians appear to have adopted the custom some 50 to 80 years earlier than the inscriptional and pictorial evidence. A relief in the temple of Ahmose I in Abydos features a pile of detached hands on the battlefield. Ahmose I was the king who conquered Avaris and defeated the Hyksos.

Were the Avaris hands severed from living victims or from the recently deceased? “When placed in the pits, the hands must have been soft and pliable enough to be stretched into a presentable position,” Dr. Gresky said. “This implies they were put there before rigor mortis set in or after it had passed.” Probably after, she said; the hands would have been collected and stored for some time before they were put in the pit. “If before,” Dr. Gresky said, “then the amputations took place just prior to or even during the offering ceremony.”

Dr. Gresky said the more likely scenario was that the hands were cut off roughly one to four days after death. She noted that the pits would have been visible from the palace throne room, indicating a public ceremony and buttressing the notion that the hands were spoils of war.

So why cut off the right hand? “The right is generally the dominant hand for activity — for writing, working, and fighting,” Dr. Cooney said. “Removing it from a living person is a method of imposing violent control and potentially leaving the living victim of such excision alive for all to see, a walking advertisement not to cross the powers-that-be.”

In the tomb of an army officer named Ahmose, son of Ibana, a narrative describes how after each skirmish with the Hyksos at Avaris and Sharuhen, he reported his new haul of enemy hands to the pharaoh, who rewarded him with the Gold of Valor. Dr. Bietak speculates that the showy regalia involved necklaces of golden beads and pendants in the shape of flies.

“Flies are in the thick of battle, they never give up, and keep returning to the fray, just as good soldiers should,” Dr. Ikram said. “Thus, comparing a warrior to a fly was a high compliment.”

Please visit the site: <https://www.nytimes.com/2023/05/16/science/archaeology-ancient-egypt-hands.html> [Go there for pix]

SWIMMER DISCOVERS PRECIOUS MARBLE CARGO FROM 1,800-YEAR-OLD MEDITERRANEAN SHIPWRECK, BY AMANDA BORSCHEL-DAN

Roman-era raw materials likely came from Turkey and were on their way to a southern Holy Land port; archaeologists hope to find wood remains of ship during excavations next week

Three weeks ago while swimming a mere 200 meters off the shore of the central beach town of Beit Yanai, recreational sea swimmer Gideon Harris took a dive of about four meters and stumbled upon a 1,800-year-old treasure trove of marble columns.

According to Israel Antiquities Authority archaeologist Kobi Sharvit, the columns are part of some 44 tons of marble blocks that appear to be from the wreck of a ship that was on its way to a Roman port — potentially Ashkelon or Gaza — to unload its precious cargo.

The IAA believes this sea-wrecked cargo — exposed during winter storms that brushed away centuries of sand — is the oldest of its kind known in the Eastern Mediterranean.

Preliminary underwater site explorations have found that the hold of the ship included decorated Corinthian capitals, other partially carved capitals, as well as a huge 6-meter marble architrave or door lintel.

“From the size of the architectural elements, we can calculate the dimensions of the ship; we are talking about a merchant ship that could bear a cargo of at least 200 tons,” said Sharvit.

Sharvit, director of the IAA’s underwater archaeology unit, confirmed that there are no visible remains from the ship on the sea bottom. He said the IAA will launch an undersea excavation next week alongside students from the University of Rhode Island in the hopes of discovering waterlogged wood from under the massive marble blocks, or a nearby underwater sand dune that may have buried and preserved parts of the ship.

An Israel Antiquities Authority archaeologist checks out pieces of 1,800-year-old marble from a shipwreck off the shore of Beit Yanai in central Israel. (Israel Antiquities Authority’s Theft Prevention Unit)

The site formation gives clues to where the ship was heading, said Sharvit. The massive marble slabs are all placed in a specific way, mirroring how they would have been placed in the ship’s hold. Based on the spread of the slabs, he believes the ship had weighed anchor while it was taking on water, probably in a storm on the coast.

“Such storms often blow up suddenly along the country’s coast and due to the ships’ limited maneuvering potential, they are often dragged into the shallow waters and shipwrecked,” said Sharvit.

