



Shell gathering at Banzu tidal flat, Tokyo Bay, Japan. Photo by Shinya Shoda (May 2017).

About the Image

Tidal flats are common along the Pacific coast in Japan. The development of these rich ecosystems in the Tokyo Bay has been linked to the formation of numerous shell middens in the Jōmon period (approx. 14000 to 800 cal BC). Banzu, the largest

Welcome to issue 29 of the AMWG newsletter! I want to thank Dr. Shinya Shoda, from the [Nara National Research Institute for Cultural Properties](#), for this issue's front-page image of shell gathering. You can read more about shell gathering at the Banzu tidal flat in the 'About the Image' section. This issue also includes a comprehensive book review of *Molluscs in Archaeology* by Malcolm Evans from the University of Durham, and information on upcoming conferences and recent publications.

About the Newsletter

The Archaeo + Malacology Newsletter warmly invites contributions related to archaeomalacology in its widest sense. Please email submissions and questions to the editor. **Annual deadlines are 31st January for circulation in February and 31st July for circulation in August.** Current and previous issues of the newsletter are available at archaeomalacology.com.

 [Archaeomalacology Working Group](#)

 [@archaeomalaco](#)

Editor: [Cindy Nelson-Viljoen](#)

tidal flat in the Tokyo Bay, located at Kisarazu, a city in Chiba Prefecture (Kantō region), extends over 1400 hectares and contains molluscs such as the small snail *ibokisago* (*Umboonium moniliferum*), and clams such as hamaguri (*Meretrix lusoria*), shiofuki (*Mactra quadrangularis*) and asari (*Ruditapes philippinarum*). These species are often found in Jōmon middens of Chiba prefecture. In this image, we (Prof. Takeji Toizumi from Waseda and Meiji University, Takumi Sakamoto from Meiji University, Diana Nukushina from University of Lisbon / UNIARQ, and Hiroshi Sugawara from Urasoe City Board of Education) are collecting samples of live shells to be analysed by Dr. Niklas Hausmann under his research project ACCELERATE. More information about the project is available at www.accelerate-project.com. Comparative research on the shell middens in Mesolithic Europe and Jōmon Japan has been undertaken by Diana Nukushina through the PhD project '[Mid-Holocene hunter-gatherers and shell midden site structure and functionality in Atlantic Europe and Japan](#)'.

The content of this newsletter does not reflect the official opinion of the editor or online host. Responsibility for the information and views expressed herein lies entirely with the author(s).

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Short Reports

Excavations at Kilise Tepe 2007-2011: The Late Bronze and Iron Ages

Sofie Debruyne¹

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The report of the excavations at Kilise Tepe (Cilicia, southern Turkey) in 2007-2011 is a work in progress of which several chapters have already been published online. The shell remains have been studied by Sofie Debruyne, and are described in three different sections*. The main report is found in 'Section 12: Molluscs', in which the un-fossilised terrestrial, freshwater and marine material is discussed, touching upon topics such as the local environment, exchange networks, food resources, craft activities and ornamental preferences. Notable elements are the use of local freshwater mussels as tools and possibly also, along with marine mussels, for the manufacture of inlays. In addition, damage on some of the mussel valves indicates predation by rats. Marine shells were used as ornaments. The presence of finished and unfinished *Nassarius* beads may demonstrate that at

least some of the marine shells were worked at the site. It is suggested that the position of the holes in the shell beads was well-considered, not only to make the objects suitable for threading, but also to determine the orientation of the ornament when strung and the resulting visual effect.

Open access available at <https://tinyurl.com/kilisetep>. The figures are accessed by clicking on the figure references in the text.

* Relevant sections:

Mac Sweeney, N. and Debruyne, S. (2017). Worked Shell. In: Mac Sweeney, N. (2017). *Section 9: Artefacts from Kilise Tepe, 2007-2011*. <https://doi.org/10.17863/CAM.10144>, pp 57-59.

Mac Sweeney, N. and Debruyne, S. (2017). Fossils. In: Mac Sweeney, N. (2017). *Section 9: Artefacts from Kilise Tepe, 2007-2011*. <https://doi.org/10.17863/CAM.10144>, pp 60-63.

Debruyne, S. (2017). *Section 12: Molluscs*. <https://doi.org/10.17863/CAM.10146>.

