This issue of the Newsletter includes updates on many scheduled meetings that have had to be rearranged because of the COVID-19 pandemic. The Calendar at the end of the issue provides a list of dates as they are currently known, but please do check the web links given regularly. Also note the July deadline for the 22nd R.J.H. Hintlemann Award for Zoological Systematics, for more details see page 48, and the new book review section planned for the next issue of the Newsletter.

As well as the pandemic, there is other troubling and disturbing news from around the world: see pages 42, 46 and 47. On a more positive note, however, our community is rising to the challenges and taking a position of solidarity. Many have had to embrace online teaching and collaboration, see page 67 for an account of one approach, but this year also marks 20 years of the ZOOARCH mailing list. Now, more than ever, online communication platforms such as ZOOARCH and ICAZ working groups provide invaluable resources.

Even if they cannot replace the tactile element of handling actual bones, while access to both archaeological assemblages and reference collections is restricted, virtual collections can help fill the gap. One such resource (thank you ZOOARCH for the tip) is the digital collection held by the Smithsonian Institution, https://www.si.edu/learn-explore, from which the image above was downloaded. Hours of fun to be had browsing through the different categories and trying different filters! Please do let us know of any other online resources you have found particularly useful.
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About the Newsletter

ICAZ welcomes submissions to its bi-annual Newsletter. Submissions can be emailed to the editor, Eva Fairnell: the deadlines for copy are 15 May and 15 November. Past issues of the Newsletter can be downloaded from the Publications section of the ICAZ website, http://www.alexandriaarchive.org/icaz.

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Cover image: Reindeer, caribou, right scapula. National Museum of Natural History (NMNH), Smithsonian, http://n2t.net/ark:/65665/3e2d6af46-8ca6-4a3b-b9db-ef2ac1b63a08

ICAZ Newsletter 20:2
Dear ICAZ members

I hope that this Newsletter finds you safe and healthy. I want to recognize that we are all struggling with a range of impacts from the pandemic, but also various other social, political and economic challenges in our countries and communities. I know we are all hoping for better days ahead.

During this difficult period, it can be helpful to look for ‘silver linings’ in our current situation and think about what we can do to shape a better future. Silver linings for individual ICAZ members may include more time with family or more space for research in the light of cancelled field projects. For ICAZ as a global community, I hope that the challenges of the pandemic present new opportunities for communication and collaboration. For example, in this Newsletter, although many in-person working group meetings and conferences have been postponed, some are deciding to shift to a virtual venue (for example, the first meeting of the new ICAZ Zooarchaeology of the Modern Era working group will be held online on 4 December). In the months ahead, many other working groups will be exploring ways to have a successful online event. It would be helpful if ICAZ members who have been conference organizers, speakers/panelists, or attendees of online events, would share their thoughts about what worked and what did not work.

There are many reasons to go online. Beyond the immediate threat of COVID-19, we should consider the environmental impacts of in-person conferences, especially for an organization with members located all around the world. In addition to helping reduce carbon emissions, a benefit of online meetings is that one can view every presentation – something that rarely happens at in-person conferences when we are running from one lecture room to another. Furthermore, people who could not attend the meeting can view talks later online. This means that our research has a far greater reach, meeting our ethical and professional obligations to disseminate our work and communicate zooarchaeology to the public. Furthermore, online conferences can be more inclusive in many ways, since they are more accessible to those members who may not have the time or funding to travel to an in-person conference. The longer term economic impacts of the pandemic may also mean that members have less access to travel funds, so finding ways to be more inclusive through virtual meetings is not just a short-term solution but one that may become a new normal.

ICAZ already has a good model that is not overly taxing, with a major international conference once every four years and working group meetings every two years. Because we have such a globally dispersed membership, we have to be especially mindful of conference frequency and location. Nevertheless, we should consider ways that we can adjust our model to be more environmentally friendly and inclusive. For instance, working groups may consider having every other meeting take place online, or the international conference may look into incorporating opportunities for virtual participation (something that the Cairns organizers seem to be considering already based on their survey questions).

In-person conferences do have their benefits, not the least of which is the opportunity to network and socialize face-to-face. One of the most challenging aspects of online events, it seems, is how to deal with ‘social time’. Even with friends and family, socializing over Zoom can be frustrating and awkward, and we are all suffering from Zoom fatigue. I am very interested to hear from those of you who have had positive experiences with virtual socialization in a professional setting. I encourage members to share their experiences with online events and also consider how shifting to more online events in the long-term might benefit the global zooarchaeology community. I will reach out to the membership before the next Newsletter for feedback on this topic.

Sarah W. Kansa, ICAZ President
Message of solidarity

Contributed by Sarah W. Kansa (ICAZ President)

Dear ICAZ members

We, the members of the ICAZ Executive Committee (EC), mourn with millions around the world over the murder of George Floyd and the murder and brutalization of so many others at the hands of the police and the state. Our community has a moral and ethical responsibility to combat violence and ideologies of hate. We must also ask ourselves how these murders represent larger patterns of violence and oppression against Black people, Indigenous people and others. While these problems have reached a crisis point in the United States, the United States is not alone in struggling with systemic racism and institutionalized injustice. ICAZ stands in solidarity with Black Lives Matter both in the United States and around the world.

ICAZ as an organization recognizes that systemic racism and discrimination need to be fought against and dismantled. We recognize that the ICAZ community has the ability and responsibility to promote anti-racist and anti-discriminatory practices – to work towards making meaningful changes that reflect equity, diversity and inclusion. We encourage all ICAZ members to consider what we can do to reflect these values in our various roles as teachers, researchers, mentors and allies. As individuals, ICAZ members and all archaeologists should speak out promptly and publicly when myths and misinformation about the human past are used to support damaging race-theories, to counter such myth-making and not to let it go unchallenged just because the claims are absurd.

Race is a social construct that has real and devastating impacts on people’s lives, opportunities and security. We recognize that historic and institutional inequalities and racism have harmed Black and Indigenous people and have disproportionately and negatively impacted their opportunities in the discipline of archaeology. In our efforts to be an anti-racist organization, ICAZ commits to the following actions.

• Ensure that our executive and international committees represent the diversity of the ICAZ community.
• Work to make ICAZ more diverse and inclusive.
• Develop anti-discrimination and anti-harassment policies for ICAZ and its affiliated working groups.
• Ensure clear and safe reporting paths to bring concerns forward.
• Increase transparency across the organization through visibility into decision-making processes, and accountability for information sharing.

These actions are a starting point that require our participation and ongoing attention. ICAZ is an international community and we want all members to feel safe and supported. We invite you to send your thoughts and suggestions on how ICAZ can continually work to fight racism and other forms of oppression while supporting equity, diversity and inclusion.

In solidarity

The ICAZ Executive Committee
Sarah Whitcher Kansa, Terry O’Connor, Christine Lefèvre, Suzanne Pilaar Birch, Hitomi Hongo, Hans Christian Küchelmann, Richard H. Meadow, Mariana Mondini, Evangelia Pişkin, Patrick Faulkner, Eva Fairnell
International Committee meeting update

Contributed by László Bartosiewicz (IC Member)

The International Committee (IC) meeting in preparation of the 2022 international conference in Cairns, Australia, was planned for mid-June 2020 at Stockholm University, Sweden. An associated scientific conference had also been organized under the title ‘The future of past animals: global perspectives in zooarchaeology’. Unfortunately, the event had to be cancelled due to the COVID-19 pandemic, which will predictably impair global travel for some time.

The Marcus and Amalia Wallenberg Foundation generously sponsored basic food and accommodation costs for participants during the meeting and agreed with the postponement of the conference within this year. The tentative dates now are 28 October–1 November 2020, although we have refrained from officially announcing this before August, when we are hoping for more precise predictions on the pandemic. The Wallenberg Foundation has not ruled out the possibility of transferring the funds for 2021, but this will need to be negotiated in light of the late summer/early autumn developments.

ICAZ 2022 update

Contributed by Patrick Faulkner (current conference organizer)

The 14th ICAZ International Conference will take place in Cairns, Australia, from 8 to 13 August 2022. We had planned for the first circular to be launched by June 2020, however COVID-19 has caused several unforeseen delays. The conference organizing committee (comprising Patrick Faulkner, Melanie Fillios, Tiina Manne, Jillian Garvey and Martin Wright) is currently working hard on overcoming these issues, and we will launch the first circular and call for sessions in the near future. To facilitate planning, the conference themes are announced here in lieu of the first circular. We welcome all subjects related to zooarchaeology but we would like to especially encourage participation within the major and/or modularized (or daily) themes outlined below.

Major theme
Oceans and Coastline – Past, Present and Future
The location of the conference on the doorstep of the internationally renowned Great Barrier Reef provides an opportunity to consider the ecological dynamism in which ancient cultures are embedded, and how they shape and are shaped by place. The rising and falling of sea levels, the transformations of coastlines through time and the shifting array of available resources is a context that resonates well beyond the Great Barrier Reef. In various ways this context frames prehistoric narratives throughout the world, as well as directly speaking to contemporary discussions of climate change. The long-term perspective provided by archaeology permits both environmental change and cultural corollary to be viewed as long-term structures, giving archaeology the unique ability to inform upon current models and projections. This theme speaks to finding our voice in this arena and demonstrating that zooarchaeology has a very real role to play.

Modularised themes
Dynamic Landscapes, Dynamic Cultures
Landscapes are the result of the long-term interaction between humans, animals, climate and the environment.

A panoramic shot of Cairns. Courtesy of Tourism and Events Queensland
The zooarchaeological record can play an important role in the interpretation of these landscapes – both prehistoric and historic. Investigations of these interactions include seasonality, taphonomy, migration, colonization, settlement, domestication and extinction. We aim to highlight new research and encourage dialogue as to how these can be identified and how this informs on human behaviour.

**People and Animals in the Social World**
Animals and people cohabit the same landscapes and are often reliant upon each other in complex ways. Each contributes to the construction of the lifeworld of the other, highlighting the myriad of ways in which humans and animals play a role in constituting each other’s worlds. Such roles can range from the non-prosaic use of faunal raw materials for artefact production, to the intertwined lives of people and domesticates, to the role of animals in social and cosmological life, and the deliberate modification of landscapes to affect responses in animals and other people.

**Science and Zooarchaeology**
The application of scientific techniques to zooarchaeological analysis has long been a part of specialist research, but ever-increasing advances in technology are rapidly providing new tools to offer greater levels of insight and accuracy. We will examine and explore new scientific techniques, advances in and creative applications of standing techniques, to highlight the role of science in zooarchaeological analysis.

**Coastal and Maritime Connections**
Coastal and marine environments, and the range of vertebrate and invertebrate resources they contain, are increasingly recognized as having played pivotal roles in human evolution, global dispersals and colonization, and later behavioural/cultural developments worldwide. Coasts encompass and connect dynamic terrestrial and marine environments, providing a backdrop for complex and variable human social and economic behaviours through time and space. Here we explore the characteristics of coastal and maritime adaptations, and the transformative nature of the connection between coastal, marine and maritime environments on human sociocultural and economic structures.

**ICAZ 2022 Scientific Committee**
The Scientific Committee has been established and will be chaired by Professor Sean Ulm (James Cook University, Australia). Members of this committee have been drawn from various institutions across Australia and New Zealand, and includes Melinda Allen (University of Auckland, New Zealand), Jane Balme (University of Western Australia, Australia), Richard Cosgrove (La Trobe University, Australia), Stuart Hawkins (Australian National University, Australia), Ariana Lambrides (James Cook University, Australia), Lisa Matisoo-Smith (University of Otago, New Zealand), Amy Prendergast (University of Melbourne, Australia) and Sofia Samper Caro (Australian National University, Australia).
Results of the survey on participation at the 2022 ICAZ Conference
In May 2020, the organizing committee held an online survey to gauge participation in the 2022 conference to assist with planning in light of the current global pandemic. The survey generated 322 responses and the results are summarized as follows.