From his experience, most wood from similar shipwrecks is washed ashore by waves and taken for reuse by locals. These planks, with metal nails and lead overlay, would have been a rare lucky find in antiquity.

“Everything was recycled in the ancient world,” he said.

Sharvit’s team has already sent marble specimens to be analyzed in a laboratory to confirm the luxurious building material’s origins, but he told The Times of Israel on Monday that it most likely came from Turkey or Greece.

The team has dated the find to the mid-2nd century CE based on architectural typography as well as historical Roman sources that cite the use of the precious marble as a building material. He hopes to discover coins in next week’s excavation.

Pieces of 1,800-year-old marble from a shipwreck off the shore of Beit Yanai in central Israel. (Israel Antiquities Authority’s Theft Prevention Unit)

The marble was earmarked for an elite building project, said Sharvit, because in this era, even the opulent Roman port city of Caesarea made do with local stone covered with plaster stucco that gave the appearance of marble. There are, however, examples of marble use in Ashkelon and Beit She’an.

The discovery of this cargo of mostly raw material helps researchers put to rest a historical question of whether marble was formed and finished prior to shipping or upon placement at a building site.

“The find of this cargo resolves the debated issue, as it is evident that the architectural elements left the quarry site as basic raw material or partially worked artifacts and that they were fashioned and finished on the construction site, either by local artists and artisans or by artists who were brought to the site from other countries, similarly to specialist mosaic artists who traveled from site to site following commissioned projects,” said Sharvit.

Please visit the site: <https://www.timesofisrael.com/swimmer-discovers-precious-marble-cargo-from-1800-year-old-mediterranean-shipwreck/> [Go there for pix]

ABORTION IN THE ANCIENT NEAR EAST AND GRECO-ROMAN WORLD, BY DR .KRISTINE HENRIKSEN GARROWAY

What we know about abortion in the ancient world from legal and medical texts.

Abortion in Mesopotamian Medical Texts

Ancient methods for ridding oneself of a pregnancy included remedies meant to be rubbed, ingested, or inserted into the body. Such recipes, however, generally do not explain why a person would decide to use these remedies.[1]

The Babylonian and Assyrian Medical Texts include a recipe for a potion that begins with the following notation:

BAM 3 246 A pregnant woman, so that her fruit [i.e., the fetus] is expelled...[2]

It requires crushing eight plants, only some of which have been identified. These plants include:[3]

azupirânu, possibly saffron, known to cause uterine contractions if consumed in large quantities;

wêdu, identified as Asafoetida, a sulfurous plant resin known colloquially as Devil's dung;

bušinnu, probably referring to mullein (*Verbascum*), a flowering plant used medicinally in many cultures;[4] and

ankinutu, or lotus (*Nelumbo nucifera*), another commonly used medicinal plant.

The patient is to drink these with wine on an empty stomach.[5] Another medical text mentions an unnamed plant, which presumably was known to medical practitioners, "to make the fetus drop" (BAM 422 iii 5).[6]

Abortion in an Egyptian Medical Papyrus

The Ebers Papyrus (ca. 1550 B.C.E.), the most extensively preserved Egyptian medical text, includes remedies for everything from acne and wrinkles to intestinal disease, tumors, and teeth issues. The text also covers gynecological issues, including abortion.

Some remedies were intended for the early stages of pregnancy, but the first concoction in this section of the text could apparently be used during any trimester:

Ebers 783 The beginning of recipes that are made for women to cause a woman to stop [abort] pregnancy in the first, second, or third period. Unripe fruit of acacia, colocynth,

dates, triturate with 6/7 pint of honey; moisten a pessary of plant fiber and place it in vagina.[7]

Acacia and colocynth are known today to have abortifacient properties; too much of these items can also be toxic, even fatal, for the mother. The solid ingredients were ground into a fine powder and mixed with honey to form a sticky substance. This was then placed into a plant fiber, maybe a leaf, and presumably rolled into a pessary, which was used like a tampon.