Abstracts

Paper Abstracts

La couleur pourpre de la mer : l'extraction de colorant à partir des coquillages à Saint-Michel-Chef-Chef au 1er s. ap. J.-C. (Loire-Atlantique).

Dupont, C¹. and Doyen, D².

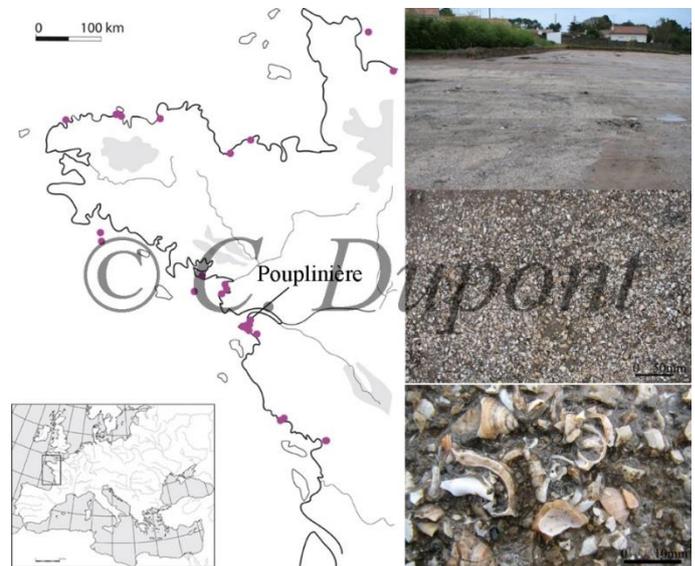
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² Inrap Grand Ouest, France

Published in R. González Villaescusa, K. Schörle, F. Gayet, F. Rechin (dir.) *Actes des XXXVIIe Rencontres internationales d'archéologie et d'histoire d'Antibes. L'exploitation des ressources maritimes de l'Antiquité. Activités productives et organisation des territoires. Antibes – France, 10-13 octobre 2016. Éditions APDCA, Antibes, 53-66.*

Summary

The production of purple dye from shell is known worldwide. Its inventory on the French Atlantic coast testifies to an activity that exists from the Protohistory to, at least until, the 14th century. After archaeological excavations and surveys, more than 30 sites have



On the left: Map of archeological sites with production of dye with dog whelks *Nucella lapillus*; On the right: views of the concentrations of dog whelks in La Pouplinière from the overview to more detailed view (CNRS C. Dupont).

been identified for dye production due to the discovery of two species: the dog-whelks *Nucella lapillus* and the murex *Ocenebra erinaceus*. The antique site of Pouplinière is one of the rare examples where the production of dye with shells has been integrated with

scientific examination of the excavation site. Several structures can be associated with dye production and dated to 1st c. AD. These structures are linked to a new organization of the excavated area. Analysis of the shells allows for determining their density, from their collection on the seashores to their discarding. It shows a mode of extraction unpublished on the Atlantic coast: the massive crushing of purples; the stratigraphy of the ditches also shows a novel result i.e. the activity of dye production began by trials before it became intensive.

Keywords: purple, shell, Antiquity, dye, maritime archaeology, fragmentation typology

Shells and Shellfish in the Château de Versailles: From the Meal to Fountain Decorations

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Published in *Coquillages et coquilles au château de Versailles aux XVIIe et XVIIIe siècles : entre repas et rocailles de fontaines*, *Bulletin du Centre de recherche du château de Versailles*, 26 p., mis en ligne le 23 décembre 2017. Free access at <https://journals.openedition.org/crcv/14407>, DOI : 10.4000/crcv.14407.

Abstract

Studying the shells discovered during the archaeological excavations of Versailles has made it possible to identify two forms of these marine molluscs' arrival during the seventeenth and eighteenth centuries. The first one is the living animal, while the second is the shell devoid of the animal's flesh. Analysis of the flat oysters of the Gate of Honour testifies to their arrival in Versailles alive, in order to be consumed. Examination of their surfaces show that the shells were most likely cleaned before being transported to Versailles. The encrusted fauna also enables the description of the environmental characteristics of their point of origin. Other shells, for their part, were sought for their aesthetics and not for their nutritional virtues. They were discovered in the current Queen's Grove and the Green Ring Grove.

Analysis of them shows that mother-of-pearl was a material much in demand. Thanks to their appearance and their multiple origins, these shells reflect the prestige of the site. They were integral to the fashion for rockery, an architectural practice mixing natural materials (stone, pebbles, shells etc.).



