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Πληροφοριακό Δελτίο της Ελληνικής Αρχαιομετρικής Εταιρείας

- Ιούνιος 2022 -

Quality is not an act, it is a habit. (***Aristotle***)

Newsletter of the Hellenic Society of Archaeometry

- June 2022 -

Nr. 255

ΠΙΝΑΚΑΣ ΠΕΡΙΕΧΟΜΕΝΩΝ – TABLE OF CONTENTS

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ONLINE SYMPOSIUM: PREDICTION OF RADIATION-INDUCED DAMAGE OF WHITE PAPER - SAVE THE DATE: 21.10.2022 (1PM - 6PM CEST)

Light exposure is one pressing preservation issue in all museums, archives, and libraries where paper objects undergo ever-increasing cycles of public exhibition and loans. Planning exhibition horizons for paper objects depends fundamentally on light dose decisions. With the exception of lignin-rich and optically brightened types, white paper is considered stable by guidelines, a classification we believe is too undifferentiated.

This symposium presents the current state of the ongoing research project „Prediction of radiation-induced damage of white paper in cultural heritage objects" funded by the German Research Foundation (DFG). The members of the research project – the Stuttgart Academy of Art and Design, the Museum of Prints and Drawings and the Rathgen Research Laboratory both at the State Museums at Berlin, and Dresden University of Fine Arts – and invited speakers will:

- provide the context with a focus on historic and modern white paper
- profile component-dependent, light-induced aging of new and pre-aged white paper types by their color evolution
- discuss the established MFT devices (Xenon and LED source)
- consider the applicability of MFT for determining the light responsivity of white paper
- provide a platform for discussing (future) lighting and exhibition policies focussing on white paper

We invite you to join the discussion!

Registration and detailed program will be available in August/September 2022. For further information, please contact Ute Henniges (ute.henniges(at)abk-stuttgart.de)

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CALL FOR PAPERS, POSTGRADUATE CYPRIOT ARCHAEOLOGY (POCA) – GRAZ, 1ST TO 3RD OF DECEMBER, HYBRID

The Institute of Classics – Classical and Provincial Roman Archaeology at University of Graz is pleased to host the 19th meeting of Postgraduate Cypriot Archaeology (PoCA) in 2022. The meeting will take place from the 1st to the 3rd of December 2022 both in person in Graz and on-line. As on-site meetings can be cancelled quickly, this hybrid form will allow us to switch to a fully on-line meeting if it becomes necessary to do so.

PoCA's main objective is the organization and publication of a conference by doctoral students for doctoral students and recent postdoctoral scholars (up to 6 years after completion of their PhDs).

We would like to invite all postgraduate researchers in all research areas on Cypriot archaeology to submit papers for another great conference meeting. The aim is to provide a forum in which participants can discuss the central themes of their research in a friendly and collegial environment. PoCA also offers an opportunity to meet people from the same research area and exchange current research questions, ideas and information. The meeting is open to everybody, and we invite all interested people to attend.

Please send your paper proposal with title, author's name, address and affiliation and an abstract with a maximum of 250 words to pocagraz2022@uni-graz.at no later than June 15th, 2022. Communications should be 20 minutes long, followed by 10 minutes of discussion. The conference language is English.

There is no conference fee. We are currently applying for funding to partly cover travel costs for participating students. More information will follow after confirmation of participation.

The keynote address will take place on Thursday, 1st of December in the evening, followed by a welcome event at the museum of the Institute of Classics.

We look forward to welcoming you in Graz!

Website: https://postgradcypriotarchaeology2022.uni-graz.at/de/ for further information on the meeting, University of Graz, Graz city and recommendations on accommodation and travelling to Graz.

PoCA's central official page: https://www.ucy.ac.cy/aru/en/poca/about

The organizing committee intends to publish the papers presented at the Meeting. All submissions will be subject to peer review, and acceptance for presentation does not guarantee inclusion in the final publication. Further information about the publication will be given during the meeting.

7TH ARCH_RNT SYMPOSIUM, ARCHAEOLOGICAL RESEARCH AND NEW TECHNOLOGIES, 6 – 8 OCTOBER, 2022, CALL FOR ABSTRACTS

Deadline : June 30, 2022

The Symposium focuses on the use of New Technologies in the Archaeological Research *(Archaeometry, Engineering, Computing and Digital Technologies)* notably with the presentation of interdisciplinary approaches, special case studies and research on archaeological material and collections.

Sessions:
Material Studies, Environment and Digital Cultural Heritage

ABSTRACTS must be submitted electronically by **June 30**,
using the template given on the web page
www.laboratoryarchaeometry.gr/7th-arch_rnt

SUBMISSIONS will be reviewed by the members of the Scientific Committee. Presentations will be given either as oral or poster communications depending on the reviewers'decision, based on quality and originality.

All presentations will be eligible for publication in a **Special Issue** of the **Journal of Archaeological Science: Reports**.

Chair
Nikolaos Zacharias

Scientific Committee
S. Boyatzis, Y. Facorellis, E. Gliozzo, J. Henderson, I. Iliopoulos, I. Kakoulli, I. Karapanagiotis, A. Karydas, V. Kilikoglou, I. Liritzis, D. Möncke, A. Moropoulou, A. Sarris, G. Tsokas, A. Voett

Organizing Committee
N. Zacharias, E. Palamara, N. Nerantzis, G. Malaperdas, V. Panagiotidis, G.Rigas

Secretariat
V. Valantou

Registration* **Student: 50€**
Regular: 80€

ABSTRACT SUBMISSION DEADLINE FOR THE 24TH RADIOCARBON & 10TH ^{14}C & ARCHAEOLOGY CONFERENCES, SEPTEMBER 11TH - 16TH, 2022, ZURICH, SWITZERLAND

Dear all,

Please note that the **deadline for submitting abstracts** to the 24th Radiocarbon & the 10th ^{14}C & Archaeology Conferences is **Sunday June 12th.** If you have not yet done so, please submit your abstract(s) at:
https://radiocarbon24.ethz.ch/?page_id=1606

Both conferences are combined with joint plenary sessions and parallel sessions for the different conference topics. For more details see our program outline:
https://radiocarbon24.ethz.ch/?page_id=53.

The 24th Radiocarbon conference covers all topical sessions and will run from September 11th through September 16th. If you want to submit your abstract for the 10th ^{14}C & Archaeology Conference, only a subgroup of the topical sessions: A01-A07 and T01-T04 are open for submission. Those sessions are scheduled in the first three days of the conference from September 11th through September 14th.

A complete session list including short descriptions of the sessions is available at:
https://radiocarbon24.ethz.ch/?page_id=914

Travel support (deadline extended to May 31st)

A limited number of travel support grants are available dedicated to support students to attend the conference. Please apply for student travel support by sending a justification letter (max. 1 page) and your CV to the conference email address: radiocarbon24@ethz.ch before May 31st.

Pre conference workshops

On Sunday 11.09 we will offer workshops at ETHZ Campus Hönggerberg, dedicated to an informal and in-depth discussion of specific hot topics and to foster exchange between users and suppliers of instrumentation. You can find more details on the workshops at:
https://radiocarbon24.ethz.ch/?page_id=1096

Abstract submission is not needed for the workshops. If you want to present something or have other workshop specific questions please contact one of the conveners directly.

Kind regards

On behalf of

Elisabetta Boaretto (Weizmann Institute)
Irka Hajdas (ETH Zurich)
Hans-Arno Synal (ETH Zurich)
Joint Conference Chairs
E-Mail: radiocarbon24@ethz.ch

DYES IN HISTORY & ARCHEOLOGY 41 CONFERENCE, OCTOBER 2022, VISBY, SWEDEN

If you are interested in attending either in person or online (free) in the *Dyes in History & Archeology 41* conference scheduled for October 2022 in Visby, Sweden, you can sign up to be notified when registration opens at: www.raa.se/in-english/...

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Margaret Geiss-Mooney
Costume/Textile Conservator in Private Practice
(707) 763-8694

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CALL FOR ABSTRACTS INTERNATIONAL CONFERENCE, "CONSERVING AND RESTORING ARCHAEOLOGICAL WOODEN HERITAGE IN EGYPT AND SUDAN. STATE OF RESEARCH, CHALLENGES AND PERSPECTIVES", 26-28 SEPTEMBER 2022, INSTITUT FRANÇAIS D'ARCHÉOLOGIE ORIENTALE, CAIRO

Organized by : Gersande Eschenbrenner Diemer (University of Alcalá de Henares) and Islam Ezzat (IFAO)
Ifao partner(s): University of Cairo, University of Alcalá de Henares, Fitzwilliam Museum, University of Cambridge, University of Ain Shams

Place : Institut Français d'Archéologie Orientale, Cairo.
Date of the conference: 26-28 September 2022.
Deadline for submitting abstracts: 30 of June 2022

The aim of this conference is to bring together Egyptian, Sudanese and international conservators working in Egypt and Sudan on wooden material to present their work and to discuss the techniques and materials used, the issues encountered and the solutions implemented in response to these various problems in the field. The discussion that takes place during these three days of lectures and round table will enable completion and updating of the brief chapter devoted to the conservation of objects made from organic materials that was published at the IFAO by Wuttman and Drieux in 2002 in the book entitled 'La conservation en archéologie'.

In order to facilitate exchanges, we invite Egyptian/Sudanese and international colleagues to submit proposals for papers and posters (limited number), preferably in English or French, on the following
themes:

- Case studies on conservation, consolidation, restoration and repacking of wooden archaeological objects from all periods with a focus on interventions in the field;
- Conservation of objects in the museums of Egypt and Sudan: case studies and protocols used;
- Waterlogged wood -Architectural wood;
- Conservation challenges and solutions applied to the Egyptian and Sudanese field(s) of work.

However, in the event that English or French is an obstacle to the presentation of work, presentations in Arabic and Spanish may be accepted but will require some translation arrangements, which will be specified later.

Proposals for papers (400 words maximum) must be submitted in English or French at the latest 30 June 2022 to the following address:
g.eschenbrenner@uah.es.
Each abstract should include the title of the presentation, whether it is a poster or a paper, the names and institutional affiliations of the various authors and the contact details of the corresponding author. Each paper should last 20 minutes, followed by 10 minutes of discussion.

After evaluation of the abstracts, participants will be informed of the selection of their intervention in mid-July.

Registration for the conference is free for both speakers and listeners. However, registration by e-mail is mandatory for all those who wish to attend the conference in person or online to g.eschenbrenner@uah.es

- Julie Dawson (Fitzwilliam Museum, University of Cambridge)
- Nesrin el-Hadidi (Cairo University)
- Gersande Eschenbrenner Diemer (University of Alcalá de Henares)
- Islam Ezzat (Archaeometry Department, Ifao- Ain Shams University)

To learn more (and for calls for abstracts in French and Arabic): https://www.ifao.egnet.net/recherche/manifestations/ma1428/

CALL FOR PAPER FOR THE 27TH CONFERENCE ON CULTURAL HERITAGE AND NEW TECHNOLOGIES

The call for papers, short papers, posters and apps is open from **April 15th 2022** until June **27th 2022**. Presenters and session chairs who participated in CHNT 27 have the possibility to publish their contributions in the proceedings of the conference. From 2019 on, the proceedings of the Conference on Cultural Heritage and New Technologies are being published as an e-book series on propylaeum, the information service for the classics in Heidelberg. The book and all of its papers will be available permanently with persistent identifiers (doi). The papers or the whole book will be available there in open access under a creative commons license. There are two formats for publishing in the proceedings: Papers and short papers.

The CHNT Committee is looking forward to your contributions:

Please visit the site: https://chnt.at/call-for-papers/

ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ/ΥΠΟΤΡΟΦΙΕΣ – JOB VACANCIES/FELLOWSHIPS

HEAD OF LABORATORY OF ION BEAM PHYSICS, 100%, ZURICH, PERMANENT

The Laboratory of Ion Beam Physics (LIP) is a World leading institution in Accelerator Mass Spectrometry (AMS) and ion beam-based analytics in Materials Sciences. LIP serves as an international center for radiocarbon dating. It is renowned for applications of radionuclides as clocks or tracers in environmental, climate, astrophysical, or pharmaceutical studies.

Job description

You provide the necessary managerial skills to lead a research group with a scientific and technical staff counting thirty members and is responsible for an annual budget of 3 MCHF.

You will have the opportunity to

- Lead and direct a research program focused on the development of novel techniques and equipment for AMS
- Coordinate the broad ion-beam application program of the laboratory
- Explore new fields of analytical applications in environmental and biomedical sciences, archeology, geology, and others
- Be responsible for all financial and personnel aspects of the laboratory
- Attract substantial external funding
- Fulfil academic duties including teaching as well as the supervision and advising of students on all levels
- Cooperate with research groups within the ETH domain (EAWAG, EMPA, PSI, WSL) and other international universities
- Liaise with industrial partners and/or public institutions

Your profile

- PhD degree in physics or chemistry
- Experience in leading a scientific group
- Background in AMS and related physics
- Familiarity with other MeV ion beam techniques
- Strong proven track record and broad professional network
- Strategic, operational and leadership competencies

We offer

The position offers the long-term perspective to develop and grow into a "Titularprofessur" at ETH Zurich.
chevron_right Working, teaching and research at ETH Zurich

We value diversity

In line with our values, ETH Zurich encourages an inclusive culture. We promote equality of opportunity, value diversity and nurture a working and learning environment in which the rights and dignity of all our staff and students are respected. Visit our Equal Opportunities and Diversity website to find out how we ensure a fair and open environment that allows everyone to grow and flourish.

Curious? So are we.

We look forward to receiving your online application with the following documents:

- CV
- Motivation letter
- Minimum 3 references

Please note that we exclusively accept applications submitted through our online application portal. Applications via email or postal services will not be considered.
Further information about the Laboratory of Ion Beam Physics can be found on our website. Questions regarding the position should be directed to Prof. Dr Hans-Arno Synal, Tel +41 44 633 20 27 or email synal@phys.ethz.ch (no applications).
For recruitment services the GTC of ETH Zurich apply.

Apply online now

CONSERVATION SCIENCE OFFICERS X2 WITH HISTORIC ENVIRONMENT SCOTLAND

Historic Environment Scotland are seeking two Conservation Science Officers to contribute to an exciting project to analyse, identify and record the stone types used in the construction of our Properties in Care. This project, which is being undertaken in partnership with the British Geological Survey, will provide important baseline data for the long-term conservation of our estate and will link with a range of related projects contributing to our understanding of masonry vulnerability.

The postholders will be part of our Heritage Science team and will have a key role in the successful delivery of the project. Key aspects of the posts will include gathering data to identify the provenance of building stone types used at each Property in Care, through a combination of literature review, petrographic analysis of stone samples and on-site survey, with associated data analysis, reporting and project support.

Historic Environment Scotland is the lead public body set up to investigate, care for and promote Scotland's historic environment. We're responsible for more than 300 properties of national importance, including Edinburgh Castle, Skara Brae, Fort George and numerous smaller sites, which together draw more than 5 million visitors per year. Our conservation experts provide guidance, training and technical research into Scotland's built environment. Find out more about us here.

The roles will be based in Stirling, for a fixed term of 24 months. Full details and information on how to apply can be found here. Applications close on 25th May 2022.

Sarah Hamilton | Conservation Scientist | Cultural Assets Directorate
Historic Environment Scotland | Àrainneachd Eachdraidheil Alba
The Engine Shed, Forthside Way, Stirling FK8 1QZ

****

T: I am currently working from home – please use mobile number below
M: 07901 111 340
E: sarah.hamilton@hes.scot

www.historicenvironment.scot

Heritage For All - read our Corporate Plan and help to share our vision

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RESEARCH SPECIALIST POSITION AT THE DEPARTMENT OF EARTH SYSTEM SCIENCE, UNIVERSITY OF CALIFORNIA IRVINE

A team from the Department of Earth System Science at UC Irvine, as well as collaborators from UC Riverside and NASA's Jet Propulsion Laboratory, are expending the UC Irvine's KCCAMS radiocarbon (^{14}C) measurement capabilities with the purchasing of a new spectrometer (MIni CArbon DAting System – MICADAS) and a series of peripheral instrumentation to attach to it. The new lab will enable the joint analysis of ^{14}C, carbon and nitrogen isotopic and elemental composition of terrestrial and atmospheric samples for climate change and air pollution research. To learn more about this job opportunity check https://recruit.ap.uci.edu/JPF07223"

SPARCH - SPECTROCHEMICAL ANALYSIS OF ARCHAEOLOGICAL BIO-ORGANIC RESIDUES

Start Date: 01/04/2020, **End Date:** 01/04/2023

SpArch «Φασματοχημική Ανάλυση Αρχαιολογικών Βιο-οργανικών Καταλοίπων»
HFRI-FM17-ΤΔΕ-3542

«1Η ΠΡΟΚΗΡΥΞΗ ΕΡΕΥΝΗΤΙΚΩΝ ΕΡΓΩΝ ΕΛ.ΙΔ.Ε.Κ. ΓΙΑ ΤΗΝ ΕΝΙΣΧΥΣΗ ΤΩΝ ΜΕΛΩΝ ΔΕΠ ΚΑΙ ΕΡΕΥΝΗΤΩΝ/ΤΡΙΩΝ ΚΑΙ ΤΗΝ ΠΡΟΜΗΘΕΙΑ ΕΡΕΥΝΗΤΙΚΟΥ ΕΞΟΠΛΙΣΜΟΥ ΜΕΓΑΛΗΣ ΑΞΙΑΣ»

The main objective of the proposed research (SpArch) is the development of a viable and efficient analytical methodology based on modern spectroscopic techniques that will enable molecular characterization and analysis of bioorganic residues on/in archaeological objects with the purpose to aid archaeological scientific research.

More specifically, our research will focus on integrating a versatile methodology that will enable rapid and efficient screening and characterization of residue materials as they are found in the context of archaeological investigations, based on the combined use of: a) 2D-fluorescence spectroscopy (excitation-emission) coupled to chemometrics tools, for the classification of various types of organic and bio-organic archaeological residues; b) Raman microscopy, exploiting, in particular, the surface enhancement effect offered by special metallic nanostructured substrates (SERS: surface-enhanced Raman spectroscopy), for the highly sensitive analysis of organic and bio-organic archaeological residues and identification of biomarkers; c) novel NMR (nuclear magnetic resonance spectroscopy) methodologies, including 1-D and 2-D schemes, for the classification of various types of organic and bio-organic archaeological residues and identification of biomarkers in complex organic residues.

