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BRITISH ASSOCIATION FOR BIOLOGICAL ANTHROPOLOGY AND OSTEOLOGY ANNUAL REVIEW

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WELCOME TO THE ANNUAL REVIEW FOR 2022

Annual Review Editor
Charlie Primeau
University of Warwick

It's been great to see all your contributions to our annual review!

It has been really inspiring to see the successes of students passing their courses and collaborations between departments and researchers still going on. It has been nice to see what a flourishing community we have within BABAO.

I can see from the department reports that some students are still affected by covid and choosing to defer their studies, hence it has still been a difficult year for many. All my thoughts are with those who are struggling.

We have also seen some changes within the organisation of BABAO, with the very exciting news that we are bringing back TRENDS! Benn and I have been working hard on this throughout 2022 and we are very excited to support our new Annual Review Editor and Editor-in-Chief of TRENDS, Veronica Tamorri (Leiden University), as Co-Editors. We will strive to get TRENDS off the ground as smoothly as possible and although we have many different types of members within BABAO we hope we will be able to maintain relevance to all, in the way you wish to be involved. Any feedback to us is most welcome.

I hope you all enjoy the Review and thank you for finding time to include your valuable contributions and sharing your knowledge, experiences, news and updates with the rest of us within the BABAO community.

ASSOCIATION NEWS

President's Column

Rebecca Redfern
Museum of London

Dear Members,

We should all be very proud of ourselves this year! With your support and participation, the trustees were able to host our annual conference, allowing the wonderful research and activities of the membership to be shared. We have also delivered online talks; presented many grants and awards, including the first Holger Schutkowski award; finished the preparation work for our website; and begun the work necessary to produce our Trends journal with BAR publishing. With the EDI subgroup, we have continued to prepare and deliver the key performance indicators identified in our 'Race equality review', and are grateful to the Sale of Human Remains subgroup for all their work pushing-back against a range of unethical activities which continue to affect the heritage sector.

Sadly, 2022 also marked the passing of Dr Ann Stirland, who mentored and inspired many of our members. Dr Stirland wrote numerous influential publications, particularly about the crew of the Mary Rose, and also co-created the International Journal of Osteoarchaeology. We are grateful to Prof. Charlotte Roberts and colleagues for writing such a heart-warming obituary for our website.

This year also saw Chris Aris, Trish Biers, Rebecca Cadbury-Simmons and Suzanne McGalliard stepping-down as trustees. On behalf of the trustees and membership, I would like to thank them for their service, perseverance and tremendous hard work. Their good humour and kindness throughout their time on the committee was very much appreciated and will be missed by us all. We would like to welcome Matt Lee, who is our first EDI trustee and also Victoria Owen, who takes over as Commercial Representative. As many trustee positions remain unfilled, we

hope that many of you will put yourselves forward for election in 2023.

2023 promises to be another good year for BABAO. Thanks to the excellent financial management of our Treasurer, we will be able to continue to offer a range of grants and support to the membership, and most importantly of all, it will be the year when we are finally able to have an in-person conference, hosted by Dr Carolyn Rando and colleagues at UCL.

This will be my last piece in the annual review as President, as my trusteeship ends this autumn. It would not have been possible to have undertaken this role without your support and trust, and I will forever value that.

With all good wishes,
Becky

Report from the Membership Secretary

Bennjamin J. Penny-Mason
York Osteoarchaeology

At the end of 2022, BABAO had 526 active members, similar to the 525 members which the society had at the end of 2021. BABAO recruited 90 new members during 2022 in comparison to 85 new members during 2021 (both figures included re-joining members); this was below the average for the last four years (104.5).

The composition of our membership remained similar to the previous year: over half of the membership comprised of waged members (296, 56.3%), as well as student members (172, 32.7%), unwaged members (40, 7.6%) and retired members (18, 3.4%). In 2021, the BABAO Trustees enacted a new scheme, endorsed by the membership, to allow first-year student members to receive a free year of membership. During 2021, 70 (13.4%) of new student members had their fees waived.

A quarter of the membership (138, 26.2%) comprised of overseas members: the majority of which represented members from Europe (78, 56.5.9%), as well as North America (37, 26.8%), the Antipodes (9, 6.5%) and elsewhere in the world (6, 4.3%) – these proportions were similar to those of 2021.

More than half of BABAO members (295, 56.1%) provided information regarding their area of occupation (individuals were able to select up to two categories). Most reporting members were found to be employed within academia (147, 49.8%), followed by commercial archaeology (71, 24.1%), with smaller proportions in curatorial roles (23, 7.8%), as forensic practitioners (22, 7.5%) and as medical specialists (9, 3.1%). Additionally, some members (17, 5.8%) also declared other forms of occupation (including *administration, animal welfare, art, citizens advice, data analytics, engineering, financial services, hospitality, IT-related fields, law, leisure, retail* and *publishing*).