Shells with pearly reflections identified during the excavation of fountains from Versailles.

1. *Lobatus gigas* (L = 173 mm).
 2. *Cittarium pica* (L = 56 mm).
 3. *Haliotis tuberculata* (L = 71 mm).
 4. *Potomida littoralis* (L = 56 mm).
 5. Unknown gastropod (L = 68 mm).
 6. *Unio tumidus* (L = 61 mm).
 7. *Pinctada margaritifera* (L = 103 mm).
 8. *Ostrea edulis* (L = 59 mm).
 9. *Anomia ephippium* (L = 42 mm).
 10. *Pecten maximus* (L = 93 mm)
- © Catherine Dupont and Laurent Quesnel, CNRS.

Call For Papers & Session Proposals

Call for Papers

Postgraduate Zooarchaeology Forum (PZAF)

7th annual PZAF meeting

Palermo, Italy

27 - 29 June 2018

An annual conference organized by and for postgraduate and graduate students and early-career professionals in the field of zooarchaeology. For many students and early-career researchers, it represents their first experience of interaction, exchange of information and mutual learning

with their counterparts from different countries. The last (6th) PZAF was held in Toruń (Poland) in March 2017. The previous editions of the conference were held in Cardiff (UK), Paris (France), Sheffield (UK), London (UK), and Tarragona (Spain). In October 2017, PZAF became an ICAZ (International Council for Archaeozoology) Affiliated Group. The Call for Abstracts is now open! We accept proposals for papers and posters on any topic related to zooarchaeology. The program will be announced once the abstracts have been selected. The **deadline for sending an abstract is 31st March 2018**. Detailed information is available at <https://www.pzaf.org/>

13th International Council of Archaeozoology (ICAZ) International Conference

Ankara, Turkey

2 - 7 September 2018

The 13th ICAZ International Conference organizing committee is honoured to receive you in Ankara for a week of academic sessions and exploration of some of Turkey's best known archaeological sites and landscapes. Important deadlines for the meeting are:

- Session proposals – CLOSED
- Review of sessions by the Scientific Committee and announcement of accepted sessions - 5 February 2018
- Papers and posters proposals - 5 February to 30 March 2018
- Review of papers and posters by session organizers and announcement of approval - 15 April 2018
- Scientific programme announcement - 1 May 2018
- Conference early registration deadline - 15 May 2018
- Conference last registration date - 15 June 2018

We would like to remind you that, as well as the themes defined for the proposed meetings and sessions, there is an 'open session' to which a variety of papers and posters can be submitted.

Website: <http://www.icaz2018ankara.com/index.html>

Shells of molluscs as archaeological and environmental records

13th International Council of Archaeozoology (ICAZ) International Conference

Ankara, Turkey

2 - 7 September 2018

Since the publication of the first papers dedicated to molluscs in the early 1970s, archaeomalacology has

raised the interest of an increased number of specialists, archaeologists, and historians. The objective of this proposed session at the ICAZ conference in Ankara is to bring together researchers studying shells of molluscs, but also crustaceans and echinoderms, and to facilitate discussions. This session should be very inclusive, to highlight the diversity of methods and approaches within the time periods, from Pleistocene to modern times, and in very diverse socio-cultural contexts. We would also welcome papers from both marine and non-marine environments.

This session should therefore focus on a broad range of topics: discussing, for example, the specificities of littoral settlements and exchange networks, the changes in customs and cultures (diet, ornaments etc.), the impacts of human activities and/or their adaptations to the environment. We would like to address in particular the following research topics: archaeomalacology of the Black Sea and the Caspian Sea, as this area is a geographical focus of this ICAZ conference, and the uses of shells in architecture (as ornamentation or construction material). We would strongly encourage papers dealing with regional, inter-regional, methodological, environmental, and anthropological problems, bringing in multiple proxy-data rather than discussions restricted to one specific site or merely descriptive presentations.

General instructions

- There is no official language for the conference but there will be no simultaneous translation.
- Paper/poster titles and abstracts should be in English (up to 300 words).
- Each speaker will have a 20-minute slot (15 minutes for the paper and 5 minutes for questions).

To contribute to this conference please **submit an abstract of no more than 300 words (PDF or DOC/DOCX format) to icaz2018.malaco@gmail.com by the 30st March 2018**.