This research is expected to bridge the gap between, on the one hand, the empirical macroscopic characterization of residues, based primarily on archaeological context and visual criteria, and on the other hand, state-of-the-art methods, relying on powerful, yet time- and effort-demanding, chromatographic and mass spectrometric techniques. The proposed methodology, relying on spectrochemical tools, shall be able to handle large numbers of samples in relatively short times and enable researchers to assess the presence of certain classes of materials, e.g. oils, waxes, resins, proteins, sugars or dyes, and possibly identify distinct molecular biomarkers, thus permitting informed decisions to be made concerning the type of residue materials encountered and the selection of a subsequent high-end method for further detailed analysis.

Principal Investigator

Prof. Anglos Demetrios
University Faculty Member

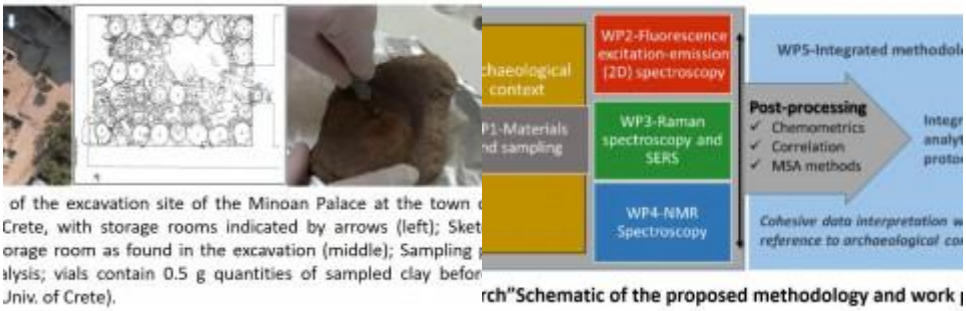
Research Associates

Dr. Philippidis Aggelos
PostDoctoral Fellow

Alumni

Dr. Sotiropoulou Sophia
PostDoctoral Fellow

University of Crete, Greece
http://www.uoc.gr/



of the excavation site of the Minoan Palace at the town
Crete, with storage rooms indicated by arrows (left); Sket
orage room as found in the excavation (middle); Sampling
alysis; vials contain 0.5 g quantities of sampled clay befor
Univ. of Crete).
rch"Schematic of the proposed methodology and work

Funding

ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΕΡΕΥΝΑΣ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑΣ
ΕΛΙΔΕΚ Ελληνικό Ίδρυμα Έρευνας & Καινοτομίας

Please visit the site: https://www.iesl.forth.gr/en/project/sparch

POSITION OPEN AT NTNU UNIVERSITY MUSEUM

About the job

The National Laboratory for Age Determination (NLD) invites applicants for a position as Associate Professor of radiocarbon dating / Head of the Laboratory.

The National Laboratory is the Norwegian national infrastructure for dating and age reconstruction. It is composed of two main units: accelerator mass spectrometry (AMS) and dendrochronology. In addition, there are advanced facilities for stable isotope mass spectrometry (IRMS). The laboratory conducts research in dating methods and their applications. It also offers dating services for research collaborations, internal as well as external users. The three units share the same personnel, and the three analysis methods are well integrated.

NLD is part of Norwegian University of Science and Technology (NTNU) in Trondheim, more specifically the NTNU University Museum. NTNU University Museum hosts internationally leading research groups covering archaeology, natural history and a strong emphasis on cross-disciplinary topics related to human-environment interactions.

The city of Trondheim is a modern European city with a rich cultural scene, and easy access to breath-taking natural landscapes. The Norwegian welfare state, including healthcare, schools, kindergartens, and overall equality, is probably the best of its kind in the world.

We invite both senior and more junior candidates to apply. This means that candidates at all stages in their career post PhD will be considered in light of their achievements, given their level of seniority and time since PhD dissertation.

You will report to the Museum Director.

Responsibilities

The successful candidate will be responsible for initiating and conducting research within fields of 14C dating techniques and applications. Interdisciplinary collaborations and interactions with other units at NTNU and through national or international research programs are encouraged. The person hired is expected to develop and lead a research group within his or her specialty while using the existing resources of the laboratory.

The person hired will also be responsible for leading and administrating the NLD. This involves day-to-day operations of the laboratory services, including customer relations and professional/scientific counseling. The successful candidate will be responsible for developing and improving laboratory routines and procedures depending on the professional background of the candidate. The future internal organization of the NLD unit is open for discussion based on experience and professional background of the successful candidate.

Associate professors are expected to disseminate relevant parts of their research to a wider audience. The person hired must also take part in administration and management of research and external dating services. Recruiting and supervising MSc and PhD candidates is another key to expand the activities within the laboratory.

Required qualifications

The position of Associate Professor requires university education at doctoral level in the field of either archaeology, chemistry, natural history, physics, or other relevant field of natural sciences, as outlined in the regulations concerning appointment and promotion to teaching and research posts

Other requirements:

- Experience in radiocarbon dating and modelling methodologies.
- Excellence in scientific writing.
- Very good communication skills in English and a Scandinavian language.

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Relevant basic competence in teaching and supervision at a university/higher education-level should be documented, as referenced in the Regulations. If this cannot be documented, you will be required to complete an approved a course in university pedagogy within two years of commencement. NTNU offers qualifying courses (200 hours).

New employees who do not speak a Scandinavian language by appointment is required should within three years demonstrate skills in Norwegian or another Scandinavian language (equivalent to level three of the course for Norwegian for speakers of other languages at the Department of Language and Literature at NTNU).

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Preferred qualifications

- Experience in the laboratory methods used in radiocarbon dating.
- Experience in developing experimental protocols and test series.
- Experience in management and leadership of dating laboratory facilities.
- Experience with obtaining externally funded research projects, and experience with research project management.
- Experience in public outreach.
- Experience in teaching at university level.
- Interest in dating methodology and applications in a wider context.

Personal qualities

- An understanding of quality control and a desire to keep NLD at the fore front of methodological development and result quality.
- Clear motivation for the position.
- Good cooperative skills.
- Creative.
- Resourceful.

- Able to deliver.

We offer

- Exciting and challenging tasks in a strong international academic environment.
- An open and inclusive work environment with dedicated colleagues.
- Favourable terms in the Norwegian Public Service Pension Fund.
- Employee benefits.

Salary and conditions

In this position you will typically receive a gross salary according to the Associate professor (Førsteamanuensis) code 1011, depending on qualifications and seniority. As required by law, 2% of this salary will be deducted and paid into the Norwegian Public Service Pension Fund.

Employment will be granted in accordance with the principles outlined in the regulations in force concerning State Employees and Civil Servants, and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter law will be prohibited from recruitment to NTNU. Applicants should be aware that there may be changes in the working environment after employment has commenced.

It is a prerequisite that you are able to be present and accessible at the institution daily.

Application Process

You can find more information about working at NTNU and the application process here.

About the application

The application and supporting documentation must be in English.

Please note that your application will be considered based solely on information submitted by the application deadline. You must therefore ensure that your application clearly demonstrates how your skills and experience fulfil the criteria specified above.

If, for any reason, you have taken a career break or have had an atypical career and wish to disclose this in your application, the selection committee will take this into account, recognizing that the quantity of your research may be reduced as a result.

Your application must include:

- CV, diplomas, and certificates
- Academic works – published or unpublished – that you wish to be considered during assessment of your application
- A description of the scientific/artistic works you consider most relevant, which you particularly wish to be factored into the assessment
- A research plan for the first five years (no more than 3 pages)
- Details of projects for which you have served as project manager, including information on financing, duration, and scope

- Details of teaching qualifications, in which your teaching competence is compiled and presented systematically, (See guidelines for applicants: Documentation of teaching qualifications in applications and appointments to academic positions at NTNU)
- Names and contact information for three relevant referees

Joint work will also be considered. If it is difficult to identify your specific input to a joint project, you must include evidence of your contributions.

NTNU is obliged by the evaluation criteria for research quality in accordance with The San Francisco Declaration on Research Assessment – DORA. This means that we will pay particular attention to the quality and academic range demonstrated by your scientific work to date. We will also pay attention to research leadership and participation in research projects. Your scientific work from the last five years will be given the most weight.

While considering the best-qualified applicants, we will pay particular attention to personal qualities, your motivation for applying for the position and your communication skills.

Your application will be considered by a committee of experts. Candidates of interest will be invited to a trial lesson and an interview.

General information

NTNUs personell policy emphasizes the importance of equality and diversity. We encourage applications from all qualified candidates, regardless of gender, disability, or cultural background. NTNU is working actively to increase the number of women employed in scientific positions, and has a number of resources to promote equality.

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The city of Trondheim is a modern European city with a rich cultural scene. Trondheim is the innovation capital of Norway with a population of 200,000. The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world. Professional subsidized day-care for children is easily available. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life and has low crime rates and clean air quality.

****

As an employee at NTNU, you must continually maintain and improve your professional development and be flexible regarding any organizational changes.

In accordance with public law your name, age, job title, and county of residence may be made available to the public even if you have requested not to appear on the public list of applicants. For the sake of transparency, candidates will be given the expert evaluation of their own and other candidates. As an applicant you are considered part of the process and is stipulated to rules of confidentiality.

If you have any questions about the position, please contact Museum Director Hans K. Stenøien, telephone +47 91897592, email hans.stenoien@ntnu.no. If you have any questions about the recruitment process, please contact Håvar Meyer Bratt, e-mail: haavar.bratt@ntnu.no.

The application and all attachments should be submitted electronically via jobbnorge.no.

If you are invited for an interview, you must bring with you certified copies of all certificates and diplomas.

Application deadline: 05.06.2022.

Please visit the site: https://www.jobbnorge.no/en/available-jobs/job/225342/associate-professor-of-radiocarbon-dating-head-of-the-laboratory

SEARCH FOR HEAD OF LABORATORY OF ION BEAM PHYSICS AT ETHZ

Dear Colleagues,

The Physics Department of ETH Zurich has an attractive Job opening which might be of interest for you. We are looking to fill the soon to be vacant permanent position of Head of Laboratory of Ion Beam Physics.

Details can be found in the following link: https://jobs.ethz.ch/job/view/JOPG_ethz_EF8ueic3gVCTPdL35t

While there is no firm application deadline, we are counting on compiling the short list in early July, to start with interviews in September. The ideal starting date would be January 2023.

In case you need further information, do not hesitate to contact synalha@ethz.ch

Sincerely

Andrey Zheludev
Head Physics Department ETH Zurich

POSTDOCTORAL RESEARCH ASSOCIATE GRADE 7, DEPT ARCHAEOLOGY, CLASSICS & EGYPTOLOGY

042230
£35,327 pa
14-Jun-2022 23:30

You will support Dr. Matthew Ponting on the £2.2M ERC-funded project `Rome and the Coinages of the Mediterranean: 200 BCE to 64 CE (RACOM). This cross-disciplinary project is a collaboration between Matthew Ponting, Kevin Butcher (University of Warwick) and Adrian Hillier (STFC, UKRI, Harwell) using chemical and isotopic analyses to investigate the links between Late Hellenistic and Roman Republican coinages. The successful candidate will be familiar with the handling and interpretation of lead isotope and trace element data from archaeological metals. This work will build on the approaches developed by Pollard and Bray (2014; 2015) and Pernicka (2014) which use elemental abundances alongside isotope ratios for Bronze Age legacy data, and the work of Albarede et al. (2012 etc.) which calculates model (assumed) ages from standard lead isotope results that can be used to distinguish between primary metal and mixed/recycled metal.

You will be expected to develop an innovative approach for the use of lead isotope data alongside trace element data, which will allow us to better model and understand processes of re-cycling and mixing, and to identify the likely sources of materials that were being mixed together. This will entail developing detailed data modelling systems for silver alloys using the elemental and isotopic data generated by the project to better understand procurement and processing of silver bullion used for the production of Late Hellensitic and Roman Republican coinage. You will be expected to publish a series of articles that investigate novel data manipulation techniques for standard lead isotope data specific to the requirements of archaeometallurgy. You should have a PhD in Archaeology or Geochemistry. The post is avail able from 1 September 2022 until 31 August 2024.

Link to the fully details: https://bit.ly/3LPftyA

The University has the right to close the vacancy early if it is deemed that there have been enough applications received.

ΑΝΑΚΟΙΝΩΣΕΙΣ - ANNOUNCEMENTS

SPECIAL ISSUE ON ARCHAEOMETALLURGY: MMA JOURNAL

Dear Colleagues,

This special issue of Metallography, Microstructure and Analysis (MMA), sponsored by the ASM International Archaeometallurgy Committee, will feature original research and review articles related to archaeometallurgy and the historical applications of metals and nonmetallic materials; the articles will also fit within the journal's scope of metallographic and microstructural analysis. Articles may address studies of artifacts or objects from archaeological excavations, museums, monuments, private collections, public infrastructure projects, and other pieces that reflect historical materials applications. Studies that use modern characterization methods to determine details of past materials extraction, processing, and manufacturing methods are welcome.

Topics include, but are not limited to:

• Characterization studies by SEM-EDS, X-ray diffraction, Raman spectroscopy, or FTIR spectroscopy, complemented by analysis of microstructure.
• Analysis of slag and crucibles from ancient metallurgical sites.
• Evaluation by means of radioisotopes to determine provenance and/or carbon 14 dating complemented with metallographic characterization.
• Use of phase structure, microstructure, and physical and mechanical property measurements to determine and explain the manufacturing process of artifacts.
• Modeling of artifacts accompanied by a material characterization study scheme by means of metallography and microstructural analysis.

All contributions will be rigorously peer reviewed. More information, including MMA submission procedures and tips on preparing your manuscript, can be found under the heading "For Authors" here:
https://www.springer.com/journal/13632

Please indicate in your cover letter that you are submitting a contribution to the special issue on Archaeometallurgy.

Interested authors are strongly encouraged to submit an abstract to Professor Patricia S. Carrizo (patricia.carrizo@frm.utn.edu.ar) or Dr. Omid Oudbashi (o.oudbashi@aui.ac.ir) for consideration and comments prior to the preparation of a full manuscript.

Submission of abstracts: June 17, 2022

Manuscript submission deadline: September 16, 2022

For more information, contact: Kate Doman (kate.doman@asminternational.org)

Kind Regards

Omid Oudbashi (On behalf of Editors)

****

Omid Oudbashi (PhD, MA, BSc)

- Associate Professor, Department of Conservation of Cultural and Historical Properties and Archaeometry (AUI)
- Head of Department of Conservation of Cultural and Historical Properties and Archaeometry

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RESPONSES TO EXTREME CLIMATE EVENTS IN THE ANCIENT WORLD, UPCOMING PHD COURSE ORGANIZED BY URBNET

****Participation is free of charge.****

PhD course: Cross-cultural and Cross-latitudinal Responses to Extreme Weather and Climate Events in the Ancient World
https://phdcourses.dk/Course/90978

As the pace of global climate change is accelerated, questions revolving around the dynamic, long-term relationship between communities and their environment are widely debated across disciplines in the humanities, social, and natural sciences and are increasingly attracting the attention of the general public.

Archaeology's unique emphasis on long-term human-environment interactions allows us to reflect on the ways in which past communities responded to extreme or unpredictable weather and climate events and to explore the long-term implications of these responses.

A key objective of this course shall be to reflect on ways of achieving uniformity in our methodologies by exploring case studies that capture geographic variability in human responses and bringing together scholars working from Arctic to Subtropical environments.

Relatedly, we will discuss the affiliated changes we would expect to see in the archaeological record. These expectations would take into consideration regional differences as impacted by local socio-political, cultural, and environmental particulars. Furthermore, models would account for the types of fluctuations communities are perennially accommodating without suffering systemic changes. Why does systemic fragmentation or collapse occur when previously the same system was resilient under pressure? We will seek to identify the archaeological proxies associated with changes in social processes such as subsistence strategies, food storage, network structure, mobility, migration, conflict and other relevant correlates of risk management in response to paleoclimatic shifts.

This course follows a one-day workshop on the same topic which will take place at Aarhus University on 30 June 2022.

Application deadline

Please sign in via this link: https://au.phd-courses.dk/CourseCatalog/ShowCourse/948 no later than 1 June 2022.

INTERNET SITES

LEXUNDRIA: A DIGITAL LIBRARY OF ANTIQUITY

Lexundria is a digital library of classical antiquity. Although most of the texts on this site can be found elsewhere on the internet, this project aims to make them accessible in a more research-friendly format. The Lexundria editions are thus distinguished by the following features:

1. Standard reference numbers. Most classical texts have a standard referencing scheme used by academics and other authors (analogous to the verse divisions of the Bible). These divisions are clearly marked in the texts on this site, even when the corresponding print edition does not contain them.

2. Pin-citation functionality. You can easily look up a passage at Lexundria using its pin citation. Rather than browse through long blocks of text in order to find the passage you're looking for, simply enter the standard citation in the Lexundria search box. Lexundria will automatically pinpoint the passage and display it.

3. Parallel-editions mode. When Lexundria hosts more than one edition of a work, you will see a "compare" option at the bottom of the version menu. This feature allows you to compare editions side-by-side, one passage at a time. For a taste of how this works, try reading Epicurus's Kuriai Doxai in comparison mode.

4. A comprehensive search engine. Lexundria's full-text search engine makes it easy to search for words and phrases. To search the entire Lexundria library, simply enter your search terms in the search box and hit submit. To limit your search to a single work, add a backslash followed by the standard abbreviation for the work. (For example, "Antonius \Cic. Phil." will search for occurrences of "Antonius" only in Cicero's Philippics.) To limit your search to a single edition, add another backslash followed by the Lexundria abbreviation for the edition. (Edition abbreviations can be found on Lexundria's table of contents page for the work you're interested in.)

Please visit the site: http://ancientworldonline.blogspot.com/2014/12/lexundria-digital-library-of-antiquity.html [Go there for linx to translations]

ΝΕΕΣ ΕΚΔΟΣΕΙΣ – NEW PUBLICATIONS

TRACING CYPRIOT CONNECTIVITY WITH THE EASTERN MEDITERRANEAN AND BEYOND THROUGH THE TRADE OF COPPER AND OTHER METALS, BY VASILIKI KASSIANIDOU

ABSTRACT

Cyprus is rich in natural resources, but the most important are without doubt the extensive copper ore deposits out of which massive quantities of the metal could be extracted. Since at least the beginning of the second millennium BC, if not earlier, the island produced enough copper to satisfy the needs of the local inhabitants but also the voracious appetite of the Bronze Age cultures of the Eastern Mediterranean. It is well known that the search for metals acted as an incentive for exploration and for establishing trading networks and systems. Cyprus, as one of the main sources of copper, became a central node in these trade networks. Cypriot copper would be exported in exchange for other metals that the island's inhabitants needed or wished to own but were not locally available, namely tin, lead, gold and silver. The aim of this paper is to bring together information deriving from ancient texts and discoveries on land and in the sea that bear witness to how intimately connected Cyprus was with the world overseas, because of the metals' trade.