One non-organic approach seems intended to create an irritant to expel the embryo:

Ebers 798 Another for inducing that everything which is in a woman's abdomen is expelled. Potsherd of a new earthen pot; it is ground in oil/fat, it is warmed, and it is placed in her genital.[8]

The heading “for loosening the child” (Ebers 800) introduces another set of abortion remedies:

Ebers 801 Another. One-part fresh beans and one part honey are pressed together and drunk for one day.[9]

The list continues with recipes using a variety of ingredients, including onions, beans, juniper berries, pine products, beer, wine, bird dung, and oils, which could be combined and made into a rub, salve for the belly, ointment, suppository, or drink (Ebers 802–807).

Some of the combinations of plants and other organic materials sound unusual and may even be dangerous, and the efficacy of these Egyptian and Mesopotamian medical recipes is unknown. Given that spontaneous miscarriage is known to occur in one out of every six pregnancies, it might have only appeared that the remedies were working, when in reality the end of the pregnancy was caused by natural means.[10]

Causing Miscarriage in ANE Law

Ancient Near Eastern legal texts generally do not directly address the permissibility or morality of abortion. They do, however, impose penalties in cases where someone outside the family causes a woman to miscarry.[11]

Bible

The Covenant Collection requires compensation to the head of the household for the loss of a potential child if a mother is struck and miscarries:

שמות כא:כב וכי יִנָּצוּ אֲנָשִׁים וְנָגְפוּ אִשָּׁה הָרָה וַיִּצְאוּ יְלֶדֶיהָ וְלֹא יִהְיֶה אֶסוֹן עָוֹשׂ יַעֲנֹשׂ כְּאִשֶּׁר יִשִּׁית עָלָיו בְּעַל
הָאִשָּׁה וְנָתַן בְּפִלְלִים. Exod 21:22 When people who are fighting injure a pregnant woman so that there is a miscarriage and yet no further harm follows, the one responsible shall be fined what the woman's husband demands, paying as much as the judges determine.[12]

In the ancient Near East, men needed children, especially sons, for a variety of reasons—e.g., to inherit, work in the fields, carry on the family name, provide elder care, and carry out the duties associated with their cult of the dead. It is noteworthy that the father is

allowed to make demands about the penalty, suggesting how seriously the law treats this case, but the law is otherwise consistent with other ancient Near Eastern law collections.[13]

Hammurabi

In the Laws of Hammurabi (ca. 1750 B.C.E.), the penalty is a fine based on social class of the woman:

LH 209 If a member of the awīlu (free, elite class) strikes a woman of the awīlu-class, and thereby causes her to miscarry her fetus (ša libbiša uštaddīši, “who causes her womb to be dropped”), he shall weigh and deliver 10 shekels of silver for her fetus.[14]

The fines are reduced if the woman is a commoner (5 shekels) or a slave (2 shekels).[15]

Hittite

The Hittite Laws (ca. 1650–1500 B.C.E.) from Anatolia (Turkey) establish penalties for causing a miscarriage based on the status of the woman and how long she was pregnant, i.e., the age of the fetus:[16]

HL 17 If anyone causes a free woman to miscarry [abort], if it is her tenth month, he shall pay 10 shekels of silver, if it is her fifth month, he shall pay 5 shekels of silver.[17]

The penalties are halved if the woman is a slave:

HL 18 If anyone causes a female slave to miscarry [abort], if it is her tenth month, he shall pay 5 shekels of silver.[18]

Middle Assyrian

The Middle Assyrian Laws (MAL; ca. 14th c. B.C.E.) in most cases also impose a financial penalty for causing a miscarriage.[19] If the fetus is male and the woman’s husband has no other sons, however, the assailant is executed:

MAL A 50 ...And if there is no son of that woman’s husband, and his wife whom he struck aborted her fetus, they shall kill the assailant for her fetus. If her fetus was a female, he shall make full payment of a life only.

The loss of a potential heir for the woman’s husband was apparently so egregious that it justified the death penalty.

The MAL also legislate the case of the prostitute:[20]

MAL A 52 If a man strikes a prostitute causing her to abort her fetus, they shall assess him blow for blow, he shall make full payment of a life.