To register for the conference, please visit the following website: <http://www.icaz2018ankara.com/>

Session 224: Bioarchaeological approaches towards understanding diet and subsistence, and their role in the formation of early societies

24th Annual meeting of European Association of Archaeologist (EAA) meeting

Barcelona, Spain

5 - 8 September 2018

This session aims to bring together archaeologists from a range of bioarchaeological sub-disciplines researching dietary habits and subsistence practices of prehistoric

populations. We are especially interested in researchers using osteoarchaeological, zooarchaeological, palaeo-environmental, and stable isotope approaches towards answering questions about diet, past agricultural practices and animal management during this crucial period of time. We encourage papers pertaining to the 5th - 2nd millennia BC, a period which sees an intensification and specialisation of agriculture in conjunction with many other important cultural, economical, and societal changes. The differing approaches towards agriculture would have had socio-economical and socio-political repercussions. This period marks the advent of what might be deemed as recognisably 'modern societies', as well as the foundation of urbanisation. Understanding diet and subsistence practices are crucial to understanding the development of increasingly complex societies. By examining the development of agricultural practices we can gain a better understanding of how populations were organised, in terms of labour divisions and resource provisioning strategies. We can also enhance understanding of how the local environment and climate affected populations and the decision making processes that helped populations counteract these natural factors.

This session aims to directly address these issues and bring together scholars utilising contemporary theories and methodologies to approach this stimulating epoch of human development. Please go to <https://www.e-a-a.org/EAA2018/> for more information about the annual meeting, including registration and abstract submission. **The deadline for abstract submission is 15th February 2018.** If you have any queries or questions please contact myself or Dr Benjamin Irvine at b.irvine@hotmail.co.uk.

Organizers: Benjamin Irvine and Jennifer Jones

Session 420: Sensitive and resilience of human communities to coastal environmental changes during the Early to Mid-Holocene

24th Annual meeting of European Association of Archaeologist (EAA) meeting

Barcelona, Spain

5 - 8 September 2018

Over the past years, the study of Early to Mid-Holocene coastal adaptations has emerged as a key research topic to understand processes of economic intensification and human resilience to environmental change. As the sea level rose during the Lateglacial Interstadial coastal configuration dramatically changed, inducing sedimentary infilling of estuaries and bays. Those sea-level changes were translated into loss of human settlement areas, reduction of hunting territories, and modification of

coastal biotopes. A key debated issue, is to determine to what extent Early to Mid-Holocene changes on coastal biotopes and marine biological productivity affected patterns of human exploitation of coastal resources.

This session aims to present new multidisciplinary findings that include:

- Archaeological records of the Mesolithic and Neolithic periods both in terms of change in settlement distribution over time along coasts and hinterlands, and in past diets (bioarchaeological remains of animals - invertebrates and vertebrates- as well as geochemical analysis);
- Paleogeographical studies recording geosystem adjustment to sea-level rise (multiple-core analysis, 3D modelling, time-slice reconstruction);
- Paleoecological studies focusing in coastal biotope reconstructions (palynology, aquatic fauna, geochemical analysis);
- Spatial and temporal correlations between archaeological and palaeoenvironmental records of the socio-ecosystem changes;
- Comparisons of European coastal areas (Mediterranean, Atlantic, Baltic, Black Sea) in order to highlight similarities and discrepancies.

Thus, we encourage participation of researchers that are interested in understanding past human-coastal environment feedbacks during the Early to Mid-Holocene. Ultimately, this session aims to take benefit of past evidences in order to better understand resilience of societies to current global changes. **Deadline for abstract submission 15th February 2018.**

Organizers: Elodie Brisset, Javier Fernandez Lopez de Pablo, Francesc Burjachs and Catherine Dupont

Session 495: Methodological Advances in Coastal and Maritime Archaeology

24th Annual meeting of European Association of Archaeologist (EAA) meeting

Barcelona, Spain

5 - 8 September 2018

Coastal and maritime archaeology has undergone unprecedented methodological advances in the last decades, from sophisticated remote sensing and submerged landscape reconstructions, that changed the scope of what compasses a 'past coastal landscape', over refined laboratory analyses of biomolecular records in human or faunal remains, which redefined consumption practices and coastal ecologies, to the study of submerged sediments through DNA or lipid analysis.