- **Are you planning on attending the ICAZ 2022 meeting in Cairns, Australia?**
  - Yes 168 (52.2%), No 17 (5.3%), Uncertain 117 (36.3%), Yes through online/Zoom 20 (6.2%).

- **If attending, would you be registering as:**
  - ICAZ Member 228 (70.8%), ICAZ Student/Unwaged Member 47 (14.6%), Non-ICAZ Member 20 (16.2%), Non-ICAZ Student/Unwaged Member 15 (4.7%).

- **Which country/region would you travel from to attend the conference?**
  - Australasia and the Pacific 41 (13.8%), Europe/UK 115 (37.8%), the Americas 109 (35.9%), South-East Asia 10 (3.3%), Middle East 9 (3.0%), Africa 8 (2.6%), UAE 1 (0.3%).

- **Would you be traveling with children, and if so, would you be interested in childcare facilities being provided (at an additional cost) at the conference venue?**
  - Yes 24 (7.5%), No 213 (66.1%), Uncertain 38 (11.8%).

- **Are you interested in participating in pre- or post-conference fieldtrips around the Cairns area?**
  - Yes 212 (65.8%), No 26 (8.1%), Uncertain 65 (20.2%).

As noted above, further details will be made available in the near future, and the organizing committee can be contacted via email at admin@icaz2022.org. Updates will also be provided on Facebook ICAZ2022 and Twitter @ICAZ2022. Information on the range of experiences that the Cairns region has to offer can be found at:


Barron Gorge National Park, Wet Tropics of Queensland’s World Heritage Area (Skyrail Rainforest Cableway). Courtesy of Tourism and Events Queensland
Loss of Juukan Gorge Rockshelters, Pilbara region, Western Australia

Contributed by Tiina Manne, Australian Archaeological Association Inc. (president@australianarchaeology.com), and Peter Veth, University of Western Australia and Director of UWA Oceans Institute (peter.veth@uwa.edu.au)

Australian Archaeological Association Inc. (AAA): Press Release posted on 28 May 2020

The destruction of the significant Juukan Gorge rockshelters, despite new and compelling evidence from archaeological excavations conducted after the permit to destroy was issued, highlights the urgent need to reform the Western Australia (WA) Aboriginal Heritage Act. These actions highlight the need to have robust heritage agreements between proponents and Aboriginal communities that are responsive to new information about the cultural significance of sites. There has been an increasing call from professional archaeologists and Aboriginal Representative Bodies to have a forum in WA for heritage appeals that considers the values of heritage to Traditional Owners and the State, and takes into account wider considerations of significance such as The Burra Charter.

New evidence for values and significance should be able to be incorporated into agreements with communities and reflected in the level of protection afforded by heritage law. This would bring WA into line with other States where up-to-date assessment of the significance of sites is used to make informed decisions around their protection and management. The early dates for occupation at Juukan, at 46,000 years ago, puts this site in the oldest bracket of dates for the human occupation of Australia’s deserts. This issue emphasizes the need for the WA State Government to progress the reforms to the Heritage Act for greater clarity, certainty and site protection for Traditional Owners, land-users and the Regulator, and not the least for the heritage itself.

While AAA understands that Rio Tinto was legally permitted to destroy these sites under a Section 18 Notice issued in 2013, the fact that Rio did not revisit this decision after the site’s increased cultural significance was demonstrated by subsequent archaeological excavations, and visits by Traditional Owners, is inconsistent with modern standards of heritage management. Many of our members work extensively and collaboratively with Rio Tinto and have done so for many years, on the assumption that Rio Tinto’s strategic mission is to set best practice in cultural heritage management and establish and maintain ethical partnerships with Traditional Owner communities. It is expected that RTIO, and other resource developers, meet both the regulatory requirements mandated by state legislation and the expectations of their agreements with Traditional Owner groups. That the timing of the destruction of these sites was on Australian Sorry Day was particularly unfortunate. Multidecadal investment in best-practice heritage management and Traditional Owner partnerships can be eroded by such actions.

There are important lessons to be learned here. As a discipline that prides itself on our collaborative work with Traditional Owner groups while striving for best practice outcomes in heritage compliance, we call on the Western Australian regulators and industry leaders to work towards building a stronger and fairer heritage protection framework for the State.

In this Week of Reconciliation – we say: We are Sorry.

For further information, contact:

- Dr Tiina Manne, President, Australian Archaeological Association Inc., president@australianarchaeology.com
- Dr Peter Veth, Professor of Archaeology, University of Western Australia and Director of UWA Oceans Institute, peter.veth@uwa.edu.au

Note in defence of Brazil’s archaeological heritage

Contributed by Albérico Nogueira de Queiroz, Universidade Federal de Sergipe-UFS, Brazil (alberico.queiroz@pq.cnpq.br)

As widely disseminated across the Brazilian television media, as well as on social networks and some international communication instruments, in May, the full information of the ministerial meeting of the government of Brazil, which took place on 22 April, that was authorized by the supreme federal court, was released. This meeting was led by the President of the Federative Republic of Brazil, Jair Messias Bolsonaro, in which some of the ministers showed complete disrespect for the country’s federal constitution and, in particular, the statements of the environment minister, Ricardo Salles, when commenting irresponsibly and criminally about the various strategies to be followed during the COVID-19 pandemic period, supposedly taking advantage of a possible ‘carelessness’ on the part of the national press, to officialize several laws that resulted in the softening of environmental legislation and consequently allowing the increase in deforestation of the Amazon rainforest and ‘legalized’ incursion of agri-business into Indigenous lands in the Brazilian legal Amazon. Facing the possibility of the immense environmental, archaeological and social problems resulting from such attitudes supported by the federal government, the Society for Brazilian Archaeology (SAB) sent a note to the press and the entire national and international community in favour of the Brazilian archaeological heritage.

This note can be accessed at the following link: https://www.sabnet.org/download/download?ID_DOWNLOAD=624.

Recent events in Bolivia

Contributed by Mariana Mondini, FFyL UBA-CONICET, Argentina (mmondini@conicet.gov.ar)

It is with concern and sadness that we learnt that the Bolivian de facto government has recently taken severe measures against some of the main national cultural institutions, including those responsible for archaeological heritage. In mid-June, the Ministry of Culture and Tourism was dismantled, and the bodies concerned with archaeology and heritage were transferred to the Ministry of Education. Then on 30 June, the police force intervened on the premises of the Archaeology and Museums Unit (UDAM) and the National Museum of Archaeology (MUNARQ). Archaeologists and other staff of both divisions were refused entrance. This informal and irregular disengagement of the personnel at these institutions within the dramatic recession augmented by the COVID-19 outbreak is itself serious. In addition, officials were unable to make an inventory of the archaeological assets and documents that are housed in the museum, its archive and library. Among MUNARQ functions are research, conservation, restoration and exhibition of archaeological heritage in order to achieve socio-educational and cultural activities that allow the transmission of knowledge, culture and traditions of the Bolivian ancestors. The MUNARQ collections include some of the most representative archaeological pieces of the Bolivian pre-Hispanic past, as well as human remains, and its archives safeguard unpublished records since the 1910s, including sacred and domestic cultural productions of Bolivian people that attest to their rich and diverse cultural heritage, and belong to the Bolivian rural and Indigenous communities and people generally. This patrimony is invaluable and, given the lack of professional monitoring of their state of conservation, it is in a situation of extreme vulnerability to destruction, deterioration and even theft at this time, as Bolivian professionals and academics have expressed.

Likewise, the UDAM is the body that oversees research projects and contract archeology in the Bolivian territory. By ceasing its operation while road, extractive and other works potentially affecting the archaeological record are still active, this record is at large risk. Equally, a large number of Bolivian archaeologists subsist on contract activity, which was halted by the pandemic outbreak of COVID-19 and which cannot be reactivated without reopening the UDAM.

Finally, a religious leader with no background at all in heritage, archaeological or cultural management was appointed as the head of the UDAM and MUNARQ. These decisions follow the intolerant, racist and colonialist ideological line of the transitional government of Jeanine Añez, which includes the killing of Bolivians of Indigenous affiliation, the burning of the Wiphala flag and the introduction of the Bible to the government palace in late 2019. Unfortunately, these are not isolated events in Latin America at this time. For further information and statements by Bolivian and international academics and students, see:

- https://notisalp.blogspot.com/2020/07/pronunciamiento-de-la-sociedad-de.html
- http://opca.umsa.bo/documents/273960/957321/Pronunciamiento+de+la+Carrera+de+Antropolog%C3%ADa+Arqu%EDolog%CC%81a+y+el+Instituto+de+Investigaciones+de+Antropolog%CC%81a+y+Arqueolog%C3%ADa/744a17e3-59e0-4460-85e3-9f30656de1d5
- https://www.facebook.com/icom.bolivia.54/posts/555883461958622

Contributed by Albérico Nogueira de Queiroz, Universidade Federal de Sergipe-UFS, Brazil (alberico.queiroz@pq.cnpq.br)
22nd R.J.H. Hintelmann Award for Zoological Systematics

Established by Mrs Elisabeth Hintelmann in memory of her husband Robert J. H. Hintelmann

For outstanding achievements in evolutionary biology (focused on zoology), including zoological systematics, phylogenetics, palaeontology, morphology, faunistics or zoogeography, the Association Freunde der Zoologischen Staatssammlung München e.V. has the pleasure to announce the 22nd R.J.H. Hintelmann Award for zoological systematics. The award has a value of €5,000 and its target group is young postgraduate scientists. This prize is awarded not only in appreciation of the previous scientific performance of the applicant, but the winner will also be given the opportunity to continue his/her research work in cooperation with the Zoologische Staatssammlung München (ZSM). This may be carried out either by visiting the ZSM or by being provided with ZSM materials for work elsewhere. The 22nd R.J.H. Hintelmann Scientific Award will be presented on 15 January 2021 during a ceremony at the ZSM in Munich, where the prize-winner has to provide a short lecture on his/her research topics. Nominations may name any young postgraduate scientist, not yet in a permanent position, with outstanding performance in one or more of the fields mentioned above.

The proposal or application should provide a cover letter with an account of the candidate’s scientific achievement – no longer than one page! In addition, a CV, list of publications and selected reprints (not more than five) have to be submitted. Please submit all files electronically only (e.g. email, DVD, USB stick, Dropbox link, etc.). Please note that submitted media devices will not be returned to the applicant. Applications are accepted in English (preferred) and German. Please use the PDF forms available from: http://freunde-zsm.de/announcement-22nd-r-j-h-hintelmann-award-for-zoological-systematics. Submissions by email are possible if the email is less than 10 MB in size.

Any zoologist/systematist may nominate candidates; self-nomination and repetitive applications in several years are also possible. The Freunde der Zoologischen Staatssammlung e.V. appoints a jury, which elects the prize-winner. Depending on the quality of applications, the Association reserves the right to withhold the award in any given year.

Please send applications or nominations by **31 July 2020** to: Freunde der Zoologischen Staatssammlung München e.V., c/o Anneke van Heteren, 22nd R.J.H. Hintelmann-Wissenschaftspreis, Münchhausenstrasse 21, D-81247 Munich, Germany; or by email to vanHeteren@snsb.de and cc’ed to franke@biotopia.net. For further information, please contact Anneke van Heteren at vanHeteren@snsb.de.

Join us for the third biennial Microvertebrate Working Group (MVWG) meeting hosted by The Catalan Institute of Human Paleoeocology and Social Evolution (IPHES)

**Contributed by Sara E. Rhodes, Eberhard-Karls Universität Tübingen, Germany (sara.rhodes@uni-tuebingen.de)**

The MVWG organizational committee is happy to announce that the 3rd bienniel MVWG meeting, taking place on **1–2 September 2020**, hosted by IPHES and organized by Drs Juan Manuel López-Garcia and Hugues-Alexandre Blain, will proceed as scheduled as a virtual congress!

