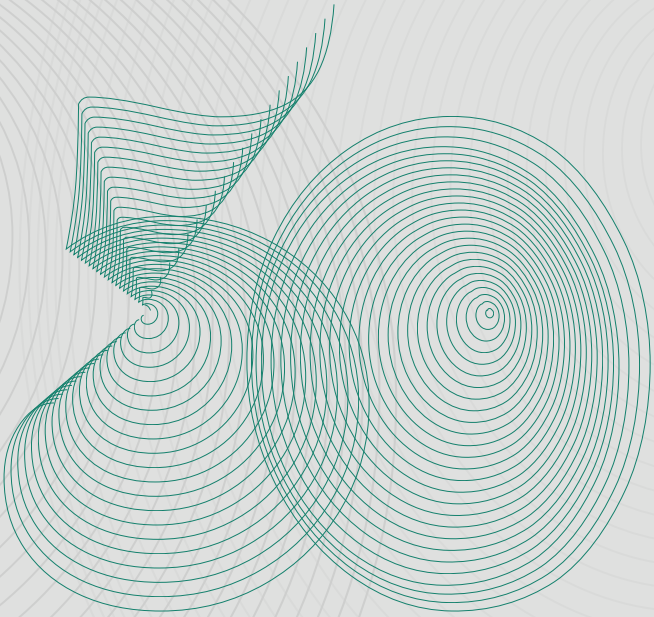
CELEBRATING



Half a Century of Archaeological Science in Greece.
Past, Present, Future.

THE FITCH LABORATORY 1974-2024

CELEBRATING FIFTY YEARS

The Marc and Ismene Fitch Laboratory
British School at Athens

BRITISH SCHOOL at ATHENS

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Celebrating 50 years of The Marc and Ismene Fitch Laboratory for Archaeological Science, BSA

Half a century of The Marc and Ismene Fitch Laboratory and of archaeological science in Greece: Setting the conference agenda

EVANGELIA KIRIATZI[1]

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A brief historical review of the main developments concerning the establishment and continuous expansion of the Marc and Ismene Fitch Laboratory for Archaeological Science will be undertaken, in the context of broader transformations in archaeological method and theory and the growth of the field of archaeological science in Greece. This will provide the basis for briefly introducing the aims of the conference.

Reflections on 50 years of the Marc and Ismene Fitch Laboratory and archaeological science in Greece.

RICHARD JONES[1]

IAN.K. WHITBREAD[2]

YANNIS MANIATIS[3]

[1]*University of Glasgow*
[2]*University of Leicester*
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The first two directors of the Fitch Laboratory, Richard Jones (1974-1991), Ian K. Whitbread (Fitch 1992-2002), together with one of the pioneers of Archaeometry in Greece, Yiannis Maniatis, will briefly share memories and their experiences of the early years of archaeological science in Greece and comment on developments thereafter.

The Fitch in the life of the BSA: A Director's perspective

CATHERINE MORGAN[1]

[1]*All Souls College, University of Oxford*

From 2007-2015, the Marc and Ismene Fitch Laboratory for Archaeological Science expanded its activities in many fields, from teaching to international research partnerships and the addition of new infrastructure. I explore these developments and consider their significance for the place of the Fitch within the British School at Athens.

The Fitch Laboratory subcommittee: A brief history and some reflections

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[2]*The British Museum*

As two individuals who have been involved in the Marc and Ismene Fitch Laboratory for Archaeological Science subcommittee for some years, we will share our experiences on behalf of many others who have provided sustained input to the activities of the Laboratory. The role of the subcommittee, which meets annually, is to maintain a strategic overview of the scientific, staffing and financial management of the Fitch Laboratory. The subcommittee also provides a point of liaison between the Fitch Laboratory Director and the UK research community. More widely, though, it has given us an opportunity to contribute to the life and development of the Laboratory and the remarkable people who have ensured its distinctiveness and success.

Archaeological Science in Greece:

A Historical Perspective

From the Fitch Laboratory to the Hellenic Society for Archaeometry: Shaping archaeological science in Greece

MARIA KAPAROU[1], ARTEMIOS OIKONOMOU[2,3], ELENI KOULOUMPI[4], METAXIA PAPAGEORGIOU[5], YANNIS BASSIAKOS[6], YIORGOS FAKORELLIS[2], & ELENI FILIPPAKI[6]

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The establishment of the Marc and Ismene Fitch Laboratory for Archaeological Science in 1974, with its first Director, the emblematic Richard Jones, marked a pivotal moment in the activation of key Greek researchers already engaged in archaeometric activities. These included Konstantinos Konofagos at the National Technical University of Athens, Artemis Papastamataki at the Institute of Geology and Mineral Exploration, and Sophocles Filippakis at NCSR 'Demokritos'. Their collective efforts culminated a few years later, in 1981, with the founding of the Hellenic Society for Archaeometry (HSA). Responding to the growing recognition of the importance of applying scientific methods to archaeological research, the HSA aimed to integrate natural and physical sciences with archaeology, thereby advancing archaeometry both in Greece and internationally. The creation of the HSA followed the growing momentum in archaeometric research, significantly strengthened by the establishment of the first Laboratory of Archaeometry at 'Demokritos' in 1984. This institutional milestone, sanctioned by Greek public law, spearheaded the foundation of more laboratories in universities and archaeological museums across Greece, fostering research and educational initiatives in the field.

Since its inception, the HSA has organised eight major international conferences and various workshops, providing a platform for scholars to share ground-breaking research and innovations, while attracting leading international researchers. These events, pivotal in the 1980s and 1990s, played a crucial role in promoting scientific approaches to understanding ancient life, solidifying Greece's central role in the early development of archaeological science. Beyond organising events, the Society has been instrumental in publishing vital resources for specialists and the broader academic community, helping disseminate new methodologies and findings related to the analysis and preservation of cultural heritage materials. In more recent years, the HSA has launched key initiatives to foster collaboration and education in archaeological science. The annual HSA Summer School introduces professionals and students to the principles of archaeological science, while the 'Bridging Archaeometry' series unites scientists from diverse fields with those engaged in Cultural Heritage studies. These initiatives encourage interdisciplinary collaboration, ensuring that the rich cultural history of Greece continues to be explored and preserved through advanced scientific techniques.

Exploring archaeological sciences in Greece: The contributions of scientific research institutions past, present and future

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The integration of natural sciences into archaeology and cultural heritage has greatly advanced, significantly enriching our understanding of the past. Innovative techniques applied across nearly all aspects of material culture, combined with interdisciplinary approaches, have addressed complex questions surrounding human existence, environmental contexts, ecological reconstruction, craftsmanship, archaeological remains, provenance, and the intricate interactions between humans and their environments. Archaeology, as the study of the past through material remains, has long fostered a diverse range of methodologies and interdisciplinary inquiry, and archaeological science (or archaeometry) exemplifies this approach by employing scientific methods to deepen our exploration of human history.

In Greece, research institutions—motivated by the country's rich archaeological heritage—have increasingly contributed to this scientific field. They have done so by strengthening collaborations with local archaeological services and foreign archaeological schools and by leading or participating in large-scale, funded research initiatives.

In the early stages of laboratory analysis, Greek research institutions employed techniques such as optical emission spectrometry, atomic absorption spectrometry, X-ray fluorescence spectrometry, and neutron activation analysis to determine sample composition, primarily addressing questions of provenance. The later introduction of thin-section petrography enabled integrated studies that not only clarified production sites but also revealed trade routes and consumption patterns.

Today, there is growing interest in studying the mechanical properties of ceramic and lithic artefacts, as well as in investigating historical transformations in human diet and nutritional habits. While these methods have provided extensive insights, the volume of data generated now necessitates advanced statistical analysis. Emerging technologies, including 3D imaging and machine learning, have further expanded analytical capabilities. Moreover, the diversity and complexity of data sources, sensors, and platforms in archaeological remote sensing have expanded significantly over the past decade, fostering a broader and more nuanced understanding of the ancient world.

Archaeological scientific analysis and research at the Directorate of Conservation of Ancient and Modern Monuments: Past, present and future

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[1]*Directorate of Conservation of Ancient and Modern Monuments, Hellenic Ministry of Culture*

This paper discusses archaeological scientific analysis and research in Greece under the auspices of the Directorate of Conservation of Ancient and Modern Monuments (DCAMM), Hellenic Ministry of Culture (HMC), based on past archival research, presenting the current situation and sharing our vision for the future.

Recent historic research of the archives and personal testimonies, show that archaeological scientific analysis and research has a long history in Greece with roots back to the newly founded Greek state, practiced either by European or Greek scientists with a European background. It was driven by archaeologists and their eagerness to interpret the abundant archaeological finds brought to light during numerous excavations. This research effort additionally represented the scientific aspect of Heritage Conservation, as its practices were utilised towards answering questions of decay mechanisms and finding conservation solutions.

It was not until the 1980s, long after the establishment of the Centre for the Conservation of Antiquities (later Directorate for the Conservation of Antiquities and today Directorate for the Conservation of Ancient and Modern Monuments - DCAMM) that archaeological scientific analysis and research was inextricably linked with the conservation of antiquities and monitored by a central governmental organisation exclusively dealing with heritage conservation in the country.

Nowadays the process of sampling, analysis and examination of tangible cultural heritage is organised and managed by the HMC through DCAMM and the Department of Applied Research (DAR) that issues all sampling permits concerning movable monuments and decorative elements of immovable monuments. The process is regulated by the codification of the current regulatory framework (Archaeological Law) and a relevant circular, which involved the work and cooperation of all responsible central services of HMC.

DCAMM/DAR conducted two relevant training workshops for the personnel of the HMC, aiming to ease the sampling process for the facilitation of scientific research in the country and the promotion of Greek cultural heritage. Monitoring requests and sampling permits further enables DCAMM to extract data on the types of materials, techniques and laboratories around the world that perform analysis and research of cultural heritage, offering the opportunity to get an overview on the trends and directions within Greece and beyond, and its evolution through time.

Reflecting on its crucial role, DCAMM is planning to further enhance its contribution along the axes of information networking, as well as public outreach. Firstly, by implementing a digital archive (database) of analytical metadata and secondly, with the publication of the application and sampling process through the National Register of Administrative Procedures (MITOS), to further facilitate scientific research.