This session aims to bring together researchers who work at these multidisciplinary frontiers and who apply new approaches in their respective fields to shape future applications in coastal and maritime archaeology. The session also seeks to include novel approaches of directly combining theoretical advances with practical implementations in the field, as there is growing demand in further developing surveys and excavations of coastal settings. These can include but are not restricted to advances in reconstructing and interpreting coastal and submerged environments, analysing coastal subsistence and ecology, and developing large-scale or multi-evidential approaches to reconstruct and promote the interplay between coastal landscapes and human lifeways. **The call for papers / posters / other contributions closes on 15 February.**

Organizers: Niklas Hausmann, André Colonese, Geoff Bailey

Session 566: Tales of isotopes from Iberia: past, present and future perspectives

24th Annual meeting of European Association of Archaeologist (EAA) meeting

Barcelona, Spain

5 - 8 September 2018

The Iberian Peninsula is a crossroads between Africa and Europe, the Mediterranean and the Atlantic. Its importance both in the present and the past for human cultures and civilizations is uncontested. Iberian Pre-history, History and Archaeology are, thus, of great relevance when studying past populations and individual lifestyles. In this sense, isotopic analyses are aiding in shedding light on many crucial aspects of human activities from Iberia's past. During the last decade, isotopic analysis on bioarchaeological remains (i.e. humans, fauna, plants) has seen a boost in its application in this region, discovering a complex scenario connected to the diverse cultural backgrounds, wide climatic transitions and biogeographical resource differences existing in Iberia. As a result, our detailed knowledge on past human dietary patterns, territorial mobility, animal husbandry, farming and other aspects of our ancestor's lives is today broader than years ago. With this session we would like to bring together all researchers applying these analytical techniques to generate knowledge on Iberia's past to discuss the relevance of past projects, discover on-going investigations, explore convergences with other disciplines/techniques, and create an Iberian research network to promote collaboration in the field for future new projects. **The call for papers / posters / other contributions closes on 15 February.**

Organizers: Domingo Carlos Salazar García, Olalla López-Costas and Carlos Tornero-Dacasa

Developing Isotopic Investigations in the Near East & Caucasus

The American Schools of Oriental Research (ASOR) annual Meeting

Denver, Colorado, United States

14 - 17 November 2018

In the last decade, biogeochemical analysis has gained pace in the archaeology of the Near East and Caucasus, allowing fine-grained interpretations of mobility patterns, subsistence, diet, and infant-feeding practices in past human societies. Now embracing a holistic understanding of human ecology, isotopic research in the region is in a stage of expansion with a growing diversity of research questions (ranging from crop water management to spread of millet cultivation and from climate change to human adaptation to climate change). Following the objectives set in our previous sessions in ASOR 2016 and 2017 Annual Meetings, our 2018 session seeks to bring together research papers that utilize various biogeochemical methods and target a wide range of questions. For the 2018 session we are inviting papers on the results of new and ongoing analyses on diet, mobility, and beyond, as well as regional overviews or syntheses, revised interpretations, and/or methodological discussions that utilize previous datasets. Papers that propose new methodological, interpretative, and thematic frameworks and/or new sampling strategies, lab procedures, and instrumental techniques in isotopic analyses are particularly welcome.

Abstracts due February 15, 250 words or less, and can be submitted via ASOR's Online Abstract Management System at:

<https://app.oxfordabstracts.com/login?redirect=/stages/453/submission>.

We are also looking forward to holding a second brief Round Table for our Isotopic Research in Near East and Caucasus Working Group (under ASOR Business Meetings). Please RSVP if you would like to attend the round table to allow us sufficient time to reserve a place and time (2 hours) on the Annual Meeting Schedule. Please contact Bike Yazicioglu-Santamaria at bikekeyaz@gmail.com for further details and round table reservations.