The MVWG meeting will be hosted by IPHES via Google Meet and include live presentations of podium and poster contributions, as well as live discussion sessions. The meeting will take place over 2 days and include three sessions, dedicated to exploring human and small
vertebrate interactions in the past, paleoenvironmental and palaeoclimatic reconstructions, and the application of new and/or improved methods utilizing small vertebrate assemblages. A poster session and update on the MVWG from the co-coordinators is scheduled to close the meeting on 2 September. A detailed programme, taking into account the different time zones of the participants, will be shared with registered participants by the end of the month. With 30 communications scheduled, this MVWG meeting is shaping up to be the largest and most diverse yet. So register today at https://mvwgicaz.wixsite.com/mvwg/contact and join us (virtually) in Tarragona!

MVWG co-coordinators:

- Sara E. Rhodes
- Ángel Blanco-Lapaz

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**The show must go on: the first Zooarchaeology of the Modern Era (ZME) working group meeting moves online!**

*Contributed by Rebecca Gordon (Rebecca@Bonesandantlers.co.uk) and Eric Tourigny (eric.tourigny@newcastle.ac.uk)*

**Call for papers! Deadline Friday 25 September 2020**

On 6 March 2020, we announced plans to host the first ZME working group meeting this autumn at Newcastle University, UK. However, because of the COVID-19 pandemic, it is no longer possible to host the meeting in person at the university.

Despite this, we believe it is important that the meeting still takes place, so we have decided to host it virtually and at a later date via Zoom on Friday 4 December 2020.

The goal of this meeting is to address current and future directions for the zooarchaeology of the modern era, allow people to present their research, and facilitate the development of new projects and collaborations. By hosting it online, we hope it allows more people to participate from around the world.

Details of the virtual meeting are being finalized so keep an eye out for further announcements.

This event is open to anyone interested in the study of animal bones from the last 500 years from any geographic region or culture. If you are interested in presenting your research please email abstracts (c. 300 words) to Becky and Eric at zmeworkgroup@gmail.com by 25 September 2020.

If you are not a member of the working group and are interested in joining please contact us on the email above.

You can find more information about the group at http://alexandriarchive.org/icaz/workmodernera.
University of Sheffield zooarchaeology short courses

Contributed by Mauro Rizzetto and Veronica Aniceti, University of Sheffield, UK (zooarch-shortcourse@sheffield.ac.uk)

- Understanding zooarchaeology I: 18–20 January 2021
- Understanding zooarchaeology II: 21–23 January 2021
- Price for one short course: £200/£140 (student/unwaged)
- Price for both short courses: £350/£240 (student/unwaged)

The next Understanding Zooarchaeology I short course will be run in January 2021 (postponed from April and September 2020). This three-day course aims to provide an understanding of the basic theory and methods that zooarchaeologists use to understand evidence from animal remains.

The introductory course will be followed by Understanding Zooarchaeology II, a three-day course suitable for anyone who has already attended our Understanding Zooarchaeology I course, or who has a basic knowledge of zooarchaeological methods. This course will cover the identification of a wider range of species than our introductory short course, including wild British mammals and birds, and the separation of sheep and goats. It will also provide participants with experience in recording and analysing a real archaeological assemblage.

Both courses will use short lectures, hands-on practical activities, and case studies focused on current zooarchaeological research.

For more information please visit our website: https://www.sheffield.ac.uk/archaeology/research/zooarchaeology-lab/short-course.

You can also follow us on Facebook (https://www.facebook.com/Sheffield-Zooarchaeology-Short-Course-100619023380021/?ref=hl) and Twitter (https://twitter.com/ZooarchLabSheff).

For any questions, please feel free to email us at: zooarch-shortcourse@sheffield.ac.uk.

Understanding Zooarchaeology I

A short course for archaeology and heritage professionals, students and enthusiasts

18th-20th January 2021

Animal bones and teeth are among the most common remains found on archaeological sites.

The University of Sheffield Zooarchaeology short course uses short theoretical lectures, practical sessions and case-studies to provide training in the theory and methods that can be used to understand animal remains in archaeology.

For more information, please email: zooarch-shortcourse@sheffield.ac.uk

Understanding Zooarchaeology II

A short course for those who have a basic knowledge of zooarchaeology. For professionals, students and enthusiasts

21st-23rd January 2021

The main aim of zooarchaeology is to understand the interaction between humans and animals, through the study of animal remains from archaeological sites.

The University of Sheffield Zooarchaeology short course uses practical sessions, case-studies, and an overview of zooarchaeological theory so that participants can experience the whole range of knowledge and skills required by the discipline, with the opportunity to work with an actual faunal assemblage.

For more information, please email: zooarch-shortcourse@sheffield.ac.uk
Call for papers for a Special Issue of Animals

Contributed by Dominik Poradowski (dominik.poradowski@upwr.edu.pl) and Aleksander Chrószcz (aleksander.chroszcz@upwr.edu.pl), Wrocław University of Environmental and Life Sciences, Poland

A call for papers in a special issue of an MDPI Open Access Journal Animals. If you’re looking for a place to publish your next zooarchaeology-palaeopathology study, please see more information below. The deadline for submissions is 31 December 2020.

Since the 1960s, archaeozoology has been aimed at the description of the roles animals have played in human life, from Neolithic times to early modernity. Animal skeletal remains are a valuable source of knowledge regarding human–animal relations, starting from domestication. Some of the bone changes observed in unearthed animal skeletal assemblages can be the result not only of domestication, but also of animal diseases leading to our palaeopathological findings. Interpretation of these findings can provide us with information on the extent to which human societies had developed in the past and help us to reflect on domestic animal care, animal use and utilization, environmental changes, and the history of zoonoses. The role of archaeozoology is to build a clear picture of this process.

Thus, the aim of this special issue is to present recent research and reviews on human–animal–environment interactions and relationships, which can be recognized through archaeozoological materials. We invite you to submit your scientific work for publication in this special issue.

For more information, please see https://www.mdpi.com/journal/animals/special_issues/Human-Animal-Environment_Relationship_in_the_Past.

Symposium in tribute to Emilie Campmas postponed to 2021

Contributed by Emmanuelle Stoetzel, HNHP UMR 7194, Paris, France (emmanuelle.stoetzel@mnhn.fr), Camille Daujeard, HNHP UMR 7194, Paris, France (camille.daujeard@mnhn.fr), Sandrine Costamagno, TRACES UMR 5608, Toulouse, France (costamag@univ-tlse2.fr)

The symposium entitled ‘Human societies and environments in the circum-Mediterranean area from the Pleistocene to the early Holocene’, which should have been held in Toulouse on 1–2 June 2020, has been postponed to 8–9 March 2021.

This symposium is being organized as a tribute to our colleague and friend Emilie Campmas, a young researcher in zooarchaeology, who passed away on 8 March 2019. She was carrying out original and innovative research on the role played by coastal zones in the evolution of human societies, particularly amongst Middle Stone Age hominins in northern Africa. The aim of this event is to bring together, following a diachronic and multidisciplinary approach, zooarchaeologists, palaeontologists, malacologists, taphonomists, ethnologists, anthropologists, archaeologists and palaeoenvironmental specialists, around the topic of coastal occupations from the Palaeolithic to the present time. In order to gather together as many researchers who have collaborated with Emilie Campmas as possible, the symposium will also focus on other topics, in particular new methods developed in zooarchaeology, archaeo- and ethno-malacology, taphonomy, experimental and actualistic approaches, but also, more broadly, on current research issues in prehistoric archaeology in North Africa and in the other parts of the African continent. Three sessions are planned, as follows.

- Session 1 – Coastal occupations from prehistory to the present: adaptation of human populations to coastal environments, exploitation of marine resources and contact networks
- Session 2 – New data on North African prehistory: human occupations, palaeoenvironments and relationship with other regions of the continent
- Session 3 – The contribution of actualistic approaches to a better perception of human/animal relations in the past

The symposium will be held at the University Toulouse Jean Jaurès, Maison de la Recherche, Toulouse, France.

We are no longer accepting new oral or poster communications, only registrations as participants (contact colloquehommagecampmas@gmail.com).

You can obtain more information about the symposium (organizing and scientific committees, guests, third circular, etc.) on the website of the AssEmCa association, created in the name of Emilie Campmas: https://sites.google.com/view/assemca/actions-scientifiques/colloque-2021 (everyone is welcome to join the association!!).
Taphos/ICAZ-TWG 2020 postponed to 2021

Contributed by Ana B. Marín-Arroyo (http://taphostwg2020.es/)

We regret to announce that, under the health alert and the uncertain development of the COVID-19 pandemic, the Organizing Committee of Taphos/ICAZ-TWG 2020 has decided to postpone the congress until late August-early September 2021.

Although late summer seems to be a long way away, the uncertainty and the possibility that we cannot fully guarantee the well-being of our participants make us consider that the safest decision to preserve everyone's health is to take time to recover from this exceptional situation.

Please, update this new schedule in your calendar. We look forward to having you for this special celebration that will include special events to enjoy all aspects of taphonomy!

We will keep you informed through our website (http://taphostwg2020.es) and other social networks.

Thank you for your interest and see you in 2021!

The Organisers http://taphostwg2020.es/

Molluscs and Ancient Human Societies and the Archaeomalacology Working Group (AMWG) postponed to 2021

Contributed by Arati Deshpande-Mukherjee, Deccan College Post-Graduate and Research Institute, India (amwg2020@gmail.com)

- Postponed: 11–13 September 2021
- Venue: Department of Ancient Indian History and Culture (AIHC) and Archaeology, Deccan College Post-Graduate and Research Institute (PGRI), Pune 411006, Maharashtra, India

The international conference ‘Molluscs and ancient human societies’ and meeting of the ICAZ AMWG, which was to be held in Pune on 11–13 September 2020, has been postponed to 11–13 September 2021 because of the severe pandemic crisis. Further updates will be made available in issue 21:1 of the ICAZ Newsletter.

All those who have already expressed their interest in participating are thanked. If you would like to participate, please contact amwg2020@gmail.com after September 2020.
Fourth Neotropical Zooarchaeology Working Group (NZWG) meeting postponed to 2021

Contributed by Sebastián Muñoz, Laboratorio de Zooarqueología y Tafonomía de Zonas Áridas, Córdoba, Spain (smunoz@conicet.gov.ar)

As proposed at the last ICAZ NZWG meeting held in San José, Uruguay, in 2017, the 4th academic meeting of the NZWG will take place in Brazil, in the city of Recife, Pernambuco, on the north-east coast of the country.

However, since the beginning of March, the organizing committee has been monitoring the extent and effects of the global COVID-19 pandemic spread. Today, most of our colleagues in Latin America, and all around the world, are facing daily challenges posed by this exceptional situation, including the closure of universities and laboratories, cuts in institutional funding, quarantines, lockdown, closing borders and travel bans.

On 24 April, the committee met by videoconference and discussed the situation in the different countries of Latin America, the difficulties for local organizers to maintain the meeting on the same dates, access by the participants and what would be the best decision to maintain the health of everyone involved.

After assessing the situation and the substantial worsening of the conditions for controlling the pandemic in Brazil in the previous two weeks, the organizing committee decided to postpone the meeting by one year, moving it to the dates of 29 September–2 October 2021. All other specifications listed in the first circular will be maintained, such as the venue and schedule of the event, to be held at the Federal Rural University of Pernambuco, Brazil.

Postponing the meeting is necessary so that everyone can organize themselves to participate in the event and because, at the present time, we cannot predict what is going to happen before the end of September 2020.

We totally understand the inconvenience of this postponement but we will be delighted to see you at the 4th academic meeting of NZWG with the theme, even more pertinent, ‘Zooarchaeology, traditional societies, biodiversity and climate change: integrative perspectives between past and future’.

The committee will assess the possibility of conducting diverse remote activities during the second half of 2020, such as discussions and conferences, so that the NZWG community can continue its vibrant discussions.

Information continues to be available at https://doity.com.br/nzwg-icaz-2021. For more information about NZWG-ICAZ, consult http://alexandriaarchive.org/icaz/workneotropical and do not hesitate to contact us by email nzwg.icaz@gmail.com.