KASSIANIDOU, V., 2022 Tracing Cypriot connectivity with the Eastern Mediterranean and beyond through the trade of copper and other metals. In G. Bourogiannis (ed.), *Beyond Cyprus: Investigating Cypriot Connectivity in the Mediterranean from the Late Bronze Age to the End of the Classical Period.* AURA Supplement 9. Athens: National and Kapodistrian University of Athens. 73-88.

(the proceedings are open access and there are many more papers that may be of interest to you in the volume)

PLACING POLITIKO PHORADES IN THE HISTORIOGRAPHY AND EVOLUTION OF LATE CYPRIOT METALLURGY, BY VASILIKI KASSIANIDOU

KASSIANIDOU, V. 20225. Placing Politiko Phorades in the historiography and evolution of Late Cypriot Metallurgy. In S. Manning (ed.), *Critical Approaches to Cypriot and Wider Mediterranean Archaeology*. Monographs in Mediterranean Archaeology 16. Sheffield: Equinox. 87-107.

This is the Festschrift for A.B. Knapp edited by Sturt Manning

NOVEL COMBINED APPROACH OF GIS AND ELECTRICAL TOMOGRAPHY TO IDENTIFY MARSH/LAKE AT KASTROULI LATE MYCENAEAN SETTLEMENT (DESFINA, GREECE),

BY IOANNIS LIRITZIS, NIKI EVELPIDOU, ILIAS FIKOS, ALEXANDROS STAMBOLIDIS, NECTARIA DIAMANTI, THEANO ROUSSARI, MARIA TZOUXANIOTI, PRODROMOS LOUVARIS AND GREGORIOS N. TSOKAS

Quaternary **2022**, *5*(2), 26; https://doi.org/10.3390/quat5020026

Abstract

The Kastrouli Late Bronze settlement in Phocis province, central Greece, has been proved to have been an important center in the periphery of the Mycenaean palaces. It was reused at least partially and was cultivated until the 20th century. The presence of a flat area off the Kastrouli hill and the seasonal flooding nowadays led to the present investigation, questioning the formation of an ancient lake or marsh/swamp. A methodological approach was applied combining the digital elevation model (DEM) and GIS of the wider and confined area, examining slopes between 0 and 5 degrees (0 and 8.75%), with electrical resistivity tomography (ERT) traverses of around 300 and 500 m, reaching a depth of 100 m. The ERT data were rapidly collected on profiles and provided a cross-sectional (2D) plot. It was found that, in the area, there is a basin with a length of 100 m and a depth of around 40–50 m. The sedimentation process over the millennia has filled the basin, with the upper 5–6 m surface layers of the area having a low resistivity. The presence of two natural sinkholes with apparent engineered hydraulic works is noted to conform to drainage and produce a habitable environment, protecting the cultivated land and avoiding a swamp associated with health issues.

Keywords: marsh; swamp; environment; basin; digital elevation model; GIS; slopes; inclinations; Mycenaean; river; flood

Please visit the site: https://www.mdpi.com/2571-550X/5/2/26/htm

ΕΙΔΗΣΕΙΣ - NEWS RELEASE

HUNDREDS OF ENGRAVED STONES DISCOVERED IN PERSEPOLIS

Hundreds of engraved stones and fragmented bas-relief carvings have recently been discovered in the ruined Tachara Palace, located in heart of the UNESCO-registered Persepolis, southern Fars province.

The discovery has taken place during the fifth season of an archaeological survey, probing a sophisticated water management system beneath the ruins of the Persepolis, archaeologist Ahmad Ali Asadi said on Monday.

The bas reliefs probably are related to the northern stairs of the H Place, Asadi was quoted as saying by CHTN.

Among the engraved stones there are pieces with human and plant motifs, and at least one of the stones has cuneiform inscriptions, and if the collection of stones is explored fully, it will probably discover more inscribed pieces, he added.

Tachara is one of the oldest and most interesting palaces of Persepolis that its charming structure is situated south of the Apadana and on a platform 2.20-3m higher than the level of the latter and the adjacent courtyard.

Persepolis website says that Tachara was built on a rectangular plan, measuring 40m by 30m, and a north-south axis. It consists of the main hall with twelve columns, two smaller columned halls on the north, a columned portico on the south, and several guardrooms or storage chambers on either side. A stairway with two reversed flights leads to the portico from a courtyard on the south. The inner walls of these flights are sculptured with representations of servants and attendants, dressed alternately in the «Median» and «Persian» costumes, carrying food and utensils.

A frieze consisting of several scenes is sculptured in the center of the facade of the staircase. In the upper part of the middle section is the winged circle (the Iranian Glory), flanked by two antithetic seated sphinxes who each raise a hand towards it in a gesture of veneration.

Behind each sphinx is a terrace of palm trees. Below this scene is two antithetic rows of nine soldiers in the «Persian» costume (fluted cylindrical tiaras, flowing skirts, and three-strapped shoes). They are facing a cuneiform inscription in Old Persian carved by Xerxes in a rectangular area framed by bands of rosettes.

The main hall and other rooms are provided with rectangular niches, each of which is hewn from a single block of stone and is crowned with a vertically fluted architrave element known as the Egyptian covetto cornice. Originally, five doors pierced the walls of the main hall: two opening into the pair of four-columned northern rooms, one giving access to the southern portico, and two leading into the adjacent western and eastern chambers.

Persepolis, also known as Takht-e Jamshid, whose magnificent ruins rest at the foot of Kuh-e Rahmat (Mountain of Mercy) is situated 60 kilometers northeast of the city of Shiraz in Fars province. The city was burnt by Alexander the Great in 330 BC apparently as revenge on the Persians because it seems Xerxes had burnt the Greek city of Athens around 150 years earlier.

Please visit the site: https://www.tehrantimes.com/news/472050/Hundreds-of-engraved-stones-discovered-in-Persepolis

RESEARCH FINALLY ANSWERS WHAT BRONZE AGE DAGGERS WERE USED FOR

Analysis of Bronze Age daggers has shown that they were used for processing animal carcasses and not as non-functional symbols of identity and status, as previously thought.

First appearing in the early 4th millennium BCE, copper-alloy daggers were widespread in Bronze Age Europe including Britain and Ireland. Yet archaeologists have long debated what these objects were used for.

As daggers are often found in weapon-rich male burials, or "warrior graves," many researchers speculated that they were primarily ceremonial objects used in prehistoric funerals to mark out the identity and status of the deceased. Others suggested that they may have been used as weapons or tools for crafts.

However, the lack of a targeted method of analysis for copper-alloy metals, like those available for ceramic, stone, and shell artifacts, left this problem unresolved.

A revolutionary new method, pioneered by an international research team led by Newcastle University, UK, has enabled the world's first extraction of organic residues from ten copper-alloy daggers excavated in 2017 from Pragatto, a Bronze Age settlement site in Italy. The new method reveals, for the first time, how these objects were used, for what tasks, and on what materials.

The project team, led by Dr. Andrea Dolfini and Isabella Caricola, developed a technique that used Picro-Sirius Red (PSR) solution to stain organic residues on the daggers. The residues were then observed under several types of optical, digital, and scanning electron microscopes. This allowed the team to identify micro-residues of collagen and associated bone, muscle, and bundle tendon fibers, suggesting that the daggers had come into contact with multiple animal tissues and were used to process various types of animal carcasses.

Uses seem to have included the slaughtering of livestock, butchering carcasses, and carving the meat from the bone.

The project team then carried out wide-ranging experiments with replicas of the daggers that had been created by an expert bronzesmith. This showed that this type of dagger was well suited to processing animal carcasses. The residues extracted from the experimental daggers were also analyzed as part of the research and matched those observed on the archaeological daggers.

Professor Andrea Dolfini, Chair of Archaeology, Newcastle University, says that "the research has revealed that it is possible to extract and characterize organic residues from ancient metals, extending the range of materials that can be analyzed in this way. This is a significant breakthrough as the new method enables the analysis of a wide variety of copper-alloy tools and weapons from anywhere in the world. The possibilities are endless, and so are the answers that the new method can and will provide in the future."

The research was published in Scientific Reports.

Please visit the site: https://phys.org/news/2022-04-bronze-age-daggers.html

AMATEUR ARCHAEOLOGIST STUMBLES ONTO TROVE OF COINS DATED TO CONSTANTINE THE GREAT'S REIGN, BY ELIZABETH DJINIS

Found in Switzerland, some of the buried Roman coins were minted during a time of relative political stability, between 332 and 335 C.E.

It's not every day that a jaunt with a metal detector turns up something truly revelatory. One might expect to find a vintage engagement ring or a necklace lost to time—but a set of over a thousand Roman coins? That seems unlikely.

Yet that's exactly what happened to Daniel Lüdin as he perused a section of forest in Bubendorf, Switzerland, close to Wildenstein Castle, on an early September day in 2021. As the amateur archaeologist swept his metal detector across the ground, a "strong signal" suddenly emitted from the machine, according to a statement from Archäologie Baselland, the archaeology department for the state of Basel-Landschaft, or Baselland. When Lüdin began to dig, he was shocked by what he found: a clay pot filled with 1,290 coins.

In accordance with proper archaeological protocol, Lüdin reburied the pot and contacted local experts, who dated the cache of coins to the fourth century C.E., during the reign of Roman emperor Constantine the Great (306 to 337 C.E.). At the time, Switzerland was part of the Roman Empire.

Based on the coins' composition—copper alloy and traces of silver—the treasure wouldn't have gone far at the time of its burial. Instead, it was simply a large stack of "small change," equal to about two months of earnings for a soldier, per the statement. Collectively, the coins amounted to as much as a single gold solidus, "a pure gold coin introduced by Emperor Constantine during the late Roman Empire that weighed about 0.15 ounces," writes Live Science's Laura Geggel.

The coins were all minted during the reign of Constantine the Great (306 to 337 C.E.). They feature portraits of the emperor and his relatives on the front. Rahel C. Ackermann Inventory of Swiss Coin Finds

Finding hidden coins from the late Roman period, which scholars define as roughly 250 to 450 C.E., is not unusual. Earlier this year, a badger in northwest Spain made headlines after digging up a hoard of more than 90 ancient coins, as Jack Guy reported for CNN in January. What's different about the newly unearthed coins in Switzerland is their specific timeframe. The most recent specimens date to between 332 and 335 C.E.—a period of relative prosperity from which few Roman coin hoards survive.

"In troubled times, triggered by civil wars, incursions by neighboring ethnic groups or economic crises, many people buried their valuables in the ground to protect them from unauthorized access," notes the statement, per Google Translate. "During the time when the pot from Bubendorf was hidden, there are hardly any comparable hoards in the entire

Roman Empire. These years are characterized more by their political stability and some economic recovery."

The timing of the coins makes the find "very important," Reto Marti, head archaeologist at Archäologie Baselland, tells Live Science. "It will give a very detailed insight into the use of money and the circulation of coins in the time of ... Constantine the Great."

Academics generally agree that people bury coin hoards during times of great stress: for example, during the Black Death or the English Reformation. But discoveries in recent decades have led some scholars to speculate that certain caches also served as ritual offerings, "perhaps [ensuring] the wealth of a farming community ... as insurance for a good harvest or good weather," noted Current Archaeology in 2010.

The newly discovered coins were found on the border of three Roman estates, indicating they may have been buried as a border sanctuary or a sacrifice to the gods, according to the statement.

While surveying the coins with a CT scan, the archaeologists spotted a piece of cowhide dividing the cache in two, indicating the money may have belonged to two different people or groups. For those who want to take a closer look at the find, researchers have created a 3-D model of the coins in situ.

"A stroke of luck is certainly also the survival of the storage vessel, which contained not only coins but also a piece of leather, organic material that rarely survives," Marjanko Pilekić, a numismatist who was not involved in the analysis, tells Live Science.

Further research could reveal "which coins belonged to which side [of each Roman estate], which may help in the interpretation," Pilekić adds.

In recent years, archaeologists, amateurs and even farmers have spotted Roman coins in Switzerland. In 2015, more than 4,000 bronze and silver coins from around the end of the third century C.E. were found in a molehill. A few years later, 293 silver coins spanning the reigns of emperors Nero through Commodus were spotted in a forest.

Modern-day Switzerland became part of the Roman Empire in 15 B.C.E., under the emperor Augustus. By the midway point of Constantine's reign, Rome's boundaries encompassed much of Western and Southern Europe, as well as parts of the Middle East and Africa.

Constantine was perhaps best known for issuing the Edict of Milan, which allowed Christians to worship freely. The emperor himself converted to Christianity on his deathbed.

Constantine also renamed Byzantium (modern-day Istanbul) Constantinople and refashioned the city as a "second Rome." That change perhaps signaled some of the instability and fear that may have prompted coin hoarding.

According to Encyclopedia Britannica, "Rome had long been unsuited to the strategic needs of the empire. It was now to be left in splendid isolation, as an enormously wealthy

and prestigious city—still the emotional focus of the empire—but of limited political importance."

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Elizabeth Djinis is a writer and journalist based in St. Petersburg, Florida. Her work has been published in Poynter, The Dallas Morning News, the Tampa Bay Times, The Penny Hoarder and Sarasota Magazine, among others.

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Please visit the site: https://www.smithsonianmag.com/smart-news/amateur-archaeologist-in-switzerland-stumbles-onto-trove-of-coins-dated-to-constantine-the-greats-reign-180980025/ [Go there for pix]

SKELETON OF ANCIENT WOMAN LYING ON HER BRONZE BED FOUND IN GREECE, BY BELLA KONTOGIANNI

The skeleton of a woman who lived in the 1st century BC lying on her bed was uncovered by Greek archaeologists recently near the city of Kozani, northern Greece.

The discovery was made at a Public Power Corporation (PPC) lignite mine in Eordea, Kozani. Archeologists say that the remains probably belong to a wealthy woman. Symbols for the Greek god Apollo were decorating her bed.

The leader of the excavation, Dr. Areti Hondrogianni-Metoki, presented the discovery in 2021.

One of the extraordinary objects excavated at the lignite mines was the bed and remains of a 1st century BC woman.

Although there is evidence that people were often buried in their beds in ancient times, this was the very first time archaeologists excavated someone buried that way in Greece.

Dr. Hondrogianni pointed out that during other excavations, bed accessories have been found but this is the first time an entire bed had been preserved. In 2020, an attempt was made by specialists at restoring the bed.

Most of the bed was made of bronze, which is why it survived over the millennia. The wooden parts of the bed had unfortunately decomposed prior to being excavated. For this reason, archaeologists devoted time to restoring the bed in 2020.

The fruits of their labor were presented at the conference in the form of the reproduction of the original bed. This included the wooden elements, which were pieced together through studying information they had gleaned at the excavation.

This is a landmark archaeological finding, which has confirmed that Greeks of this period were indeed buried in their beds.

Ancient skeleton may be of royal woman

The identity of the woman whose remains were found continues to be unknown. However, she is notable due to her wealthy—and perhaps royal—status.

Luxury objects were found buried around the woman, and she herself was found with golden laurel leaves around her head. Archaeologists believe that these may have been woven into a wreath for her to wear.

The woman was middle-aged and is theorized to have belonged to a royal family, as there have been other archaeological discoveries in the wider area that point to royalty having settled there.

However, there is also the possibility that she was someone with great religious authority, which would also explain the wealth of the objects buried with her.

Symbols of Apollo found on her bed

Parts of her bed were also decorated, according to the archaeologists.
The ends of the bed were decorated with the heads of mermaids, but the decorations adorning the top of the bedstead hold particular significance.

This part of the bed bears the symbol of an aquatic bird holding a snake in its mouth, a known symbol for the god Apollo because of the Greek myth which recounts him having killed the snake in Delphi, subsequently saving the world.

The laurel tree and leaf is also sacred to Apollo, meaning that the leaves found on the woman's head may have also been symbols for Apollo.

Archaeological findings in nearby Mavropigi show the remains of a sanctuary for Apollo.

Further archaeological study is necessary The woman's remains have been transported to the Archaeological Museum of Aiani, where they will be studied further. The museum's laboratory is expected to be able to confirm her age and gender, as well as determine her cause of death using anthropological information.

The main goal of the Ephorate of Antiquities of Kozani is to create a life-size reproduction of the bed that was found as part of the burial This would be exhibited at the Archaeological Museum of Aiani for the public to view.

Please visit the site: https://greekreporter.com/2022/05/08/stunning-archaeological-finds-greece-dig-reveal-ties-to-apollo/ [Go there for pix]

FOUR AMAZING ASTRONOMICAL DISCOVERIES FROM ANCIENT GREECE, BY GARETH DORRIAN AND IAN WHITTAKER

Ancient Greek scientists and mathematicians made some of the most significant and surprising astronomical discoveries centuries ago.

"The Histories," by Herodotus, who lived from 484 BC to 425 BC offers a remarkable window into the world as it was known to the ancient Greeks in the mid-fifth century BC.

Almost as interesting as what these people knew, however, is what they did not know. This sets the baseline for the stunning advances in their understanding over the next few centuries—simply by relying on what they could observe with their own eyes.

Herodotus claimed that Africa was surrounded almost entirely by the sea. But how did he know this about such a gigantic land mass? The historian recounts the story of Phoenician sailors who were dispatched by King Necho II of Egypt (about 600 BC), to sail around continental Africa, in a clockwise fashion, starting in the Red Sea.

This story, if true, not only recounts the earliest known circumnavigation of Africa, but also contains an interesting insight into the astronomical knowledge of the ancient world.

The voyage, of course, took several years. Having rounded the southern tip of Africa, and following a westerly course, the sailors observed the sun as being on their right hand side, above the northern horizon.

This observation simply did not make sense at the time because they didn't yet know that the Earth has a spherical shape and that there is a southern hemisphere.

1. The planets orbit the Sun

A few centuries later, there had already been a great deal of progress in cosmology. Aristarchus of Samos (310BC to 230BC) argued that the Sun was the "central fire" of the cosmos, and he even placed all of the then-known planets in their correct order of distance around it.

This is the earliest-known heliocentric theory of the solar system.

Unfortunately, the original text in which he makes this argument has been lost to history, so we cannot know for certain just how the brilliant thinker worked it out.

Aristarchus knew the Sun was much bigger than the Earth or the Moon, and he may have surmised that it should therefore have the central position in the solar system.

Nevertheless it is a jaw-dropping finding, especially when you consider that it wasn't rediscovered until the 16th century, by Nicolaus Copernicus, who even acknowledged Aristarchus during the development of his own work.

2. One of the greatest astronomical discoveries from ancient Greece: the size of the Moon

One of Aristarchus' books that did survive addresses the sizes and distances of the Sun and Moon. In this remarkable treatise, Aristarchus laid out the earliest known attempted calculations of the relative sizes and distances to the Sun and Moon.