Beyond excavation. Archaeological fieldwork and new methods from the perspective of the central administration

KONSTANTINA BENISSI[1] & ELENA KOUNTOURI[1]

[1]*Directorate of Prehistoric and Classical Antiquities, Hellenic Ministry of Culture*

The 50th anniversary of the Fitch Laboratory is an opportunity to reflect on the introduction and development of the contribution of science to archaeological research. The Directorate of Prehistoric and Classical Antiquities of the Ministry of Culture, due to its central role, monitors this process, particularly through the reception, consideration and approval of the systematic archaeological research programmes carried out by all bodies in Greece: Foreign Archaeological Schools and Institutes, Greek educational and research institutions and the Archaeological Service. Laws, rules and procedures reflect the development of excavation methodology, the introduction of new tools, and the need for administrative practice to adapt to new requirements. The focus of this presentation will be to highlight this dynamic relationship, as well as to provide an overview of the quantitative data regarding scientific methods applied in the field, as recorded in our archive over the last decade.

Farewell to Humanities?

KOSTAS KOTSAKIS[1]

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Since the previous meeting on Science in Archaeology, held in 1985 at the British School in Athens, the approach of Sciences and Archaeology has spread like wildfire. What was once considered an outlier, at best related to archaeometry, became progressively central to the archaeological debate. Today, the entanglement of science has gone much further than archaeometry. Science underpins almost every key archaeological theme, such as mobility, culture, society, or economics and cutting-edge scientific analysis is considered a sine qua non for tackling any core topic. In other words, it is a totally new paradigm.

This turn is really spectacular and demands closer scrutiny. For this, we need to trace its significance within the corpus of theoretical discussion of the last decades, passing from the remnants of 19th-century historicism to the positivism of processual archaeology, demolished by the post-processual critique, and finally to the present domination of the Sciences.

As a Greek archaeologist working in Greece, I am particularly interested to understand where we stand in Greek archaeology. To what extent has it conformed to this new scientific paradigm, and if not, what hurdles or obstacles have prevented the shift? My experience of the academic environment shows that there were many, but primarily a deep resistance to change.

The persistence of scientific research in archaeology indicates that its popularity is far greater than a passing fashion or trend. At first glance, it would seem like a reaction to the postmodernist philosophy of the 1980s and '90s. However, the world's unstable condition now poses much more severe challenges than the philosophical concerns of certain groups of academic intellectuals. Historically, periods of political and social unrest were connected with a turn towards the certainties of scientific logic. Nevertheless, these certainties do not come without a price for archaeology. The standing of humanities in the present context will close the talk.

Mediterranean futures for archaeological science

CYPRIAN BROODBANK[1]

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The Mediterranean has long been a crucible for advances in archaeological science, from the radiocarbon revolution, to environmental archaeology and provenance studies, and through to the biomolecular breakthroughs of the present and emergent future. Such advances have vastly enriched our understanding of the long-term history and dynamics of Mediterranean societies. Increasingly, this work involves not simply collaborations between archaeologists and scientists, often working in big multinational teams, but also the emergence of a new generation of hybrid experts, fluent in the methods and reasoning of both fields. The fine granularity and wealth of Mediterranean data, underlying geological diversity of the basin, and fundamental role played from an early date by the maritime and terrestrial movement of people, raw materials and finished objects all contribute to these exceptional results and prospects. Among the extraordinary range of materials that shaped the world of the ancient Mediterranean, ceramics still stand out for their remarkable ubiquity, quantity, and breadth of functions, from food processing, storage and social consumption, to specialised transport and textile production, as well as for their suitability for scientific approaches to important social questions about manufacturing technology, provenance, and container contents. The Fitch Laboratory of the British School at Athens, whose fiftieth anniversary we celebrate this year, has helped to pioneer such approaches to state-of-the-art pottery analysis, and continues to play a leading role in promoting the scientific exploration of archaeologically significant questions across the Mediterranean world. This lecture considers some of the key questions of interest to Mediterranean archaeologists today and in the future, and asks how archaeological science can help to address them.

Keynote Lecture

Archaeological science in the postcolonial era

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Science permeates nearly all branches of archaeology. The two fields were introduced to parts of Eurasia, Africa, America and Australasia as accessories of empire. The extractive nature of colonialism was often accompanied by the plunder of archaeological sites in the colonies to stock museums and private collections in Europe and America with exotica. Colonialism created unbalanced and unequal relationships in approaches to studying the past between the coloniser and the colonised. Such inequalities persist after the end of formal colonialism. For example, former colonial centres have strong facilities for archaeological science and are well resourced compared to most former colonies. This gives researchers based in Britain, France, Germany and other countries involved with colonialism unlimited access to archaeological science which they export and or practice in former colonies. Several questions immediately follow: is archaeological science in the former colonies a trojan horse for continued colonisation in the post colony? Is archaeological science relevant to the needs of post-colonial states? How can the relationship between those with the firepower of archaeological science and those without be just and fair? This lecture addresses these questions and argues that opportunities for collaboration brought by archaeological science are a step towards equity, transfer of knowledge and know-how as well as the integration of science with local knowledge to achieve revolutionary outcomes.

Landscape Histories and Environment

Palaeolithic dispersals, survivals and population contacts: Uncovering human evolution in Greece

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Greece lies on the principal migration route through which past human groups dispersed across three continents, as well as in one of the major hypothesised glacial refugia of the continent, where plants, animals and hominins may have persisted through Pleistocene glacial intervals. Based on this biogeographic role, the region's Palaeolithic / paleoanthropological record would be expected to be among the longest and most continuous, but also highly diverse, reflecting the complex processes of late survivals, new arrivals and, potentially, contact between different groups. However, until recently, little evidence existed to support these ideas. Indeed, it is common for maps of Palaeolithic Europe to indicate population dispersals as arrows that either entirely bypass or 'fly over' much of the southern Balkans. Here we present results from more than ten years of field and laboratory research in Greece, which brought forth new evidence of the regions' importance as both dispersal corridor and glacial refugium for Palaeolithic populations. Results underline the crucial role of the archaeological sciences and of interdisciplinary, systematic, and targeted research in uncovering Palaeolithic lifeways.

This research is supported by the European Research Council (Grant Nrs. 283503, 724703 and 101019659).

Archaeological soil and sediment microstratigraphy: Understanding how archaeological sites are formed

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For interpreting the archaeology of a site, it is imperative to understand how the building blocks of stratigraphy, the archaeological deposits, have been formed. The micromorphological approach, a microscopic contextual method, offers a fine-grained stratigraphic perspective for deciphering activities and events in the biography of sites, as well as a means to understand how a site has been built. Micromorphology has become widely used only recently as its interpretive potential has increased considerably. Currently, a growing body of data is emerging based on the application of experimental research to the study of archaeological sediments and in particular those related to anthropogenic processes and activities.

This talk utilises examples, particularly the fuel characteristics and maintenance practices of Palaeolithic hearths, and the patterns of floor construction and maintenance in the architectural sites, to decipher behaviours, activities and practices of hunter gatherers and urban settlers.

Celebration time, come on: Anthracological studies in Greece, looking back, looking ahead

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In this celebrating mood, Anthracology (wood-charcoal analysis) in Greece also has a good reason to celebrate. More than half a century has passed since the first studies of wood charcoal remains were carried out in prehistoric contexts in Greece. However, anthracological studies entered a dynamic phase only towards the end of the 20th century and the early years of the 21st. Many paths concurred: advances in archaeological science and environmental archaeology, greater interest by archaeologists for neglected yet common bioarchaeological materials, more interest in archaeobotany, young specialists dedicated to carrying out the "dirty work" in the field (flotation) and the laboratory (hours of sorting and microscopy), new methodologies and methods in anthracology, wider diffusion of relevant publications, institutions that provided generous funding, etc. The lonely road of the early years is now getting more diverse with new faces, new academic backgrounds, and new studies. We take the Fitch Laboratory celebration as an opportunity to follow the timeline of wood charcoal studies in Greece and to reflect on how and to what extent these have enriched our knowledge of the interaction between human communities and their environment along the Greek archaeological timeline. From the Palaeolithic to Historical times anthracological studies focus on how communities managed the vegetation and provided their camps, households, workshops, funeral fires, rituals, etc with (fire)wood and timber. With such data, anthracological studies seek to understand the diversity of human practices and responses in their variable socioeconomic and physical background. New projects, research fields, and interdisciplinary collaborations lay ahead for Anthracology in Greece.

Linking present and past farming landscapes through archaeobotany

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Archaeobotany relies on comparisons between present and past. Part of the excitement of archaeobotany in its early days was the realisation that ancient seeds and other 'perishable' plant parts were not only amenable to preservation (under the right circumstances), but in a form that resembled modern specimens, enabling taxonomic identification. In this talk we will develop the argument that archaeobotany in Greece has been an important context for 'conversations' between present and past farming landscapes. Those conversations have extended from instances of remarkable continuity and sustainability in certain farming practices (such as cultivation of local species for making fava in the Greek islands), to the extinction of crops (such as Timopheev's wheat) that were brought to light again through archaeology. Equally, ecological surveys of present-day 'traditional' cultivation regimes in Greece and beyond have enabled the development of complementary techniques for inferring past agricultural practices (from weed ecology and stable isotopes). These survey data document rare and endangered farming regimes that are increasingly recognised as sources of resilient and sustainable practice. We use archaeobotanical case studies from Greece and adjacent regions to illustrate linkages between present and past farming over the last 50 years.

Climate change and landscape histories in the Aegean

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In the last two decades the Aegean has become one of the most prominent testbeds for climate-environment-society dynamics. The rich and well investigate archaeological and historical records stemming from the long history of complex societies can now be combined with an increasing amount of paleoclimate records to explore if and how climate change impacted human societies on different temporal scales. Much of the work undertaken along these lines is of interdisciplinary nature which in essence means that teams of researchers from different disciplines and with different backgrounds need to find ways to communicate to make the most of the strengths of the individual disciplines. In this presentation we will present an overview of climate-environment-society dynamics research in the Aegean to emphasise the role of uncertainties, along with the importance of temporal and spatial scales for our understanding of climate change and landscape dynamics. This will lead to a discussion that highlight the need for more nuanced renditions of the sequence of events within which internal societal factors are given more room, to eventually enable us to approach the elusive nature of causality.