We hope that everyone is and stays well and healthy.

Organizing committee of the 4th academic meeting of the NZWG-ICAZ:

- Caroline Borges, Coordinator NZWG and general organizer, arqueocarol@gmail.com
- Pablo M. Fernández, Coordinator NZWG, pfernandez@retina.ar
- Rosa Cristina Corrêa Luz Souza, Coordinator NZWG, rcclsouza@yahoo.com.br
- Sebastián Muñoz, Coordinator and ICAZ liaison, smunoz@conicet.gov.ar

ICAZ Newsletter back issues

The ICAZ Newsletter has been published since 1980, with a hiatus from 1993 to 1999. All issues are now available to download from https://www.alexandriaarchive.org/icaz/publications-newsletter.
Archaeozoology of Southwest Asia and Adjacent Areas (ASWA[AA]) Working Group

https://www.alexandriaarchive.org/icaz/workaswa

Contributed by Marjan Mashkour, CNRS/MNHN Paris, France (marjanmashkour1@gmail.com), and Roger Alcantara, UAB, Barcelona, Spain (roger.alcantara.fors@gmail.com)

A short overview of the ASWA conference held in Barcelona, June 2019

The XIVth ASWA[AA] working group meeting was held at the Autonomous University of Barcelona, Spain, on 3–7 June 2019 (https://aswa2019.sciencesconf.org/). Dr Maria Saña (Universitat Autònoma de Barcelona, UAB, Spain), Dr Carlos Tornero (Institut Català de Paleoeologia i Evolució Social, IPHES, Spain) and Dr Roger Alcântara (UAB) were in charge of organizing the 2019 meeting, with the support of the Museu d’Arqueologia de Catalunya and Agència Catalana de Patrimoni.

Delegates representing 26 countries from Asia (Armenia, Iran, Israel, Jordan, Lebanon, Turkey, United Arab Emirates, Japan), Europe (Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Poland, Romania, Serbia, Spain, Switzerland, Ukraine, United Kingdom), America (Canada, United States) and Australia attended the conference. Degree, master and PhD students, as well as young and consolidated researchers, from more than 80 different universities, research groups and institutions, had the opportunity to present the most recent advances in archaeozoology in Southwest Asia (SWA).

Representation of keywords used (most used words are bigger)
Overall, 170 researchers presented the results of their work in the form of 63 oral communications and 13 poster presentations, with a temporal range from the Natufian period to medieval times, and once again provided the opportunity to deepen our knowledge on human–animal interactions in SWA and adjacent regions. As confirmed by the keyword counts, discussions on Neolithic and Bronze Age periods, and on domestication and the development of husbandry practices, were the favourites at this meeting, although hunting strategies and fishing were also well represented.

Archaeozoological assemblages and problems were addressed from varied points of view. With fundamental archaeozoological analyses at its core, archaeozoological studies were integrated into multiple technical and methodological approaches: stable isotopes, ancient (a)DNA, dental microwear, geometric morphometrics, bone microstructure and biomechanics. Ethnoarchaeozoological work also presented interesting results, and there was time for reptiles and other microremains. Economic issues and food history were addressed during the meeting, as well as palaeoclimatic reconstructions and the always problematic distinction between wild and domestic specimens of the same species.

Details of these talks can be consulted via the online abstract book: https://aswa2019.sciencesconf.org/data/pages/ABSTRACT_BOOK_ASWA2019.pdf.

The meeting was opened by two speakers: Dr Professor Joris Peters, from the Archaeological Museum of Barcelona, presented a paper entitled ‘Outstanding and enigmatic: perspectives on the early Neolithic site of Göbëkli tepe (SE Turkey)’, and Dr Professor Louis Chaix a paper on ‘Cattle, sheep, goats and dogs: companions for the death (Kerma Sudan, 2500-2000 BC)’.

During the last day of the meeting a packed bus of researchers visited the Neolithic site of la Draga, Iron age Ullastret and the Greek colony of Empúries.

The conference organizers are now gathering the manuscripts together to be published within a volume in the BAR International Series (https://aswa2019.sciencesconf.org/resource/page/id/24). The deadline for the submission of the papers has been extended because of the COVID19 complications. For more information please contact roger.alcantara.fors@gmail.com.

Roger Alcantara (UAB, Barcelona)

Other news

The publication of the 13th ASWA conference held in Nicosia-Cyprus, edited by Julie Daujat, Angelos Hadjikoumis, Remi Berthon, Jwana Chahoud, Lina Kassianidou and Jean-Denis Vigne, is in press and will be published by Lockwood Press (https://aswa2017.sciencesconf.org/resource/page/id/10).

With the spectacular growth in our scientific community during the last few decades, which is a clear sign of the success of this group, we have also had more proposals for future ASWA conferences. These proposals are transmitted to the group liaison, who has the duty of presenting the proposals to the SWA archaeozoological community, generally at the end of the conferences or within ICAZ meetings. In 2018 in Ankara, Turkey, during the ICAZ conference, many members of the ASWA group were present and could gather together. I proposed Hitomi Hongo, as a longstanding member of the ASWA group, and because of the important role of Japanese archaeologists in the SWA region, to organize the next meeting in Japan. The idea gradually grew and Hitomi accepted and, at the Barcelona conference, officially presented her plan for the 2021 meeting. The next meeting will therefore be held in Tokyo, Japan. Hitomi will soon be in touch with the group with further details and instructions.

Meanwhile, Selena Vitezovic (Institute of Archaeology, Belgrade, Serbia) proposed organizing an ASWA conference in Belgrade, and Joris Peters (Ludwig-Maximilians-Universität, Munich, Germany) proposed organizing one in Munich. After discussion and mutual agreement between Selena and Joris, the 2023 ASWA meeting will take place in Munich and the 2025 meeting in Belgrade. I can only be happy of such a prestigious waiting list and the constantly growing enthusiasm shown by the ASWA community.

Finally, during the Barcelona meeting, I announced the need to change the liaison of the ASWA working group. Emmanuelle Vila (Laboratoire Archéorient, Lyon, France) and Hitomi Hongo (SOKENDAI, Hayama, Japan) presented themselves for this task and I organized a vote on 4 August 2019. The candidates were both very successful, as the scores were practically equal, and Hitomi Hongo was duly elected as the new liaison of the ASWA working group for the next 4 years. Welcome to her.

It has been a great pleasure for me to serve as the ASWA liaison for these last few years.

Marjan Mashkour (CNRS/MNHN, Paris)
The proceedings of our last meeting in Basel (Switzerland) will be available in English in the Kolloquien zur Vor- und Frühgeschichte series (vol. 27) from the German Archaeological Institute. The publication is now being completed and the volume on ‘Roman animals in ritual and funerary contexts’ will (hopefully) be released before the end of this year.

The volume contents will be:

- **Preface**, Sabine Deschler-Erb, Umberto Albarella, Silvia Valenzuela-Lamas
- **Introduction – Animal in ritual and funeral context: diversity in unity**, Sabine Deschler-Erb
- **Cremated animal bone from two ritual/ceremonial sites in Britannia**, Clare Rainsford, Anthony C. King, Susan Jones, Rose Hooker, Gilbert Burleigh
- **Deux dépôts exceptionnels à Briga (« Bois l’Abbé » Eu, France) : le sacrifice de bovins au IIIe siècle de notre ère**, Alice Bourgois
- **Animals in ritual and domestic contexts – the example of the vicus of Kempraten (Rapperswil-Jona, CH)**, Simone Häberle, Sabine Deschler-Erb, Heide Hüster Plogmann, Barbara Stopp, Sarah Lo Russo, Pirmin Koch, Regula Ackermann
- **A herd of sheep led to the slaughter – evidence of hecatombs at Losodica/Munningen (Bavaria)**, Andreas Schaffitzl, Sabine Deschler-Erb
- **Sacrificing dogs in the late Roman world? A case study of multiple dog burial from Viminacium amphitheatre**, Sonja Vuković-Bogdanović, Mladen Jovičić, Dimitrije Marković, Ivan Bogdanović
- **In the belly of the earth: bones and the closing of sacred space in central Italy**, Angela Trentacoste
- **Animals to the slaughter. Meat-sharing and sacrifice in geometric and archaic Greece**, Veronika Sossau
- **Evidence of ritual practices from the animal remains found in the Juno Sanctuary at Tas Silg, Malta**, Jacopo De Grossi Mazzorin
- **Faunal remains from a fourth-century church complex at Ain el-Gedida, Upper Egypt**, Pam J. Crabtree, Douglas V. Campana
- **Bird and other animal sacrifice in the Ploutonion of Hierapolis, Phrygia (Turkey): some results from two votive deposits**, Jacopo De Grossi Mazzorin, Claudia Minniti
- **Tierknochen aus dem Heiligtum der Größeren Götter Domnus und Domna in Sarmizegetusa (Rumänien)**, Constanze Höpken, Manuel Fiedler
- **Some more aspects of the animal remains from the sanctuary of Jupiter Heliopoliotanus at Carnuntum**, Günther Karl Kunst, Erika Gál, Verena Gassner
- **Sabazios-Kult in Sorviodurum: Tierknochen aus einer Kultgrube in Straubing (Bayern/Deutschland)**, Constanze Höpken, Hubert Berke
- **Animals in funeral practices in Belgic Gaul between the end of the 1st century BC and the beginning of the 5th century AD: from Gallic practices to Gallo-Roman practices**, Sébastien Lepetz
- **Animals in funerary practices during the early and the late Roman periods in southern Belgium**, Fabienne Pigière
- **Animals in funerary ritual in Roman Netherlands**, Maaike Groot

We are also working towards our next meeting, which will take place at the School of Archaeology, University College Dublin, Ireland, from **11 to 13 March 2021** (contact Fabienne.Pigiere@ucd.ie). The topic will be ‘Animals in the Roman economy: production, supply, and trade within and beyond the Empire’s frontiers’.

This meeting intends to inform about and discuss the numerous implications of animals in the Roman economy during the late Republic and Empire, and on the diversity and common points in the practices between different regions in both the East and West, as well as beyond the frontier. In addition to osteological studies, presentations on ancient historical and multidisciplinary research combining zooarchaeological and archaeological data are encouraged, as well as isotopic, ancient (a)DNA and geometric morphometric approaches to reconstruct networks of exchange.

Both posters and oral presentations are welcome, and abstracts (no longer than 250 words) should be sent to romanwg@ucd.ie before **30 September 2020**.

Please also note that three grants of $170 will be awarded for travel support for students, junior researchers, and unfunded scholars who wish to attend the working group meeting.
And on a practical note, please remember that, thanks to Barbara Stopp (University of Basel, Switzerland), we now have an online biometric dataset that we can all use to calculate log ratios for the main domesticates. The dataset is now available through the Integrative Prähistorische und Naturwissenschaftliche Archäologie (IPNA) webpage:

https://duw.unibas.ch/de/ipna/forschung/archaeobiologie/archaeozoologie/methodik/.

It can also be accessed through the ICAZ RPWG webpage: https://alexandriaarchive.org/icaz/workroman. Please, do not hesitate to contact us (svalenzuela@imf.csic.es, sabine.deschler@unibas.ch) if you have inquiries or would like to join this working group.

For further information and to register visit our conference website: https://www.ucd.ie/archaeology/icaz_romanperiodworkinggroup_3rdmeeting/.

We look forward to meeting and talking with you after the confinement caused by the COVID-19 emergency!

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**ICAZ Membership**

To join ICAZ or renew your membership, visit the Membership section of the ICAZ website, https://www.alexandriaarchive.org/icaz/membership-join. Dues may be paid online or via post. Questions and inquiries may be emailed to the treasurer, Suzanne Pilaar Birch, sepbirch@uga.edu.