It had long been observed that the Sun and Moon appeared to be of the same apparent size in the sky, and that the Sun was further away. They realized this from solar eclipses, caused by the Moon passing in front of the Sun at a certain distance from Earth.

Also, at the instant when the Moon is at first or third quarter, Aristarchus reasoned that the Sun, Earth, and Moon would form a right-angled triangle.

As Pythagoras had determined how the lengths of triangle's sides were related a couple of centuries earlier, Aristarchus used the triangle to estimate that the distance to the Sun was between 18 and 20 times the distance to the Moon.

He also estimated that the size of the Moon was approximately one-third that of Earth, based on careful timing of lunar eclipses.

While his estimated distance to the Sun was too low (the actual ratio is 390), on account of the lack of telescopic precision available at the time, the value for the ratio of the size of the Earth to the Moon is surprisingly accurate (the Moon has a diameter 0.27 times that of Earth).

Today, we know the size and distance to the moon accurately by a variety of means, including precise telescopes, radar observations, and laser reflectors left on the surface by Apollo astronauts.

3. The Earth's circumference

Eratosthenes (276BC to 195 BC) was chief librarian at the Great Library of Alexandria, and a keen experimentalist. Among his many achievements was the earliest known calculation of the circumference of the Earth.

Pythagoras is generally regarded as the earliest proponent of a spherical Earth although apparently not its size. Eratosthenes' famous and yet simple method relied on measuring the different lengths of shadows cast by poles stuck vertically into the ground at midday on the summer solstice at different latitudes.

The Sun is sufficiently far away that, wherever its rays arrive at Earth, they are effectively parallel, as had previously been shown by Aristarchus. So the difference in the shadows demonstrated how much the Earth's surface curved.

Eratosthenes used this to estimate the Earth's circumference as approximately 40,000km. This is within a couple of percent of the actual value, as established by modern geodesy (the science of the Earth's shape).

Later, another scientist called Posidonius (135BC to 51BC) used a slightly different method and arrived at almost exactly the same answer. Posidonius lived on the island of Rhodes for much of his life.
There, he observed the bright star Canopus would lie very close to the horizon. However, when in Alexandria in Egypt, he noted Canopus would ascend to some 7.5 degrees above the horizon.

Given that 7.5 degrees is 1/48th of a circle, he multiplied the distance from Rhodes to Alexandria by 48 and arrived at a value also of approximately 40,000km.

4. The first astronomical calculator from ancient Greece The world's oldest surviving mechanical calculator is the Antikythera Mechanism

The amazing device was discovered in an ancient shipwreck off the Greek island of Antikythera in 1900.

The device is now fragmented by the passage of time, but when intact, it would have appeared as a box housing dozens of finely machined bronze gear wheels.

When manually rotated by a handle, the gears span dials on the exterior to show the phases of the Moon, timing of lunar eclipses, and positions of the five planets then known (Mercury, Venus, Mars, Jupiter, and Saturn) at different times of the year.

This even accounted for their retrograde motion—an illusionary change in the movement of planets through the sky.

We don't know who built it, but it dates to some time between the 3rd and 1st centuries BC and may even have been the work of Archimedes.

Gearing technology with the sophistication of the Antikythera mechanism was not seen again for a thousand years.

Sadly, the vast majority of these works were lost to history and our scientific awakening was delayed by millennia.

As a tool for introducing scientific measurement, the techniques of Eratosthenes are relatively easy to perform and require no special equipment, allowing those just beginning their interest in science to understand by doing, experimenting, and, ultimately, following in the footsteps of some of the first scientists.

One can but speculate where our civilization would be now if this ancient science had continued unabated.

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Please visit the site: https://greekreporter.com/2022/05/07/four-amazing-astronomical-discoveries-from-ancient-greece/

A NEW ORIGIN STORY FOR KING TUT'S EXTRATERRESTRIAL DAGGER, BY MARISA SLOAN

The weapon, forged from an iron meteorite, may have come from beyond ancient Egypt's borders.

When archaeologists peered inside Tutankhamun's tomb for the first time in the early 1920s, they found antechambers packed to the brim with thousands of artifacts: statues, furniture, jewelry, clothes, chariots, paintings. Among these possessions was an iron dagger — just over one foot in length and crafted from an iron meteorite — that would puzzle researchers for nearly a century.

It's easy to see why the researchers might be confused. The Iron Age, a period when people across Europe, Asia and Africa began making tools from iron ore through a process called smelting, is generally thought to have begun no earlier than 1200 B.C. — some 150 years after King Tut's death. If smelting was off the table, archaeologists wondered, how might the dagger have been made?

Takafumi Matsui, director of the Chiba Institute of Technology's Planetary Exploration Research Center in Japan, and his colleagues visited the weapon at the Egyptian Museum of Cairo in 2020 to find out. "A number of manufacturing processes are possible," they wrote in a recent study in Meteoritics & Planetary Science, "such as cold working, in which an iron meteorite is cut and polished; hot working, involving high-temperature melting and subsequent casting; or low-temperature heating and subsequent forging."

But their chemical analyses of the dagger's blade and gold hilt, combined with historical knowledge of ancient manufacturing techniques, now cast doubt on whether it was crafted in ancient Egypt at all. Instead, Matsui and his colleagues propose that the king of the nearby Mitanni empire gave the dagger to King Tut's grandfather as a wedding gift.

Lines of Evidence

Although some prehistoric iron artifacts are known to have been forged from meteorites, the cosmic source of the iron in the late pharaoh's dagger wasn't confirmed until a team of Italian researchers analyzed its elemental composition for the first time in 2016. While Earth-based iron contains about 4 percent nickel, the team found that the blade's higher nickel concentration (and trace amounts of cobalt) was instead consistent with space rock.

Four years later, aided by the Grand Egyptian Museum's conservation center, Matsui and his colleagues used a portable scanning X-ray fluorescence instrument to map out the elements on the surface of the blade; not just iron, nickel and cobalt, but also chlorine and manganese, among others. They found that the bumpy, black spots along its edges and center, for example, likely originated from troilite — a mineral commonly found in iron meteorites — but had lost a large amount of sulfur after being heated around 1,300 degrees Fahrenheit.

And just as informative as the abundance of these elements is their arrangement. “In some places, discontinuous banded arrangements with cubic symmetry and bandwidth of about 1 [millimeter] are observed,”
the authors wrote. This three-dimensional, cross-hatched texture, known as a Widmanstätten pattern, occurs in some meteorites if their iron-nickel mixtures separate into bands upon cooling. The pattern is only visible after the rock has been cut, polished and acid-etched, but its near-hidden and lasting presence on King Tut’s dagger reveals that the blade was never heated above 1700 °F.

Through the process of elimination, the researchers threw both cold working and hot working techniques out the window: "These lines of evidence lead to a conclusion that the Tutankhamen iron blade was made by low-temperature heat forging," Matsui and his colleagues write. But they had yet to solve the mystery of who made it.

A Wedding Gift

The team turned to the dagger’s gold hilt, decorated with intricate patterns of fine gold grains and stones of lapis lazuli, carnelian and malachite. During King Tut’s reign, ancient Egyptians commonly used organic glue to attach gold powders and gold leaf on wood. This is true of the gilded wood samples found in the pharaoh's tomb. But high amounts of calcium detected on his dagger’s hilt suggest that its artisans used a stronger adhesive instead: lime plaster, composed of sand, water and calcium oxide (lime).

This was somewhat surprising. After all, much like smelting, the use of lime plaster in ancient Egypt only began to take off after King Tut's death, during the Ptolemaic period. Both iron processing technology and lime plaster, however, were already prevalent in the northerly Mitanni and Hittite regions. “The [calcium]-bearing, sulfur-lacking plaster used on the gold hilt may support the idea that the Tutankhamen meteoritic iron dagger was brought as a gift from Mitanni, as recorded in the Amarna letters,” conclude the researchers.

The 3,400-year-old Amarna letters, hundreds of clay tablets considered to be the oldest documents of diplomacy ever found, consist of correspondences written between Egyptian pharaohs and nearby kings.
One such letter mentions a list of gifts made of iron — including an iron dagger with “an inlay of genuine lapis lazuli” and a gold sheath — that the king of Mitanni sent to King Tut’s grandfather, Amenhotep III, when the pharaoh married a princess from the region.

Although it would seem the various puzzle pieces have fallen perfectly into place, it will be the job of future studies to confirm whether the family heirloom mentioned in the Amarna letter is indeed the very dagger currently sitting in the Museum of Cairo. Until then, we can all agree on one thing: The bar for wedding gifts has certainly been raised.

Please visit the site: https://www.discovermagazine.com/the-sciences/a-new-origin-story-for-king-tuts-extraterrestrial-dagger

IKLAINA: THE FIRST CITY-STATE OF ANCIENT GREECE AND EUROPE, BY PHILIP CHRYSOPOULOS

The little-known site, Iklaina, on the Peloponnesian peninsula was a major center of Mycenaean culture; findings now indicate that it was the very first city-state in ancient Greece.

Iklaina marks the transition from a world without organized states to a world where the state is the dominant political institution. In the city-state located in todays' Messenia prefecture, archaeologists have discovered the oldest written text in Europe on a tablet made of clay.

Situated at a strategic location overlooking the Ionian Sea, Iklaina appears to have been an important capital city of the Late Bronze Age (ca. 1600-1100 BC) that became famous for such mythical sagas as the Trojan War.

Iklaina may be first city state in ancient Greece An open-air pagan sanctuary, an early Mycenaean palace, giant terrace walls, murals, an advanced drainage system, and a clay tablet from between 1450 and 1350 BC featuring an early example of Linear B writing have reinforced the view that this ancient Greek town was one of the earliest complex states in ancient Greece by hundreds of years, if not the first.

The massive buildings that have been unearthed apparently served as administrative centers, and the clay tablet is the earliest-known governmental record in Europe.

Iklaina apparently had a centralized political administration, a complex organized society, and an advanced economic organization.

Until very recently, the earliest complex state in ancient Greece had been thought to have arisen around 3,100 years ago; however, the evidence from Iklaina indicates that the complex states were taking form as long as 3,400 years ago.

Archaeologists and historians believe that Iklaina was ultimately vanquished by its great rival, the famed Mycenae.

It was destroyed by enemy attack at the same time that the Palace of Nestor expanded, most likely indicating that it was the ruler of the Palace of Nestor who took over Iklaina.

Mycenaean civilization

The ancient Mycenaeans ruled mainland Greece and the Aegean Sea from 1,600 BC to 1,200 BC.

Mycenae, the kingdom of the mythical king Agamemnon, is the most important and richest palatial center of the Late Bronze Age in Greece.

Myths related to its history, from the Homeric epics to the great tragedies of the Classical period, have inspired poets and writers over many centuries.

For several centuries, mainland Greeks appeared to imitate the Minoans. Pylos, an early Mycenaean power center, had buildings that resembled the large houses with ashlar masonry found at Knossos, Crete.

The mansions had painted walls, a type of artistry pioneered by the Minoans.

For a certain time period, the Mycenaeans imported Minoan luxury goods and incorporated Minoan symbols, such as the bull, into their own art.

Wealthy Mycenaeans were buried with Minoan luxury goods while other graves included locally produced Mycenaean objects, such as painted pottery, that were copies of Minoan originals.

The Mycenaeans also adapted the Minoan script, called Linear A, for their own use. This adapted script is now called Linear B.

Please visit the site: https://greekreporter.com/2022/05/12/iklaina-the-first-city-state-of-ancient-greece-and-europe/

THE ORIGINS OF THE PLANETARY WEEK, BY ILARIA BULTRIGHINI

As part of my previous role as member of the ERC project Calendars in Antiquity and the Middle Ages: Standardisation and Fixation (University College London; PI: Prof Sacha Stern; 2013-2018), I investigated the origins and development of the seven-day week in the Roman Empire. Despite its interest and obvious relevance to the present, the early history of the seven-day week had not been systematically studied before. The only comprehensive study of the seven-day week in antiquity up to then was a book published by Colson in 1926. Yet, the wealth of epigraphic and documentary evidence that has subsequently been discovered made Colson's work outdated. As part of my research, I searched for, collected, and analysed references to individual days of the week and to the seven-day week as a whole across the entire corpus of epigraphic, documentary, and literary sources in Greek and Latin from throughout the Roman Empire. This relatively large body of evidence covers the whole Roman Imperial period and Late Antiquity, until approximately the end of the sixth century CE. The main output of this research is a substantial book chapter I wrote jointly with Sacha Stern, which also includes an examination of the early history of the Jewish Sabbath week based on his detailed analysis of relevant Hebrew and Aramaic sources.

The week as known today is the result of the merging of two different cultural traditions: the Jewish, biblical week and the planetary week of astrological origin. Although the idea of dividing the days of the year into cycles of seven days and of naming each of these days reaches far back into biblical antiquity, the seven-day week as a structure of time reckoning was in fact devised in the early Roman Imperial period. In the course of the first two centuries CE the Jewish and astrological traditions gradually converged to create a single, standardised seven-day week. The Christianisation of the week in the fourth century led to its wide diffusion in the Roman Empire, but its mixed cultural origins—Judeo-Christian and astrological—persisted up to Late Antiquity and the early Middle Ages.

In this blog post, I focus on one of these two traditions, the astrological one. The planetary week makes its first appearance in Italy in the second half of the first century BCE. At that time and throughout the first century CE the evidence for it remains limited to the city of Rome and other parts of central-southern Italy. It is only in the course of the second century CE that the planetary week is attested outside of the Italian peninsula, including in the eastern Mediterranean. Still, the evidence suggests that even when the planetary week did reach the East, it remained a considerably more limited phenomenon compared to the western part of the Roman Empire.

On this basis, Sacha Stern and I assume that the planetary week is a ‚Roman' product. This conclusion differs drastically from earlier scholarship, in which the general consensus is that the planetary week originated from Babylonian, Egyptian, or Hellenistic astrology. Colson did not attempt to pinpoint any specific tradition for its invention, but still presumed a 'spread from east to west'. Nevertheless, there is in fact no evidence of a planetary week in Egypt, Mesopotamia, the Hellenistic world, or anywhere further east, before the second century CE. The evidence suggests, therefore, that the tradition could only have originated in Italy.

The sequence of the planets within the week is as follows: day of Kronos/Saturn (Saturday), day of Helios/Sol (Sunday), day of Selene/Luna (Monday), day of Ares/Mars (Tuesday), day of Hermes/Mercury (Wednesday), day of Zeus/Jupiter (Thursday), and day of Aphrodite/Venus (Friday). This differs from the order of the planets in the Hellenistic astronomical and cosmological traditions, in which the planets were arranged according to their distance from the earth and/or the length of their revolution, originally as Saturn, Jupiter, Mars, Mercury, Venus, Sun, Moon, and in later, Roman sources as Saturn, Jupiter, Mars, Sun, Venus, Mercury, Moon—the so-called Chaldean order.

The earliest mention of the generally accepted explanation for the order of the planets within the week in the literary sources is by the Alexandrian astrologer Vettius Valens (mid-2nd century CE), followed a half-century later by the historian Cassius Dio. The theory is based on the role of the seven planets as rulers of hours. The week was mapped out in 168 hours; the seven planets (in the so-called Chaldean order) were assigned serially to the 24 hours of the day, and then to the 168 hours of the week, the planet assigned to the first hour of each day becoming the ruler of that particular day. Therefore each planet was assigned both to specific hours of the day and to a whole day. The resulting sequence runs from the day of Saturn (Saturday) to the day of Venus (Friday). It is thus clear that the planetary week was not founded on any astronomical principle or system; the correspondence of days of the week with the seven celestial bodies is indeed abstract, artificial.

In fact, this concept is attested at least a half-century before Vettius Valens in a fragmentary inscription from the area of Potenza Picena (ancient Potentia) in central Italy, near the Adriatic coast.

The inscription has been dated mainly on the basis of letterforms to around 100 CE or possibly earlier, even as early as the Augustan period (27 BCE – 14 CE). The fragment preserves part of a repeating list of planets in the cosmological sequence; each planet is given a number and a letter (B, N, or C) designating it as good (bona), harmful (noxia), or indifferent (communis). In other words, this inscription presents the sequence of planetary hours as described by Vettius Valens and thus suggests that such a scheme was most likely of Italian origin. This would tie in well with the Italian origins of the planetary week Sacha Stern and I are arguing for.

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Further reading:

Bultrighini, I. and Stern, S. (2021) „The seven-day week in the Roman Empire: origins, standardization, and diffusion“. In S. Stern (ed.), Calendars in the Making: The Origins of Calendars from the Roman Empire to the Later Middle Ages (Time, Astronomy, and Calendars: Texts and Studies, 10). Leiden: Brill, 10–79.

Colson, F.H. (1926) The Week: An Essay on the Origin and Development of the Seven-Day Cycle. Cambridge: Cambridge University Press.

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Please visit the site: https://blogs.fu-berlin.de/zodiacblog/2022/05/02/the-origins-of-the-planetary-week/

ANCIENT TRASH A TREASURE IN MAPPING FIRST STEPS TO GLOBALIZATION ON INCENSE ROUTE, BY AMANDA BORSCHEL-DAN

Sifting through refuse at roadside inns from 300 BCE to 300 CE uncovers 'social archives' that help explain the social and economic organization of the Nabatean caravan trade

A new study of trash heaps at rest stops along the ancient Incense Route in the Negev Desert shows it was a two-way street for trade.

Contrary to previously held theories, the intrepid camel merchants carried goods both to and from the region in what the researchers call "a process of pre-modern globalization."

"We were trained to think that the road functioned mainly in a one-way direction. We found that a significant amount of the finds were also carried by traders that carried loads of organic material from the fertile land," University of Haifa Prof. Guy Bar-Oz told The Times of Israel.

"The most surprising finds were materials that originated from the west, i.e., the Mediterranean Sea and the Nile," he said. It had hitherto been understood that trade had run from the Arabian Peninsula, i.e., east to west.

In the recently released study, "Caravanserai middens on desert roads: a new perspective on the Nabataean–Roman trade network across the Negev," published in the bi-monthly peer-reviewed journal of world archaeology Antiquity, the middens, or trash heaps, of three small Nabataean–Roman desert caravanserai along the Incense Route in the Negev were examined to assess the material culture of the nomadic traders and where it came from.

The Incense Route was at its height during the Nabataean and Roman periods (roughly 300 BCE–300 CE) and linked the Arabian Peninsula and Red Sea to the Mediterranean Sea. It was the main thoroughfare for spice and perfume transport and is dotted by settlements and smaller roadside inns, or caravanserai.