Coastal landscapes at Palaikastro, eastern Crete, from the Late Neolithic to the Bronze Age and historical periods

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This presentation discusses new sedimentological and faunal data obtained from two palaeo-environmental cores extracted near the Bronze Age urban centre of Palaikastro, eastern Crete, and provides valuable insights into the coastal landscape history during the Neolithic and the Early Minoan periods, as well as snapshots into later chronological periods and landscape phases. Our combined results indicate that during the Late Neolithic (before 3822-3710 BCE) a low energy, oligohaline estuary occupied the study area. The estuary gave way to an open and shallow marine lagoon during the Final Neolithic (3531-3354 BCE). A short-lived phase of alluvial deposition resulted in sea regression and the creation of coastal marshes at the beginning of the Early Minoan period (between 2924-2872 BCE and 2822-2629 BCE), whereas later in the Early Minoan period (2580-2469 BCE and 2466-2175 BCE), lagoonal/shallow marine conditions were re-established. Although our data do not bear evidence of the mid-2nd mil. BCE Thera eruption (e.g., tephra or tsunami deposits), further research is clearly needed to reconstruct the coastal landscape history for the next ca. 1000 years, between the Early Minoan IIB and the Late Minoan IIIA period. It is conceivable, however, that post-Theran eruption hydrological changes may have triggered accelerated soil erosion, and flash fluvial deposition, resulting in sea regression and the creation of marshes at the coastal zone. By the 13th – 14th century CE, thick deposits blanketed the coastal plain and the landscape started to resemble its modern morphology. Integration of sedimentological and faunal evidence with the multi-proxy Palaikastro off- and on-site dataset highlights the complex interplay of ecological, climatic, geomorphological, economic and social factors in shaping the coastal landscape in the vicinity of the Bronze Age town.

Approaching the past through multiscale analysis of ceramic landscapes

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Archaeology in Greece, and more broadly in the Mediterranean, has traditionally put a lot of emphasis on the study of the uniquely rich, clay-based material culture of the region, primarily focusing on pottery to establish its chronology, provenance and function and investigate trade and connectivity as well as socio-cultural, economic and political aspects of past societies.

This emphasis, combined with the increased, and gradually more integrated, use of scientific techniques, has made the Aegean, and the Mediterranean, an ideal place to use ceramic material culture to understand the human past. Furthermore, broader developments in contemporary archaeological theory and practice gave rise to different research questions over the years greatly influencing the issues addressed through ceramic studies in the area. The research focus moved from the regional to the local scale and from the study of provenance and long-distance trade and exchange to the study of technology and the reproduction and transfer of technological knowledge. Such shifts have fundamentally changed the design and execution of pottery analytical projects as well as the interpretation of the resulting data, fully unlocking the analytical potential of the particularly ceramic-dense archaeological landscapes of the Aegean and the Mediterranean.

These developments will be illustrated and discussed through the work of the Fitch Laboratory, which functions as both a research and training center. Over time, the laboratory has developed a landscape-based, bottom-up, and multidisciplinary approach to the study of ceramics. This approach focuses on reconstructing the biographies of pots and the people who made and used them, spanning a wide range of regions and historical periods. By continuously building on this, the laboratory enables multiscale investigations into societal change, connectivity, mobility, and the interplay between nature and human history across various spatial and temporal scales.

On the key-holes and broad-brushes of landscape history

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Mediterranean landscapes offer insights at spatial scales ranging from the truly microscopic to the wholly globe-spanning, at social scales from individual people to cultures of millions, and at timescales from milliseconds to millennia. Today, researchers are swept up in a veritable flood of new methods and new data, but likewise continue to wrestle gamely with important old methods and old data. Our personal motivations for studying past landscapes often vary so much across disciplines that we fall back on 'history' as a catch-all term for our collective endeavour. Well-known creative tensions exist between narrative or numeracy, object or text, humanities or sciences, fieldwork or deskwork, excavation or survey, and gradualism or catastrophism to force some slightly awkward distinctions. Sometimes these tensions are manifest in departmental fault-lines, governmental oversight and/or major personality conflicts, but often they follow healthier paths, as has often seemed the case within the walls of Greece's first archaeological science laboratory. This short paper takes the Fitch Laboratory's 50th anniversary to reflect on some of these multi-scalar and multidisciplinary challenges, with particular attention to intensive survey, artefact studies and data science.

Mobility and Movement

Aegean in the spotlight. A new paradigm for reconstructing early Palaeolithic dispersals, settlement and landscapes of habit

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The Aegean region, only recently started to catch the attention of the research community for its potential to provide dispersal corridors and attractive habitats for hominins during periods of lower sea levels in the Pleistocene. Investigations on Palaeolithic Lesbos have been seminal to this model and currently frame early Palaeolithic research at the Eurasian crossroads. Palaeogeographical reconstructions for the last 400 ka, based on the identification of successive glacial prograding sequences in seismic reflection profiles and boreholes from different parts of the Aegean, suggest the prevalence of extended terrestrial environments connecting western Anatolia to continental Greece. Our work has further refined these reconstructions by implementing evidence on tectonics, sediment deposition, geomorphology and hydrogeology providing a qualitative outline of thinly sedimented areas in the shallow shelf that would have been exposed during the glacial lowstands of the Middle and Late Pleistocene. This offered a frame of reference to assessing archaeological implications relevant to dispersal potential and availability of natural resources in the Aegean. It highlighted the potential of the Aegean continental shelf and islands to framing the geographies of eastern gateways to/from Europe in the discussion of early Eurasian colonisation and settlement. Affordance-based suitability (predictive) modelling has further explored this idea by indicating potential areas of occupation within the Aegean and potential trans-Aegean corridors for dispersal. Palaeolithic research on Lesbos has offered tangible evidence to support a new model which places under the magnifying glass the islandscapes, the coastal zones and the submerged landscapes of the north Aegean, shifting investigations away from the mainland and its karstic geographies, that have formed the research paradigm up to the end of the 20th century. Palaeolithic Lesbos has contributed a robust Acheulean record dated to the second part of the Middle Pleistocene. This record suggests that Acheulean tool using hominins favoured the volcanic landscapes of the Mediterranean and marks an eastern point of departure for trans-Aegean crossings. The submerged landscapes of the Aegean and the Aegean islands, if seen, as we do here, as a seamless whole during certain periods of the Early and Middle Pleistocene, emerge as a new and promising arena for early Palaeolithic research.

Ancient DNA research in the Aegean: Recent findings and future perspectives

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The Aegean societies of the Bronze Age have long fascinated scholars with their outstanding palaces, literary sources, and rich burials. However, many basic questions have remained unanswered: how were families structured? Did people immigrate to the Aegean and how did people move within the Aegean? Recent archaeogenetic studies offer fresh perspectives on these issues, enabling us to reconstruct familial relationships and track migration patterns across Greece from the Bronze Age into the Early Iron Age. We will discuss how and why marital practices were shaped in Mainland Greece, Crete and the other islands following biological rules, and what the impact of non-local individuals and migrant groups could have been on the societies. All these new aspects are also helping us better understand how collective burials, from Mycenaean infant graves to chamber and tholos tombs, represented familial ties and social belonging during life.

We are now extending these insights to the Athenian society of the 1st millennium BCE, where archaeologists have paid great attention to the spatial organisation of cemeteries, grave typology, burial practices, and rituals of each period, grave marker style and iconography, etc. The study of differences among regions and changes in the demographic composition of cemeteries in Athens and Attica through time are leading to a more nuanced understanding of social developments. Recently, the Antiquity Ephorates of Attica and the Max Planck Institute for Evolutionary Anthropology have initiated the Attic Archaeogenetic Project Collaboration. In this framework, we have generated archaeogenetic data for more than 100 human bone samples from cemeteries from all over Attica, with a particular focus on the famous burial ground of Phaleron. Here, we will present the current state of our research and the novel insights achieved so far in demography, kinship, mobility, and marital practices in the 1st millennium BCE Attica.

Palaeomobility studies in the Aegean: Where do we stand and where are we heading?

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Palaeomobility has been a central research topic in bioarchaeological research in Greece and beyond. In the context of the Aegean, different forms of palaeomobility study have a long history, starting with typological research on cranial morphology, proceeding to more nuanced biodistance studies, and implementing advanced isotopic and ancient DNA analysis over the past years. Each of these approaches reveals the methodological and theoretical advances that have taken place in bioarchaeology but also in archaeology more broadly. This lecture will present key studies that demonstrate this advancement in Aegean palaeomobility studies, covering biodistance studies from prehistory to contemporary contexts, as well as isotopic and aDNA studies for historical periods. A parallel focus will be on how different methodological approaches complement each other. The final part will stress the existing gaps in our knowledge as well as the directions in which future research is anticipated to develop.

From Panic to SOS: Amphorae and the development of pottery studies

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The past fifty years have seen substantial developments in the study of archaeological ceramics, frequently highlighted by collaborative work between the Fitch Laboratory and Demokritos, and particularly by the mobility of researchers between the two institutions and their collaborative networks. Rather than being based solely on the application of new scientific techniques, progress in the field has built upon an increasing emphasis on technology and its social dimensions, in contrast to a previous focus on provenance, and especially by such studies becoming an accepted part of the study of ceramic assemblages.

Fundamental to the many successes in the field has been the effective combination of different analytical techniques, and it was a collaborative paper from the Fitch and Demokritos in 1984 on Amphorae that started that trend. We trace the development of such work including the explicit 'manifesto; of the GEOPRO project at the turn of the Millennium which cemented the belief in the integration of petrographic and chemical techniques. Using examples of a variety of maritime transport containers, from Early Bronze Age collared jars, through to Hellenistic amphorae from Kos, we discuss how a combined understanding of provenance and technology reveals a host of insights into past economy, social interaction, and consumption of the transport vessels' content.

In looking forward to the next fifty years of research and collaboration, we present insights from a current project on the diachronic study of amphorae from Attica, conducted at Demokritos as part of the PlaCe European consortium, in which the Fitch is also a partner.

Tracing craftspeople mobility in the Aegean – past, present and future

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In this paper we explore the development of research on craftspeople mobility in the Aegean, with emphasis on potters and through the combined application of scientific methods. Our aim is to reflect on how our approaches, methodology, and research questions have evolved during the last 50 years, and to address the future of such research, including its broader implications and prospects for approaching human mobility more generally.