Of the 172 active student members, over three-quarters (140, 81.2%) provided information regarding their level of study. The reporting students were recorded as being engaged in doctoral (81, 57.9%), masters (52, 37.1%) and undergraduate (7, 5.0%) courses.

More than half of the membership (292, 55.6%) provided information on their areas of interest. *Human bioarchaeology* (280, 95.9%) and *forensic anthropology* (209, 71.6%) were the two most popular areas of interest, followed by *medical anthropology* (84, 28.8%), *human evolution* (71, 24.3%) and *primatology* (8, 2.7%). Additionally, some members (26, 8.9%) also declared additional areas of interest (including *3D Recording, anatomy, archaeology, archaeological science, dental anthropology, ethics, funerary archaeology, gender studies, geometric morphometrics, mortuary studies, palaeopathology, social anthropology, stable isotope analysis* and *taphonomy*).

I would also like to encourage all members who have not completed a 'change of details' form recently to do so – the forms are available from the membership section at www.babao.org.uk. Please do send me updates on changes in job titles, positions, affiliations, personal details, and postal addresses. Please

do not hesitate to contact me if you have any questions regarding your BABAO membership: you can email me at membership@babao.org.uk.

Report from the Grants Secretary

Rachel Schats
Leiden University

In 2022, the BABAO Board of Trustees awarded six academic, of which three were funded under the Decolonising and Diversifying Osteology and Biological Anthropology (DDOBA) grant scheme, and one commercial research grants. Additionally, we were able to award three Microgrants. Last but not least, we awarded the first Holger Schutkowski prize for the best master's thesis!

Project summaries Research Grants

Academic grants

Maia Casna (Leiden University, NL) - £625

Childhood morbidity and health in adulthood: using ear infections to identify past life-course connections

Early childhood lays the foundation for many outcomes in later years. Several clinical studies have demonstrated that poor childhood health can negatively affect individual health in adulthood. This project uses ear infections as a proxy to investigate whether early childhood morbidity is associated with later-stage illness in 50 adult skulls from the Dutch post-medieval period (AD 1626-1829) by comparing lesions associated with ongoing otitis media to evidence of childhood ear infections. As otitis is today among the most common diseases, understanding its implications on past health will provide a new perspective on a problem of increasing concern worldwide.

Emma Smith (University of Edinburgh, UK) - £1000

Investigation of the relationship between diet and physiological stress in two conflict-affected populations from medieval Croatia

Skeletal remains, dated to 14th-15th centuries AD, from high-status individuals were excavated from St. Jacob's Cathedral, Udbina, Croatia. The late medieval period in Croatia was a tumultuous time. The tactics used by the Ottoman army in the expansion of their Empire lead to food shortages and mass migrations of low-status serfs to the coast. Consequently, leading to a financial decline for land-owning nobles. This research aims to evaluate the impact of protracted periods of conflict on the diet and health of high-status individuals in Medieval Croatia through analysis of stable isotope analysis using incremental dentine and skeletal markers of stress.

Christina Koureta (British School at Athens, GR) - £407.47

Narrowing the gaps: Investigating the significantly understudied Geometric populations of Greece through macroscopic skeletal analysis.

Osteoarchaeological research in Greece has for a long time been focused on Bronze Age populations, and although a multitude of Iron Age (1100-700 B.C.) cemeteries have been excavated in the country, the human remains from these sites remain unstudied in most cases. This project aims to provide a deeper understanding regarding the scarcely documented Geometric (900-700 B.C) populations of Greece, and especially the region of Attica, through the palaeodemographic and palaeopathological analysis of approximately 22 inhumation and six cremation burials unearthed during the excavation of a large organised Iron Age cemetery in Paiania, Attica, Greece.

Academic grants (DDOBA)

Ibukunoluwa Olowe (University of Central Lancashire) - £1000

Does skin tone affect visual decomposition scoring systems for the estimation of post-mortem submersion interval?

Decomposition Scoring systems (DSS) are used for estimation of Post-Mortem Submersion Interval in drowning cases. These DSS are limited because they have been developed from studies conducted in countries with predominantly pale-skinned individuals. So, the existing DSS are only applicable to cases with comparable climates and waterways, but also often only to individuals with paler skin tones. This leaves a level of uncertainty about whether these DSS are

useful in drowning cases involving darker skin-toned individuals, potentially disadvantaging the investigation. This research aims to validate whether these DSS can be applied to drowning cases involving individuals with darker skin tones.