"Our aim here is to demonstrate the potential of the middens left by caravan traders as social archives, and as a complementary source for understanding the social and economic organization of the caravan trade," write the authors, including Bar-Oz, Roy Galili, Daniel Fuks, Tali Erickson-Gini, Yotam Tepper, Nofar Shamir and Gideon Avni.

"I think that it is among the first times that we actually touch some of the materials that were moving along the incense roads; many were known before only from historical sources. The archaeological material provides us with new ways to measure and quantify the magnitude and type of trade that was moving along the road," said Bar-Oz.

Discovered organic materials include fish and shellfish that came from aquatic sources such as the Nile River, the Red Sea and the Mediterranean, and fruits, including grapes or raisins, olives, pomegranates and peaches, Bar-Oz said. At the same time, the archaeologists found potsherds for ceramics that originated in Petra in the east.

"Two millennia ago, the trade of perfumed oils and incense resins was extremely important in societies around the Mediterranean basin and prompted long-distance, intercultural contacts between places as far away as Southeast Asia, India, Yemen, Alexandria and Rome. This is what makes working in sites along the Incense Road so very interesting," the Israel Antiquities Authority's Erickson-Gini told The Times of Israel.

According to the 1st century CE Roman philosopher Pliny the Elder, crossing the section of the Incense Route that spanned from Yemen to Gaza took some 62 days. Within this segment, there are several large settlements and a multitude of caravanserais. Three from the Negev section of the route are included in the study: Orhan-Mor, Sha'ar-Ramon and Neqarot Fort.

Trolling through trash in the smaller road stations, said Bar-Oz, teaches about the magnitude, diversity and type of material that was consumed along the route. Or, what people ate at a motel along Route 66 versus in the big city of Chicago.

"This tells us about the 'economic belt' that supported the road. The type of material tells us also their origins, where they were coming from and how they were packed and transported. It also tells us about the cooking and consumption preferences of food that was served along the way," said Bar-Oz.

Although several sites along the trade route have previously been excavated, "this is the first time that the middens at sites along the Incense Road have been investigated so extensively, using up-to-date technology and scientific analyses such as radiocarbon dating," Erickson-Gini told The Times of Israel.

"The new project uses very careful and exact collection methods and great attention is paid to very small details such as the shells, animal bones and other organic material. A great deal of information can now be achieved through very small finds such as these," she said.
Erickson-Gini noted that the arid Negev uniquely preserves organic material, meaning that the finds are of "particular importance in quality and quantity compared to other regions."

The current study was a pilot project for future research. In follow-up research, Bar-Oz plans to search for trash heaps in more distant dumps along the Incense Route.

"We hope that in the future we will be able to establish a multi-country research initiative on the organic commodities of the ancient Incense Trade Route (ITR) that stretched between Oman, Arabia, and the Eastern Mediterranean, forming the focus of international commercial trade," said Bar-Oz.

"This ambitious joint initiative among research institutes will build on lessons from the past to impact the future of our societies with the goal of working toward more sustainable arid-land economies," said Bar-Oz.

Bar-Oz expects that the project will create opportunities for developing tourism, science and education.

"Only a part of the Incense Road runs through Israel. The most intensely investigated part, and the shortest part, runs through southern Israel," said Erickson-Gini. "Hopefully, in the future it will be possible to join forces with researchers working in neighboring countries."

Please visit the site: https://www.timesofisrael.com/ancient-trash-a-treasure-in-mapping-first-steps-to-globalization-on-incense-route/ [Go there for pix]

IS AN UNKNOWN, EXTRAORDINARILY ANCIENT CIVILISATION BURIED UNDER EASTERN TURKEY? BY SEAN THOMAS

I am staring at about a dozen, stiff, eight-foot high, orange-red penises, carved from living bedrock, and semi-enclosed in an open chamber. A strange carved head (of a man, a demon, a priest, a God?), also hewn from the living rock, gazes at the phallic totems – like a primitivist gargoyle. The expression of the stone head is doleful, to the point of grimacing, as if he, or she, or it, disapproves of all this: of everything being stripped naked under the heavens, and revealed to the world for the first time in 130 centuries.

Yes, 130 centuries. Because these penises, this peculiar chamber, this entire perplexing place, known as Karahan Tepe (pronounced Kah-rah-hann Tepp-ay), which is now emerging from the dusty Plains of Harran, in eastern Turkey, is astoundingly ancient. Put it another way: it is estimated to be 11-13,000 years old.

This number is so large it is hard to take in. For comparison the Great Pyramid at Giza is 4,500 years old. Stonehenge is 5,000 years old. The Cairn de Barnenez tomb-complex in Brittany, perhaps the oldest standing structure in Europe, could be up to 7,000 years old.

The oldest megalithic ritual monument in the world (until the Turkish discoveries) was always thought to be Ggantija, in Malta. That's maybe 5,500 years old. So Karahan Tepe, and its penis chamber, and everything that inexplicably surrounds the chamber – shrines, cells, altars, megaliths, audience halls et al – is vastly older than anything comparable, and plumbs quite unimaginable depths of time, back before agriculture, probably back before normal pottery, right back to a time when we once thought human 'civilisation' was simply impossible.

After all, hunter gatherers – cavemen with flint arrowheads – without regular supplies of grain, without the regular meat and milk of domesticated animals, do not build temple-towns with water systems.

Do they?

Virtually all that we can now see of Karahan Tepe has been skillfully unearthed the last two years, with remarkable ease (for reasons which we will come back to later). And although there is much more to summon from the grave, what it is already teaching us is mind stretching.

Taken together with its age, complexity, sophistication, and its deep, resonant mysteriousness, and its many sister sites now being unearthed across the Harran Plains – collectively known as the Tas Tepeler, or the 'stone hills' – these carved, ochre-red rocks, so silent, brooding, and watchful in the hard whirring breezes of the semi-desert, constitute what might just be the greatest archaeological revelation in the history of humankind.

The unveiling of Karahan Tepe, and nearly all the Tas Tepeler, in the last two years, is not without precedent. As I take my urgent photos of the ominously louring head, Necmi Karul touches my shoulder, and gestures behind, across the sun-burnt and undulant plains.

Necmi, of Istanbul University, is the chief archaeologist in charge of all the local digs – all the Tas Tepeler. He has invited me here to see the latest findings in this region, because I was one of the first western journalists to come here many years ago and write about the origin of the Tas Tepeler. In fact, under the pen-name Tom Knox, I wrote an excitable thriller about the first of the 'stone hills' – a novel called The Genesis Secret, which was translated into quite a few languages – including Turkish. That site, which I visited 16 years back, was Gobekli Tepe.

Necmi points into the distance, now hazed with heat.

'Sean. You see that valley, with the roads, and white buildings?'

I can maybe make out a white-ish dot, in one of the pale, greeny-yellow valleys, which stretch endlessly into the shimmering blur.

'That,' Necmi says, 'Is Gobekli Tepe. 46 kilometres away. It has changed since since you were last here!'

These carved, ochre-red rocks constitute what might just be the greatest archaeological revelation in the history of humankind

And so, to Gobekli Tepe. The 'hill of the navel'. Gobekli is pivotally important. Because Karahan Tepe, and the Tas Tepeler, and what they might mean today, cannot be understood without the primary context of Gobekli Tepe. And to comprehend that we must double back in time, at least a few decades.

The modern story of Gobekli Tepe begins in 1994, when a Kurdish shepherd followed his flock over the lonely, infertile hillsides, passing a single mulberry tree, which the locals regarded as 'sacred'.

The bells hanging on his sheep tinkled in the stillness. Then he spotted something. Crouching down, he brushed away the dust, and exposed a large, oblong stone. The man looked left and right: there were similar stone outcrops, peeping from the sands.

Calling his dog to heel, the shepherd informed someone of his finds when he got back to the village. Maybe the stones were important. He was not wrong. The solitary Kurdish man, on that summer's day in 1994, had made an irreversibly profound discovery – which would eventually lead to the penis pillars of Karahan Tepe, and an archaeological anomaly which challenges, time and again, everything we know of human prehistory.

A few weeks after that encounter by the mulberry tree, news of the shepherd's find reached museum curators in the ancient city of Sanliurfa, 13km south-west of the stones. They got in touch with the German Archaeological Institute in Istanbul. And in late 1994 the German archaeologist Klaus Schmidt came to the site of Gobekli Tepe to begin his slow, diligent excavations of its multiple, peculiar, enormous T-stones, which are

generally arranged in circles – like the standing stones of Avebury or Stonehenge. Unlike European standing stones, however, the older Turkish megaliths are often intricately carved: with images of local fauna. Sometimes the stones depict cranes, boars, or wildfowl: creatures of the hunt. There are also plenty of leopards, foxes, and vultures. Occasionally these animals are depicted next to human heads.

Notably lacking were detailed human representations, except for a few coarse or eerie figurines, and the T-stones themselves, which seem to be stylised invocations of men, their arms 'angled' to protect the groin. The obsession with the penis is obvious – more so, now we have the benefit of hindsight provided by Karahan Tepe and the other sites. Very few representations of women have emerged from the Tas Tepeler so far; there is one obscene caricature of a woman perhaps giving birth.

Whatever inspired these temple-towns it was a not a benign matriarchal culture. Quite the opposite, maybe.

The apparent date of Gobekli Tepe – first erected in 10,000 BC, if not earlier – caused a deal of skepticism. But over time archaeological experts began to accept the significance. Ian Hodden, of Stanford University, declared that: 'Gobekli Tepe changes everything.' David Lewis-Williams, the revered professor of archaeology at Witwatersrand University in Johannesburg, said, at the time: 'Gobekli Tepe is the most important archaeological site in the world.'

And yet, in the nineties and early noughties Gobekli Tepe dodged the limelight of general, public attention. It's hard to know why. Too remote? Too hard to pronounce? Too eccentric to fit with established theories of prehistory? Whatever the reason, when I flew out on a whim in 2006 (inspired by two brisk minutes of footage on a TV show), even the locals in the nearby big city, Sanliurfa, had no conception of what was out there, in the barrens.

I remember asking a cab driver, the day I arrived, to take me to Gobekli Tepe. He'd never heard of it. Not a clue. Today that feels like asking someone in Paris if they've heard of the Louvre and getting a Non. The driver had to consult several taxi-driving friends until one grasped where I wanted to go – 'that German dig, out of town, by the Arab villages' – and so the driver rattled me out of Sanliurfa and into the dust until we crested one final remote hill and came upon a scene out of the opening titles of the Exorcist: archaeologists toiling away, unnoticed by the world, but furiously intent on their world-changing revelations.

For an hour Klaus (who sadly died in 2014) generously escorted me around the site. I took photos of him and the stones and the workers, this was not a hassle as there were literally no other tourists. A couple of the photos I snatched, that hot afternoon, went on to become mildly iconic, such as my photo of the shepherd who found the site, or Klaus crouching next to one of the most finely-carved T-stones. They were prized simply because no one else had bothered to take them.

After the tour, Klaus and I retired from the heat to his tent, where, over dainty tulip glasses, of sweet black Turkish tea, Klaus explained the significance of the site.

As he put it, 'Gobekli Tepe upends our view of human history. We always thought that agriculture came first, then civilisation: farming, pottery, social hierarchies. But here it is reversed, it seems the ritual centre came first, then when enough hunter gathering people collected to worship – or so I believe – they realised they had to feed people. Which means farming.' He waved at the surrounding hills, 'It is no coincidence that in these same hills in the Fertile Crescent men and women first domesticated the local wild einkorn grass, becoming wheat, and they also first domesticated pigs, cows and sheep. This is the place where Homo sapiens went from plucking the fruit from the tree, to toiling and sowing the ground.'

Klaus had cued me up. People were already speculating that – if you see the Garden of Eden mythos as an allegory of the Neolithic Revolution: i.e. our fall from the relative ease of hunter-gathering to the relative hardships of farming (and life did get harder when we first started farming, as we worked longer hours, and caught diseases from domesticated animals), then Gobekli Tepe and its environs is probably the place where this happened. Klaus Schmidt did not demur.

He said to me, quite deliberately: 'I believe Gobekli Tepe is a temple in Eden'. It's a quote I reused, to some controversy, because people took Klaus literally. But he did not mean it literally. He meant it allegorically.

Klaus told me more astonishing things.

'We have found no homes, no human remains. Where is everyone, did they gather for festivals, then disperse? As for their religion, I have no real idea, perhaps Gobekli Tepe was a place of excarnation, for exposing the bones of the dead to be consumed by vultures, so the bodies have all gone. But I do definitely know this: some time in 8000 BC the creators of Gobekli Tepe buried their great structures under tons of rubble. They entombed it. We can speculate why. Did they feel guilt? Did they need to propitiate an angry God? Or just want to hide it?' Klaus was also fairly sure on one other thing. 'Gobekli Tepe is unique.'

I left Gobekli Tepe as bewildered as I was excited. I wrote some articles, and then my thriller, and alongside me, many other writers, academics and film-makers, made the sometimes dangerous pilgrimage to this sumptuously puzzling place near the troubled Turkey-Syria border, and slowly its fame grew.

Back here and now, in 2022, Necmi, myself and Aydan Aslan – the director for Sanliurfa Culture and Tourism – jump in a car at Karahan Tepe (Necmi promises me we shall return) and we go see Gobekli Tepe as it is today.

Necmi is right: all is changed. These days Gobekli Tepe is not just a famous archaeological site, it is a Unesco World-Heritage-listed tourist honeypot which can generate a million visitors a year. It is all enclosed by a futuristic hi-tech steel-and-plastic marquee (no casual wandering around taking photos of the stones and workers).

Where Klaus and I once sipped tea in a flapping tent, alone, there is now a big visitor centre – where I bump into the grandson of the shepherd who first found Gobekli. I spy the stone where I took the photo of a crouching Klaus, but I see it 20 metres away. That's as close as I can get.

After lunch in Sanliurfa – with its Gobekli Tepe themed restaurants, and its Gobekli Tepe T-stone fridge-magnet souvenir shops - Necmi shows me the gleaming museum built to house the greatest finds from the region: including a 11,000 year old statue, retrieved from beneath the centre of Sanliurfa itself, and perhaps the world's oldest life size carved human figure. I recall first seeing this poignant effigy under the stairs next to a fire extinguisher in Sanliurfa's then titchy, neglected municipal museum. Back in 2006 I wrote about 'Urfa man' and how he should be vastly better known, not hidden away in some obscure room in a museum visited by three people a year.

Urfa man now has a silent hall of his own in one of Turkey's greatest archaeological galleries. More importantly, we can now see that Urfa man has the same body stance of the T-shaped man-pillars at Gobekli (and in many of the Tas Tepeler): his arms are in front of him, protecting his penis. His obsidian eyes still stare wistfully at the observer, as lustrous as they were 11,000 years ago.

As we stroll about the museum, Necmi points at more carvings, more leopards, vultures, penises. From several sites archaeologists have found statues of leopards apparently mounting, riding or even 'raping' humans, paws over the human eyes. Meanwhile, Aslan tells me how archaeologists at Gobekli have also, more recently, found tantalising evidence of alcohol: huge troughs with the chemical residue of fermentation, indicating mighty ritual feasts, maybe.

I sense we are getting closer to a momentous new interpretation of Gobekli Tepe and the Tas Tepeler. And it is very different from that perspective Klaus Schmidt gave me, in 2006 (and this is no criticism, of course: he could not have known what was to come).

Necmi – as good as promised – whisks me back to Karahan Tepe, and to some of the other Tas Tepeler, so we can jigsaw together this epochal puzzle. As we speed around the arid slopes he explains how scientists at Karahan Tepe, as well as Gobekli Tepe, have now found evidence of homes.

These places, the Tas Tepeler, were not isolated temples where hunter gatherers came, a few times a year, to worship at their standing stones, before returning to the plains for the life of the chase. The builders lived here. They ate their roasted game here. They slept here. And they used, it seems, a primitive but poetic form of pottery, shaped from polished stone. They possibly did elaborate manhood rituals in the Karahan Tepe penis chamber, which was probably half flooded with liquids. And maybe they celebrated afterwards with boozy feasts. Yet still we have no sign at all of contemporary agriculture; they were, it still appears, hunter gatherers, but of unnerving sophistication.

Another unnerving oddity is the curious number of carvings which show people with six fingers. Is this symbolic, or an actual deformity?

Perhaps the mark of a strange tribe? Again, there are more questions than answers. Crucially, however, we do now have tentative hints as to the actual religion of these people.

In Gobekli Tepe several skulls have been recovered. They are deliberately defleshed, and carefully pierced with holes so they could – supposedly – be hung and displayed.

Skull cults are not unknown in ancient Anatolia. If there was such a cult in the Tas Tepeler it might explain the graven vultures pictured 'playing' with human heads. As to how the skulls were obtained, they might have come from conflict (though there is no evidence of this yet), it is quite possible the skulls were obtained via human sacrifice. At a nearby, slightly younger site, the Skull Building of Cayonu, we know of altars drenched with human blood, probably from gory sacrifice.

Necmi has one more point to make about Karahan Tepe, as we tour the penis chamber and its anterooms. Karahan Tepe is stupefyingly big. 'So far,' he says, 'We have dug up maybe 1 per cent of the site' – and it is already impressive. I ask him how many pillars – T stones – might be buried here. He casually points at a rectangular rock peering above the dry grass. 'That's probably another megalith right there, waiting to be excavated. I reckon there are probably thousands more of them, all around us. We are only at the beginning. And there could be dozens more Tas Tepeler we have not yet found, spread over hundreds of kilometres.'

In one respect Klaus Schmidt has been proved absolutely right. After he first proposed that Gobekli Tepe was deliberately buried with rubble – that is to say, bizarrely entombed by its own creators – a backlash of scepticism grew, with some suggesting that the apparent backfill was merely the result of thousands of years of random erosion, rain and rivers washing debris between the megaliths, gradually hiding them. Why should any religious society bury its own cathedrals, which must have taken decades to construct?

And yet, Karahan too was definitely and purposely buried. That is the reason Necmi and his team were able to unearth the penis pillars so quickly, all they had to do was scoop away the backfill, exposing the phallic pillars, sculpted from living rock.

I have one more question for Necmi, which has been increasingly nagging at me. Did the people that build the Tas Tepeler have writing?

It is almost impossible to believe that you could construct such elaborate sites, in multiple places, over thousands of square kilometres, without careful, articulate plans, that is to say: without writing. You couldn't sing, paint and dream your way to entire inhabited towns of shrines, vaults, water channels and cultic chambers.