An emblematic paper was published in 1977 by Richard Jones, the then director of the Marc and Ismene Fitch Laboratory for Archaeological Science, and Jeremy B. Rutter on the identification of 'resident Minoan potters' on the Greek Mainland. This was based solely on a combination of stylistic observations with chemical analysis pointing towards local production of Minoanising pottery. Since 2000s the focus in such investigations has shifted towards the study of technology of pottery production, influenced by the *chaîne opératoire* approach and focusing on the extensive use of petrography to characterise fabrics, but also to reconstruct potters' choices aiming at defining potting traditions. Admittedly scholars associated with the Fitch Lab were at the forefront of this research, combining the targeted application of petrographic and elemental analysis in the context of the ceramic landscape approach, which in this particular problem provides important insights into how mobile potters approach and familiarise themselves with new landscapes. Finally, the most recent development appears to be the detailed investigation of forming techniques and body motor habits, as a crucial aspect of technology that is more closely associated with potters' identity and consequently can contribute significantly to the detection of potters' mobility under different socio-historical circumstances.

We conclude by looking into the future of studies on mobile craftspeople, suggesting that the approach elaborated for pottery can be successfully applied to other crafts using similar parameters. We also note that tracing of craftspeople mobility can supplement study of human mobility with other methods that look at human remains, or even provide the only clues about such movement in cases where human remains are not sufficiently abundant or revealing.

Models of movement: Integrating networks with multidimensional ceramic data

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In the fifty years since the Fitch was founded, our understanding of connectivity and mobility in the ancient Aegean has undergone some profound changes. On the one hand, we now have at our disposal a suite of concepts and methods for exploring the dynamics of movement, ranging from globalisation theory to network analysis. On the other, there are now masses of data on the movement of people, artefacts, and technologies, much of it generated through archaeological science; it is quite wide-ranging, across both the diverse regions of the Aegean and its many millennia of prehistoric occupation. What is missing, however, is a bridge between these two domains; the theory and method on movement has barely been put into play with the large bodies of data now available. In this presentation we review the current state of affairs concerning Aegean connectivity and mobility, in theoretical, methodological and empirical terms, before offering some thoughts on what the future may hold. We largely concern ourselves with Crete and the southern Aegean during the Bronze Age, and will zoom in on the considerable potential of network approaches – particularly when harnessed to large ceramic datasets that incorporate typological, technological, and compositional data. The resultant 'data models' may transform how we think of movement at both regional and inter-regional levels.

Everyday Life

Cooking with plants in prehistoric Greece: Exploring food provisioning using archaeological science and experimentation

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Recent research in the context of ERC project PlantCult has focused on exploring prehistoric plant foods from Greece and other parts of Europe and beyond and developing methodologies for understanding the underlying 'recipes' and processing/preparation steps that led to the food remains we often encounter charred in the archaeobotanical record. The paper offers a brief overview of the methodologies developed by PlantCult and the interpretations put forward for specific categories of food remains encountered at prehistoric sites of northern Greece. The methodologies involved experimental cooking, experimental charring aided by the use of SEM. The potential and limitations of interpreting ancient plant food remains are explored and discussed.

The role of viticulture and wine production in the social revolutions of the third millennium BCE Aegean

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The domestication of grapes and the distinction between wild and cultivated varieties in the Aegean has been a central focus of research for decades, as it represents a turning point in the agricultural, economic, and social development of Aegean societies. Much of the research has concentrated on the morphological differences between these two subspecies, seeking to identify the period when vine cultivation became widespread. This paper will review the current state of archaeobotanical evidence related to grape cultivation and wine production before the second millennium BCE. Additionally, it will examine the extensive land cultivation required and the material culture associated with wine production, related craft production, new forms of pottery, and specialised installations. The paper will conclude by proposing that wine production within settlements may have been more of a performative act than a purely agricultural necessity.

Understanding everyday life in ancient Greece: The contribution of zooarchaeology

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What part did animals play in the daily life of ancient Greece? We focus here on the timespan from the beginning of farming in Greece (i.e., the 7th millennium BCE onwards) and thus primarily on the role of domestic animals. First, we offer a summary of what we know (and do not know) about the husbandry, use and broader cultural significance of domestic animals. We note that zooarchaeology has made a much richer contribution to understanding of everyday life for the Neolithic and Bronze Age than for Classical and especially post-Classical Antiquity, emphasising that the rich textual and iconographic sources of the latter periods do not make zooarchaeological evidence redundant. Secondly, we consider changes in the methods applied to the study of faunal remains, highlighting the expanding role of biomolecular analyses alongside long-established macroscopic (and, more recently, microscopic) approaches. While biomolecular (particularly stable-isotope) analyses are revolutionising our understanding of ancient animal management, we emphasise the need for such analyses to be embedded in macroscopic studies and interpreted in the light of other relevant archaeological evidence. We also highlight the key role of ethnographic, ecological and experimental studies in framing relevant questions about the past, in developing and testing zooarchaeological methods (macroscopic, microscopic, and biomolecular alike) and in interpreting the resulting data. Thirdly, looking to the future, we foresee an increasing role for studies of ancient animal exploitation in the conservation of threatened cultural landscapes and sustainable development of vulnerable rural communities.

Experiencing life histories in the prehistoric Aegean: Old trends and new perspectives from the study of the human remains

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Bioarchaeological research in Greece has a long history and a broad thematic span. Over time and under the influence of various trends in archaeological method and theory, the study of human skeletal remains has taken many forms regarding academic outreach ranging from typical appendices with long lists of skeletal measurements, to research-oriented studies that focus on various aspects of everyday life including demographic profiles, diseases, diet, activity patterns, genetic relationships, migrations and mortuary practices using population-based approaches. Current research, endorsing a contextual and multidisciplinary methodology, emphasises the importance of studying smaller groups of people within their historical and regional contexts in order to acquire a better understanding of lived experiences at the individual, kin-group and household level. These studies are gaining momentum, particularly with the use of advanced analytical methods and tools such as aDNA and isotopic studies, which complement our understanding on life and/or individual histories.

This paper presents the osteoarchaeological work undertaken in skeletal assemblages from the prehistoric Aegean. Based on extensive and updated macroscopic studies, aspects of daily life ranging from health, activity patterns and diet to attitudes towards death and the dead will be discussed. Available case studies will demonstrate the potential of contextual bioarchaeology in answering key research questions by exploring demographic profiles, age and/or sex related differentiations in labour, health patterns, changes in burial practices and the acts of managing and transforming the human body during the enactment of funerary processes. These aspects could reflect differentiated status, social identities as well as origins held by the deceased in their lifetime. In a second step this paper will raise certain questions and address challenges related to the methodological restrictions and errors in the macroscopic study of human skeletal remains, as well as the increasing interest by the academic community in microscopic and biomolecular analyses and their emergence as primary lines of bioanthropological evidence.

CityLife: A bioarchaeological study of 1,800 years of resilience and adaptation to urbanity

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CityLife explores, from a bioarchaeological perspective, how historical populations adapted to an urban environment and developed resilience to the disadvantages of urban life. By exploiting the information contained in human skeletal remains, the project clarifies the roles of biological factors in the durability and sustainability of pre-industrial urban societies. Newly developed osteological, chemical isotope, and genomic methods are being used, together with cutting-edge tools for statistical evaluation. CityLife evaluates the living conditions, economy, population structure, pathogen load, and immune defence in a sample of more than 4,500 skeletons from Thessaloniki, a hotspot of European urban culture. The city offers a unique constellation to study urban life diachronically from 300 BC to AD 1,500 and investigate urbanisation in a single place continuously over 1,800 years. The main objectives of the project are to a) infer urban living standards by studying secular changes in anthropometric indexes, infant diet, childhood stress, and trauma in a combined manner; b) investigate the resilience and sustainability of urban food systems by reconstructing individual diets and local supply networks; d) investigate social structures, religious cohabitation, and migration by genetically reconstructing the degree of kin and non-kin relationships; and e) explore the effects of pathogen exposure on human evolution and health by studying genes associated with increased immunological response and the oral microbiome.

Understanding various aspects of everyday life through the analysis of organic residues

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During the past 30 years organic residue analysis has emerged as a powerful tool in archaeological research, providing a more detailed understanding of the many dimensions of life in antiquity by shedding new light into the daily lives of ancient populations and into their interactions with the environment. Residues of food and beverages, oils, medicines, and technologies involved in the production and repair are often preserved in various types of objects (i.e. pottery, metallic and stone artefacts and also clay structures) and have been analysed with a range of extraction and instrumental methods. More recently, molecular archaeology has recourse to effective interdisciplinary collaborations for the identification of different types of residues, such as starches and proteins.

One of the primary contributions of organic residue analysis lies in its ability to illuminate subsistence practices and foodways, providing direct evidence on the types of foods consumed and, indirectly, indication on past nutritional regimens, processing of natural products, crops and agricultural activities, and the role of food in social and ceremonial contexts. This level of specificity helps archaeologists build a clearer picture of regional variations in diet, shifts in dietary patterns over time, and offers a dynamic view of how people adapted to environmental changes and economies, as well as of the social importance of the use of specific substances in a given milieu. Beyond food consumption, organic residue analysis also sheds light on ancient industries, technological practices, on the ways early communities utilised natural resources and on the of trade networks.

In the context of Greek archaeology, the implementation of molecular analysis has provided significant information on everyday life activities mainly on a micro-scale, looking into relatively small assemblages addressing well-structured research questions. Despite the development of new and powerful analytical tools in the detection and characterisation of organic residues and the potential offered for a comprehensive consideration of life in the past, residue analysis has not been used as extensively as in other parts of the Old World. Residue studies in Greece can benefit from consistent and targeted sampling over a wider scale of ceramic objects, as well as other materials, tackle inherent issues in the archaeology of the southeast Mediterranean and explore new horizons through experimental approaches.

Organic residue analysis, used complementary to other lines of evidence, provides archaeologists with more nuanced and tangible means of reconstructing ancient diets, technologies, and social practices offering a glimpse into practical, everyday activities. Ultimately, it helps reconstruct the intricate relationships between people and their material world and appreciate the complexities of past human societies.

Techniques, senses and emotions: The case study of stone polishing in the prehistoric Aegean

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Nowadays, archaeological objects are exhibited in museums as artworks to be admired. However, in prehistoric times, these craft productions were used in everyday life but also during profane or religious rites. They were handled, exchanged, transmitted from one generation to the other. Their colour and sheen, but also their texture, were essential components of their identity: ''human crafts, give tangible expression to our inexhaustible trust in the solidity of matter and veracity of touch'' (Aristotle, Magna Moralia I, 34, 1197a 4–13).

Our study pointed out, by applying an ethnoarchaeological approach, that visual and tactile skills are essential for traditional, non-mechanised, craftsmanship. Technological development mobilises not only empirical knowledge about physical properties of materials but also senses and emotions during creation processes.