Chairs: G. Bike Yazicioglu-Santamaria and Maureen E. Marshall

Session Proposals

'Life on the Edge' – International Union for Quaternary Research (INQUA)

Dublin, Ireland

25 - 31 July 2019

Climate change, sea level rise, ice-ages, human evolution, the migration of peoples, cultures, plants and animals, and the formation of the landscape and habitats of today are all subjects that elicit passion and interest among the public. The little-known term that incorporates all these scientific strands is 'The Quaternary.' Proposals are invited for INQUA 2019 Scientific Sessions. Proposals are sought for both highly specialised and multi-/ interdisciplinary topics covering any research, teaching, innovation or technological aspects of Quaternary research. New and innovative techniques and approaches are especially welcome. All Scientific Session Proposals should include the following:

- Names and affiliations of organisers (max three, inclusion of early career researchers strongly encouraged)
- A short description of the special session
- A list of possible speakers, where possible
- An indication of whether the organisers aim to publish their session in a special volume (name the journal)

Proposals in all areas are welcomed and proposals should be emailed to sci-prog@inqua2019.org by 31st March 2018 with the subject 'Scientific Session Proposal'. All proposals will be reviewed by the Scientific Programme Committee in April 2018, after which a final list will be available for abstract submission.

Website:

<http://www.inqua2019.org/programme/proposed-sessions/>

Conferences and Events

110th Annual Meeting of the National Shellfisheries Association

Seattle, Washington, USA

18 - 22 March 2018

Founded in 1908, The National Shellfisheries Association is an international organization of scientists, management officials and members of industry, all concerned with the biology, ecology, production, economics and management of shellfish resources - clams, oysters, mussels, scallops, snails, shrimp, lobsters, crabs, among many other species of importance. The

National Shellfisheries Association Annual Meeting provides a valuable opportunity to present and learn about the latest research on shellfish and shellfisheries. The Annual Meeting is generally held in late March unless held as the triennial meeting convened concurrently with the World Aquaculture Society and American Fisheries Society, Fish Culture Section. Abstracts from past annual meetings can be found [here](#).

Website: <https://shellfish.memberclicks.net/annual-meeting---program>

Paper submission closed.

New perspectives on evolution in molluscs: from fossils to next generation sequencing. 125th Anniversary Symposium of The Malacological Society of London

Flett Theatre, Natural History Museum, London

21 March 2018

You are warmly invited to attend this celebratory symposium to accompany the 125th Annual General Meeting of the Malacological Society of London, hosted by the Natural History Museum, London. The meeting will include talks from world-renowned experts in the field of malacology, covering aspects of molluscan evolution and life histories ranging from pharmacology, palaeontology and chemosymbiosis to larval development and shell structure. Focused on the phylum Mollusca, these talks will be of interest to evolutionary biologists, biogeographers, marine biologists and palaeontologists.

The meeting is free to attend but registration is necessary. Please register by sending an email to the automated account MSL-events@nhm.ac.uk. You will receive a bounce back message to say that you have successfully registered. Please do not send queries to this account as it is not monitored. Each participant must register via a separate email.

Website: <http://malacsoc.org.uk/meetings/125th-anniversary-symposium-agm/>

Recent Workshops

Humans' Earliest Personal Ornaments: Symbolism, Production & Distribution and EU-Beads Workshop: Early Upper Palaeolithic personal ornaments and behavioural adaptations

Daniella E. Bar-Yosef Mayer¹ and Marjolein D. Bosch²

¹ Tel Aviv University and Harvard University

² University of Cambridge

Two workshops were held recently to discuss the emergence of beads and other personal ornaments by Ancient Modern Humans. While they were not dedicated exclusively to shell beads, the latter were obviously a major component in the presentations and discussions. The "Humans' Earliest Personal Ornaments: Symbolism, Production & Distribution" workshop was held between 6-8 March 2017 in The Steinhardt Museum of Natural History, Tel Aviv University. The workshop organized by Daniella Bar-Yosef Mayer and Marjolein Bosch, included two days of lectures and discussions followed by a field trip to Manot Cave in the western galilee and to the Mt. Carmel caves, where some of the earliest personal ornaments have been discovered. Publication of the proceedings is under way. The workshop was supported by the Wenner-Gren Foundation, The Steinhardt Museum of Natural History, Tel Aviv University, the McDonald Institute for Archaeological Research (Cambridge), Horizon 2020, Marie Skłodowska-Curie Actions, and Ben-Gurion University of the Negev.

Seventeen papers were presented in five sessions, focused on different aspects of Paleolithic ornamentation of which most are made on materials of biological origin e.g., shell, bone, ivory, teeth, ostrich egg shell. The talks

covered a large range both temporally and geographically. Sessions were dedicated to: the earliest evidence for ornaments, of both modern humans and of Neanderthals, the use of shell beads in the Early Upper Palaeolithic (UP) of the Mediterranean basin, the expansion of modern humans towards East Asia and Sahul, Late Upper Paleolithic and Mesolithic sites with case-studies across the world, and the cultural role of personal ornaments in prehistoric cultures.