Necmi shrugs. He does not know. One of the glories of the Tas Tepeler is that they are so old, no one knows. Your guess is literally as good as the expert's. And yet a very good guess, right now, leads to the most remarkable answer of all, and it is this: archaeologists in southeastern Turkey are, at this moment, digging up a wild, grand, artistically coherent, implausibly strange, hitherto-unknown-to-us religious civilisation, which has been buried in Mesopotamia for ten thousand years. And it was all buried deliberately.

Jumping in the car, we head off to yet another of the Tas Tepeler, but then Necmi has an abrupt change of mind, as to our destination.

'No, let's go see Sayburc. It's a little Arab village. A few months ago some of the farmers rang us and said "Er, we think we have megaliths in our farmyard walls. Do you want to have a look?"'

Our cars pull up in a scruffy village square, scattering sheep and hens. Sure enough, there are classic Gobekli/Karahan style T-stones, being used to buttress agricultural walls, they are probably 11-13,000 years old, just like everywhere else. There are so many of them I spot one of my own, on the outskirts of the village. I point it out to Necmi. He nods, and says 'Yes, that's probably another.' But he wants to show me something else.

Pulling back a plastic curtain we step into a kind of stone barn.

Along one wall there is a spectacular stone frieze, displaying animal and human figures, carved or in relief. There are leopards, of course, and also aurochs, etched in a Cubist way to make both menacing horns equally visible (you can see an identical representation of the auroch at Gobekli Tepe, so similar one might wonder if they were carved by the same artist).

At the centre of the frieze is a small figure, in bold relief. He is clutching his penis. Next to him, being threatened by the aurochs, is another human. He has six fingers. For a long while, we stare in silence at the carvings. I realise that, a few farmers apart, we are some of the first people to see this since the end of the Ice Age.

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Sean Thomas is a bestselling author

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Please visit the site: https://www.spectator.co.uk/article/does-an-unknown-extraordinarily-ancient-civilisation-lie-buried-under-eastern-turkey- [Go there for pix]

CAESAR'S FAVOURITE HERB WAS THE VIAGRA OF ANCIENT ROME. UNTIL CLIMATE CHANGE KILLED IT OFF, BY JAMES TAPPER

Perfume, tonic – even love potion – silphium was prized by the ancient Romans, but in its success lay the seeds of its own downfall

Of all the mysteries of ancient Rome, silphium is among the most intriguing. Romans loved the herb as much as we love chocolate. They used silphium as perfume, as medicine, as an aphrodisiac and turned it into a condiment, called laser, that they poured on to almost every dish. It was so valuable that Julius Caesar stashed more than half a tonne in his treasury.

Yet it became extinct less than a century later, by the time of Nero, and for nearly 2,000 years people have puzzled over the cause.

Researchers now believe it was the first victim of man-made climate change – and warn that we should heed the lesson of silphium or risk losing plants that are the basis of many modern flavours.

Paul Pollaro and Paul Robertson of the University of New Hampshire say their research, published in Frontiers in Conservation Science, shows that urban growth and accompanying deforestation changed the local microclimate where silphium grew.

"You'll often see the narrative that it [became extinct] because of a mix of over-harvesting and also over-grazing – sheep were very fond of it and it made the meat more valuable," Pollaro said. "Our argument is that regardless of how much was harvested, if the climate was changing, silphium was going to go extinct anyway."

A coin from Cyrene shows the herb silphium on one side. Photograph: Alamy

Silphium is believed to be a species of Ferula whose modern counterparts include fennel and asafoetida, a spice often used in Indian cooking. It was a bush that grew wild only in a strip of land 30 miles wide and 125 miles long in Cyrenaica, in what is now Libya.

The ancient Greeks, who colonised the north African territory in about 630BC, tried and failed for centuries to cultivate silphium. "They talked about the frustrations of trying to transplant it – 'why doesn't this stupid silphium plant grow'," Robertson said. "It had these micro-climactic requirements and they couldn't figure it out."

Administrators in Cyrene ordered limits on how much silphium could be harvested, and fenced off areas where it grew, Pollaro said. "There's evidence that they knew it was declining and they tried to preserve the plant. But all of these tactics were ultimately irrelevant, because they had changed the microclimate."

Silphium grew along the drier, sea-facing side of Libya's Jebel al-Akhdar plateau, a fertile, forested region. After harvesting, it was exported to Rome and beyond.

"It's hard to overstate how important silphium was because the Romans in particular were absolutely obsessed with it," Pollaro said. "They minted coins in ancient Libya that had silphium on the front of the coin and the god or the emperor's face on the back."

Herodotus, Theophrastus and Pliny the Elder wrote extensively about the plant and laser. Pliny extolled it as a cure for dog bites, snake venom and haemorrhoids. It could be used as a contraceptive and the plant itself was a prized vegetable.

Children walk at Apollonia near the ancient Greek and Roman city of Cyrene, in Libya. Apollonia served as a port for the export of silphium. Photograph: Amr Dalsh/Reuters

Exports brought wealth, which meant expansion. The Greeks and the Romans, who took control of Cyrenaica about 90BC, cut down forests on the plateau to build bigger and better houses and to clear land for crops for the growing population.

Deforestation changed rainfall patterns, causing greater erosion on the hillsides where silphium grew, which Pollaro said was confirmed by excavations at Haua Fteah cave near Benghazi. Silphium's microclimate was ruined and it disappeared quite rapidly.

"In a way, silphium's value was the cause of its own decline," Pollaro said. "Without silphium, Cyrene's economy wouldn't have grown so much."

Modern climate change is having a similar impact. Asafoetida, a sap extracted from a herb that grows wild in parts of Afghanistan and neighbouring countries, is widely used in India. But its footprint is shrinking due to changes in the local climate.

Professor Monique Simmonds of Kew Gardens said coffee, carrots and rice were similarly at risk. "We rely on between 10 and 12 species for most of our food," she said. Kew was collecting seeds of wild species for its millennium seed bank and this diversity was crucial, since modern varieties might prove vulnerable to changes in climate in ways that could not be foreseen.

"If we don't do the research and collection of wild species, we won't have the reserves of genetic material in banks to do crosses in the future," Simmonds added.

Please visit the site: https://www.theguardian.com/world/2022/may/15/caesars-favourite-herb-was-the-viagra-of-ancient-rome-until-climate-change-killed-it-off

GREECE AND UK AGREE TO FORMAL TALKS OVER PARTHENON MARBLES, BY ELAINE VELIE

The UK has long refused to return the contested sculptures, which were stripped from the Parthenon in the 1800s.

The United Kingdom and Greece have agreed to formal talks regarding the return of the Parthenon marbles, UNESCO announced yesterday, May 17. The contested works have been in London's British Museum since 1816, after they were taken them from Athens and sold to the British government.

Last September, UNESCO called on the UK to "reconsider its stand and proceed to a bona fide dialogue with Greece," and on April 29, the UK's minister for arts, Stephen Parkinson, sent a request to organize a meeting with Greek Minister of Culture Lina Mendoni. She immediately accepted and according to UNESCO's report, the meeting will be arranged "in due course."

Created between 447 and 432 BCE, the Parthenon marbles depict gods and heroes, an ancient Athenian festival called the "Panathenaea," and a battle from Greek mythology. Much of the sculptural program has been destroyed, but the majority of what remains is housed at the British Museum.

The marble friezes lined the Parthenon atop the Acropolis in Athens, until the turn of the 19th century, when they were removed by the British ambassador to the Ottoman Empire, which controlled Greece at the time.

For decades, Greece has asked the UK to return the sculptures: It filed its first formal request back in 1983. Maintaining the country's firm stance, last March, Prime Minister Boris Johnson rejected the marbles' return and said they had been acquired completely legally.

A section of the Parthenon frieze at the British Museum (via Wikimedia Commons)

In a meeting last November between Johnson and Greek Prime Minister Kyriakos Mitsotakis, Johnson said that the return of the sculptures was up to the British Museum, not the UK government. This idea was reiterated at a parliament meeting in February, when Parkinson stated: "Our Prime Minister emphasized the UK's longstanding position that this is a matter for the trustees of the British Museum, who legally own the sculptures. The British Museum operates independently of the Government, meaning that decisions relating to the care and management of its collections are a matter for its trustees."

However, the upcoming talks will take place between the two countries' ministers of culture, not the Greek minister and the British Museum.

The Parthenon sculptures have continued to make headlines in recent years. In January, Italy sent part of a Parthenon sculpture back to Greece as a long-term loan, which some thought might encourage England to do the same. And last month, the British Museum refused a digital imaging technology organization's request to create 3D scans of the marbles, which would have been used to produce an exact replica that some saw as a potential solution to the countries' dispute.

A date has yet to be set for the talks.

Please visit the site: https://hyperallergic.com/733911/greece-and-uk-agree-to-formal-talks-over-parthenon-marbles/

URFA MOSAIC MUSEUM REFLECTS ANCIENT HISTORY OF THE TURKISH CITY, BY JUDITH SUDILOVSKY

Roman, Christian and unique Seleucid-period mosaics in Turkey's third-largest mosaic museum

Two thousand years ago, in their luxury villas, the Roman elite walked upon floor mosaics depicting fantastical scenes of wild animals, heroic Greek mythology and colorful geometrical designs artfully made from impossibly small stones.

In 2006, when the southeastern Turkish City of Urfa, officially known as Sanlıurfa, was undertaking a construction project next to renovation work on the Sanlıurfa Archaeological Museum, workers unearthed sections of such Roman mosaics. Work was halted and in the subsequent three years of excavations, the spectacular mosaic floors of an entire Roman villa were revealed.

The "Amazon Villa"

Rather than removing the mosaics from the villa for exhibition at the museum, the mosaics were kept in place and the Haleplibahçe Mozaik Museum was built around them, opening in 2015

It was dubbed the "Amazon villa" because of the stunning large rectangular mosaic depicting an Amazon hunting scene on the floor of the hall opposite the villa's entrance. The villa's mosaics also portray scenes from the life of Greek Trojan War hero Achilles, as well as birds, tigers and lions.

The Amazons were a race of warrior women in Greek mythology known for their riding skills, fighting ability, courage and pride.

Enduring varied religious rules

In antiquity, Urfa was known as Edessa. It is believed that as early as 190 CE, Christianity had taken root among the people of Edessa and its surroundings, and was soon made the official religion by King Abgar IX. It became a prominent center of Christian learning, however, under Roman rule many Christians were martyred. Following numerous changes of rulers, the area adopted Islam as its official religion.

Some mosaics found in the region now also on display in the museum attest to the ancient Christian history of the area, including a sixth century CE mosaic depicting a scene of an unknown martyr that was found in a nearby village of Sabuncu.

Another mosaic from the floor of an ancient tomb in the village of Yolbilen from the same period depicts the four disciples of Jesus who according to Christian tradition wrote the Gospels: Matthew, Mark, Luke and John. Both mosaics have inscriptions in the

ancient Christian Syriac language, a dialect of Aramaic that emerged in the first century CE.

THE KINGDOM of Edessa — which was ruled by the Abgarid dynasty for a short period starting in the second century BCE and up to the 3rd century CE — created its own mosaic style, which included the embedding of the date of the completion of the mosaic in Syriac, making it easy to date and place them. Many of the mosaics were discovered lining the floors in cave tombs in the city, some of which are located right across from the mosaic museum. Many others have been looted or destroyed by construction.

In 2012, this unique dating of the mosaics enabled the Turkish authorities to locate and repatriate a unique, extremely well-preserved marble mosaic of Orpheus, son of Apollo, playing his lyre to tame the animals, dating to 194 CE, which had been looted in 1998.A Jewish researcher

of ancient Aramaic and Syriac named Judah Ben-Zion Segal had documented a similar partially-preserved Orpheus mosaic in situ in a burial cave near Edessa so the style and design was known to be local to Edessa burials.

Proof of thievery

How did the Turkish authorities know it had been stolen in 1998?

Because a roll of film the thieves had taken to be developed contained evidence of the looting. The thieves never came back for their pictures, but the store owner alerted the authorities, and when the mosaic surfaced in a public auction ending up at the Dallas Art Museum, the Turkish government asked for its repatriation.

The mosaic's return

Since its return in 2015, the mosaic has been exhibited at the Haleplibahçe Mozaik Museum.

“There are quite a few mosaics of Orpheus playing to animals, but an Orpheus mosaic with the Syriac date is unique to Urfa, and only two exist – the one documented by Segal and the one which was repatriated,” said Prof. Boaz Zissu, a classical archaeologist from the Martin (Szusz) Land of Israel and Archaeology Department at Bar-Ilan University.

The top inscription names Barsaged as the person who laid the mosaic.
The lower inscription notes the completion of the mosaic as the floor for the burial chamber of a man named Papa the son of Papa and his family in the month of Nisan in the Seleucid dynasty year of 505, which coincides with 194 CE.

“This is the earliest Syriac inscription ever found,” said Zissu.
“These inscriptions are so special that it was possible for the Turkish authorities to prove the mosaic originated from Edessa. This was a happy ending story with the mosaic returning back, which usually doesn’t happen. The bad news is that the original context is forever lost.”

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The writer was a guest of the Turkish Tourism Board.

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Please visit the site: https://www.jpost.com/archaeology/article-707570 [Go there for pix]

WHEN DID HUMANS DOMESTICATE THE HORSE?

Only recently have scientists discovered exactly when and where the animal went from wild to tame Amber Dance,

They say dogs are man's best friend, but horses could also claim that title.

Horses gave us a way to transport people and goods — literal horsepower. They changed warfare: drawing chariots, carrying the cavalry. They've inspired artists from Stone Age cave painters to the makers of "My Little Pony." Their role in industry may have waned in favor of machines, but they still maintain a place in sport, in leisure and in our collective hearts. Horses have been intertwined with human culture since at least 2000 B.C.E. and were associated with certain human groups even earlier.

"Horses are the animal that has changed history," says Ludovic Orlando, a molecular archaeologist at the University of Toulouse III-Paul Sabatier in France.

Today, horse breeds number in the hundreds, from the high-stepping Lipizzan horses of Austria to the Clydesdale draft horses of Budweiser commercials to the thoroughbreds of the Kentucky Derby. Despite their differences, these animals are all Equus caballus, joined in the modern equid family by donkeys, zebras and the wild Przewalski's horses (pronounced shuh-VAL-skees) of Central Asia (though some taxonomists prefer the name Equus ferus for wild horses, and classification of Przewalski's horses can vary).

The evolutionary path leading up to Equus is a classic model of evolution — a thoroughly documented history that graces textbooks and museum exhibits. But until lately, the route to domestication by people has been a black box. The bones of E. caballus all look pretty much the same, whether wild or domestic, so they couldn't answer a longstanding question: Where and when did humans first domesticate horses, linking the two species on a road that would lead to horse-drawn carriages, horse-racing and so much more?

Today, a revolution in the study of DNA, from both ancient and modern creatures, is providing answers. Applying the same approach used in a landmark 2010 study of Neanderthal DNA, scientists have learned much about the history of Equus caballus. They have tracked how ancient wild horses shared genes across the Bering Strait between Asia and North America, and revealed the surprising history of Przewalski's horse. And working with more modern samples, they have observed how recent management by people has undone much of the diversity in horse genomes, while adding a host of breed-specific features.

But there has never been quite enough ancient DNA to answer the question of domestication — until late 2021, when scientists reported their analysis of more than 250 ancient horse genomes.

"It's great to have this big piece filled in, in the puzzle of where horses actually came from," says Jessica Petersen, an animal geneticist at the University of Nebraska-Lincoln

who wasn't involved with that particular mystery. But, she adds, the domestication process was a complex series of events, and more intricate details will be difficult to uncover.

Evolution of the horse

Sifting through fossil bones and teeth, paleontologists have traced the ancestry of horses back roughly 50 million years to a dog-sized, hoofed animal called Hyracotherium — aka eohippus, the "dawn horse."

The genus Equus, as we know it, probably emerged between 4 million and 4.5 million years ago in the continent that would become North America. (That's well before the Homo lineage, which wouldn't hit the scene for at least another million years.)

Fast forward to the late Pleistocene, 11,700 to 129,000 years ago, and horses were trotting back and forth between Asia and the Americas on the Bering Land Bridge. The line leading to modern-day domestic horses and wild Przewalski's horses split sometime in the middle of that epoch, between 35,000 and 50,000 years ago.

But about 11,000 years ago, around the time the Bering Land Bridge submerged for the last time, the North American horses went extinct, along with many other large species such as mammoths and giant beavers. While it's hard to pinpoint a reason, climate, hunting or a combination of the two might have been a factor, says Alisa Vershinina, a geneticist at LifeMine Therapeutics in Cambridge, Massachusetts, who investigated the Bering crossings while working as a researcher at the University of California, Santa Cruz.

Early humans would have seen horses around, and they were clearly interested in the majestic animals: Horses are the top animal depicted in Stone Age, Western European cave art. But there's a big difference between observing the animals for artistic inspiration and harnessing them for horsepower, transport and sport. When, and where, did the relationship between human and beast undergo a dramatic change?

Horses were a late addition to the barnyard. Dogs were domesticated 15,000 years ago; sheep, pigs and cattle, about 8,000 to 11,000 years ago. But clear evidence of horse domestication doesn't appear in the archaeological record until about 5,500 years ago.

Horse remains from across Eurasia gave scientists several candidates for the first domestication event. For example: In 2018, scientists found a frozen, mummified horse in modern-day Siberia. It was dated to about 4,600 years ago. Might it have been one of the first workhorses?

Iberia, the peninsula containing modern-day Spain and Portugal, seemed promising because horses have continuously inhabited the region for the past 50,000 years, and would have been available for potential domestication.

And in the part of Eastern Europe around the Caspian Sea, archaeologists noticed horse remains appearing alongside those of other domestic animals. Human burials about 6,000 years ago began to contain maces decorated with horse heads, perhaps indicating some

change in human-horse relations. This area also got attention because of long-term horse presence in the area.

But the archaeological site that captivated many horse-domestication researchers was the 3500 B.C.E. settlement at Botai, about 1,000 miles northwest of the Caspian, in modern-day Kazakhstan.

The diet of the people in Botai seems to have been "entirely focused on horses," says Alan Outram, a zooarchaeologist at the University of Exeter in England. Aside from a few dog bones, those of horses make up the majority of non-human remains on the site. There's evidence of fenced yards that might have held herds. Some skulls hint at slaughter by an axlike tool, and some horse teeth exhibit "bit wear," as if they'd been bridled. Pottery shards contain chemical traces of mare's milk, which Outram says might have been consumed as butter, yogurt or cheese.

Analyses of DNA found in ancient bones, especially when combined with more recent genetic samples, can answer a variety of questions about creatures of the past and their relationships with animals alive today. Scientists can explore big-picture and fine-scale evolutionary questions and learn about changes at the population level, across genomes and more. Adapted from D.E. MacHugh et al / AR Animal Biosciences 2017

Nonetheless, the site's importance has been hotly debated. There's no way to confirm that Botai inhabitants fully domesticated horses.