More specifically, we have studied traditional stone polishing at Mahabalipuram (India, Tamil Nadu) and at Tenos Island (Greece, Cyclades) and observed, as craftsmen pointed out to us, that the more skilful ones ''measure with their hands''. The surface topography of polished samples was measured with an interferometer and a confocal rugosimeter. Polish has been identified by a multi-scale analysis based on the 2D method of continuous wavelets transform (CWT). Finally, we have considered the sensorial perception of the polish by using an ''haptic tribometer''. Using this methodology, we were able to show that technical choices occurring are closely related to the colour and the texture of the surface desired. Coming back to the archaeological record, we were able to identify similar types of polish: some workshops (Egypt) produced mainly smooth and mat surfaces, some others (Crete) rougher but more shiny ones. As pointed out by psychological and anthropological studies, can we see here the impact of culture on surfaces' perception?

In any case, this step forward in refining our own way of looking at ancient techniques enhances our appreciation of contemporary craftsmanship. It stimulates new museum exhibitions with the introduction of touch experiences. It finally contributes to elucidate, in correlation with psychology and neuroscience, sensory and cognitive mechanisms during creation processes.

Making the everyday world: An anthropological interdisciplinary approach to artefacts and crafts

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Archaeology is currently experiencing a significant epistemological shift, challenging the prevailing Western functionalist and instrumentalist views of technology, with more voices calling for the exploration of alternative ontologies of making in the past. Over the last two decades, technological studies have undoubtedly embraced, social understandings of techniques, particularly in the context of prehistoric material culture, recognising the cultural and historical nature of crafting practices. Under this 'cultural turn', the French-derived *chaîne opératoire* approach has emerged as the *par excellence* methodology for examining the operational sequences and technical choices involved in production. However, this focus on technical and material dimensions of objects often overlooks a fundamental component of the everyday hand-crafted world of (pre-industrial) ancient societies: the embodied relationship between makers, tools, raw materials and ecological landscapes, which is forged as skilful *body techniques*, with their learning and transmission being central to the social and material reproduction of communities. This paper advocates for an anthropologically grounded interdisciplinary approach to artefacts, emphasising the material traces of these techniques as indicators of the cultural enskillment of the human body in manipulating tools and raw materials, and hence as remnants of craftspeople identities and artefact's meaning. By harnessing the potential of both established and innovative 'scientific' methods to provide access to previously impermeable aspects of object's making biographies, and by drawing on case-studies from the Bronze Age Aegean technologies, this approach aims for a bottom-up understanding of ancient crafts: the one that opens a window into the often dis-regarded mundane habitual gestures that shape everyday life in the past through the appropriation of kinaesthetic knowledge of materials and tools as embodied traditions.

Inter-disciplinarity in action: The case of Neopalatial Papadiokampos in east Crete

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Inter-disciplinarity was introduced in Greek archaeology in the early 1980s mainly through sampling for environmental materials during excavation and the use of archaeometric techniques to tackle archaeo-environmental and palaeo-economic research questions. Minoan archaeology became arguably the arena of application par excellence of the new approach due to the plethora of excavations and sophisticated research questions. With its mission to provide technical support and assist publication the INSTAP Study Center brought together specialists from different fields (conservation, illustration, photography) to offer their expertise in major archaeological projects in Crete and across the Aegean. In 25 years the Publication Team has evolved into a multi-disciplinary group including specialists for ceramic and zooarchaeological analysis, not only offering new data for the individual sites and assemblages but also contributing to a better understanding of intra- and inter-regional relations over time and often tackling research questions beyond technology and economy.

For the celebration of the 50 years of the Fitch lab we present Papadiokampos as a case study representative of our collaborative work. It showcases the potential of this approach and shows how our combined effort allowed for a better understanding of the character of the site, shed light on a previously unknown aspect of everyday life in the Neopalatial period in east Crete, and opened the way for a new reading of previously excavated sites.

The rescue excavation of the Ephorate of Lasithi uncovered three houses of the Late Minoan IB period, and that is only part of a larger settlement stretching along the coast. Among the different lines of investigation, a Publication Team project was carried out including the detailed contextual analysis of animal remains (mammal-fish bones and marine molluscs) and the scientific analysis of pottery. This enabled the comparative study of two different Houses, A.1 and B.1, and the contextualisation of their finds within Neopalatial Crete. The questions addressed focus on the character of the site and the range of activities performed in the buildings. What is the role of a site without any “local” pottery? How to interpret the hugely uneven amount of molluscan evidence in the two Houses? What is the relationship of Papadiokampos with major sites like Mochlos and Petras? And, most important, are there any other sites of similar character in east Crete? If they exist, do they form a new type of Minoan habitation? Our approach offers an innovative suggestion about the role of Papadiokampos within the economic arena of the LM IB period emphasising the importance of the combined examination of the finds.

Keros and the Small Cyclades: a twenty-first century approach to research design, field methodology, interdisciplinary research and answering big questions from granular connected data

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Advances in interdisciplinary scientific research pioneered at the Fitch Laboratory had loomed large in Colin Renfrew's mind when he founded the McDonald Institute in Cambridge as a centre for archaeological science, and later clearly impacted the planning for the research design of the Cambridge Keros Project being planned before 2006. The 2006-2008 Cambridge Keros Project was one of the first to fully integrate a plethora of archaeological science approaches from the design stage, including planning for sampling from the start. The publication record of the project showed the way in moving archaeological science from disjointed appendices to the heart of the research programme. More recent projects took this further by rethinking field methodology from first principles and introducing digital recording at all stages of fieldwork. As we look forward to further work on Keros, we examine the legacy of an evolving research design and the advances in knowledge this approach has facilitated.

Posters

Human remains in focus: Integrative macroscopic and analytical approaches in Prepalatial Koumasa Tholos Tomb B

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Cremation is a highly sensory experience that symbolically represents the transformation and destruction of the ephemeral nature of the human body. The differential use of fire on human remains as part of multi-layered funerary rituals during the Prepalatial period on Crete underlines the presence of incorporeal experiences and beliefs. Person and body are socially reconstructed throughout the life cycle, while individual and communal identities are challenged and negotiated. The cemetery of Koumasa occupies a prominent position in the field of Minoan archaeology. At the same time, the burnt human remains from Tholos Tomb B (3350/3000-2030/1880 BCE) represent an exceptional case of a commingled deposition. Macroscopic observations, including valuable insights into taphonomy, biological profile, and heat-induced alterations, have been enriched by the recognition of compositional, structural, and chemical changes in the bone apatite through infrared (FTIR-ATR) and isotope (^{18}O, ^{13}C) analyses. This poster presents the main results of the multidisciplinary study of the bone assemblage from Koumasa Tholos Tomb B, with particular attention devoted to the detection of the burning conditions that occurred in Prepalatial Koumasa.

Exploring cremation practice in the Prehistoric and Protohistoric Aegean: Bio-anthropological and technological insights

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Cremation as a means of treating the deceased has a long history in human society, involving both the living and the dead. The study of human remains exposed to fire, while challenging, can yield important insights into the process of cremation. In the Aegean region, the use of fire in funerary contexts appears as early as the Mesolithic period (10th mil. BCE) and continued to be applied during prehistoric and protohistoric times. Although widely well documented in the Aegean archaeological record, a comparative systematic study of this practice in a broad geographical and chronological context is still lacking. The TEFRA project, funded by the Hellenic Foundation of Research and Innovation (H.F.R.I) aims to address this gap by investigating cremation in the Aegean from the Neolithic (7th mil. BCE) to the Early Iron Age (11th–9th c. BCE). The project seeks to reconstruct the biological attributes of the people whose bodies were exposed to fire (e.g., minimum number of individuals, biological sex, age at death etc.), as well as to assess the use and technology of fire through an interdisciplinary approach. This poster will present some results of the macroscopic analysis of burnt human remains from various bone assemblages from Greece, focusing on bio-anthropological data and heat-induced changes observed in the osteological material. These data will be further supported by preliminary results from the infrared analysis (FTIR-ATR) of selected samples, which provide additional insights into the compositional and structural changes due to fire. The integration of multiple methods aims to identify geographic and chronological variations in cremation practice, contributing to a broader understanding of this complex funerary process.

Investigating cremation practice in Early Iron Age central Macedonia: A multi-proxy approach

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Cremation as a social process encompasses a range of practices, choices, and meanings associated with the act of burning, where participants not only interact with the deceased but also establish, challenge, and negotiate social identities. Cremation burials are commonly found in the archaeological record of prehistoric and protohistoric Greece. In the region of Macedonia, the practice of cremation appeared as early as the Late Neolithic and continued to be applied during the Bronze Age. During the Iron Age, cremation became more widespread, with an increasing number of cemeteries with deposits of burnt human remains. However, osteological studies on these remains are still limited. This presentation aims to explore cremation as a means of treating the dead in central Macedonia during the Early Iron Age, focusing on two cemeteries: Polichni and Nea Philadelphia, Thessaloniki. Both cemeteries have yielded numerous secondary cremation deposits spanning from the 11th to the 8th century BCE. Macroscopic analysis of the burnt skeletal remains aims to reconstruct the biological profiles of the individuals subjected to cremation and to assess thermal alterations (e.g. discoloration, warping, shrinkage) due to exposure to fire. Additionally, preliminary data from the application of Fourier Transform Infrared Spectroscopy (FTIR) in Attenuated Total Reflectance (ATR) mode on selected samples from both sites will offer valuable insights into the compositional and structural changes of the bones. Finally, the examination of the associated artefacts and pyre goods will shed light on the social and cultural dimensions of this multi-layered practice.

Dying in the Iron Age Argolid. Osteoarchaeological insights from the Geometric graves of Argos, Greece

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Argolid is a special case regarding the study of the Early Iron Age, as it is the region where most of the palatial centers and citadels of the Mycenaean world (Mycenae, Tiryns, Midea, Argos) were concentrated during the Late Bronze Age. After the collapse of the palatial system, settlement activity in the region continued, but under completely different socio-political conditions, with the absence of any form of central administration and the organisation of society within the frame of the 'oikos'. During the Protogeometric and Geometric periods, the picture of Argolid seems to change. There was an increase in population, indicated by the expansion of cemetery sites, while contacts with distant areas was also noted. Due to the lack of archaeological data from settlement remains, cemeteries are the main source of information about the structure of society.