Throughout the lectures, most researchers presented not only the beads that were found, but also observations made on them, such as presence of ochre stains and evidence of manufacture and use wear. In the general discussion, several topics were covered including standardization and variability, raw material selection, and how to interpret symbolic behavior.

A second workshop, "EU-Beads Workshop: Early Upper Palaeolithic personal ornaments and behavioural adaptations" took place from 4-6 October, 2017 at the McDonald Institute for Archaeological Research at the University of Cambridge, UK. It was organized by Marjolein Bosch and was supported by the Horizon 2020 Marie Skłodowska-Curie (grant 656325) and the DM McDonald Grants and awards fund. The latter included fewer presentations, with a similar range of topics, but the presentations were longer and followed by longer discussions. It culminated in the viewing and discussion of the shell beads from Ksâr 'Akil, Lebanon, one of the largest shell bead assemblages in any Palaeolithic site.

Further details are available at

<https://eubeads.wordpress.com/workshops/>

Book Reviews

Molluscs in Archaeology: Methods, Approaches and Applications

Allen, M.J. (ed.) 2017. *Molluscs in Archaeology: Methods, Approaches and Applications* Oxbow Books, [Studying Scientific Archaeology](#), Volume 3 (ISBN: 9781785706080)

Malcolm Evans¹

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Boredom over the holiday period was not an issue this year as I was asked to review *Molluscs in Archaeology: Methods, approaches and applications*, edited by Michael J. Allen. The work was published in June 2017; the third instalment of the Studying Scientific Archaeology Series by Oxbow (Paperback Edition ISBN 978-1-78570-608-0, Digital Edition ISBN 978-1-78570-609-7). The paperback retails on-line for 25.00GBP. Oxbow states the purpose of

the series as "aimed at students at all levels... demonstrate how scientific analyses contribute to our wider understanding of past human behaviour, technology and economy", coupled with an objective of being "...recommended reading on university courses". The preface asserts the need for a single book rather than diverse reading lists, and the introduction sets the objective of an "...introduction to the whole world of molluscs...", to a readership extending from "student to lecturer". The back cover provides a quote that "Particular strengths ...are that it integrates studies of terrestrial and marine molluscs each often pursued separately...". Collectively these succinct statements provide a firm basis for this review.

The volume extends to 434 pages structured into 5 parts containing 23 chapters. These capture the input of 26

contributors for whom institutional affiliations or private addresses are provided. A physical count revealed the presence of 110 figures and 15 tables, plus 3 tables that are not labelled or captioned. Several chapters also provide useful 'box features' covering helpful reference material, such as identification guides and similar. Terrestrial molluscs (Parts 1 and 2) are clearly the focus given the 212 pages allocated compared to the 75 dedicated to marine molluscs (Part 3), 70 to artefacts and raw material (part 4), and the 50 given over to 'the science' (part 5). A little too weighted towards terrestrial molluscs for my taste, but the limited space afforded to certain areas does avoid excessive overlap with the works of Claassen and Ryman, amongst others. The title of the final part will hopefully not leave the reader with the impression that parts 1 to 4 are not science. This structure highlights that the volume cannot in anyway be construed as integrating the study of terrestrial and marine molluscs, other than part 5 discusses marine and freshwater reservoir effects. The work simply consolidates material as discrete sections within a single physical volume.

Individual chapters in a book can but table a limited selection of material. Generally, the examples are interesting, and I found them fit for purpose and likewise for the targeted readership. Only on a few occasions did I question what had been included or excluded. The scope of material covered is extensive and does provide a very 'wide angle' view of the use of molluscan remains within archaeology and palaeoenvironmental studies. This includes the very educational narrative provided in chapter 9 on how sustained research effort at a regional level is often required to overturn the 'perceived wisdom'. Whilst at the other end of the scale chapter 14 provides an excellent illustration of the return available from a detailed knowledge of the physiology and ecology of a single taxon. Molluscs as both raw material and artefacts are also covered, providing a return for those not focused on subsistence or environmental reconstructions. This a useful inclusion, as I 'struggle' with some of the intentional modification asserted in the published literature and I obtained some welcome pointers from this section. Chapters 7,8 and 11 add consideration of freshwater taxa to that provided on marine molluscs and terrestrial snails. It is challenging to identify gaps in the range of habitats covered by the examples taken from a geographic zone extending from the Mediterranean to the Western Isles. Nearly all chapters are clearly written, comprehensible and engaging, and their accessibility is enhanced (but see below) by a mixture of charts, tables and diagrams. The final three chapters provide very readable accounts of the application of dating and isotope techniques to biogenic carbonates, which will be helpful to those taking more advanced dating or isotope focused modules.