Cecilia Collins (Reykjavík University) - £488
Investigating the micro-architecture of chronic maxillary sinusitis.
MicroCT (μCT) affords a non-destructive method to examine skeletal remains in incredible detail. In studies of chronic sinusitis, pathological formations (i.e. protruding or 'cobweb-like' lesions) have frequently been identified in archaeological populations. Though sometimes referred to as calcification, they are often presumed to be examples of ossification of the mucous membrane. Using the maxillary sinuses of two adult and two non-adult individuals from two medieval Icelandic sites, this project will attempt to differentiate the structure of these lesions using μCT and a review of the clinical literature, and advances a more uniform terminology for these commonly identified lesions.

Rick Schulting (Oxford University, UK) - £950
Six centuries of pre-Columbian Lucayan adaptations on Guanahani (San Salvador), The Bahamas.
The project involves the combined radiocarbon dating and stable isotopic (δ13C and δ15N) analysis of pre-Columbian human remains from the island of Guanahani (San Salvador), The Bahamas. The indigenous inhabitants of The Bahamas, known as the Lucayans, settled the archipelago from ca. AD 900, and by the early 16th c the islands were depopulated through disease and forced removal by the Spanish. This six century window offers a unique opportunity to explore adaptations to a challenging island environment. Previous research has suggested terrestrial extinctions and marine resource overexploitation following initial colonisation over the archipelago as a whole. The present project seeks to determine whether similar subsistence trends can be identified on a single island.
Commercial grant

Chris Chinnook (Museum of London Archaeology) - £2,475
Osteological and stable isotope analysis of an early Anglo-Saxon cemetery at Whitehall Farm, Nether Heyford Northamptonshire.
Excavation of an Anglo-Saxon cemetery in Northamptonshire, threatened by agricultural activity, has been undertaken by community group C.L.A.S.P since 2003. A collaborative project between MOLA, C.L.A.S.P, and Dr Leggett saw six individuals used as part of a PhD project at Cambridge University to investigate diet and mobility using stable isotope analysis. The excavations are now complete, and funding is sought to produce a full osteological report for the recorded skeletons and to expand the earlier stable isotope analysis to include additional individuals and undertake new techniques to further investigate questions around diet and mobility within this well-preserved early Anglo-Saxon cemetery.

Winner Holger Schutkowski thesis prize 2022
Timea Remsey (University of Durham)
Supervised by Prof. Dr Rebecca Gowland and Professor Dr Janet Montgomery
Abstract
Aims and Objectives: Incremental stable carbon and nitrogen isotope analysis and osteological analysis were applied to examine ante- and postnatal stress by combining isotopic profiles and skeletal lesions in ten non-adults between the ages two to six from the archaeological site of Fishergate House, York, UK (mid-14th – 15th century AD). Amelogenin peptide analysis was conducted for sex estimation to explore dietary and stress differences between female and males.
Material and Methods: The population at Fishergate House belonged to the poorest around urban York during the Late Middle Ages. All ten selected non-adults were analysed macroscopically for skeletal stress lesions (CO, sinusitis, DEH). Incremental tooth dentine isotope analysis and amelogenin peptide analysis was carried out on deciduous mandibular second molars for all individuals.
Results: Seven out of ten non-adults showed evidence of one or multiple types of skeletal stress lesions. Ranges for stable carbon and

nitrogen isotopes spanned from δ 15N 10.99‰ to 16.46‰ and δ 13C -20.95‰ to -18.30‰. Peptide data was not included due to a delay in receiving the results.

Discussion: The high temporal resolution of incremental isotopic data allowed more detailed insight and interpretation of dietary and physiological shifts compared to a previous study on the Fishergate House non-adults that used microsampling of tooth dentine. Strong evidence for maternal stress could be established through isotopic in utero patterns in combination with skeletal stress formed in utero. A bigger focus on isotopic shifts ante-and postnatally rather than only looking at the magnitude of δ 15N values is suggested for assessing maternal stress. Further, indications of stress episodes during early childhood could be partly supported by active or temporally corresponding lesions.

Update BABAO Research Grants 2023

The next BABAO Grants application round will open on February 1st 2023, and will close on May 1st 2023. The application forms as well as further guidance and information on eligibility, how to apply, and what can be funded can be found at the following page https://www.babao.org.uk/grants-and-prizes/research-grants/.

NEW FOR 2023: Please note, that from 2023 onwards, applicants have only one year to claim the funds associated with the grant and two years to analyse the data, complete the research and present at the BABAO conference.