In a patriarchal society, without a man to provide for her, the law compensates the woman for the loss of a child to care for her in old her age.[21]

Abortion

Among the Mesopotamian and Hittite material, only the MAL explicitly address the possibility that a pregnant woman might strike or harm herself to intentionally end a pregnancy:

MAL A 53 If a woman aborts her fetus by her own action and they then prove the charges against her and find her guilty, they shall impale her, they shall not bury her. If she dies as a result of aborting her fetus, they shall impale her, they shall not bury her.[22]

As in the previous cases, the law presumably focuses on the concerns of the father, since the mother's action would deprive him of a potential child. The brutal public impalement and non-burial of the woman serve to make an example of her.

Abortion in the Greco-Roman Literature

The section of the Hippocratic oath in which the physician swears not to do harm to a patient includes the following commitment:

Neither will I give a woman a suppository (pessary) to cause an abortion.[23]

Though this statement has traditionally been interpreted as a general prohibition against abortion, the oath only specifically prohibits pessaries, which carried a known risk of harm to the mother.[24] In any case, it appears that ancient physicians generally did not follow the oath, and it is clear from other ancient sources that abortion was practiced in the Greco-Roman world.[25]

In Medical Texts

The Greek text *On the Diseases of Women*, attributed to Hippocrates (460–370 B.C.E.) but likely representing a compilation of materials from multiple authors, includes a variety of abortifacient remedies, many of which use methods and ingredients similar to those found in the Egyptian papyri.[26]

The text contains numerous recipes for purgatives or emetics, which were meant to weaken the embryo, including:

Potent uterine abortifacient, the roots of sweet earth-almond, that is like a bulb, small like an olive, and let her drink it. If small, two are needed; if not, one will do. Mix together some seeds of Ethiopian cumin, Massilian hartwort, dried Lybian leaves [possibly *Silphium*] with three cotyls of wine; boil down to a half and let her drink this.

Fruit of the chaste tree, hartwort likeness, myrtle, ground and given as a drink in water.

A small handful of mint [possibly Pennyroyal], rue, coriander, juniper or cyperus chips, boiled down in sweet wine and drunk.[27]

These recipes appear to include plants such as *Silphium* and Pennyroyal, which were known and used for their abortive properties throughout the Greco-Roman world. Also mentioned is the chaste tree (*Vitex agnus-castus* L.), a native Mediterranean shrub whose

modern English name suggests that it was associated with reducing sexual desire. Several studies have indicated that it has antifertility and abortifacient qualities.[28]

Many of the remedies take the form of pessaries, which were intended to place pressure on the uterus, loosening or opening the womb and expelling the pregnancy. Some examples include:

Ecboic (abortive) suppository: Egyptian salt, mouse dung, wild colocynth; pour in a fourth-part honey, boiled to a half; take a drachma of resin and put into the honey and mouse dung, grind all together well. Make suppositories, insert in the uterus, until the proper time.

Elaterium (squirting cucumber) in double amounts, honey and wine on linen pad.

Butter and alum on coarse flax.[29]

Hippocrates's Commentary on the Nature of The Child also describes inducing abortion by having the pregnant woman engage in excessive physical activity, such as carrying heavy loads, jumping up and down, or shaking items. The text specifically mentions a practice, attributed to the Spartans, called the Lacedemonian leap, which involved a woman jumping up and kicking her buttocks with her heels. If performed correctly, the leap would expel the pregnancy in its very early days.[30]

In Greek Philosophy

References to abortion are also found among the Greek philosophers. For example, Plato (ca. 428–348 B.C.E.) includes abortion among the practices of midwives:

The midwives, by means of drugs and incantations, are able to arouse the pangs of labour and, if they wish, to make them milder, and to cause to bear those who have difficulty in bearing, and they cause abortions at an early stage if they think them desirable.[31]

The key for Aristotle (384–322 B.C.E.) is that abortion should happen before life is established:

Abortion must be practiced on it (the embryo) before it has developed sensation and life. For the line between lawful and unlawful abortion will be marked by having sensation and being alive.[32]

Under Roman Law

The first state laws that directly address abortion in Classical Antiquity appeared during the Roman period, during the reigns of Septimius Severus (r. 193–211 C.E.) and Antonius Caracalla (r. 211–217 C.E.). The two case laws establish limits for abortion, but neither outlaws the practice.