Outram suspects that the Botai peoples treated the horses somewhat like how modern reindeer herders use their animals: They may have kept the horses near at hand for meat and milk, and maybe even have ridden a few of them to herd others. But they probably weren't managing breeding or using the animals extensively as pack or transport animals.

And without enough ancient DNA, there was no way to be sure these were the horses that spread around the world as human-managed livestock.

Then Orlando, Outram and colleagues analyzed a broad set of horse genomes, from as far back as about 42,800 years ago all the way up to 18 modern breeds, publishing the findings in the journal Science in 2018. The result: Today's ponies, draft horses and their ilk have little in common with the Botai horse bones. "They're not the genetic origin for modern domestic horses," says Outram.

The Botai lineage does live on, though. Unexpectedly, the researchers were able to draw a direct line between those 5,500-year-old bones and modern Przewalski's horses. These stocky animals with short, bristly manes live on the steppes of Mongolia, where they're called takhi, or "spirit," and considered a national symbol.

In other words, Przewalski's horses, once considered the remnants of an eternally wild population, may not be completely wild after all.

Rather, they seem to be the feral descendants of horses that people at Botai might have managed, to some extent, but later lost control of.

They'd have that in common with other feral populations such as the mustangs of the American West and Australian brumbies.

Przewalski's horses aren't much good for riding, notes Arne Ludwig, an evolutionary geneticist at the Leibniz Institute for Zoo and Wildlife Research in Germany. Perhaps, he speculates, that's why they fell out of use.

Whatever happened after Botai, Przewalski's horses had a rough go of it. They nearly went extinct, with the last wild animal disappearing in 1969. Today's population, all descendants of a handful of animals that persisted in captivity, now number around 2,000 individuals in captivity or natural reserves. There are also a few modern domestic horses in their family tree.

Scientists had several candidates for potential sites of horse domestication before finally, in 2021, determining that today's domestic horses originated in the lower Volga-Don region (shaded).
Reporting by A. Dance / Knowable Magazine

Domestication rising

Despite these advances, when Orlando documented genomic studies of horse domestication for the Annual Review of Genetics in 2020, he was forced to conclude, "The geographic origin of modern domestic horses is presently unknown."

But the clues were building up. Scientists had already nixed the Iberia and Siberia candidates: When researchers looked at ancient DNA, they found that those horse populations withered away, contributing little to the modern domestic lineage.

Getting to the true domestication site was a numbers game, says lead author Orlando. "We built the answer by narrowing down the evidence, little by little." The more than 150 collaborating scientists, including Outram and Ludwig, kept adding more horse genomes, from across Eurasia and spanning about 50,000 to 200 B.C.E.

With 264 ancient horse genomes in hand, the answer was undeniable: The homeland of modern domestic horses was the part of Western Eurasia between and north of the Black and Caspian seas, more specifically known as the lower Volga-Don region. The team reported their results in Nature in October 2021.

While the data point to a clear answer, there's still plenty of room for interpretation and speculation. Pinpointing that spot near the Caspian doesn't mean it was the only place — and time — that people bent horses to the bridle. The genomic and paleontological evidence from the other candidate regions suggests horses may have been domesticated multiple times, at Botai and elsewhere, without leading to widespread horsemanship.

"It shows how important horses were to people, that so many groups of people independently domesticated them," says Beth Shapiro, an evolutionary biologist at the University of California, Santa Cruz, and a coauthor of the Nature study.

The 2021 analysis does suggest that the domestication in the Volga-Don was the only one that "took," the only one that spread like horse-drawn wildfire. Why were horses one of the last animals to be domesticated, and why these horses in particular?

While it's impossible to be certain, ancient genomes suggest tantalizing hypotheses. The lineage leading to modern domestic horses included a change near a gene called GSDMC. In people, alterations to this gene are linked to back problems. It's possible that the domestic horse version gave the animals stronger backs, suitable for long-distance riding.

The domestic horse line also includes a change near a gene called ZFPM1. This gene is important in mood regulation. Perhaps some domestic version of ZFPM1 made the animals in the region more docile, easier to tame. These changes could have been the key to long-term horse domestication — but that's all speculation, says Shapiro.

As for who did the domesticating, it hasn't been possible to narrow it down to one culture, says Orlando. Diverse people from the region may have started experimenting with these horses about 4,200 years ago.

Domestic horses spread a bit from that point on, but things didn't really take off until about 2000 B.C.E.

The scientists tentatively attribute the explosion in horse-based transport and technology to the warlike Sintashta culture, which inhabited the north Eurasian steppes between 2100 and 1800 B.C.E. The Sintashta traveled back and forth between Asia and Europe, Outram says, and presumably picked up horses on one of these journeys. Later, they got around by riding, or via the horse-drawn chariots found in their graves.

This was during the Bronze Age, and it's thought that horses carried the people of these steppes far and wide, along with cultural accessories like advanced metal working, lightweight spoked wheels and Indo-European languages. Anthropologist David W. Anthony of Hartwick College in New York suggested in a 2007 book, "The Horse, the Wheel, and Language," that steppe dwellers invented the spoked wheel that made their horses useful for carting cargo and chariot-based warfare.

The prestige of the horses and metal goods, along with the chariots for raiding, would have helped these elements of steppe culture, and the Proto-Indo-European language, to spread.

The result was that in later centuries, horsepower and spoked wheels become commonplace, and languages as diverse as Punjabi, Polish and Welsh can be traced back to the same root.

Horse genes and human intervention

That domestication event was just the beginning of a relationship between people and horses — and between people and the horses' DNA.

Human management can do striking things to animal genomes over millennia.

For example, all the Y chromosomes of modern domestic horses — passed only through the male line — are nearly identical. To track how this happened, Ludwig, Orlando and colleagues examined the Y chromosomes of
96 Eurasian stallions from the past 5,000 years. While Y chromosomes started out rather diverse, they became more similar with time, with big changes starting about 1,500 years ago. This corresponds to when certain bloodlines, such as Oriental horses, became popular for breeding, says Orlando.

But even that level of breeding is mild compared with what's happened in the last 200 years. The diversity of the horse genome has dropped further since, even as specific breeds acquired genes that create their defining characteristics.

Petersen, of the University of Nebraska-Lincoln, has studied modern breeds to identify regions of the genome associated with color, speed, gait and size. For example, changes to the gene for the muscle protein myostatin are known to occur in racing breeds such as thoroughbreds.

Petersen also looked at the "gaited breeds" with unusual styles of locomotion — in her words, "horses that move funny" — which are often more comfortable to ride. These breeds typically possess DNA changes in a particular spot, which acts as a sort of "master switch" for gait. That spot contains a gene called DMRT3; a shortened version of the protein it encodes has been linked to horse gait. And mice lacking the gene altogether have problems with how their spinal nerves function.

Genomes aside, there's undoubtedly something special about the horse-human connection, says Orlando, who took up riding lessons in 2019.

"You have the feeling, when you ride, that this animal understands you and you understand this animal," he says. "You also have this feeling of mastering this big animal — it makes you feel powerful."

Please visit the site: https://www.smithsonianmag.com/science-nature/when-did-humans-domesticate-the-horse-180980097/

'SPECTACULAR' PAPHOS MOSAIC

A spectacular ancient mosaic floor that was part of a building from the Hellenistic period is among the important finds from excavations carried out recently at Fabrika Hill in Kato Paphos, Cyprus.

Known to archaeologists as the "Acropolis of Paphos," the Hill holds treasures that have been the focus of archaeologists from France's University of Avignon for the past twelve years.

The finds unearthed at the site were presented to the Paphos Municipal Council recently by Claire Balandier, a professor of archaeology and ancient Greek history and head of the Archaeological Mission of the University of Avignon.

Part of the Hellenistic-era building unearthed at Paphos recently by a team from the University of Avignon. Credit: Municipality of Paphos

Balandier, who has served as chief of the archaeological expedition conducting excavations on site for more than a decade, told the authorities the Fabrika Hill area was considered the Acropolis of Paphos and still holds extremely important monuments from the ancient history of the area.

Phedonas Phedonos, the mayor of Paphos, thanked Professor Balandier in a statement for the important excavation work carried out in the last twelve years in the area by the French Archaeological Mission.

Part of the Hellenistic-era building found at Paphos by the team from the University of Avignon. Credit: Municipality of Paphos

The announcement also noted that she even ranked the quarries that existed there as the "third most important, after the quarries of Petra in Jordan, and Sicily."

During her presentation, Professor Balandier also pointed out that excavation work was especially difficult in the past year due to the coronavirus because no students were allowed into the area to help.
"This year we are doing studies and cleaning," she noted, "while at the same time the program is being prepared for next year."

Ancient mosaic on Cyprus only one of spectacular discoveries there One of the more spectacular discoveries made in the dig is a room with a mosaic floor that had been part of a building from the Hellenistic period.

In another incredible twist, the archaeologists found that the building where the mosaics were found had been supplied with water from a clay pipe that is amazingly still preserved, in what Balandier called "very good condition."

It is believed that the water came from the area of Tala.

Unfortunately, the building appears to have been partially destroyed by later Roman-era construction projects, which even included the construction of a water pipeline and reservoirs.

Paphos Mayor Phedonos expressed his great gratitude to Professor Balandier, who, according to a report in the Cyprus Mail, has been coming to Paphos for 31 years and is fluent in Greek. He also thanked all the other foreign archaeological expeditions that have been conducting excavations in the city recently.

The University of Krakow, led by Professor Evdoxia-Papoutsi-Wladyka, who is of Greek descent, is currently conducting an excavation in Paphos' ancient market.

A team from Australia's University of Sydney under the direction of Dr. Craig Barker is another major player in the ongoing archeological operations in the Paphos area with its discovery of an 8,000-seat theater there which was declared to be the largest Hellenistic theater ever found.

Please visit the site: https://greekreporter.com/2022/05/20/ancient-mosaic-paphos-cyprus/ [Go there for pix]

SECRET PLATO CODE DISCOVERED AND SOLVED CLAIMS HISTORIAN, BY THOMAS KISSEL

Did Plato hide a secret code in his writings? Dr. Jay Kennedy, a historian and a member of the University of Manchester's Faculty of Life Sciences, recently published a scholarly work parsing the Ancient Greek philosopher Plato's writing, discovering a rhythmic system of symbols that constitute a musical pattern in the storied philosopher's key texts.

This rhythm is known as "The Plato Code."

Dr. Kennedy closely read Plato's writings, most notably The Republic, and in its structure, he was able to perceive an entire blueprint of constructed Greek musical notes. Kennedy observed how Plato would insert groups of words at each twelfth portion of his writing— realizing that the Greek musical scale contains twelve notes—and that with these spaced increments, Plato was able to portray the entire musical scale.

These notes were not all the same, expressing a wide range of emotion and affect through their contrast and dissonance.

The hidden codes show that Plato anticipated the scientific revolution
2,000 years before Isaac Newton, discovering its most important idea—that the book of nature is written in the language of mathematics. The decoded messages also open up a surprising way to unite science and religion. The awe and beauty we feel in nature, Plato says, shows that it is divine; discovering the scientific order of nature is getting closer to God.

This revelation could transform today's culture wars between science and religion.

Plato's thinking in this regard was influenced by Pythagoras, another ancient Greek philosopher and mathematician who is perhaps best known for discovering the Pythagorean Theorem. Pythagoras believed that the universe could be reduced to a natural, mathematical foundation and that the solar system moved in a rhythm he called "a harmony of the spheres."

Because musical notation corresponds to mathematical notation, Pythagoras thought the workings of nature were determined by a mathematical-musical harmony. Plato adapted this musical movement to the experience of his writing.

"It's a musical code," says Kennedy. "Plato and the Greeks believed music was the key to mathematics and the cosmos. What we didn't know was that he used Greek musical scales to give his works a hidden structure and then built layers of hidden meanings beneath that."

"The Plato Code" deepens the already rich Republic

The presence of "the Plato Code" in the Republic adds a structural sophistication to a work that was already dense with complex ideas about the nature of society and politics. Plato was able to inscribe a reference to Pythagoras in the very DNA of his writing while also impacting the abstract concepts of democracy and civilization for years to come.

Plato is famous for his writings that pierced to the heart of man's fraught relationship with the process of world-building: "Only the dead have seen the end of war."

But the advancement in mathematical and musical construction Plato created opens up the possibility for new ways of thinking just as much as his more well-known political philosophy.

"This is a true discovery, not simply reinterpretation," Kennedy insisted. "The result was amazing—it was like opening a tomb and finding new set of gospels written by Jesus Christ himself. Plato is smiling. He sent us a time capsule."

Dr. Kennedy, a researcher in the Centre for the History of Science, Technology and Medicine in Manchester in the UK, continued: "As we read his books, our emotions follow the ups and downs of a musical scale. Plato plays his readers like musical instruments."

However, Plato did not design his secret patterns purely for pleasure.
It was for his own safety. The great thinker's ideas were a dangerous threat to Greek religion. He clearly held that mathematical laws—and not the gods—controlled the universe.

Plato's own teacher, Socrates, had been executed by the state for heresy. Secrecy was therefore normal in ancient times, especially for esoteric and religious knowledge, but for Plato it was a matter of life and death. Encoding his ideas in secret patterns was the only way to be safe.

Plato experienced a huge amount of personal upheaval as a result of his writing. His life was famous for its fascinating drama. Born four centuries before Christ at a time when Sparta defeated plague-ravaged Athens, he wrote thirty books and founded the world's first university, called the Academy.

He was a feminist, allowing women to study at the Academy, and the first great defender of romantic love (as opposed to marriages arranged for political or financial reasons), and he defended homosexuality in his books. In addition, he was even captured by pirates and sold into slavery before being ransomed by his friends.

"Plato's importance cannot be overstated. He shifted humanity from a warrior society to a wisdom society. Today our heroes are Einstein and Shakespeare—and not knights in shining [armor]—because of him." Dr.
Kennedy said.

Over the years, Dr. Kennedy carefully peeled back layer after symbolic layer, sharing each step in lectures in Manchester and with experts in the UK and the US.

He recalls: “There was no Rosetta Stone. To announce a result like this I needed rigorous, independent proofs based on crystal-clear evidence.”

“The result was amazing—it was like opening a tomb and finding new set of gospels written by Jesus Christ himself,” he concluded.

“Plato is smiling,” Dr. Kennedy added. “He sent us a time capsule.”

Dr. Kennedy’s findings are not only surprising and important; they overthrow conventional wisdom on Plato. Modern historians have always denied that there were codes, but now, Dr. Kennedy has proven otherwise.

He adds: “This is the beginning of something big. It will take a generation to work out the implications. All 2,000 pages contain undetected symbols.”

Please visit the site: https://greekreporter.com/2022/05/26/secret-plato-code-solved/

ENTIRE DNA OF POMPEII VICTIM 2,000 YEARS AGO SEQUENCED BY SCIENTISTS, BY TASOS KOKKINIDIS

For the first time, researchers have managed to sequence the entire DNA belonging to the remains of a man who died in Pompeii 2,000 years ago.

Preserved by volcanic materials from the eruption of Vesuvius and analyzed with new scientific methods, the genome reveals great genetic diversity in a sick man who tragically died in his thirties.

A team led by Gabriele Scorrano, an assistant professor of geogenetics at the University of Copenhagen, extracted DNA from a man and a woman as part of its search for the first "Pompeian human genome," according to the study published in the journal Scientific Reports.

The bodies were first recovered in 1933 from what Pompeii archeologists have called Casa del Fabbro, or The Craftman's House.

They were found slumped in the corner of the dining room as if they were having lunch when the volcano erupted on Aug. 24, 79 A.D.

DNA analysis shows Pompeii man suffered from tuberculosis

"From the positions [of their bodies] it seems they were not running away," Viva told the BBC. "The answer to why they weren't fleeing could lie in their health conditions."

Analysis found the man was between 35 and 40 years old and about 5 feet and 3 inches tall while the woman was 50 years old and about 5 feet tall.

The genetic study found that the man's skeleton contained DNA sequences that suggested he may have had tuberculosis before his death while the woman is believed to have been affected by osteoarthritis.

"This could have been the reason for which they waited for it all to finish, maybe in the security of their home, compared to other victims who were fleeing and whose remains were found in open spaces," Viva said.

Technology in genetic analysis allows scientists to sequence genomes

The scientists were only able to sequence the entire genome from the man due to gaps in the genome of the woman, resulting in a near-complete set of "genetic instructions" encoded in DNA extracted from their bodies.

"In the future, many more genomes from Pompeii can be studied," Serena Viva, an archaeologist from the University of Salento and a member of the study team, told The Guardian.

"The victims of Pompeii experienced a natural catastrophe, a thermal shock, and it was not known that you could preserve their genetic material. This study provides this confirmation, and that new technology on genetic analysis allows us to sequence genomes also on damaged material," Viva said.

Please visit the site: https://greekreporter.com/2022/05/27/dna-pompeii-victim-sequenced/ [Go there for pict]

PIECE OF ANCIENT GRAFFITI REVEALS NEW CLUES ABOUT THE DAY POMPEII WAS DESTROYED, BY ANDY CORBLEY

Pompeii has captured the world's attention for years, and few sites have revealed more about the life and luxuries of the Roman Empire than it has.

Recent clues—scrawled onto walls by ne'er-do-wells, and others uncovered in the ash, are changing the record about exactly when the city met its unfortunate end at the hands of the volcano.

A worker wrote a joke with charcoal onto the wall of a building one day in CE 79, more or less reading, "he ate too much." However this everyday bit of time-killing was made with a date: October 17th, two months after the long-suspected eruption of Vesuvius.

It's believed that Pompeii was buried on August 24th, based on a letter sent by Pliny the Younger, who, standing on the other side of the bay of Naples, witnessed the destruction from a safe distance.

This new date is thought to be pretty accurate, as the delicate charcoal which wrote the graffiti would not have lasted long in the sea air. Instead the volcanic ash preserved it.

MORE: Robotic Dog Designed in Boston Patrols the Ruins of Pompeii to Help Preserve Relics

There are other recently-uncovered reasons to believe the eruption took place later in the year, including charred fruit from autumn harvests, bodies buried in thick cold-weather clothing, outdoor braziers still filled with firewood, sealed amphorae with wine—again from the harvest, and a coin that was not minted before September.

Pliny's account from the advancing ash is harrowing, and helps us imagine the gravity of the eruption as it spread across the region. He wrote the day after the eruption:

"From the other direction over the land, a dreadful black cloud was torn by gushing flames and great tongues of fire like much-magnified lightning. The cloud sank down soon afterwards and covered the sea, hiding Capri and Capo Misenum from sight. My mother begged me to leave her and escape as best I could, but I took her had and made her hurry along with me. Ash was already falling by now, but not very thickly.