**ICAZ Health & Safety Guidelines**

The study of archaeozoological remains is not inherently dangerous, but there are legal and health implications to handling animal remains. These may vary according to your location, the provenance of the samples and whether you are dealing with archaeological samples, bone and/or animal tissues. The best way to prepare for potential problems is to obtain proper documentation. The ICAZ webpage provides a partial list of some commonly encountered risks and suggested sources. Members are strongly encouraged to acquaint themselves with ICAZ’s Professional Protocols.

https://www.alexandriaarchive.org/icaz/about-policies-health-safety

ICAZ needs your help to expand the number of links provided. If you have links to country/regional sources that complement the information provided here, please fill out the short Google form via the webpage. If you cannot access the Google form, please send the links with the heading (microorganism/transportation/zoonotic/work&safety) and, if the link does not make it obvious, the relevant country, to: icazhealth.safety@gmail.com.

Thank you!
100 years of archaeozoology in Groningen

Contributed by Youri van den Hurk (y.van.den.hurk@rug.nl)

The Groningen Institute of Archaeology in Groningen, the Netherlands, celebrates its centennial anniversary in 2020! In 1920 Albert Egges van Giffen founded the Biological-Archaeology Institute (BAI), later renamed to the Groningen Institute of Archaeology (GIA), which is now part of the University of Groningen. Already back in 1920 archaeozoology was a main component of the institute’s research focus, and Albert Egges van Giffen started an archaeozoological reference collection. This collection gradually expanded under the direction of first Anneke Clason, then Wietske Prummel, and now Canan Çakırlar. At the moment the collection contains faunal remains of more than 5000 specimens of fish, reptiles, amphibians, birds and mammals. Most taxa are endemic to Europe and the Near East. This collection is open to Dutch and international researchers, students and commercial users, and we welcome visitors. An overview of the collection can be found at https://dataverse.nl/dataset.xhtml?persistentId=hd1:10411/20702.

Over the past 100 years, the archaeozoology community at the GIA has gradually expanded and now primarily focuses on archaeozoological research in Europe and the Near East. Several projects are ongoing.

- ‘Hidden hybrids: the cultural biography of dromedary–Bactrian crosses’ – this project seeks to combine several disciplines concerned with the hybridity of camels. A combination of scientific zooarchaeological analysis, metric and genetic data, anthropological and heritage approaches, and artistic expressions are included. This project is funded by the Wenner-Gren Foundation.

- ‘EDAN – emergence of domestic animals in the Netherlands’ – as part of this project, archaeozoological assemblages of primarily Swifterbant sites in the Netherlands are being analysed using ancient (a)DNA, stable isotope and 14C analysis in order to reconstruct the emergence of animal husbandry in the Netherlands. This project is funded by the Netherlands Organization for Scientific Research (NWO).
• ‘SeaChanges’ – is a doctoral training programme bridging archaeology and marine biology. The programme provides state-of-the-art training to forge a new generation of interdisciplinary researchers able to operate at the interface of archaeology and marine biology. Marine resource use has influenced European societies for millennia, and we in turn have impacted the seas. As part of this international programme, four PhD students are carrying out research in Groningen on sea turtles, groupers, whales and walruses. This project is part of the Marie Sklodowska-Curie actions (MSCA) Innovative Training Networks (ITN) and is funded by the European Union’s (EU) Framework Programme for Research and Innovation Horizon 2020.

Upcoming conferences in Groningen include the following.

• 3rd ICAZ Marine Mammal Working Group (MMWG) conference – **early 2021**

• 41st Association for Environmental Archaeology Conference – Sustainability in Environmental Archaeology – postponed to **late 2021**

• Isotopia – The Potentials and Limitations of Isotope Analyses in Archaeology – postponed, new date to be announced

• ScapeCon2020: No (E)scape – postponed, new date to be announced

**Recent publications**

ABiLiS-Lab: Ancient Bio Life Science Laboratory

Contributed by María Fernanda Martínez-Polanco (mfmartinezp@gmail.com)

ABiLiS-Lab is part of the Institut Català de Paleoecologia Humana i Evolució Social (IPHES), located in Tarragona, Spain. ABiLiS-Lab has arisen from the current need in bioarchaeology for interaction between multiproxy approaches capable of producing compatible results to explain a single phenomenon (i.e. dietary patterns, territorial mobility, animal husbandry techniques, domestication or hunting strategies).

ABiLiS-Lab uses specialized techniques such as dental microwear, stable isotopes and cementochronology analyses on faunal remains to provide high-resolution data about the life history of animal populations from archaeological and palaeontological assemblages. Our aim is to contribute to a better knowledge of human palaeoecology, subsistence and social behaviour by integrating results from different sources that allow a more complete overview of the research question.

The laboratory has two work areas, one dedicated to fauna microwear and mesowear analysis, and one to stable isotope analyses. The space dedicated to tooth wear is equipped with a stereomicroscope (Zeiss Stemi 2000-C), a reference collection of tooth casts of extant large mammals (2600 specimens), and a space to store moulds and casts that have been studied from archaeological and palaeontological sites (about 10,000 casts). A larger area of the laboratory is designed for sample preparation for stable isotope and trace element analyses of archaeological and modern specimens, including bones, teeth, shells, plants, hair/fur and skin. Bioapatite and bone collagen samples are currently processed for isotope ratio mass spectrometry (IRMS) and inductively coupled plasma mass spectrometry (ICP-MS) analyses. Grinding, drilling and extraction treatment areas are distributed separately within the laboratory.

The research questions, the taxa studied, the chronologies and the geographical area of the analyses carried out in the laboratory cover a wide remit. Controlled experiments are also used as a tool to address research questions. One of the academic activities at ABiLiS-Lab is bi-weekly meetings where ongoing research is presented. This provides a space where the laboratory members can exchange opinions and suggestions, get to know the processes used by others, and to improve their own research. In the last few years the academic production of the ABiLiS-Lab has increased, and
The publications can be found at https://docs.google.com/spreadsheets/d/1LIVhGfj0BZ58yr_8XvDrTuGqzb8d1KxyVcRf4pgJc/edit#gid=486747450.

The ABI-Lis-Lab team is led by Florent Rivals (ICREA research professor at IPHES), and includes Carlos Tornero (postdoctoral researcher), Sandra Bañuls-Cardona (postdoctoral researcher), Carlos Sánchez-Hernández (predoctoral researcher), María Fernanda Martínez-Polanco (predoctoral researcher), Iván Ramírez-Pedraza (predoctoral researcher), Chiara Messana (predoctoral researcher) and Celia Díez-Canseco (laboratory technician).

ABI-Lis-Lab is open to researchers and projects interested in exploring and applying the techniques used in the laboratory, or to collaborate on current or future research projects.

Contact: frivals@iphes.cat, ctornero@iphes.cat, @ABI-Lis_Lab
Does anyone know? 20 years of ZOOARCH and zooarchaeology

Contributed by Jacqui Mulville (mulvilleja@cardiff.ac.uk) and Jacob I. Griffith (griffithj24@gmail.com), Cardiff University, Cardiff, UK

ZOOARCH is an internet discussion list for zooarchaeologists created by Jacqui Mulville in 2000, and managed by Jacqui and Umberto Albarella (University of Sheffield, UK) ever since. Now, 20 years on, it seems timely to review how and why ZOOARCH came into being, and the role this medium of exchange has played in shaping and supporting the zooarchaeological community.

Conception
The concept of building a digital network for zooarchaeologists arose at the turn of the 21st century, in response to the intellectual isolation of individual researchers and increasing internet usage. At that time, the funding and nature of zooarchaeological research meant that many researchers worked alone. For British zooarchaeologists, discussions were limited to scheduled meetings at routine conferences. In 2000, Jacqui worked as an English Heritage Regional Science Advisor (RSA). These posts were spread out across Britain in various institutions, with individuals often working alone. Consequently they formed a network, spending much time exchanging information and responding to queries by email and phone.

This was during the earlier days of the internet, when search engines were poor and web content often restricted and difficult to access. With no direct community advice, solitary researchers seeking specific answers had limited access to resources. This was challenging in the absence of access to university libraries or when working time-constrained commercial contracts. While personal contact with other zooarchaeologists was possible, it was time consuming.

The email-assisted co-operation within the RSA team demonstrated how easy it was to ask a community a question and share the answers, and offered a model that could benefit all. This was not a novel idea: the first UK electronic discussion lists were constructed by the National Mailbase Service (NMS) in 1989, and enabled communication between groups of UK higher education and research staff. In the 1990s, the NMS hosted an early discussion list concerned with all aspects of British Archaeology: BRITARCH. Jacqui drew inspiration from this model, forming a new discussion list specifically for zooarchaeologists: ZOOARCH.

Upon creation, the NMS suggested that list management should be shared between two list ‘owners’, to ensure all queries were dealt with promptly, and thus the second list owner, Umberto, joined the scheme. There were no long-term plans for the list and the potential for its success was unknown. Later, control of NMS lists switched to the Joint Information Services Committee, and today ZOOARCH is hosted by JiscMail.

Definition
The next stage was to decide upon the group’s format and purpose. Jacqui and Umberto developed an outline to send to prospective members and decided on a few ground rules:

Zooarchaeology is the analysis of animal remains from archaeological sites to reconstruct the cultural lifeways of people and the interrelationships between people, animals, and the environment. This list promotes the flow of ideas, skills, information, and offers support to fellow zooarchaeologists. Zooarch is supported by and works closely in association with the International Council of Archaeozoology (ICAZ)

It was decided that ZOOARCH should support anybody interested in zooarchaeology, and as such discussion would not be restricted to members of particular groups (e.g. ICAZ). Members joining are sent the following message:

We seek messages to stimulate discussion on methodologies, analyses, interpretation, to help with sources of information and most of all to allow us all to share our knowledge. Zooarchaeologists of all status from amateurs to students to professionals are welcome to contribute.
Launch
ZOOARCH was launched in March 2000. The list owners emailed a range of zooarchaeologists they knew, asking them to join, and by the end of the first day 20 people had responded. Jacqui sent the first message to the list:

This is just a preliminary hello message to you all. I already have a question someone has asked to be posted. ‘Can you distinguish worked bone from worked antler when polished smooth’ – does anyone know?

The discussion list was a success: by 2001, the list had 90 members, with numbers steadily increasing to 350 in 5 years, and >900 in 10 years. As of June 2020, the discussion list boasts 1380 active members across 39 different countries (Figure 1).

Membership by year
Membership has increased steadily over the years, with most new participants maintaining their list subscription. Figures 2 and 3 summarize the profile of the present membership, showing the number of new memberships each year and the total membership. These data do not account for the profile of those who are no longer members. A survey in 2010 indicated a membership of just under 1000 individuals, so in the last 10 years the number of list members has grown by about 400. The data do not represent the full picture, as many older members appear as new members whenever they change email addresses: the small number of original members is an artefact of the data and not a representation of the membership at any one point.
Membership by country

JiscMail management tools offer standardized summary reports, enabling a review of ZOOARCH membership by country. Countries are identified by email addresses, although this does result in some acknowledged caveats. Currently, three European Union (EU) members can only be located to continent, and some members with .com address (e.g. Yahoo.com) are incorrectly assumed to be in the USA. This is a particular issue with members from the Republic of Ireland and the Philippines.

The spread of the membership is extensive, with 39 countries identified, although most countries have <10 ‘zooarchers’. Argentina, Australia and a range of European countries have between 10 and 30 members. The top five, Italy (28), Canada (33), France (59), the UK (202) and the USA (850), account for 85% in terms of the membership (Figure 1). The USA-assigned email addresses account for 62% of ZOOARCH’s membership. It is notable that some of the most populous countries have small memberships; India and China have no members, while the African continent has only three, represented in South Africa.

Comparison of the 2019 ICAZ membership data (484 members) with that of ZOOARCH reveals that, despite ICAZ’s broader global membership spread (50 countries), a significantly higher number of people is registered on ZOOARCH (Figure 4). This higher number is expected, reflecting the difference between paid membership of professional bodies and ZOOARCH’s free service. It is also notable that some countries have more members in ZOOARCH than in ICAZ; these include the USA and the UK. While this is partly the consequence of the wrongly assigned .com addresses, it also reflects the increased internet access and a broader membership base in these countries.