The first case deals with a woman who sought an abortion after her divorce, against the wishes of the ex-husband. Her punishment, exile, is motivated by the rights of her husband, whom she has deprived of an heir: “for it may seem unworthy that she should have cheated her husband of her children with impunity.”[33]

The second case concerns those who have given abortion inducing drugs to a woman. Its stated motive suggests that the law is not concerned about abortion per se, but about setting a precedent that a person could not give dangerous drugs to a patient with impunity: “They give an abortion or an amorous cup, even if they do not do it with guile, but because it is a matter of bad example.”[34] If the patient dies, the person administering or providing the abortifacient is put to death as punishment for her death.[35]

Abortion: Unlegislated

The ancient legal sources—both Near Eastern and Greco-Roman—seem to share common general approach that is more about compensating the head of a household for the loss of a potential child than it is a commentary on the rights of women or perceptions of when life began. In most cases, the head of a household would be the woman’s husband, but the right to compensation apparently could shift to the woman if she were not under the authority of a male.

Implicitly, the absence of broad prohibitions against the practice suggests that abortion decisions would have been a family matter. In addition, the existence of numerous recipes and procedures for inducing an abortion in these cultures seems to indicate an ongoing desire for such remedies.

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Please visit the site: <https://www.thetorah.com/article/abortion-in-the-ancient-near-east-and-greco-roman-world> [Go there for notes, bio, format]

THE MARITIME TRANSPORT OF SCULPTURES IN THE ANCIENT MEDITERRANEAN, BY KATERINA VELENTZA

From the 16th century onwards, hundreds of Greek and Roman sculptures have been discovered in the Mediterranean Sea, both from shipwrecks and isolated finds. This material constitutes some of the strongest evidence for studying the maritime transport of sculpture in antiquity. Yet, despite the large number of underwater sculptural finds, their early discovery and long period of study, most researchers of the ancient Mediterranean have so far analysed those artefacts primarily from an art historical perspective. The interpretation of their maritime transportation has largely remained conjectural, due to the incomplete recording and the remoteness of their underwater findspots.

To rectify this situation, I undertook a project to retrieve data about the underwater archaeological context of ancient sculptures with the aim to interpret anew where, when, why and how sculptures were transported by sea in the ancient Mediterranean world. For that purpose, I compiled a database of 110 entries recording any known incident of Greek or Roman sculptures found on the Mediterranean seabed. For each database entry I recorded: the country and date of discovery; any dating information available for the underwater archaeological deposit; the number, material, type and date of the retrieved sculptures; any evidence for preserved hull remains, or packaging of the cargo; as well as the presence of amphorae, coins, architectural pieces, domestic furnishing, pottery, glassware, ingots, scrap metal, skeletal remains or other objects found on the seabed with the sculptures.

Based on the geographical distribution of the underwater incidents (Fig. 2), we can see right away that sculptures were transported by sea all around the ancient Mediterranean world. The evidence, however, is uneven. Modern day factors, such as historical circumstances, local politics, development of large-scale fishing, recreational underwater activities, as well as the availability of provisions for the documentation and protection of underwater cultural heritage, have influenced the preservation of evidence in specific regions more than others. Nonetheless, overall the geographical distribution of underwater sites with sculptures proves clearly that the maritime transport of sculptures in the ancient Mediterranean was widespread and not restricted between exclusive regions or geographical areas.

The information gathered in the database also established a chronology for the time periods of Graeco-Roman antiquity when sculptures were transported by sea. Of the recorded incidents, only 42% of sculptural discoveries preserved information that allowed dating of their underwater deposition. This dating information showed that sculptures were transported by sea from the 7th/6th century BC to the 7th century AD.

Above all, the systematic study of the dataset has made it possible to identify distinct reasons for and patterns of maritime transport of sculptures in the ancient Mediterranean world. The first recognisable reason of sculptural transport has been the movement of small-scale sculptures as shipboard items or personal belongings. This type of movement

was not commercial. The sculptures belonged to the sailors and passengers or were part of a shrine on board the ship. The chronological span of this transport ranges from as early as the 7th century BC up to the 2nd century AD, even though later examples of this activity might be recognised in the future.