The poster will examine the burial practices and the osteoarchaeological data from the cemetery of the Geometric Argos when the latter emerged as the most important center of Argolid. During this period, local elite groups active in Argos negotiated their social position in the burial field through the display of weapons, painted pottery, metal, and imported objects, which they deposited in the tombs as grave goods. The systematic osteoarchaeological study of skeletal material from graves dating to the Geometric Period aims to investigate questions related to demographic synthesis (biological sex, age at death), health levels, diet, and physiological stress of the population under study. The osteoarchaeological data are compared to the archaeological data (type of tombs, distribution, grave goods, etc.) to study them in combination and reconstruct the social organisation and processes that contributed to the emergence of the political institution of the city-state of Argos.

Examining mechanical stress in the population of Thebes in Boeotia during Classical Antiquity

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During Classical Antiquity, central mainland Greece was the arena where major historical events that influenced the development of the Greco-Roman world took place. Boeotia, positioned in this key region, played an important part in these events, while Thebes, its capital, acted as a prominent power until its defeat by Alexander the Great in 335 BCE. Subsequently, Boeotia came under Macedonian control and later in the 2nd century BCE fell under Roman rule. These political shifts significantly affected the lives of the city's population, making it an ideal setting for studying changes in health and lifestyle over time.

While there has been extensive historical and archaeological research on Classical Antiquity Greece, bioarchaeological studies, are rare. This research aims to fill in this gap through the study of human skeletal remains from the north-eastern cemetery of Thebes. To do so, health indicators related to mechanical stress are examined, namely osteoarthritis, intervertebral disk disease, apophyseal joint arthritis and Schmorl's nodes. Emphasis is placed on differentiations in relation to biological sex and age, offering insights into the lived experiences of individuals in Classical Antiquity and how they were shaped by the socio-political environment.

Frequencies of mechanical stress markers were rather low for both periods (Classical and Hellenistic), which is expected given the urban setting of the population. Even though most markers exhibited comparable frequencies for the two periods, Hellenistic period individuals were more frequently affected by stress than the Classical period ones. When comparing different markers in different parts of the skeleton per sex and period, the results showed a complex pattern suggesting that males and females engaged in different activities during Classical and Hellenistic times. These results are part of a broader bioarchaeological study encompassing additional mechanical stress markers, such as entheseal changes and cross-sectional geometric properties, but also exploring physiological stress, diet and kinship through a biocultural approach.

Exploring the impact of multiple and consecutive status-quo transitions on human health and diet in ancient Amphipolis

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Experiencing different socio-political systems is considered to shape the human body, in biological as well as in cultural terms. The BIOSOCIOPOLIS project, funded under a Marie Sklodowska-Curie frame, aims to develop a new interpretive model to reveal the extent to which multiple and consecutive socio-political transitions, affect human lifeways and deathways, in a diachronic perspective. Amphipolis in northern Greece, experienced many different political models, including colonisation, political autonomy, consolidation and imperialisation (5th c. BC-2nd c. AD) and was thus chosen as an ideal case study. Historical sources on Amphipolis' dynamic history, offer information on administrative, constitutional and cultural changes during the stated transitions, nonetheless a key thing to consider is that many or most of these sources were politically motivated and so only reflect aspects of interest to the writer and their agenda, not neutral treatises in most cases. Bioarchaeology on the other hand, has the capacity to illuminate everyday lived human experiences which remain invisible or altered in historical or archaeological information. Amphipolis gradually faced urban expansion, while it moved from autonomous to participatory in a political network, to being a provincial subject in an empire, thus passing from a state of managing its resources for its own benefit to serving the needs of others. This could theoretically affect various parameters of social organisation and reflect consequently to the general well-being. For the purpose of the current conference, results on health and diet, by combining macroscopic with isotopic analyses, will be presented in relation to age, sex, time period/socio-political transition and contextual information (e.g. burial types). This approach, which is completely novel for historical populations of the broader region of northern Greece, is expected to induce significant progress, both on a methodological level, as well as for humanities in general.

Estimating the human diet in the ancient Greek colony of Ambracia using Stable Isotopes (δ 15N, δ 13C) and Bayesian Mixing model

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The coexistence of multiple traditions in the newly formed Greek colonies led to a cultural hybridisation allowing nutrition systems to combine in new ways, as food is a marker of social practice. While extensive research has been conducted on reconstructing the diet of past populations through stable carbon and nitrogen isotopes, only a limited focus has been placed on quantifying colonial diets over time using both chemical and statistical data. In this study, we utilise stable carbon and nitrogen analysis of human and faunal remains together with isotopic mixing models to quantify the relative contribution of different food sources in Ambracia, a Corinthian colony. We examine the individuals' diet to clarify food strategies during the colonisation process. A diet of 232 individuals and 17 animals was reconstructed by measuring nitrogen and carbon isotope ratios on bone collagen. The material originates from the western cemetery of ancient Ambracia dated from its foundation (625 BC) to the city's decline (33 BC). Dietary protein was estimated using the Bayesian mixing model MixSIAR. Our results demonstrate that the first settlers and subsequent generations followed the same diet, consisting mainly of terrestrial animals and a lesser extent of C3 plants (grains, cereals, fruitvegetables) and marine resources (fish-seafood). During the Hellenistic period (323-31 BC), in which Ambracia became the capital of the kingdom of Pyrrhus, a clear change was observed in the dietary preferences of the population. We noticed a decrease in the consumption of terrestrial animal protein and an increase in the consumption of plant and marine protein. These observations reveal that the population is beginning to combine food sources to a greater extent, indicating the simultaneous exploitation of livestock, agricultural and fishery products. Our findings provide a basis for more specialised approaches to understanding the colonial subsistence techniques in antiquity.

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Assessing the impact of breastmilk consumption on vitamin D deficiency: A Histomorphological and Stable Isotope analysis

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Infants are more susceptible to stress due to their underdeveloped immune system. Dental Enamel Hypoplasia (DEH) and Interglobular Dentin (IDG) are dental pathological markers that indicate physiological and metabolic stress, such as reduced breastmilk consumption and vitamin D deficiency. Vitamin D has a key role in regulating the homeostasis of bones and teeth mineral components and its deficiency may result in abnormalities like IDG. Recent studies have revealed a correlation between low breastmilk proportions and DEH. While extensive research has delved into IDG and DEH among ancient individuals, the appearance and causation of these conditions during infancy remain unexplored. To investigate this hypothesis 26 ancient individuals, that exhibited DEH, originating from the city of Thessaloniki (323 BC – 16th c AD) were examined. Permanent canines were analysed histologically, recording the severity of the IDG and DEH and estimating the age of occurrence. The breastmilk intake of the individuals was estimated using carbon and nitrogen isotope ratios from first permanent molars in a Bayesian mixing modelling approach using the MixSIAR package. Our results reveal that all the individuals with DEH exhibited also IDG, while the isotopic results show that the breastmilk proportions were below 40% of their diet. Our study focuses on the potential development of IDG and DEH due to stress related to breastfeeding or triggered by vitamin D deficiency.

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Reconstructing weaning practices in ancient Thessaloniki: A milestone in bioarchaeological research using isotopic and computational methods

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In this study, we applied the stable isotope analysis and various computational methods to investigate the weaning practices in ancient Thessaloniki, the capital of Provincia Macedonia and one of the largest cities of the Roman Empire. We analysed δ13C and δ15N isotopes in dentine collagen from the first permanent molars of 65 individuals to reconstruct childhood diets and in femoral collagen of 160 individuals to assess adult diets. The Bayesian model MixSIAR was used to estimate food source contributions. We created the first mathematical tool to estimate the weaning duration using serial measurements of stable nitrogen ratios. We also employed the k-means algorithm to detect patterns of physiological stress, based on the principle that carbon and nitrogen ratios shift in opposite directions during stress periods.

On average, individuals were weaned by the age of two; however, the dataset revealed cases of both prolonged (beyond age three) and shortened (under one year) weaning periods, emphasising the variability in cultural practices and life conditions that influenced weaning decisions. The k-means analysis identified a subset of individuals, comprising nearly half of the sample (25 out of 66), who exhibited isotopic evidence of stress during and after the weaning process. These individuals consumed limited breast milk during weaning (below 50%). We also observed that women over 50 years of age showed a reduced dependence on animal protein (32%) compared to younger women under 50 (28%), suggesting adaptations in dietary intake with age.

This study introduces innovative approaches for analysing isotopic data related to breastfeeding and weaning in ancient populations, demonstrating how machine learning techniques and Bayesian modeling can be integrated into bioarchaeological research to address complex questions and provide deeper insights into the feeding practices of past societies.

Food for thought: An interdisciplinary diachronic approach to cooking vessels from Toumba, Thessaloniki

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Thessaloniki Toumba, located on the coastal plain of the Thermaic Gulf, is one of the major tell sites in central Macedonia with continuous occupation from at least the Middle Bronze Age to the end of the Classical period. The ongoing excavations by the Aristotle University of Thessaloniki, combined with a large number of specialised studies on various aspects of the site's material culture, have hugely enhanced the understanding of local communities in the wider region in the course of two millennia (2nd-1st mill. BC). In this framework, the current project aims to undertake a diachronic study of the cooking vessels from Thessaloniki Toumba throughout its occupation to shed light on the reproduction and/or transformation of ceramic traditions and culinary practices. Through an interdisciplinary and holistic approach, all aspects of the cooking vessels' biography are considered from production, and circulation to use(s). The project focuses on a detailed morpho-typological, technological and functional study of cooking pot assemblages. The entirety of the manufacturing *chaîne opératoire* is examined through macrotraces observation, petrographic analysis with thin sections, elemental analysis, and industrial X-radiography. Functional analysis is conducted through macroscopic examination of use-wear traces, organic residue analysis and paleoproteomics. Additionally, technological and functional hypotheses are tested on experimental vessels. The data will be discussed in the context of the intense mobility and interaction attested in the region with other Aegean and Balkan communities during the so-called Mycenaean period through to the time of the first Greek colonies, a period marked by significant socio-cultural and economic transformations in the region and the wider Aegean-Balkan area.