In 2021, BABAO started a new grant scheme: the Decolonising and Diversifying Osteology and Biological Anthropology (DDOBA) Grants, which supports the decolonisation of our research, learning and teaching, and diversification of our profession. This grant scheme operates alongside the current research grant scheme. The amount of funding available, application process, general eligibility criteria and deadlines are the same as the research grant scheme. Both academic (for independent researchers, members employed in research/teaching and students) and commercial applications (where members require 'buy-out' from their roles) will be considered. For more information, please visit https://www.babao.org.uk/grants-and-prizes/decolonising-and-diversifying-osteology-and-biological-anthropology-grant/.

Report from the Sub-Group for Equality, Diversity and Inclusion

Matthew Lee
Durham University

At the end of 2021 Lizzy Craig-Atkins stepped down as Chair of the EDI sub-group with Kori Filipek later stepping down as group secretary. Matthew Lee took over as interim chair of the EDI sub-group in March before becoming the inaugural EDI Trustee in September. Alice Rose became group secretary and Sam Purchase took on responsibility for covering BABAO EDI work on social media to help Christopher Aris the BABAO communications officer. During 2022 the EDI sub-group expanded to 24 members, inclusive of the BABAO trustees.

Race Review

The primary focus for the EDI sub-group this year has been working through 6 of the Key Performance Indicators (KPIs) raised in last year's BABAO race review (https://www.babao.org.uk/committee/equality-diversity-inclusion-sub-group/edi-race-equality-review-2021/).

These six KPIs are as follows:

- KPI 2: There should be a clear process for responding to and acting on feedback.
- KPI 5: Identify key pinch points over the career pipeline and related membership stages that can be targeted through racially literate recruitment and advertising campaigns.
- KPI 6: Communicate a more inclusive strategy and vision that is available both internally and publicly.
- KPI 7: Continue work to decolonise the current charitable activities and ensure they are more inclusive.
- KPI 14: To ensure victims of racism are offered culturally responsive support,

outsourcing to appropriate external agencies if required.

- KPI 15: To ensure appropriate consequences are taken when dealing with racism, including strong management support and weight at senior leader/trustee level.

The current state of progress on these is as follows:

KPI 2: Work on this KPI is currently on pause. A new method of providing feedback to the trustees via a webform has been proposed. This would allow members to highlight issues to the trustees both anonymously or not, whilst also being able to ensure that if a complaint is placed about a specific trustee there is confidentiality in the identity of the member and that the trustee will not be able to see the complaint prior to a formal procedure taking place. However, implementing this with the website in its current form would not be possible. Once the website has been transferred to a different provider and redesigned this will be revisited to see how we can implement this and add it to the new website.

KPI 5: Work on this KPI is ongoing. This KPI has involved the greatest level of commitment and work from the EDI members working towards accomplishing it due to the level of complexity surrounding the issue of the leaky pipeline concept and how it affects the membership of BABAO. However, significant progress has been made in the latter half of 2022 which will hopefully mean some practical actions will be taken on this KPI this year.

KPI 6: This KPI is complete with the BABAO vision and statement being uploaded to the website, sent out to members, and highlighted on our social media in August 2022. This can be found here: https://www.babao.org.uk/assets/Uploads/BABAO-EDI-Vision-Mission-Statement-final-2022.pdf

KPI 7: Work on this KPI is ongoing. The members of the EDI group working on this KPI produced a table of BABAO activities and ways through which these could be decolonised. This table will be reviewed on a regular basis to ensure this work is done and also can be updated as required.

KPI 14 and KPI 15: Due to the nature of these KPIs they have been worked on as a unit. Work on this KPI is ongoing but should hopefully be finalised in the first half of 2023 with the outcomes of this work being able to be included in BABAO's standard operating procedures for dealing with issues of racism and abuse.

Other Work

Other work undertaken by the EDI sub-group this year has included reviewing applications for the DDOBA (Decolonising and Diversifying Osteology and Biological Anthropology) grants. By doing this the EDI sub-group can look at all applications for DDOBA grants in a given year and then as a group vote on whether they feel the proposed work fulfils the eligibility criteria of the DDOBA grant scheme and can feed this back to the trustees whilst also being able to monitor the scheme itself and ensure that the criteria proposed do enable researchers to access funds to undertake decolonisation work. For more details about this grant please visit: https://www.babao.org.uk/grants-and-prizes/decolonising-and-diversifying-osteology-and-biological-anthropology-grant/

In July and August a number of articles and social media posts were published which falsely claimed that professionals in our field were being pressurised into no longer using the labels of "male" and "female" in our work. In response a statement was prepared by the EDI sub-group outlining the methods we use in our work to examine sex and gender of individuals in the past. This was sent to the membership in October, was made available on the website (https://www.babao.org.uk/news-and-announcements/babao-statement-on-sex/) and posted on our social media pages. The response to this was highly positive online and thank you to any members who may have shared this on their personal or professional platforms.