The second pattern is the maritime transport of stone sculptures as part of wider stone cargo, a trading activity developed widely in the Mediterranean world during the period of the Roman empire. The shipwrecks recognised in this pattern are found in both the western and eastern Mediterranean, as well as in the Black Sea. These underwater sites preserve stone blocks, architectural members, and marble sculptures, some of them in an unfinished stage (Fig. 3), shipped for trading purposes from the 1st century BC to the 3rd century AD.

The third pattern detected is the trade of sculptures with other luxury objects, which has been archaeologically documented only for the last two centuries BC and in underwater sites off the coasts of Greece, Italy and northern Africa. The Antikythera (Fig. 4) and Mahdia shipwrecks, dated both in the late 2nd or early 1st century BC, are the two most notable examples.

The fourth identified pattern for the maritime transport of sculptures comprises a less well-documented reason, which is the trade of bronze sculptures (Fig. 5) and other metals as scrap to be recycled. This maritime activity was connected to a wider circulation of metalware and the redistribution of non-functional metal objects with the intention to create raw material. It can be seen in the archaeological record from at least the Hellenistic period to the Late Antique period in Spain, Italy, Greece and Israel.

The fifth pattern of sculptural transport is related to underwater deposits with only terracotta sculptural pieces. These sites, located mostly around Italy and along the Levantine coast, must have been the result of the maritime transport of solely terracotta sculptures for either trade or religious purposes, and are dated between the 5th and 2nd centuries BC. The poor recording of the respective underwater archaeological contexts, though, did not permitted a better documentation of this activity.

Finally, in the researched dataset, there are several sites that do not fit in any of the reasons and patterns of transport described above. These are mostly out-of-context underwater sculptural discoveries, which lack adequate archaeological information, such as the dancing satyr of Mazara del Vallo (Fig. 6). Some others, though, were well-identified shipwrecks with sculptures from preserved archaeological contexts, but with unique features, distinct chronology and geographical location, which did not permit a straightforward identification of a transport pattern. One of these examples is the Porticello shipwreck (Fig. 7). Re-examination of its material in combination with ancient literary testimony suggests that this late fifth- or early fourth-century BC ship could have been carrying bronze sculptural pieces for three possible reasons: as scrap to be recycled; as sculptural dedications commissioned and sent to be dedicated in a specific sanctuary or city overseas; or simply as traded sculptural products sent to be sold and redistributed in a different region and market. This interpretation adds two more reasons in the maritime movement of sculptures: (1) the shipping of sculptures for religious dedications, which has been known to classical archaeologists so far only from terrestrial archaeological evidence or ancient textual references; and (2) the maritime transport of

sculptures for purely trading purposes, a commercial transportation presumed already but without (until now) identified underwater archaeological evidence.

The shipping of sculptures in all the above patterns involved the movement of a heterogeneous, mixed cargo, picked up and redistributed by merchant ships that stopped in several ports and harbours across their trading route. The agents involved in these commercial activities, such as the individuals who organised the shipping and the logistical details, were not possible to identify just from the study of the underwater archaeological record. However, references in the ancient sources, such as Cicero asking to send sculptures from Athens to Italy with “Lentulus’ ship” (Cicero, Letters to Atticus 1.8.2) and Philostratus’ ship captain transporting sculptures to Asia Minor (Philostratus, Vita Apollonii 5.20), suggest that regular sea merchants and ship contractors must have been involved in this maritime transport.

With the current state of most underwater archaeological sites, it has not been feasible to discern clearly detailed shipping routes, precise transport networks, or specific shipping orders and sculptural exports from individual cities or workshops. Overall, though, this new research shows that the maritime transport of sculptures was a normal commercial activity that took place with the use of regular means of mercantile transport existing in the ancient Mediterranean world. Its preparation and execution must have been a long process that would have involved careful planning and probably several months or weeks to complete.

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Please visit the site: <https://www.asor.org/onetoday/2023/05/maritime-transport-sculptures> [Go there for pix and format]