A Pot in need is a friend indeed: Handmade tableware and social dynamics at Toumba, Thessaloniki from the Late Bronze Age to Early Iron Age

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This study examines the handmade pottery from the tell site of Toumba Thessaloniki, Northern Greece, during the transitional period from the Late Bronze Age to the Early Iron Age. Toumba is considered one of the most significant tell settlements in the region for this period, providing crucial insights into the changes in pottery consumption, production and broader socio-economic practices. Over the past decades the typology, technology, and distribution of handmade pottery, a prevalent form in this period alongside wheel-made vessels, have been a focal point of archaeological investigation in the region of Macedonia. Handmade pottery is typically characterised by coarse, medium, or medium to fine fabrics, usually undecorated or minimally adorned. The typical repertoire consists of utilitarian forms such as cooking pots, storage jars, and tableware. Our research focuses on handmade tableware, due to its pivotal role in the understanding of the changes in dining practices, social interactions, and cultural expressions connected to food consumption during the LBA and EIA. Using a holistic methodological toolkit, we combined macroscopic typo-technological analysis with manufacturing trace studies, along with advanced analytical techniques such as petrography coupled with refiring tests, WDS-XRF, pED-XRF, and SEM-EDAX. These methods were employed to investigate technological aspects such as clay selection, manufacturing techniques, firing processes, and surface treatments, to better understand local production systems and technological traditions. Until now the results of this interdisciplinary study suggest both continuity and change in pottery traditions from the LBA to the EIA, with changes reflecting shifting social dynamics. The coexistence of handmade pottery with imported or locally-produced fine wares indicates a diverse ceramic economy. Handmade pottery, predominantly used for domestic purposes, underscores the importance of local production for everyday household activities. Furthermore, shifts in pottery styles and functions suggest broader changes in consumption patterns, likely linked to transformations in settlement organisation, trade networks, and social hierarchies during this transitional period. By contextualising the handmade pottery from Toumba within the broader regional framework, this study advances our understanding of ceramic production's role in the region's economic and social transformations during the LBA and EIA. It also sheds light on the interaction between local and external influences shaping the material culture of Northern Greece during this critical historical juncture.

Exploring the Persistence of Handmade Pottery in Roman Thrace

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At the beginning of the Iron Age several widely distributed vessel shapes appeared in Thrace, emerging from a long tradition of handmade pottery production. These handmade pots continued being produced during the Roman period, even when Roman wheel-made coarse ware appears, and it is found in a vast area stretched over the modern territories of southern Romania, Bulgaria, Northern Greece and European Turkey.

Four Roman period (2nd–4th c. AD) rural sites were surveyed along the Tundzha River in Bulgaria. Besides wheel-made pottery, fragments of handmade pottery were found at each site (6 to 19%). Ceramic petrography and WD-XRF analyses of selected pottery and clay samples collected along the Tundzha River identified two different fabrics for the handmade pottery and two areas suitable for clay extraction, located 30 km apart. Lipid analysis identified predominant fat residues inside the pots, attributable both to ruminant and not ruminant animals. One of the pottery samples could have been exposed to high temperatures suggesting heating. Three samples also featured indications for potential beeswax impregnation.

Our results suggest that the handmade pots were produced in the area and traded. However, what were they used for, and why did they continue to be made even after the introduction of Roman wheel-made coarse ware? The answer may lie not in the vessels themselves, but in their content. It is possible that Thracian communities produced salted or marinated meats seasoned with herbs for trade with the Romans. If this is the case, we cannot interpret the handmade pottery found in Roman settlements in Thrace as evidence of local communities coexisting with the Romans; instead, we should explore alternative interpretations of their interactions.

Layers of time. An ever-evolving landscape in Thessaloniki Toumba.

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The prehistoric settlement of Toumba Thessaloniki belongs to a network of artificial hill settlements, a common type found in central Macedonia during the Late Bronze Age. It is one of the largest of its kind in the region and has dominated the local landscape. Its strategic location—close to the sea, the Thessaloniki plain, the Chortiatis mountains, and the Anthemoundas river valley—provided access to diverse ecological zones. Systematic research, initiated in 1984 by the Aristotle University of Thessaloniki and ongoing to this day, has uncovered a continuous stratigraphy, with no evidence of disruption in the site's occupation. Habitation evidence spans from the late 3rd millennium BCE to historical times (2050–300 BCE) and extends both on the hilltop and the slopes of the tell. Findings from recent excavations, which since 2019 focused on the northern part of the hilltop have uncovered two new building complexes, dating from the Late Bronze Age through the Early Iron Age (from the 11th century BCE onward). Additionally, strata from the Archaic period containing storage facilities have also been revealed. By the Middle Byzantine period, the hilltop becomes the site of substantial burial activity, reaffirming the use of the mound through time. The highly diverse utilisation of the hill through the centuries stands as an undeniable proof to the ever-evolving utilisation of an artificial hill, which has dominated the local landscape up to modern times. This poster will present the excavation of the upper strata and the stratigraphic sequence of the new buildings (Buildings N and O), as well as findings from the Middle Byzantine cemetery and historic-period deposits. Its aim is to showcase how a tell settlement subjected to constant artificial change has played a key role in the formation of local landscape history.

Builders in the landscape: An experimental approach to the *chaîne opératoire* of mudbrick production and its raw resource selection strategies in Toumba, Thessaloniki

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Using mud as a building material has been prevalent from the early Neolithic period to modern times. In particular, sun-dried mud bricks have been widely used across the world, appearing in numerous archaeological contexts. Within this extensive spatiotemporal framework, the production and use of mud bricks, while adhering to common principles, exhibit significant variability at each stage of the *chaîne opératoire*. Traditionally, buildings have been examined as part of material culture, yet their social significance is undeniable. Similarly, building remains can be examined in both technological and societal contexts. Each step of the complex *chaîne opératoire* required for constructing a building is highly dependent on human decision-making. The availability and proximity of various resources may constitute crucial factors, but at the same time the selection strategies are also affected by social beliefs and purposes. The landscape surrounding the settlement would have been the natural source of a great volume of resources, which were carefully selected for specific purposes based on their properties. A multidisciplinary approach to the study of mudbrick production and use not only clarifies each step of the production process but also reveals how social factors influenced building technology. An extensive survey and sampling of raw resources is essential for identifying the available resources, as the first step in deconstructing the *chaîne opératoire*. Taking into consideration the social factors that affected selection strategies, while leading to a better understanding of how prehistoric people perceived their surrounding landscape, and how craftsmen navigated and utilised it to its full potential. The aim of this poster is to showcase the preliminary results of this approach at the Late Bronze Age tell settlement of Thessaloniki Toumba, where mudbricks constitute the key component of architectural craft specialisation.

The Artemision of Amarynthos (Euboea): Where earth and life sciences meet

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Research at Amarynthos (Euboea) has made considerable progress over the last decade, thanks in particular to two successive projects funded by the Swiss National Science Foundation (SNSF). The aim is to excavate the pre-classical phases in order to understand the origin and development of the cult and to determine the position of the Artemision in the ancient landscape through an archaeological survey.

Under the auspices of the Swiss School of Archaeology in Greece and the Ephorate of Antiquities of Euboea, the excavation and survey brought together a team of Swiss, Greek, and international specialists who use a wide range of techniques from the earth and life sciences to uncover evidence that had previously been poorly documented. The poster presents some of the ongoing research in collaboration with specialists in the archaeological sciences, including LiDAR survey, micromorphology, clay and stone provenance, organic residue analysis, paleoenvironmental studies, and ancient DNA.

Pots for the goddess: Exploring connectivity and ritual practices at the sanctuary of Artemis Amarysia

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The Artemision in Amarynthos, controlled by the neighbouring city of Eretria, is believed to have been the centre of a pan-Euboean cult of Artemis as the deity ranked first in the Eretrian pantheon. Recent excavations of the temple of Artemis Amarysia by the Swiss School of Archaeology in Greece have yielded a rich deposit of offerings dated to the last quarter of the 6th century BCE, including approximately 700 artefacts. A selection of fine ware ceramics from the sanctuary and contemporary comparanda from Eretria were analysed to explore their provenance and technology, as a proxy for understanding the regional role and connections of the sanctuary as well as aspects of ritual practices linked to this pottery. Laboratory analyses consisted of elemental analysis by wave-length dispersive X-ray fluorescence spectroscopy (WD-XRF), refiring tests, and petrographic analysis of thin sections prepared from a sub-selection of samples. Results were compared to previously analysed pottery from Eretria and beyond, to assess potential origins. They indicate that pottery from the specific offering deposit was mostly locally produced, in the wider area of Eretria, with very little pottery likely coming in from further abroad. This picture, matching patterns seen in Eretria itself, is in contrast to the rest of the pottery found in the temple.

Insights into rituals and social interactions at the Sanctuary of Poseidon in Chalcidice: From pottery to faunal remains

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Recognition of the significance of cult activities in Aegean societies during the Late Bronze and Early Iron Ages is essential, as they were deeply woven into the fabric of everyday life. These practices profoundly had an impact on social, religious, and communal interactions as well as on feast occasions and rituals that characterised the experiences of individuals and the broader community participating in them. This presentation aims to offer new insights into the cult activities at the Sanctuary of Poseidon in Poseidi, Chalcidice, the earliest sanctuary in Macedonia and one of the earliest in Greece, dating to the late 12th or early 11th century B.C.E. This will be achieved through a combined analysis of the faunal remains alongside pottery typology and technology recovered from sanctuary's deposits. The ongoing interdisciplinary research seeks to investigate the early phases of its foundation and compare them with its counterparts in central and southern Greece, such as Apollo Daphnephoros and Plakari in Euboea, and Kalapodi in Phokis. So far, comparisons between Poseidi and cult sites in other regions of Greece, particularly Euboea, have primarily focused on architectural remains or structures discovered *in situ*. Building on this idea, our study will attempt to explore the similarities and differences between Poseidi and these southern sites. Preliminary evidence of the zooarchaeological remains suggests a stronger link between the North and South in the selection of species, carcass manipulation, disposal and sacrificial practices. At the same time, the pottery assemblage hints southern influences although features of the local tradition regarding stylistic characteristics in pottery types, treatment of the surface and decorative motifs are interestingly pronounced.