Number of messages per year

The number of messages has also increased over the years, although this is not directly proportional to the membership, and over time there has been a decline in the membership to messages ratio. There are several potential reasons for this decline. First, the bank of knowledge available in the archive. Indeed, the archive is one of the most significant and enduring legacies of ZOOARCH: available online for members via JiscMail and, since 2010, accessible to anyone as public content. Second, the expansion of the content

<table>
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<tr>
<th>Country</th>
<th>ICAZ</th>
<th>ZOOARCH</th>
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<td>Italy</td>
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<td>28</td>
<td>Total</td>
<td>484</td>
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and accessibility of the internet. Journals can often now be accessed online, and researchers' webpages often contain downloadable documents, course outlines and bibliographies. Third, the proliferation of zooarchaeology internet resources. In 2006, ICAZ launched BoneCommons to facilitate contact between zooarchaeologists worldwide by offering forums where ICAZ members could post papers, ideas, images, questions and comments. Over time, this forum has developed into a complimentary resource, providing services for the global zooarchaeological community to openly share information and research materials. A later development was Zoobook, a members-only social network that enables sharing of unpublished commercial reports and other materials.

Finally, there is some anecdotal evidence that the size of the group and some dismissive responses may have discouraged more junior members from posting queries or responses. This is unfortunate and ZOOARCH continues to encourage everybody with an interest in zooarchaeology to post queries.

Attachments
ZOOARCH originally stripped out email attachments so that members’ inboxes were not overloaded. Over the last 20 years, however, the capability of email servers and processing units has meant that this ‘overload’ of attachments may no longer be an issue. In recent years, members began to request a change to the attachment policy, citing how attachments would facilitate discussions within the list, rather than moving the discussions to other internet resources with access to uploaded photos and documents. A survey was therefore sent out to all members asking them for their views. With >85% approval, as of March 2020, attachments are now allowed, and members can share up to 5MB of files with the list.

How useful is ZOOARCH?
Over the past 20 years, the volume of zooarchaeologists conversing around the world has far outstripped expectations and ZOOARCH now plays a major role in zooarchaeological discussion. Its most significant legacy is the democratization of knowledge and the formation of an international community.

Morris (2010) questioned zooarchaeologists on the usefulness of various organizations and groups. ZOOARCH was identified as being a key resource, with >80% of respondents agreeing it was an important tool for keeping up with current research (Figure 5). A British survey by Law (2011) revealed that all responding zooarchaeologists (30) were members of ZOOARCH. The increasing and sustained membership also reflects this.

While the increasing membership and number of messages are a useful set of numeric indicators of success, what follows is a list of the other contributions that ZOOARCH has made.

![Figure 5: Assessment of the usefulness of various organizations of interest to zooarchaeologists, from Morris (2010, fig. 15)]](image-url)

<table>
<thead>
<tr>
<th></th>
<th>Totally Agree</th>
<th>Partially Agree</th>
<th>Neither Agree or Disagree</th>
<th>Partially Disagree</th>
<th>Totally Disagree</th>
<th>Response Count</th>
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<td>AEA</td>
<td>38.9% (14)</td>
<td>36.1% (13)</td>
<td>16.7% (6)</td>
<td>8.3% (3)</td>
<td>0.0% (0)</td>
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<td>29.7% (11)</td>
<td>10.8% (4)</td>
<td>16.2% (6)</td>
<td>0.0% (0)</td>
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<tr>
<td>PZG</td>
<td>30.6% (11)</td>
<td>25.0% (9)</td>
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<td>ZOOARCH</td>
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<td>20.5% (8)</td>
<td>5.1% (2)</td>
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<td>IFA</td>
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<td>11.8% (4)</td>
<td>32.4% (11)</td>
<td>20.6% (7)</td>
<td>29.4% (10)</td>
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<tr>
<td>BABAQ</td>
<td>9.1% (3)</td>
<td>15.2% (5)</td>
<td>45.5% (15)</td>
<td>21.2% (7)</td>
<td>9.1% (3)</td>
<td>33</td>
</tr>
</tbody>
</table>

answered question 40

skipped question 7
• Regular informal conversations – across the world zooarchaeologists now converse daily.
• Information flow – the ZOOARCH community is generous with knowledge, and less experienced researchers can easily find information in the archives and are introduced to many active researchers.
• Quality assurance – there is an element of quality assurance and peer review within the list. People can trial ideas within the community prior to pursuing or publishing work.
• Continuing professional development – the list provides a constant stream of updates, exposing list members to new ideas and techniques as well as advertising conferences, training and employment opportunities.
• Efficient use of time – a ZOOARCH query often provides quick, informed guidance on the most relevant or recent work.
• Access to unpublished and obscure literature – the list often provides access to unpublished or hard to find literature.
• Globalization – ZOOARCH has created international communities of researchers and has also globalized the discipline itself, engaging list members with an extensive range of geographical locations, cultural groupings and species.
• Breaking down barriers to knowledge exchange – boundaries between academic, commercial, public sector and amateur zooarchaeologists do not exist on ZOOARCH.

Using ZOOARCH
ZOOARCH encourages its users to always:

• be friendly and polite in their responses.
• search the archives
• always have a subject heading and make sure this is relevant to the content
• say who they are and in what capacity they are enquiring
• state what they already know
• be precise in their queries.

There are, however, several common problems that ZOOARCH members will recognize. The most common issues are described below.

• Mis-sending an email to the whole list or just one person. When replying to queries, all messages are automatically sent only to the individual posting the message. We encourage people to send a summary of off-list answers to the ZOOARCH archive.
• Asking for ‘everything’ relating to one broad subject.
• Gender/nationality confusion because of the myriad of international naming conventions.

• Mis-using the list. JiscMail works hard to prevent hacking and spam email and does an excellent job. If the list is exploited the list owners ask people to stop. If they refuse, they can be excluded.
• JiscMail takes a ‘dislike’ to a member. Occasionally there are issues with certain email addresses and, as result, some members have difficulties interacting with the list. In these cases, the list owners work with JiscMail to resolve the problem.

Conclusion
ZOOARCH’s success, failure and future can be considered in the context of general research and a reflection on its usefulness. Criticisms of the list over the last few years centre around the growing number of queries that are merely passive requests for pdfs, rather than engaging discussions, which may indicate a growing decline in interactivity. However, the notification of conferences, workshops, collaborations and resources remains one of the list’s core strands, and as such ZOOARCH continues to foster interactivity within the community. Also, discussions and knowledge sharing remain the core activity of the list, which can spark lively debates.

ZOOARCH remains one of the simplest ways of becoming part of the global zooarchaeology community. Joining is easy, and there are no passwords or costs; messages arrive in your inbox and can be answered like any other email. Settings can be changed to receive a weekly digest, to receive no messages or to just search the archives for information. It is also a quick method of reaching other zooarchaeologists, keeping it a relevant and vibrant resource. Research for this article suggests that the list has an uneven uptake worldwide and that it may be possible to improve utility and access for all interested groups. The list also has several non-traditional members, e.g. visual artists and animal behaviourists, and the potential for cross-disciplinary work remains largely untapped.

In the ever-changing world of digital information, it is hard to predict the next development. However, the list owners remain confident that the community of zooarchaeologists will continue to be a lively and welcoming one, whichever medium of contact they use. The greatest thing about ZOOARCH is its membership: the warmth, interest, support and knowledge of the community never fails to impress, and the list owners dedicate this paper to the ‘Zooarchers’.

References

'Zoomarchaeology': teaching animal skeletal anatomy in an online format

Contributed by Christyann M. Darwent, University of California, Davis, USA (cmdarwent@ucdavis.edu)

When we headed into pandemic lockdown in mid-March of this year, it was the end of Winter quarter instruction and the start of finals week, followed by a one-week Spring break and the start of Spring quarter instruction. For those not on the West Coast of North America, this format may be unfamiliar. Our academic year is broken down into three 10-week quarters instead of two semesters. Thus, while other instructors had to modify their zooarchaeology courses mid-stream, which posed its own challenges, I was faced with creating an online laboratory course for zooarchaeology from start to finish in one week. After going through the stages of grief – denial, anger, fear and finally acceptance – I set to work creating what I think turned out to be a less than horrible experience for both my students and myself; or at least that’s what they conveyed in their teaching evaluations.

As you are preparing for Fall instruction, keep in mind that you will most likely have students participating from outside your country or outside your time zone, and thus it may be difficult for them to attend synchronously. I personally need an audience, so I prefer to record my lectures at the same time I give them live, and then post them to a secure course website rather than create pre-recorded videos. For those who select to create recorded videos, it is better to create multiple short recordings of 5 to 10 minutes each on particular topics rather than one long lecture. Use your university’s course platform to post lecture recordings rather than YouTube, as you may run into copyright issues.

Regardless of which format you choose, assume that your students will have internet or technology issues at some point during the quarter. My home internet was down one day and thus I had to create a hotspot with my phone to be able to share the slides on my laptop and give my lecture. For my teaching assistant (TA), her home internet was poor so she had to give her guest lecture on bone technology from her campus office. Also, assume that some students may only be able to listen to the lecture or may be viewing it on tiny phone screens, so make sure to provide your lecture materials beforehand. If you have TAs, make them the co-host for all course meetings. This provides an added backup for technological issues, and they can monitor the chat or ‘reaction’ buttons to field questions, as this is often difficult to do at the same time you are lecturing.

One piece of advice I cannot emphasize enough is not to use your ‘regular’ PowerPoint lectures. You need to keep accessibility at the forefront with online instruction; it is not just about being cognizant of students who are red-green colorblind (thank you Lee Lyman and Don Grayson for making me keenly aware of this issue). Use the accessibility and subtitle functions in PowerPoint. Most importantly, include much more descriptive text on your slides than you would normally and provide a pdf of your slides to the course website before you give your lecture. It makes it much easier for students to follow along and to be able to return to the materials for studying and completing labs and assignments.

I gave two lectures per week, with the first 40–45 minutes focused on theory and methods, and generally following topics outlined in Terry O’Connor’s The Archaeology of Animal Bones (2013, The History Press, Stroud, UK). A ‘virtual lab’ on animal skeletal anatomy followed the lecture.

One advantage instructors teaching human osteology or human evolution have over those teaching zooarchaeology is the quantity of virtual resources available. Likewise, if you plan to focus only on domestic mammals, you will find excellent online materials through veterinary departments, such as:

- Dog and Horse Skeleton Flashcards, University of California, Davis, School of Veterinary Medicine https://www.studyblue.com/notes/n/canine-skeleton/deck/1574731

However, the options for virtual instruction using non-domestic species is more limited, and often these online resources focus on particular classes of animals. For example:

- Archaeological Fish Resource, University of Nottingham http://fishbone.nottingham.ac.uk/
- Pictorial Skeletal Atlas of Fishes, Florida Museum of Natural History https://www.floridamuseum.ufl.edu/fishatlas/

Although I provided links to these and numerous references (thank you ZOOARCH@jiscmail.ac.uk for suggestions), I wanted a centralized location, or a one-stop shop, that could mimic the ‘hands on’ experience they would have in the laboratory with real comparative specimens. In addition, I...
wanted the students to be familiar with species they would likely encounter if they worked as field techs in western North America (typical employment for many of our graduates). Thus, I provided detailed instructions for ‘self-guided’ laboratories using the Idaho Museum of Natural History’s Virtual Museum https://virtual.imnh.iri.isu.edu/Osteo.