Then I turned around and saw a thick black cloud advancing over the land behind us like a flood. 'Let us leave the road while we can still see", I said, "or we will be knocked down and trampled by the crowd'.

We had hardly sat down to rest when the darkness spread over us. But is was not the darkness of a moonless or cloudy night, but it was just as if the lamps had been put out in a completely closed room. We could hear women shrieking, children crying and men shouting. Some were calling for their parents, their children, or their wives, and trying to

recognize them by their voices. Some people were so frightened of dying that they actually prayed for death. Many begged for the help of the gods, but even more imagined that there were no gods left and that the last eternal night had fallen on the world."

Still, just one-third of Pompeii has been excavated. Much of the last two-decades has been restoration work, part of the Great Pompeii Project. There's likely so much more to be discovered.

Please visit the site: https://www.goodnewsnetwork.org/ancient-graffiti-and-harvest-time-evidence-suggests-new-vesuvius-eruption-date/ [Go there for pix]

IF THE ANCIENT ROMANS HAD GOOGLE MAPS

OmnesViae is a modern route planner based on the roads of the Roman Empire.

Plan your road trip across the Roman Empire with this route planner the Romans never knew they needed. (Credit: OmnesViae.org)

Like us, the Romans were adept at scrolling — except they used actual, unwieldy scrolls. They would have loved OmnesViae, a handy online route planner, just for Roman roads. Handy, yes. But crossing the empire would still be a schlep of more than 250 days.

In 20 BC, the emperor Augustus had a giant gilded spike installed next to the Temple of Saturn on the Forum Romanum. This was the Milliarium Aureum, or Golden Milestone, from which distances to cities throughout the empire were measured — and the true subject of the saying: omnes viae Romam ducunt ("all roads lead to Rome").

It was a boast with more than a little truth to it. The Roman Empire's extensive network of well-engineered, preferably straight roads was one of its main unifying features, a fact Augustus himself was very aware of. He put considerable effort into his reform of the road administration, had several roads built out of his own pocket, and created a courier service to optimize the usefulness of the network.

Not for nothing did his litany of honorifics include the title Curator Viarium ("Steward of the Roads").

Rome's roads really tied the empire together In its heyday, Rome's cursus publicus ("public road network") consisted of about 380 interconnected roads, totaling around 50,000 miles (app. 80,000 km). Way stations and milestones facilitated the movement of traders and soldiers. In other words, they where vectors for the extension of Rome's wealth and power. And they really did tie the empire together. Find yourself anywhere on the network, from the frozen wastes of northern Britannia to the shores of the Persian Gulf, and you easily could find your way back to Rome.

You're a local Roman administrator in Lutetia (Paris; top left), and you're being recalled to Rome (at the center of the urban blob in mid-Italy) — probably because you had that entire rebellious Gallic village slaughtered. But will you be praised for your forcefulness or demoted for stoking unrest? You have a trip of DCCLXIX (769) Roman miles, taking LII (52) days to agonize over the future of your career.
(Credit: OmnesViae.org)

Easily perhaps, but not necessarily quickly. Lacking motorized transport, Romans could travel only as fast as legs could carry them — their own, or if they could afford them, those of their horses.

Unfortunately, ancient Rome also lacked a decent internet connection, otherwise travelers could have looked up the course and duration of their trip on OmnesViae.com, the online route planner the Romans never knew they needed.

OmnesViae leans heavily on the Tabula Peutingeriana, the closest thing we have to a genuine itinerarium ("road map") of the Roman Empire.

Ancient Rome certainly had maps, but none from that time survive. The Peutinger Map, a 13th-century parchment scroll, is a copy of a much older map, which is only two "possibles" away from the Steward of the Roads himself: It may date from the 4th or 5th century, and that version may be a copy of a map prepared for Augustus around year 1 AD.

One argument in favor of the Augustan link: the map includes ancient Pompeii, which was destroyed by an eruption of Mount Vesuvius in 79 AD and never rebuilt, which points to an earlier origin. (Modern Pompei was founded only in 1891.) Yet it also includes Constantinople and prominently features Ravenna, which suggest the map copied by that anonymous 13th-century monk was an updated version from the 4th century (at the earliest), or more likely the 5th, as it splashes the name Francia (France) — after the newly arrived Germanic tribe of the Franks — across what until then was known exclusively as Gallia (Gaul).

Roman maps were just like… Tube maps?

Whatever its ultimate age, the shape of the Tabula — about a foot high and 22 feet long (33 cm by 6.75 m) — tells us that it cannot be topographically accurate. Instead, it focuses on presenting road corridors and connectors, with a few branches forking off through Persia all the way to India. By sacrificing topographic accuracy for network connectivity, the Peutinger Map is strangely reminiscent (or should that be "predictive") of the London Tube map and other modern metro maps.

Geolocating thousands of points from Peutinger, OmnesViae reformats the roads and destinations on the scroll onto a more familiarly landscaped map. The shortest route between two (ancient) points is calculated using the distances travelled over Roman rather than modern roads, also taking into account the rivers and mountains the network must cross.

The Peutinger, for all its historical value, is not complete: It misses Britain and Spain. The roads of those Roman provinces were reconstructed using other sources, including the Itinerarium Antonini, a register (rather than a map) of Roman roads, way stations, and distances, possibly based on an empire-wide survey carried out in the time of Augustus.

Goodbye, Flour Sacks!

So, what's the farthest distance you could travel on Roman roads? From Blatobulgium to Volocesia must come pretty close.

Blatobulgium was a Roman fort in what is now Dumfriesshire, Scotland, at the northern terminus of Route 2 in the Antonine Itinerary (also known as Watling Street). The fort's name, Brittonic in origin, may mean something like "Flour Sacks" — a reference to the place's granaries. It was occupied for about a century following 79 AD.

Just about the farthest you could travel on Roman roads was from present-day Scotland to Kuwait. (The start and end points are marked by dots.) The Peutinger Map's road network branches further east toward India. The map misses information on Spain and Britain, which was extrapolated from other sources (and marked in grey on this map). (Credit: OmnesViae.org)

Volocesia, placed by OmnesViae near the Kuwaiti island of Bubiyan, is sometimes identified with a modern place called Abu Halafiya, on the banks of the Tigris in southern Iraq. According to OmnesViae, the distance between both is MMMDCCLI (3,751) Roman miles (about 4,100 modern miles, or slightly more than 5600 km). That trip would take you CCLI (251) days to complete.

That's not a road trip to undertake casually, but a life-altering (and possibly life-ending) journey. Come to think of it, the same could very well be said today of a walk (or even a ride on horseback) from Scotland to Kuwait — and that's with Google Maps.

Please visit the site: https://bigthink.com/strange-maps/omnesviae-roman-roads-map/ [Go there for pix and maps]

A 3400-YEAR-OLD CITY EMERGES FROM THE TIGRIS RIVER - DROUGHT REVEALS URBAN CENTER OF THE MITTANI EMPIRE

A team of German and Kurdish archaeologists have uncovered a 3400-year-old Mittani Empire-era city once located on the Tigris River. The settlement emerged from the waters of the Mosul reservoir early this year as water levels fell rapidly due to extreme drought in Iraq. The extensive city with a palace and several large buildings could be ancient Zakhiku – believed to have been an important center in the Mittani Empire (ca. 1550-1350 BC).

Bronze Age city resurfaced due to drought Iraq is one of the countries in the world most affected by climate change. The south of the country in particular has been suffering from extreme drought for months. To prevent crops from drying out, large amounts of water have been drawn down from the Mosul reservoir – Iraq's most important water storage – since December. This led to the reappearance of a Bronze Age city that had been submerged decades ago without any prior archaeological investigations. It is located at Kemune in the Kurdistan Region of Iraq.

This unforeseen event put archaeologists under sudden pressure to excavate and document at least parts of this large, important city as quickly as possible before it was resubmerged. The Kurdish archaeologist Dr. Hasan Ahmed Qasim, chairman of the Kurdistan Archaeology Organization, and the German archaeologists Jun.-Prof. Dr. Ivana Puljiz, University of Freiburg, and Prof. Dr. Peter Pfälzner, University of Tübingen, spontaneously decided to undertake joint rescue excavations at Kemune. These took place in January and February 2022 in collaboration with the Directorate of Antiquities and Heritage in Duhok (Kurdistan Region of Iraq).

Fritz Thyssen Foundation supported excavations A team for the rescue excavations was put together within days.

Funding for the work was obtained at short notice from the Fritz Thyssen Foundation through the University of Freiburg. The German-Kurdish archaeological team was under immense time pressure because it was not clear when the water in the reservoir would rise again.

Massive fortification, multi-storey storage building, industrial complex Within a short time, the researchers succeeded in largely mapping the city. In addition to a palace, which had already been documented during a short campaign in 2018, several other large buildings were uncovered – a massive fortification with wall and towers, a monumental, multi-storey storage building and an industrial complex.

The extensive urban complex dates to the time of the Empire of Mittani (approx. 1550-1350 BC), which controlled large parts of northern Mesopotamia and Syria.

"The huge magazine building is of particular importance because enormous quantities of goods must have been stored in it, probably brought from all over the region," says

Puljiz. Qasim concludes, "The excavation results show that the site was an important center in the Mittani Empire."

The research team was stunned by the well-preserved state of the walls – sometimes to a height of several meters – despite the fact that the walls are made of sun-dried mud bricks and were under water for more than 40 years. This good preservation is due to the fact that the city was destroyed in an earthquake around 1350 BC, during which the collapsing upper parts of the walls buried the buildings.

Ceramic vessels with over 100 cuneiform tablets Of particular interest is the discovery of five ceramic vessels that contained an archive of over 100 cuneiform tablets. They date to the Middle Assyrian period, shortly after the earthquake disaster struck the city. Some clay tablets, which may be letters, are even still in their clay envelopes. The researchers hope this discovery will provide important information about the end of the Mittani-period city and the beginning of Assyrian rule in the region. "It is close to a miracle that cuneiform tablets made of unfired clay survived so many decades under water," Pfälzner says.

Conservation project to prevent damage by rising water To avert further damage to the important site by the rising water, the excavated buildings were completely covered with tight-fitting plastic sheeting and covered with gravel fill as part of an extensive conservation project funded by the Gerda Henkel Foundation. This is intended to protect the walls of unbaked clay and any other finds still hidden in the ruins during times of flooding. The site is now once more completely submerged.

Please visit the site: https://kommunikation.uni-freiburg.de/pm-en/press-releases-2022/a-3400-year-old-city-emerges-from-the-tigris-river [Go there for link to German version]

WHO WAS SAPPHO?
BY ANNIKA BARRANTI KLEIN

Who was Sappho? Although very little is actually known about the Ancient Greek lyric poet, some of our most common language about queer women is derived directly from her, and we remain generally fascinated with her 26 centuries after she lived and died on the Greek isle of Lesbos. If you've ever used the word lesbian — or the word sapphic — or so much as enjoyed a song or poem, Sappho and her far reaching influences have touched you. Read on to learn a tiny bit more about who Sappho was.

Poetry in Ancient Greece was, like most forms of storytelling in the pre-modern world, generally enjoyed in a different manner, one that would likely look unfamiliar today and might indeed be considered more of a performance. Lyric poetry, such as the poems Sappho wrote, was intended to be sung with accompaniment on the lyre. Like the finest hip-hop, writing lyrics (poems) that fit both the rhyme and the meter — or, more accurately, the pattern of syllables — was a skill that likely required a healthy mixture of talent and practice.

If, dear reader, you are now imagining Ancient Greece as something between a poetry slam and a rap battle, you're welcome and my job here is done. (But do read on for more about Sappho.)

Lesbian: a Latinized version of Lesbios, Greek for from or relating to the island of Lesbos. In English, lesbian became a term for women who love women in the late 19th century, presumably sometime after 1869, when the profession of "sexology," the pseudo-scientific study of sex which initially referred to homosexuality as "inversion," was invented (Lesbian Histories and Cultures: An Encyclopedia by Bonnie Zimmerman). However, the French were using sapphisme and lesbienne as early as 1838 and 1867, respectively, to mean the same thing. It is only more recently that lesbian has been used to mean women who exclusively love women.

The island of Lesbos is in the northern Aegean sea, a few miles off the coast of modern day Turkey. The third largest island in the Aegean, Lesbos is about 665 square miles and was also the home of Sappho's contemporary Alkaios, another poet.

Sappho was born sometime around in the 7th century BCE, most likely in the town of Eresos (modern day Skala Eressou) on the southwestern coast of Lesbos. She was renowned in Ancient Greece, most likely beginning during her lifetime and certainly extending to mentions a century and more later by Plato, who called her "the Tenth Muse" and Aristotle, who said, "Everybody honors the wise…the Mytilineans honored Sappho although she was a woman." (Is it too late to cancel Aristotle?)

Sappho's poetry was lost during the early Christian period, and for several centuries all we had of her were the words of those men as well as a fictionalized Sappho in Ovid's Metamorphoses, along with two of her poems and a few fragments that had made their way to Renaissance Europe via other (men's) work. In 16th and 17th century France and England, efforts were made to preserve and translate those works.

In 1896, Bernard Grenfell and Arthur Hunt, who studied the then-new discipline of archaeology at Oxford, came to the Egyptian city el-Behmesa, once known as Oxyrhynchus, in search of ancient papyrus.

The city had been in decay since its colonization by and the subsequent fall of the Roman empire, and the locals hired to help dig had low expectations. But the first document found contained words attributed to Jesus Christ, who is largely considered a big deal. They also found a huge amount of papers documenting daily life, from receipts and tax records to personal letters — so many that they had to store them in biscuit tins for transportation. And they found a poem that unmistakably was written by Sappho. They marveled at their luck, and assumed it was a one-time find, but they went on to find many more fragments.

Sappho's mother was named Cleis, and in Ancient Greek naming tradition it is likely that Sappho was named after her grandmother; Sappho named her own daughter Cleis. Her father's name is not known, though there is much scholarly speculation about it. Ovid claimed that he died during her childhood, possibly citing poetry of hers to which he had access but which has since been lost.

Women's education revolved largely around household management skills, the Greek word for home being oikes and the word for running the home oikonomia, which is the root of the modern word economics. Sappho would have learned many skills including spinning and weaving, but unlike many girls of the time she also became well-versed in literature. Her (male) biographers speculate that she might have sat in on her brothers' lessons, which is certainly possible. However, Lesbos was notable for its upper-class women enjoying more social freedoms than mainland Greek women, so perhaps she was allowed schooling on her own behalf.

Either way, she became a noted poet as well as a wife.

Lyric poetry was, like the majority of oral traditions, not necessarily written down in its time, but much later. The oldest surviving fragments we have of Sappho's poetry is on papyrus and potsherd from the 3rd century BCE, a few hundred years after she lived. In the 1st century BCE, the Roman poets discovered and were influenced by her work. For the first three centuries CE, she was featured on the coins used in Lesbos. Also during this time, most of the surviving Oxyrhynchus fragments of her poetry — those found by Grenfell and Hunt — were written down. In the 7th century, her poetry was written on parchment in Egypt. Then some 1,000 years went by before writers and scholars began attempts to find her words (however, it is certainly possible that efforts were made in that time and are merely no longer known).

In 1894 French writer Pierre Louys published The Songs of Bilitis, erotic poetry that he claimed was translated from Ancient Greek found in Cyprus written on the walls of a tomb. Bilitis was his own invention, and the poems — written by Louys — were in the style of Sappho.

Natalie Barney was an American writer who, when she was 5 years old, met Oscar Wilde, who encouraged her mother Alice to pursue her interest in art. Barney was a lesbian, and during her time living in Paris as a young woman held literary salons. She once presented herself to renowned dancer and courtesan Liane de Pougy as a page of

love sent by Sappho, and later became the subject of Pougy's roman-a-clef Sapphic Idyll. Barney herself wrote Five Small Grecian Dialogues under the name Tryphé, which contains long passages about Sappho. And Barney dated Renee Vivien (Pauline Tarn), a poet who was one of the earliest modern translators of Sappho's poetry.

In her diary, Virginia Woolf speculated that critics of her book A Room of One's Own would call her a Sapphist for its descriptions of female friendship. Woolf's novel Orlando features a gender-fluid character based on her lover Vita Sackville-West.

Sappho continued to be referenced, directly and indirectly, throughout 20th century literature. In the 1970s, Sidney Abbot and Barbara Love wrote Sappho Was a Right On Woman, in which they discussed connections between feminism and lesbianism. In the latter half of the century and the early 21st century, Sappho's work was translated into English by writers and scholars including Mary Barnard, who focused on the language rather than the meter in Sappho: A New Translation; Anne Carson, the Canadian poet and professor of Ancient Greek, who I believe introduced the use of brackets to denote lost fragments in If Not, Winter; and most recently Aaron Poochigian, who translated from Greek meter to English rhymed verse, giving readers what may be the closest experience to Ancient Greek lyric poetry in modern English, in Stung With Love.

We still know very little about Sappho, but can learn a great deal from her poetry. From her poems we know she was married and had a daughter, and that she had dark hair that turned white. We also know that she was banished to Sicily for some time around 600 BCE, and though the reason is not known it is likely that it was political. She is believed to have later returned to Lesbos, where she eventually died, most likely not by suicide despite early misreadings of a poem that were later reinforced by Ovid in his fictionalization of her life (which was notably heterosexual).

It is interesting — and by that I mean it is deeply sexist — that we know so much about the lives of men and boys in Ancient Greece but can basically only make guesses ranging from wild to educated when it comes to women and girls (and, while nonbinary people have of course always existed, even if we did have records, we would most likely still have to guess because that language we use to describe gender has evolved and changed so rapidly and so recently — which is a huge step forward but adds to the complexities of accurately describing the past).

One of the books I read while researching Sappho was Searching for Sappho by Philip Freeman. It's an interesting book that lost me somewhat when the author attempted to piece together what life might have been like for a girl in 7th century Greece in part by studying the poetry of Anyte, who lived 300 years later, also on Lesbos, and whose words survived in less fragmented form. This strikes me as rather like using my now defunct blog (2002–2016) to learn what life was like for a woman during the revolutionary war, but perhaps I am being unfair.

On the other hand, Freeman also claimed that there is no way of knowing whether Sappho, who lived in a time when we are absolutely certain that the vast majority of women and girls made textiles, ever used a loom, because — according to him — none of her poetry mentions weaving.

Sweet mother, I cannot weave –

slender Aphrodite has overcome me with longing for a girl.

I suppose there's also no way of knowing if she liked girls.

Please visit the site: https://bookriot.com/who-was-sappho/ [Go there for pix and embedded linx]