The author of chapter 3 sets an additional objective in the form of the opinion of a renowned ostracodologist, quoted in the first paragraph as, "all that quantitative stuff is worthless". A courageous move given the challenging nature of the subject matter and limited space available. Unfortunately, this opportunity to challenge the renowned ostracodologist was not seized. Whilst the chapter parades, thick and fast, many techniques (with complicated names, equations and acronyms), there is an over reliance on Author1 did (said) this and Author2 did (said) that, and so on and so forth. The reader is provided with little guiding critique, being left to their own devices to reconcile numerous contradictory statements, of which there are four on pages 53 and 54 alone. The targeted readership and the stated objectives would be better served by more on the basics including; the implications of taphonomy, excavation sample sizes, sample normalisation, data transformation and cleansing. This supported by just one or two illustrative case studies that demonstrate the additional return the 'more sophisticated' techniques can deliver when appropriately deployed. Such cases studies including, as a minimum, a summary of the data presented in the charts. It is all too easy to shovel some data into a package (or equation), hit enter, and get either a chart or value with a fancy name. Unfortunately, the risk of, garbage in, garbage out, is omnipresent, and no material mitigation is offered to the reader. Conventional approaches are utilised exclusively in the rest of parts 1 and 2, and therefore a case needed to be made. As someone who is involved in teaching quantitative methods I found the chapter unsatisfactory and overly complicated given the readership being targeted; as well as poignant given the current debates within the ecological fraternity regarding 'analytical machismo'. The conclusion does highlight a very important point, and that is detailed ecological knowledge is a prerequisite, whether applied *a priori* or *a posteriori* to the (semi-) quantitative analysis. I believe a publication in 2017 should anticipate the reader consulting the substantially revised 2nd edition of Magurran's text book and citing the relevant pages from that edition (2004) does not strike me as an unreasonable expectation.

Beyond chapter 3 as discussed above I found little to take issue with. That said, the perpetuation of a factoid in terms of the interpretation of a t. test result (p.54) is unfortunate; arrays of pie charts for comparative analysis (p.170, p.174) likewise; and the presence of grid lines in graphs (p.52, p.175), less than ideal. The otherwise informative chapter 16 provides a rather theoretical statement regarding allometry and environmental plasticity, whose overly pessimistic tone the reader may misinterpret, *prima facie*, as 'metrical analysis is not worthwhile'. This would be unfortunate as the chapter's author sensibly acknowledges that there is excellent

scope for further research and methodological innovation. Basic stuff admittedly, but important nonetheless given the stated objectives of the volume and the series. Also, the use of figures that are too small is a frequent issue throughout.

Overall the volume succeeds in disseminating the potential of scientific analysis of molluscan remains to inform archaeological interpretation, and the breadth of material certainly gives an insight into all but the whole 'world of molluscs in archaeology'. Sections 1 and 2, (excluding chapter 3) provided what I found to be a good and stimulating starting point for terrestrial and freshwater environments; tending towards a 'soup to nuts' handbook for the former. Part 3 will provide a good entry point for those new to marine molluscs. This is achieved using case studies and examples that I found very relatable, as I did the environmental and procurement narratives they generated. Clearly, and by design I have no doubt, this work is not the mollusc equivalent of *The Archaeology of Animals* by S. Davis, or *The Archaeology of Human Bones* by S. Mays (2010), both of which seek to communicate concepts through

simplification and a degree of abstraction. The volume will be useful to undergraduates considering a possible environmental archaeology topic for their dissertation, either because they will consider published molluscan data, or a molluscan assemblage as the target for fresh analysis. This suitability extends to masters students and PhD proposers who wish to pursue a new direction. Finally, readers of the hardcopy may wish to have a hand lens readily available.

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Research profile -

https://www.dur.ac.uk/archaeology/research/research_postgraduates/?id=15449

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