The focus of the Idaho Virtual Museum (IVM) is North American fauna; however, you can find species from around the world in this extensive online collection. There are 106 different species of mammals, ranging from the agouti to the wolverine, some of which have multiple specimens and ages; 76 species of birds; 50 species of bony fish; and 6 species of reptile. The skeletons are from specimens housed at the Burke Museum of Natural History and Culture, the Canadian Museum of History, the Smithsonian Institution and the University of Victoria. Taken from six different orientations (i.e. anterior, posterior, proximal, distal, medial, lateral), photographs with a scale are provided for each available skeletal element. The Idaho Virtualization Laboratory on Sketchfab has also provided 3-dimensional (3D) crania images for most animals, and complete 3D skeletons are available for select species (i.e. *Bison bison*, *Camelus bactrianus*, *Stigmochelys pardalis*, *Ovis canadensis*, *Pelecanus occidentalis* and *Tamandua tetradactyla*). Filters allow the user to search for species by either common or Latin name.

I covered five animal families during the quarter: Canidae, Cervidae, Phocidae, Anatidae and Salmonidae. After reviewing the online resources, I selected 8-10 complete or nearly complete specimens for each family, and provided this list to the students. For example, the arctic fox, or specimen number UWBM-31585, is an excellent reference to teach the general canid skeleton: https://virtual.imnh.iri.isu.edu/Osteo/View/Ancient_Fox/554.

For each family of animal, I broke the skeleton down into appendicular and axial sections. The students were required to sketch selected skeletal elements and provide different orientations geared toward learning features important for identifying and describing the elements. Once we had completed an animal family, students then took pictures of their notebooks with their phones, pasted the photos into a .doc or .pdf file, and uploaded the file to the course website. I did not evaluate the students on their artistic skills, but rather on their clear and correct labelling of the elements, features and orientations. I sketched and labelled the specimens in my own notebook to make sure the assignments were feasible (Figure 1). My notebook was also useful for checking their labelled sketches. To provide feedback, which was key to online instruction, I used Adobe tools to correct or comment on each of their sketches. Most students used these comments to improve on their next suite of sketches. By the end of the course, the students had created their own skeletal anatomy reference manuals for five ‘typical’ taxa.

In addition to the sketchbooks, we released an online quiz on Thursday mornings, which they had to complete prior to midnight on Friday. These were not proctored quizzes, and thus they had access to their course materials. However, the quiz was timed and once started it had to be completed within the allotted period (25–30 min). These weekly quizzes were multiple choice, true/false and fill-in the blank, and included topics covered in both the lecture and ‘laboratory’ for that week. Photos of skeletal elements had arrows pointing to particular features or orientations (e.g. proximal or distal). I used the IVM skeletal images so the students were familiar with them beforehand; however, they may or may not have looked at the exact specimens I used. I dropped the two lowest quiz grades, which allowed for students who may have had technical issues, illnesses or other conflicts. Weekly, low-stake, quizzes enabled me to identify what concepts may
have been unclear. I then returned to those topics at the start of the following week’s lecture.

The goal of the laboratory portion was for students to understand basic animal skeletal anatomy so they could appreciate the kinds of questions zooarchaeologists might ask of faunal remains. Two assignments allowed them to apply their knowledge to ‘real’ zooarchaeological datasets. One focused on prey mortality using data provided by my colleague Teresa Steele, and the other focused on preparing a zooarchaeological report using a faunal dataset from one of my own Alaskan sites. Without these virtual laboratories, they would not have been able to calculate minimum number of elements (MNE) and minimum number of individuals (MNI) or understand taphonomic processes, as they needed to have a working knowledge of differences across taxa, elements and portions.

After three months of lockdown, I recently allowed a masked intern back into the archaeology laboratory to assist with counting and weighing bones (following National Park Service curational protocols) from one of our Alaskan excavations. Having only taking online zooarchaeology, he was able to identify the archaeological faunal specimens! I asked him what was the most helpful part of the course for learning bone identification, and he said that having to draw and label them from the photographs was key to remembering them.

My approach is by no means the only way to teach zooarchaeology using online resources, but I hope my experience can alleviate some of the trepidation and provide examples as you move forward with teaching your own ‘Zoomarchaeology’ class in the coming terms.

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The Textile Revolution

Contributed by Hans Christian Küchelmann, Knochenarbeit (info@knochenarbeit.de)

Data on sheep husbandry, assembled from 2013 to 2018 by the research group The Textile Revolution, have been published open access on the website of Edition Topoi in Berlin, Germany.

Descriptions of the project and its four related sub-projects, and publications, are available via the following links.

- Research Project A-4-1: Archaeological sources for the early wool usage in the Near East and Europe [http://www.topoi.org/project/a-4-1/](http://www.topoi.org/project/a-4-1/)
- Research Project A-4-2: Archaeozoological analyzes of domestic sheep in the area between the Near East and Central Europe (5th–2nd millennium BC) [http://www.topoi.org/project/a-4-2/](http://www.topoi.org/project/a-4-2/)
- Research Project A-4-3: Mid-Holocene landscape changes due to grazing [http://www.topoi.org/project/a-4-3/](http://www.topoi.org/project/a-4-3/)
- Research Project A-4-4: Sheep husbandry of Mesopotamia in the late 4th to early 3rd millennium [http://www.topoi.org/project/a-4-4/](http://www.topoi.org/project/a-4-4/)

The raw data of each project are available as Excel files from the links below. There are also files with metadata and summaries for each dataset.

- [https://www.knochenarbeit.de/topoi-sheep-database/](https://www.knochenarbeit.de/topoi-sheep-database/)
- [http://repository.edition-topoi.org/collection/WOLL](http://repository.edition-topoi.org/collection/WOLL)

For those of you working on the Neolithic or Bronze Age of south-east Europe or Southwest Asia, the archaeozoological database (Project A-4-2) may be of interest, in which data from archaeozoological publications and unpublished raw data of sites in south-east Europe and South-West Asia spanning a time frame from 7000 BC to 1500 BC have been recorded. The data have been collected from 548 publications published between 1952 and 2015. The present state of the database (29 July 2019) combines data from 401 settlement sites from 18 countries, 296 of which are located in south-east Europe and 105 in Southwest Asia. The database includes archaeozoological data for more than 2.1 million identified mammal bones, including 66,717 bones identified as *Ovis aries*. The osteometrical part of the collection contains more than 14,000 measurements of sheep bones. Anybody interested in the original archaeozoological database instead of the Excel files, please get in touch with Hans Christian Küchelmann (info@knochenarbeit.de).
Bob (Robert Andrew) Wilson
1943-2020

Contributed by Roger Thomas, Gill Knowles and Gill Campbell
Published originally in AEA Newsletter 147, June 2020

Bob Wilson was born in Hamilton, on the North Island of New Zealand, in 1943. Even as a schoolboy, he was interested in biology and zoology. One of his first forays into the study of bones involved him dissecting the body of a pukeko (a large New Zealand bird) which had been shot by a neighbour. As a young man, Bob also played cricket and was a good long-distance runner. More generally, he was a great lover of the outdoors.

Bob did a BSc degree in Zoology at Victoria University, Wellington, New Zealand, and then taught for a year in a high school in Canterbury, New Zealand. In about 1971, Bob left New Zealand, travelling by boat to Japan and then on the TransSiberian Railway to Europe. He eventually arrived in England, and began working on excavations here. In 1973, he moved to Abingdon to work for the Abingdon Excavation Committee. The town was to be his permanent home from then on.

He initially worked as an excavator, but soon began to specialize in the study of archaeological animal bones. The Abingdon Excavation Committee was absorbed into Oxford Archaeological Unit (OAU, now Oxford Archaeology) in about 1974. Bob worked there alongside two other noted environmental archaeologists, Martin Jones and Mark Robinson, helping to develop OAU’s innovative programme of integrated regional research carried out under the ‘rescue archaeology’ flag. Some of this work was ground-breaking, such as the reports on Ashville Trading Estate, Abingdon (Iron Age settlement) and Barton Court Farm (Iron Age enclosure, Roman villa and Saxon settlement). His book Ageing and Sexing Animal Bones from Archaeological Sites is on nearly all zooarchaeologists’ desks. His work on disposal and the importance of considering the context type, and areas of activity or in activity, as laid out in Spatial Patterning among Animal Bones in Settlement Archaeology, is a must read for many archaeologists.

Unfortunately, ill-health struck Bob in the mid-1980s, and he subsequently retired on medical grounds. He remained living in Abingdon, and continued some archaeozoological work; his Spatial Patterning book was published in 1996.

As well as his work in archaeozoology, Bob was active in local archaeology. He directed and published a number of excavations for Abingdon’s archaeological society, and volunteered on others, and examined and reported on animal bones from some of these sites.

Bob had many other interests outside archaeology. He read widely, especially about philosophy and religion, and had an interest in Buddhism. He greatly enjoyed listening to sport on the radio (especially football and cricket) and he went walking almost every day. He also enjoyed the company of a small number of valued close friends.

Works cited

Anne Pike-Tay 1956-2020

Contributed by Ariane Burke

With profound sadness, we share with you the news that Anne Pike Tay, PhD (1989, NYU), Professor Emerita of Anthropology (Vassar College), passed away suddenly and unexpectedly on 16 April 2020.

Anne taught at Vassar College from 1990 until her retirement in 2016, when she returned to her earlier career as an artist. Anne was a palaeoanthropologist who specialized in faunal analysis and skeletochronology. An active ICAZ member, she loved teaching archaeozoology and was instrumental in several cross-disciplinary programmes at Vassar, including the Environmental Studies programme, which she co-founded. She was planning to host an educational excursion, exploring the antiquities of the Red Sea and Aegean Sea, for the Vassar travel programme this autumn.

Anne’s research interests were wide-ranging, both geographically and temporally. Her thesis led to the publication of her first book, which focused on red deer predation in the Upper Palaeolithic of south-west France. Her publications explored topics as diverse as seasonal variation in faunal exploitation during the Middle to Upper Palaeolithic transition in Cantabria, early animal domestication and patterns of site function and seasonal occupation during the Neolithic in China, Hungary and Cyprus, and, finally, the debate surrounding the timing of megafaunal extinctions and the first peopling of Tasmania.

Following her retirement from teaching, Anne was a successful artist and illustrator, co-authoring and illustrating Miss Van Winkle’s Mountain Tale, and creating puppets and dolls that intertwined her delight in mammalian critters and global folktales. She fostered a motley collection of cats and rescued greyhounds and loved living in the countryside. Anne is survived by her husband, the artist Eng Chye Tay, and her son, Brendan Yi Fu, and daughter, Hannah Ling.

Ofer Bar-Yosef 1937-2020

Contributed by Richard Meadow

It is with great sadness that we note the loss of Professor Ofer Bar-Yosef, the George G. and Janet G.B. MacCurdy Professor of Prehistoric Archaeology, Emeritus in the Department of Anthropology at Harvard University. Professor Bar-Yosef passed away peacefully in his home in Kfar Saba, Israel, on Saturday 14 March 2020. As well as being a world-renowned field archaeologist, teacher, mentor and prolific writer, he was a great supporter of ‘archaeological science’, including archaeozoology.

A more complete appreciation of his contributions is planned for the next ICAZ Newsletter. Anyone who would like to contribute to an obituary for Ofer, please contact Richard Meadow at meadow@fas.harvard.edu.
The ICAZ Publications List is Now Online!

Please remember you can view and download the latest zooarchaeology references in our Zotero library: https://www.zotero.org/groups/353233/icaz. The complete list of publications submitted to recent newsletters is also visible on the ICAZ website: https://alexandriaarchive.org/icaz/publications-zooarch.

Many new publications were submitted by ICAZ members to this issue of the Newsletter. We have chosen to highlight just a few of the great works that zooarchaeologists all over the world have published recently. These publications provide a very brief sample of the important and very diverse research carried out recently in zooarchaeology!

Please remember to submit your new (or old!) publications to Idoia Grau-Sologestoa (icaznewsletterassistant@gmail.com) so that they can be included in the ICAZ database.

Bears: Archaeological and Ethnohistorical Perspectives in Native Eastern North America

H. A. Lapham and G. A. Waselkov
2020 Gainesville: University Press of Florida
ISBN 9781683401384

Although scholars have long recognized the mythic status of bears in Indigenous North American societies of the past, this is the first volume to synthesize the vast amount of archaeological and historical research on the topic. Bears charts the special relationship between the American black bear and humans in eastern Native American cultures across thousands of years.