Thank you to the members of the EDI sub-group for another year of hard work. If anyone in the membership is interested in trying out or joining the EDI sub-group then please do contact myself or Alice, our email addresses are available on the EDI sub-group page

(https://www.babao.org.uk/committee/equality-diversity-inclusion-sub-group/).

PEOPLE

Dr Charlotte (Charlie) Primeau started as assistant professor in forensic radiology at WMG, University of Warwick in August 2022.

Dr. Laura Castells Navarro, started as a Postdoctoral Research Associate in osteoarchaeology with the University of York, joining the COMMIOS team in October 2022.

NEWS & PROJECT UPDATES

WMG, University of Warwick

Charlotte (Charlie) Primeau

At Warwick Manufacturing Group (WMG) at the University of Warwick, Charlie Primeau is now a permanent staff in the role of assistant professor in forensic radiology. This department is a little different from most others within the BABAO community in that it is predominantly an engineering department. However, for the last 9 years, a collaboration has slowly developed between WMG and West Midlands Police that has since become more formalised with an official partnership. Within this partnership, WMG provides micro-CT scanning for West Midlands Police, but also take on micro-CT scanning requests for any police force. This has seen WMG providing micro-CT scanning for around 32 different police forces within the UK and abroad. The type of case work are strangulations, hangings, child abuse, elder abuse, sharp and blunt force trauma, dismemberment cases, 3D printed weapons, traffic accidents and house and car fires. In addition, WMG has also been involved with medical research relating to human remains and cadavers and continues this with several ongoing projects.

Part of the reason for the huge variation in case work is the unique equipment available at WMG, with 5 different micro-CT scanners that all have their different capabilities and specifications allowing a huge range of material to be scanned and of varying sizes. Nearly any material that should be wishes to be scanned, can be at WMG, with the only limitation of (large) sample size. Dependent on the size of an object we can scan down to a voxel size of 1 micrometre and can scan items up to a height of 150cm. In addition, we also have Scanning Electron Microscope (SEM) and microtome facilities.

At WMG we have also been involved in several projects involving archaeological material such as human cremation urns, fossils and rare museum specimens such as the Oxford Dodo, the only remaining Dodo in the world to still have soft tissue retained. We have also been involved in printing 3D replicas of rare museum objects for exhibits, fossils and different bones specimens with an extremely high true colour representation with our 3D printer with capabilities of mixing colours during the printing process.

We hope with the appointment of Dr Charlie Primeau, to become more involved with research of human remains, utilizing our range of micro-CT scanning and 3D printing facilities to advance the research of biological anthropology and human osteoarchaeology.

We have funding available for smaller micro-CT scanning projects such as proof of concepts, feasibility studies or method development, through the National Facility for X-ray Computed Tomography (NXCT).

To get in touch, please use:
Charlie.primeau@warwick.ac.uk

MUSEUMS AND OTHER INSTITUTIONS REPORTS

Cotswold Archaeology

Sharon Clough

Summary

A continuing busy fieldwork programme has led to plenty of post-excavation work and numerous human remains. As such an additional post, osteoarchaeology trainee, has been taken up by Frankie Wildmun to undertake training and assist with the assemblages. Sharon Clough continues to lead the human remains work at Cotswold Archaeology.

Early 2023 several publications are expected which have been the focus of much of the work this year. Some of these are the results of work over the last few years and it will be fantastic to share the findings with everyone.

Sharon presented on some of the results from the work at Hinkley Point, Somerset, at the Society for medieval archaeology conference which focused on migration.

The aDNA results of a triple burial from Cheddington dating to the very Late or early Post-Roman period which identified the two adult females as both related the pre-term foetus (mother and either paternal grandmother or paternal aunt) was a well-received story in the press.

https://cotswoldarchaeology.co.uk/ancient-dna-confirms-late-roman-family-grave-at-cheddington-bucks/

Key Sites of 2021-22

Sam's Lane, Blunsdon, Swindon –Roman cremation cemetery (34 urned and un-urned) and two inhumations – full analysis of this assemblage.

Multi sites known as the Bidwells excavated on the edge of Houghton Regis, Luton/Dunstable a small number of prehistoric cremated remains.

Bicester – two adjacent sites just outside Bicester, north of the Roman town of Alchester have revealed a substantial number of Roman cremation burials c.80 in total and some neonate burials. Assessment work completed.