Unravelling the function of Aegean fireboxes: An integrated archaeological, experimental, and archaeometric study

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Aegean perfumery has traditionally been studied through the lens of Mycenaean Linear B tablets from Pylos, Knossos and Mycenae, which document a palatial perfume industry during the final centuries of the Bronze Age. However, Linear B records reflect only a fraction of a civilisation that spanned nearly two millennia. In contrast, the identification of archaeological findings potentially related to perfumery is considered challenging and they have often been overlooked. Fireboxes are amongst artefacts frequently associated with perfumery. This clay object, resembling an inverted cup with a hollow sphere and downward perforations, often bears burning marks on its inner surface. Distribution of the fireboxes extends across the south-eastern Aegean, from Crete to the Cyclades and Western Anatolia, with the highest concentration found in Crete, suggesting a Minoan origin. While early interpretations identified these artefacts as boilers, braziers or incense burners, recent studies have proposed their use in the production of perfumes or unguents. Despite being the subject of several studies, the actual function of this object remains debated. Our research aims at providing a more thorough understanding of fireboxes, exploring their role in the processing of aromatising spaces and people. Specifically, this study presents new findings from the analysis of fireboxes excavated from both palatial and non-palatial contexts of the Aegean Bronze Age. It also reports on preliminary experimental reconstructions and organic residue analyses that explore the techniques of perfume and unguent production, as well as the types of fragrances used. By integrating diverse lines of evidence, this research seeks to investigate the function of fireboxes and the use of scented oils, expanding on the same time our knowledge on Aegean perfumery practices beyond the limited timeframe of the Linear B tablets, offering a more comprehensive view of this craft throughout the second millennium BC.

Wood ash tempered ceramics? Recognising wood ash tempering of ceramic bodies through textural, chemical, and mineralogical analysis

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Potters' past and present have employed various strategies to modify the properties of raw materials and finished products. One common practice is the addition of aplastic temper to clay paste, which can enhance the workability of the clay and alter properties of the final ceramic product, including its aesthetic, thermal, and mechanical characteristics. While the effects of many tempering materials on ceramic bodies, and methods to identify them, are relatively well understood, one material that has remained largely overlooked until now is wood ash.

Wood ash and its by-product, lye, have been utilised in various crafts and industries, including ceramic production, where they are most commonly associated with glaze manufacture. This use spans from the Shang Dynasty in China (c. 1500 BC) to the present day. However, the use of wood ash as a tempering material in ceramics has received far less attention, despite ethnographic accounts documenting its addition to clay during pottery manufacture in traditions across the globe.

This experimental project investigated the effects of wood ash tempering on ceramic bodies and developed methods to identify its presence in archaeological ceramics. Using a suite of analytical techniques commonly applied in archaeological ceramic studies, we have established criteria for recognising wood ash tempering. Re-examination of previously studied material has revealed instances of its use in archaeological contexts, from prehistoric burnished bowls to Roman-period crucibles.

Transforming access to Mediterranean cultural heritage science collections

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Over the past century, leading UK researchers working under the auspices of the British School at Athens (BSA), British Institute at Ankara (BIAA) and British School at Rome (BSR) – members of the British International Research Institutes (BIRI) – have generated heritage science collections of international significance for addressing big-picture questions concerning the human past in the Mediterranean. These collections have substantial research value in terms of ancient technologies and economies, impacting on innovation and societal change, with unparalleled value for investigating mobility of objects, raw materials, and humans.

Specifically, 50-years of scientific study of Mediterranean ceramics at the BSA's Marc and Ismene Fitch Laboratory for Archaeological Science has created a unique collection of unrealised potential: discipline-leading Greek geological and ceramic samples documented by rich archival material on traditional pottery production. This combination of assets is uniquely positioned to provide scholars and the public with world class capabilities for the study of Greek pottery production (ancient and traditional) and thus the Fitch laboratory has been recognised as a vibrant international centre of excellence in ceramic studies. However, the above-mentioned fundamental collections remain inaccessible to most researchers for various reasons (many of these are not digitised, lack of resources for digitisation, complex heritage science data concepts not handled by typical collection management systems, and a lack of mechanisms to build upon these collections to name a few).

Recently (September 2024) Newcastle University collaborated with the BSA to apply for and win a 2-year grant to build a versatile and powerful heritage science collections management infrastructure to host the BSA's Fitch Laboratory and the other BIRI heritage science collections. This project entitled "Transforming access to Mediterranean cultural heritage science collections" is funded by the Arts and Humanities Research Council in the framework of the RICHeS program which aims to maximise the research, development, and innovation potential of UK heritage science.

Preliminary study of Lesvos clayey raw materials through pXRF and SEM analysis

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Over the last years, several archaeological and ethnographic studies have been focussed on the investigation of pottery production in the East Aegean and Asia Minor. However, the determination of the origin of production of specific pottery wares particularly on Lesvos turned out to be a complex topic. The present study focuses on examining the compositional variation of clayey raw materials potentially used for pottery production in Lesvos. After a detailed literature review, 39 clayey raw materials from 23 deposits were collected at different locations on the island considering their vicinity to ancient and historic settlements. The samples were cleaned and sieved, and experimental briquettes were prepared and fired under controlled conditions (700°C, 900°C, 1050°C) in a laboratory kiln. The briquettes were examined with pXRF and SEM-EDS techniques at NCSR Demokritos for their elemental composition and micro-structure. Preliminary results from pXRF analysis indicates clayey raw materials with distinct elemental compositions presumably related to different geochemical contexts. SEM-EDS results have demonstrated two major groups based on CaO content. The first cluster includes samples from areas such as Agiasos and Mistegna with a comparably high CaO content (7-20wt%), while the second cluster contains samples from areas such as Mandamado, Mesotopos and Arisvi with a significantly lower CaO content (<4wt%). The pXRF and SEM-EDS analysis provided an initial categorisation of the raw materials as part of a more comprehensive investigation, which will include the analysis of the experimental briquettes with complementary techniques such as optical microscopy and XRPD. Nevertheless, the hitherto collected results allowed for a straightforward screening and grouping and thus offering a first sight of the material, which is expected to be completed with planned petrographic and mineralogical analysis.

Early Bronze Age ceramic islandscapes in the northeast Aegean region: Characterising pottery production and establishing connections

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The northeast Aegean region, encompassing the Greek islands and the western Anatolian coast, is crucial to understanding the dynamics of the Early Bronze Age, a period characterised by extensive cultural, social, and technological interactions and transformations. This poster presents a systematic analysis of ceramics and raw materials from key sites in the region, including Poliochni (Lemnos), Thermi (Lesbos), Emborio (Chios), and the Heraion (Samos), aiming both to characterise the local pottery-making traditions and to investigate the role of cross-regional connectivity of these sites with the wider Aegean island- and coastscapes. By taking a diachronic approach, this research explores ceramic production, specialisation, and circulation across the northeast Aegean during the 3rd millennium BC. This research proposes that this region was a central hub for cultural and technological transmission, with communities that were far more interconnected and socially complex than previously assumed.

Analysis of Late Bronze Age pottery from Emporio, Chios: Production, consumption, and regional interaction

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This poster presents the results of archaeological and raw materials analysis of Late Bronze Age pottery from the site of Emporio on Chios, excavated by Sinclair Hood. The integrated methodology of typological, macroscopic, petrographic study, and NAA has enabled the identification of several ceramic pastes compatible with local Chian sources, alongside probable imports from Anatolia and the northeastern Peloponnese. Sampled were systematically all types ceramic vessels, from fine to utilitarian, both plain and decorated.

The data from these analyses have provided important insights into the nature of production and consumption at Emporio during the Late Bronze Ages, revealing both the range of locally produced vessels and those imported from other regions. These results provide fresh perspectives on the site's interactions and economic networks as the period progressed, with three clearly defined phases: Early LBA, LH IIIB and LH IIIC. Active work with the original documentation made it also possible to re-create many of the original excavation units, which in turn enabled a complete re-analysis of Hood's 2nd Millenium BCE finds.

Emporio's location, within the East Aegean-West Anatolian Interface, makes it a compelling case study for understanding changing cultural dynamics, particularly the processes of "Minoanisation" and "Mycenaeanisation." Its close proximity to the Anatolian mainland further highlights the influence of regional interactions on these transformations, which are key to interpreting the material evidence collected.

Tyrrhenian crossroads: Compositional and technological study of 8th to 7th centuries BC amphorae from Pithekoussai (Italy)

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The current poster focuses on the results of the analytical study of selected amphorae from the Necropolis of San Montano in Pithekoussai (Italy), dating between the 8th and the 7th centuries BC. The study includes both local production and imported vessels previously identified by using solely typo-chronological classification. The results confirm the importance of the settlement of Pithekoussai, as part of an extended network connecting the Tyrrhenian Sea with the rest of the Mediterranean basin. These amphorae are part of a broader doctoral study aiming to understand how material culture was employed to promote new social and economic relations during the formative stages of the so-called Greek 'Colonisation' in Campania, and how the process of 'Colonisation' was materialised in the ontologies of the 'colonisers' and the 'colonised'. Such project provides a comprehensive study of selected pottery assemblages (including fineware, coarseware and amphorae) from the Campania region (i.e. Pithekoussai and Cumae), dating from the Late Bronze Age (12th century BC) to the early-stages of the so-called Greek Colonisation (8th -7th centuries BC). An integrated analytical programme has been designed to reconstruct and understand the reproduction of local pottery traditions, as well as human mobility, movements of products, and transfer of technologies between Campania and the Mediterranean basin through time. After an in-depth macroscopic study focusing on the technological and formal characteristics covering the observed variability in the studied assemblages, a number of samples have been selected for further laboratory analysis (thin section petrography, SEM, WD-XRF) to address questions of provenance and technology. The results have been further compared with an extensive landscape geo-survey focusing on the individuation of raw materials for the determination of local production centres. Finally, the Fitch Lab of the British Archaeological School at Athens, further provided a vast reference collection including pottery and raw materials, from several Greek archaeological sites crucial to the determination of provenance of some of the imports.

Connecting the Cycladic islands: A multidisciplinary approach to Hellenistic ceramics

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The island of Delos, located in the Cyclades, was a duty-free port established by the Romans in 167/6 BCE and operated until the early 1st century BCE. During this time, it was the largest trading centre in the eastern Mediterranean, attracting merchants, bankers, shipowners, builders and artists from all over the Mediterranean. Due to its cosmopolitan character, most studies have focused on the island's long-distance connections. However, very little research has been done on the intra-regional networks of Delos during this period. It is likely that regional goods and commodities, such as pottery, were consumed by the inhabitants of Delos. In order to test this hypothesis and investigate the intra-regional connectivity, ceramic material from the excavations on Delos conducted by the École française d'Athènes was examined macroscopically and 232 samples were subjected to laboratory analysis (WD-XRF and thin section petrography). This study also included analysis of geological material from Tinos, Mykonos, Paros, and Sifnos. The results revealed several different ceramic fabrics whose origins might be linked to the neighbouring islands.

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