These essays draw on zooarchaeological, ethnohistorical and ethnographic evidence from nearly 300 archaeological sites from Quebec to the Gulf of Mexico. Contributors explore the ways bears have been treated as something akin to another kind of human – in the words of anthropologist Irving Hallowell, “other than human persons” – in Algonquian, Cherokee, Iroquois, Meskwaki, Creek and many other Native cultures. Case studies focus on bear imagery in Native art and artefacts; the religious and economic significance of bears and bear products such as meat, fat, oil and pelts; bears in Native worldviews, kinship systems and cosmologies; and the use of bears as commodities in transatlantic trade.

The case studies in Bears demonstrate that bears were not only a source of food, but were also religious, economic and political icons within Indigenous cultures. This volume convincingly portrays the black bear as one of the most socially significant species in Native eastern North America.

https://upf.com/book.asp?id=9781683401384&fbclid=IwAR3_kAarmeCDAgYdzuZKEF-9MK3pMy04GI5Mo3o-om3RAGbiYuGiFbTuw
Humans, Animals, and the Craft of Slaughter in Archaeo-Historic Societies
K. Seetah
2019 Cambridge: Cambridge University Press
ISBN 9781108428804

In this book, Krish Seetah uses butchery as a point of departure for exploring the changing historical relationships between animal utility, symbolism and meat consumption. Seetah brings together several bodies of literature – on meat, cut marks, craftspeople and the role of craft in production – that have heretofore been considered in isolation from one another. Focusing on the activity inherent in butchery, he describes the history of knowledge that typifies the craft. He also provides anthropological and archaeological case studies that showcase examples of butchery practices in varied contexts that are seldom identified with zooarchaeological research. Situating the relationship between practice, practitioner, material and commodity, this imaginative study offers new insights into food production, consumption and the craft of cuisine.


Les vaisseaux du désert et des steppes : Les camélidés dans l’Antiquité (*Camelus dromedarius* et *Camelus bactrianus*)
D. Agut-Labordère and B. Redon
2020 Lyon: MOM Éditions
ISBN 9782356680679

During the first millennium BCE, the dromedary and, more marginally, the camel began to impose their tall silhouettes on the roads of the Middle East and Egypt. Gathered in two workshops, in Lyon then Nanterre, 16 archaeologists and historians have tried to assess this camel revolution. From Xinjiang to the Libyan Desert, the increasingly intensive use of the old-world camels has indeed disrupted the fields of caravan transport but also agriculture, redesigning the trade routes, increasing the export capacities of oases, opening up previously isolated areas. Gradually becoming a critical agent of the economic systems of the desert or semi-desert regions, the camels remain at the same time associated with nomadic populations whose expertise is essential to breed and train these large animals.

Written sources (in Akkadian, Hebrew, Demotic, Greek, ...) but also archaeozoology, iconography, as well as ethnoology and zootechnology, are examined to reconstruct the camel revolution in its many aspects. This book presents a very large number of documents, including unpublished ones, and addresses a wide range of issues: the different uses of camels, the link between these animals and the nomadic and sedentary populations, their place in the imagination of the peoples of Asia and from Egypt, but also in the daily life of the Greeks, Romans, Nabateans, Arabs, inhabitants of the Byzantine Levant, populations of Central Asia in environments as varied as Mesopotamia, Assyria, the Arabian Peninsula, the Levant, Egypt and Central Asia. Two articles on the recent fate of the animal and the current practices of camel breeding in Mongolia round off this overview of an animal that is definitely a central one in the history of the regions under consideration.

http://books.openedition.org/momeditions/8457
Skates Made of Bone. A History
B. A. Thurber
2020 Jefferson: MacFarland Books

Ice skates made from animal bones were used in Europe for millennia before metal-bladed skates were invented. Archaeological sites have yielded thousands of examples, some of them dating to the Bronze Age. They are often mentioned in popular books on the Vikings and sometimes appear in children’s literature.

Even after metal skates became the norm, people in rural areas continued to use bone skates into the early 1970s. Today, bone skates help scientists and re-enactors understand migrations and interactions among ancient peoples.

This book explains how to make and use them and chronicles their history, from their likely invention in the Eurasian steppes to their disappearance in the modern era.


The Neglected Goat: A New Method to Assess the Role of the Goat in the English Middle Ages
L. Salvagno
2020 Oxford: Archaeopress
ISBN 9781789696295

Distinguishing between the bones of sheep and goats is a notorious challenge in zooarchaeology. Several methods have been proposed to facilitate this task, largely based on macro-morphological traits.

This approach, which is routinely adopted by zooarchaeologists, although still valuable, has also been shown to have limitations: morphological discriminant traits can differ in different sheep/goat populations and a correct identification is highly dependent upon experience, as well as the availability of appropriate reference collections and the degree to which a researcher is prepared to ‘risk’ an identification.

The Neglected Goat provides a new, more objective and transparent methodology, based on a combination of morphological and biometrical analyses, to distinguish between sheep and goat post-cranial bones. Additionally, on the basis of the newly proposed approach, it re-assesses the role of the goat in medieval England.

http://archaeopress.com/ArchaeopressShop/Public/displayProductDetail.asp?id=%7B7E7AA06B-62CD-4D29-AF21-241370099786%7D

Journal Special Issues

The collection 11 of papers presented at the 8th ICAZ Bird Working Group (BWG) meeting has been published as a special issue ‘Avian zooarchaeology: prehistoric and historical insights’ of the journal Archaeological and Anthropological Sciences, with Frank J. Dirrigl Jr and Timothy Brush as special editors.

https://link.springer.com/journal/12520/topicalCollection/AC_95068Cc6b9Df1724235fd15d5ea3540e/page/1
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tr>
<td>1-2 SEPTEMBER</td>
<td>3rd meeting of the ICAZ Microvertebrate Working Group (MVWG)</td>
<td>Tarragona, Spain</td>
<td><a href="mailto:mvwg.icaz@gmail.com">mvwg.icaz@gmail.com</a>, mvwgicaz.wixsite.com/mvwg</td>
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<td>28 OCTOBER-1 NOVEMBER (PROVISIONALLY)</td>
<td>The Future of Past Animals: Global Perspectives in Zooarchaeology</td>
<td>ICAZ International Committee meeting</td>
<td><a href="mailto:laszlo.bartosiewicz@ofl.su.se">laszlo.bartosiewicz@ofl.su.se</a>, alexandriaarchive.org/icaz/meetings-ic2020</td>
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<td>4 DECEMBER</td>
<td>1st meeting of the ICAZ Zooarchaeology of the Modern Era Working Group (ZMEWG)</td>
<td>Newcastle University, UK</td>
<td><a href="mailto:zmeworkgroup@gmail.com">zmeworkgroup@gmail.com</a>, alexandriaarchive.org/icaz/workmodernera</td>
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<td>18-20 JANUARY</td>
<td>Understanding Zooarchaeology I</td>
<td>University of Sheffield, UK</td>
<td><a href="mailto:zooarch-shortcourse@sheffield.co.uk">zooarch-shortcourse@sheffield.co.uk</a>, <a href="https://www.sheffield.ac.uk/archaeology/research/zooarchaeology-lab/short-course">https://www.sheffield.ac.uk/archaeology/research/zooarchaeology-lab/short-course</a></td>
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<td>21-23 JANUARY</td>
<td>Understanding Zooarchaeology II</td>
<td>University of Sheffield, UK</td>
<td><a href="mailto:zooarch-shortcourse@sheffield.co.uk">zooarch-shortcourse@sheffield.co.uk</a>, <a href="https://www.sheffield.ac.uk/archaeology/research/zooarchaeology-lab/short-course">https://www.sheffield.ac.uk/archaeology/research/zooarchaeology-lab/short-course</a></td>
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<td>8-9 MARCH</td>
<td>Human societies and environments in the circum-Mediterranean area from the Pleistocene to the early Holocene</td>
<td>University Toulouse, France</td>
<td><a href="mailto:colloquehommagecampmas@gmail.com">colloquehommagecampmas@gmail.com</a>, <a href="https://sites.google.com/view/assemca/actions-scientifiques/colloque-2021">https://sites.google.com/view/assemca/actions-scientifiques/colloque-2021</a></td>
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<td>11-13 MARCH</td>
<td>3rd ICAZ Roman Period Working Group (RPWG)</td>
<td>University College Dublin, Ireland</td>
<td><a href="mailto:Fabienne.Pigiere@ucd.ie">Fabienne.Pigiere@ucd.ie</a>, alexandriaarchive.org/icaz/workroman</td>
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<td>11-13 MARCH</td>
<td>86th meeting of the Society for American Archaeology (SAA)</td>
<td>San Francisco, CA, USA</td>
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<td>14-18 APRIL</td>
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<td>JUNE</td>
<td>10th meeting of the ICAZ Bird Working Group (BWG)</td>
<td>University Museum of Bergen, Norway</td>
<td>alexandriaarchive.org/icaz/workbird</td>
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<td>2nd Iberian Zooarchaeology Meeting (EZEI 2020 Madrid)</td>
<td>Universidad Autónoma de Madrid</td>
<td><a href="https://eventos.uam.es/46188/detail">https://eventos.uam.es/46188/detail</a></td>
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<td>LATE AUGUST-EARLY SEPTEMBER</td>
<td>9th international conference on Taphonomy and Fossilisation (Taphos) and 6th meeting of the ICAZ Taphonomy Working Group (TWG)</td>
<td>Alcalá de Henares, Madrid, Spain</td>
<td><a href="mailto:taphostwg2020@gmail.com">taphostwg2020@gmail.com</a>, taphostwg2020.es, alexandriaarchive.org/icaz/worktaphonomy</td>
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<td>8-11 SEPTEMBER</td>
<td>27th annual meeting of the European Association of Archaeologists (EAA)</td>
<td>Kiel, Germany</td>
<td><a href="http://www.e-a-a.org">www.e-a-a.org</a></td>
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<td>11-13 SEPTEMBER 2021</td>
<td>Molluscs and ancient human societies and the ICAZ Archaeomalacology Working Group (AMWG)</td>
<td>Deccan College Post-Graduate and Research Institute, Pune, India</td>
<td><a href="mailto:amwg2020@gmail.com">amwg2020@gmail.com</a>, archaeomalacology.wordpress.com/2019/11/14/molluscs-and-ancient-human-societies-conference</td>
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</table>
23-25 SEPTEMBER
9th meeting of the ICAZ Archaeozoology, Genetics, Proteomics and Morphometrics Working Group (AGPM)
Oulu, Finland
Email: icazagpm2021@oulu.fi
Internet: www.oulu.fi/archaeology/node/193085

29 SEPTEMBER-2 OCTOBER
4th meeting of the ICAZ Neotropical Zooarchaeology Working Group (NZWG)
Universidade Federal Rural de Pernambuco, Recife, Brazil
Email: nzwg.icaz@gmail.com
Internet: https://doity.com.br/nzwg-icaz-2021

LATE 2021
41st conference of the Association for Environmental Archaeology (AEA)
Groningen, Netherlands
Email: aewinter@rug.nl
Internet: https://envarch.net/events/41st-aea-conference-groningen/

2022
8-13 AUGUST 2022
14th International Conference of the International Council for Archaeozoology (ICAZ)
Cairns, Australia
Email: admin@icaz2022.org
Internet: alexandriaarchive.org/icaz/meetings-international

Forthcoming: new section dedicated to Reviews

We are delighted to announce that the ICAZ Newsletter will soon have a section dedicated to critical reviews of books related to any zooarchaeological/archaeozoological topic. Reviews should have a limit of 700–1000 words, and should be submitted by 15 May (to be published in July) and 15 November (to be published in January) each year.

If you are interested in writing a review for our Newsletter, please send your proposal by email to Idoia Grau-Sologestoa (icaznewsletterassistant@gmail.com).