Evaluation trenching over the year has produced a number of cremation burials and inhumation burials. This work identifies areas for further investigation, or areas which would benefit from a re-design of the construction project to avoid further intrusion. See grey literature library for details.

Boss Hall, Ipswich, Suffolk. Anglo-Saxon burial ground. Due to the soil type the skeletal remains were very poorly and, in some cases, not at all preserved. 53 of the graves had some surviving skeletal or dental elements and two cremation urns. Assessment completed.

Tongham, Surrey – one inhumation burial and five cremation deposits from rectangular features, which may be re-deposited pyre debris or single use cremation pyre pits. Later Roman radiocarbon dates.

Eckington Roman Meadow, Worcestershire. 8 skeletal remains, dates uncertain but likely Roman - early medieval. Assessment completed.

Walton, Suffolk – Assessment completed on 57 Bronze Age cremation burials. For details please see the web story:
https://cotswoldarchaeology.co.uk/walton-high-street-felixstowe-suffolk/

M11, Junction 7A, Gilden Way, Harlow – publication report. Area 1 had eleven Late Bronze Age cremated bone deposits, three Late Iron Age/Early Roman cremated bone deposits and one inhumation, three Roman cremated bone deposits and one inhumation and two disarticulated human bone deposits.

Forest Green Rovers, Gloucestershire – 11 Roman burials, possibly associated with a known villa site in the adjacent field. Assessment completed.

Stoke Rd, Bishop's Cleeve, Gloucestershire – 18 skeletal remains, probably Roman period. Assessment completed.

Cotswold Archaeology deposit all their grey literature reports with Archaeology Data Service and in their online library http://reports.cotswoldarchaeology.co.uk

Email sharon.clough@cotswoldarchaeology.co.uk with any queries

Follow our updates on twitter **@cotswoldarch or Facebook page Cotswold Archaeology & Instagram**

MOLA
(Museum of London Archaeology)

Don Walker

News and Project Outlines

L-P: Archaeology joined MOLA this year. We welcomed 93 new staff members, including those with recent experience of burial ground excavation and osteological work on large projects in London and Stoke Mandeville. MOLA now has offices in Stansted, Chester and Bristol to add to those in London, Northampton and Basingstoke.

Department Reports

MOLA osteoarchaeology information and blogs can be found on the organisation websites:

http://www.mola.org.uk/blog/osteoarchaeology

https://www.facebook.com/MOLArchaeology

https://twitter.com/MOLArchaeology

Excavation and Contract Work

A14 Cambridgeshire

Post-excavation analysis continued following large-scale excavations on the A14 Cambridge to Huntingdon improvement scheme. This included reports on inhumation and cremation burials ranging from the Neolithic up to the Anglo-Saxon period, spread over numerous excavation areas grouped into eight landscape blocks. A lengthy coordinated programme of scientific testing incorporating aDNA sampling, isotope analysis and radiocarbon dating is now reaching its conclusion and promises to enrich the interpretation of the lives and experiences of past communities in the Cambridgeshire region. An ongoing programme of A14 community and engagement projects has included osteological workshops and talks organised jointly with local groups in the area of the scheme.

Bank End, Southwark

Osteological analysis was carried out on two late Roman inhumations, an adult female and an adult male, from 1 Bank End, Southwark. They were found on the northern of the two Southwark islands, to the north-west of the secondary road running south-west from the river crossing. Both burials were aligned parallel to a late Roman boundary or defensive wall running along the edge of the island.

Blossom Street, London E1

Six Roman inhumations, five forming two parallel lines WSW-ENE and a quantity of disarticulated human bone were recovered during the redevelopment works at Blossom Street. One individual was found with remnants of a heavily decayed timber coffin. The site lies immediately to the east of the major Roman Road (Ermine Street) leading north from London and these burials provide further evidence for the extramural Roman cemetery flanking this road.

Landmark Court

Recent excavations at Landmark Court in Southwark revealed 97 inhumation burials, some aligned with a probable mausoleum. The cemetery was located near the southern edge of the northern island between the two roads running south-west from the river crossing. This evidence adds to that recovered during excavations in 1979 which revealed five burials and a possible *mansio*. Post-excavation assessment is ongoing.

Lion Green Road, Coulsdon
Osteological analysis is currently underway on 24 Saxon burials, dating to the 6th–8th century, recovered from Coulsdon, Surrey (LGR15). Some burials contained grave goods including four with iron blades, probably knives. Two subadult burials contained Roman artefacts, one with a sand-tempered ware necked globular beaker and one with penannular bracelets and perforated coins. These burials join those recovered during previous excavations in the cemetery, now curated at the Natural History Museum and Horniman Museum, London.

Middlesex Annex, Fitzrovia
Following on from excavations of the Middlesex Annex workhouse cemetery by L-P: Archaeology and Iceni Projects a post-excavation assessment of the unearthed skeletal remains has been completed. The entire cemetery was excavated with 962 inhumations recovered in addition to the 85 articulated skeletons retrieved at the evaluation stage. Good bone preservation aided the osteological assessment and high prevalence of pathological conditions was observed in the remains together with several cases of post-mortem dissection and autopsy. Full analysis of the skeletal assemblage will commence in the forthcoming year.

St James's Burial Ground, Euston (HS2)
The extensive post-excavation assessment work for the excavations at St James's Burial Ground, London in advance of the development works at Euston for HS2 has now been completed. The main phase of archaeological excavation commenced in autumn 2018 and concluded in September 2019. The burial ground was used by the Parish of St. James, Piccadilly between 1789 and 1853. Burial records indicate that around 57,650 interments were made in St James's parish and St James's Chapel vaults during its use. The ground was divided into four areas by socio-economic status with the wealthiest buried in the first ground to the west, nearest a chapel, while the poorest were buried in the fourth ground to the east. The expansion of Euston station in the late 19th century removed a large number of burials from the eastern end of the ground. Over 11,000 burials were archaeologically excavated and subject to osteological assessment, of which a sample of c. 4500 were retained for further osteological analysis. A large proportion of these had surviving name plates and assessment has identified good potential to correlate biographic information from coffin plates with other archaeological evidence and documentary sources. The buried population has huge potential for investigations into demographic diversity, health and disease as well as both inter and intra-site comparisons and between different socio-economic and religious groups at a local, regional and national level.

St Lawrence Burial Ground,
Excavation of c 1000 inhumations from St Lawrence Burial Ground, Brentford included burials from the 'Old Burial Ground' (17th to 19th century) and 'New Burial Ground' (1884–1973). Osteological analysis will contribute important information about an underrepresented area at the peripheries of London. The continuity over time presents an opportunity to explore the changing demography and health of the population and identify differing burial practices and beliefs in one parish from the 17th–20th century. Burials dated to the late 19th and early 20th century present a unique opportunity to learn about individuals from the late Victorian and Edwardian period.

St Mary's Church, Stoke Mandeville, Bucks
Following large-scale excavations by L-P: Archaeology on behalf of Fusion for HS2, post-excavation assessment work on St Mary's Churchyard, Stoke Mandeville, is now complete. Burials numbered 3203, and chiefly originated from medieval, post-medieval and modern periods of occupation. This work augmented that from the earlier evaluation phase (2018–19) where 91 burials were recovered. Signs of continuity of mortuary function lay within the footprint of the church, in the form of a Roman mausoleum, possibly re-used in the Saxon period.

St Mary's Church, Walthamstow
A total of 61 complete or partially complete inhumation burials were excavated during subsequent phases of archaeological works between 2020 and 2022. The church of St. Mary the Virgin was established in the 12th century and excavation included an area that was part of the medieval burial ground. Potential archaeological interest therefore relates to the possible dates ranging from the 12th century and up to the middle of the 19th century.

Sidney Gardens, Bath
An excavation and osteological assessment were carried out by L-P: Archaeology after the discovery of a stone sarcophagus and cremation deposits during an archaeological watching brief in Sidney Gardens. The sarcophagus contained an articulated skeleton buried in a prone position and disarticulated remains from a second individual recovered from the foot end of the sarcophagus. The two individuals were both adults, probable females and have been broadly dated to the 4th century AD. Joint degeneration and several fractures were observable on the bones of the prone individual. Further post-excavation research, including aDNA and isotope analysis is ongoing.

Publications
The excavation of the burial grounds at Marshall Street, Westminster has now been published. The site formed part of the additional burial areas used by the parish of St James Westminster in the 17th–18th century. The response to pressure mounted on burial space in the parish churchyard on Piccadilly is seen in the establishment of a lower ground (early extramural burial ground), which opened in 1695, the upper ground (later extramural burial ground), which opened in 1733, and the new workhouse complex and burial ground, which was constructed in 1725–7. Full Osteological analysis of 1786 individuals revealed a higher proportion of adult females in the workhouse population, while there appeared to be a disproportionately low number of childhood deaths across all three burial grounds. The negative impact of urbanisation and a growing population – such as the spread of infectious disease, pollution, and illnesses like rickets – affected people from all backgrounds. However, the detrimental impact of a life of destitution was also evident. Tuberculosis, trauma and age-related degenerative conditions all showed higher overall rates amongst the workhouse dead. This probably reflected the admission of a higher proportion of destitute individuals – the elderly and sick, and those already dying. As the population of Westminster continued to grow, a new burial ground was established in 1789 at St James's Gardens, Hamstead Road, the site of the archaeological excavations that commenced in 2017 in advance of HS2.

This work represents the latest MOLA monograph in a series relating to post-medieval burial grounds: - https://www.mola.org.uk/publications

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Centre for Human Bioarchaeology
Museum of London
Jelena Bekvalac
Curator of Human Osteology

In 2022, fortunately it was possible to get back in to the swing of participating more with in person events and I was delighted that in the summer, for the first time following the restrictions due to covid, that we were able to organise student workshops with overseas colleagues from Arizona State University, Brigham Young University, Michigan State University and Portland University, USA and welcome back students for the workshops.

In February I had the pleasure of being part of the panel of speakers with Dr Linda Fibiger, Evonne Turner-Byfield, and Dr Aja Lans for the PPA Webinar Series - *'The human body on display: Ethical considerations and museum practice'* that was excellently hosted by Dr Chryssa Bourbou. My presentation was a joint one looking back at the processes and developments for display and exhibitions with archaeological skeletal remains through the Museum of London. Listening and learning from the other speakers was thought provoking with the great discussion afterwards further

highlighting the complexities and scope of the topic.

For the first time in March I was able to attend and speak at an in person workshop *London before Lundenwic* at the Institute of Archaeology, UCL organised by Dr Stuart Brooks to assess the state of knowledge about pre-Lundenwic London. Supported through funding from the research project PUDEME: Pre-urban demography in early medieval Europe (London and Stockholm) this was the first workshop with the aims to carry out a critical review of the archaeology from early medieval London, discuss the state of knowledge in complementary fields, and identify potential areas for future research. It was a great day and a fascinating insight from the other speakers into a period of time that I am not very familiar with and that amongst the extensive skeletal collection curated at the museum the numbers of individuals from this time range is comparatively small.

Working in May with Gaynor Western and the Learning & Engagement Team, Gaynor and I were filmed to make Learning resource films aimed for secondary school students based on the Impact of Industrialisation on London Health project. The films produced can be shared as an on line resource for teachers and also used when doing a school Live Stream. I was back to filming again in the rotunda in September (with my feet again a focal point of shot footage…no pun intended!) as part of an educational documentary series based on plagues. For the part of the programme with me I was talking about the excavations of the East Smithfield catastrophe cemetery (1348-1350) and the important research undertaken on the individuals by academics and students that has revealed so much fascinating and significant information about the plague, people and time.

At the end of June and early July I was happy to again be one of a group of Work Experience Champions at the museum to connect with students (age 14 -18yrs) from local state schools. I had the great pleasure of spending time with five students over the course of different days covering a selection of areas of work within my curatorial role in the Centre for Human Bioarchaeology (CHB). The students were surprised by the variety of work involved with the skeletal collections in the museum and particularly enjoyed the combination of the practical hands on aspects with the collection and public engagement. They were always enthusiastic to get involved in tasks during the time with me and happy to engage in discussions. It was really enjoyable to spend the time with them as part of their work experience in the museum.

At the beginning of July working again with school students I was very pleased to be able to participate with the CHB teaching collection in the one day symposium for sixth form students *Bodies Of Knowledge* organised by the Youth Programme Producer at Wellcome Collection. It was a cross-curricular careers day that considered the significance of our relationship with our body and how it helps form our identity, as well as how and why our knowledge of human anatomy has changed over the last 2000 years. The symposium was to encourage students to reflect upon the variety of careers that link to different understandings of the body.

During the course of the year I was kindly invited to speak for different organisations and societies and greatly enjoyed taking part and sharing information about the curated skeletal collections. In July I spoke at the Royal College of Physicians Society Meeting as part of their Archaeology event. I gave an overview of the Centre for Human Bioarchaeology and three key archaeological sites that have been significant for research studies. We all did well not to melt as it was one of the hottest days in the summer! In August I gave another talk for the Guildhall Library Events programme and spoke about the extraordinary discoveries from the excavations at the Royal London Hospital, with highlights from the MoLA monograph publication by Louise Fowler and Natasha Powers and the resultant 2012 exhibition Doctors, Dissection and Resurrection Men. I was very pleased to once again be part of the super programme for the London Month of the Dead in October, with a talk centered on the Post Medieval period given in the brilliant

setting of the Dissenters Chapel at Kensal Green Cemetery and with kind permission of St Bride's church gave two tours of the crypt at St Bride's. Also in October I was able to give a talk in person to undergraduate students studying the history of infectious disease at the London School of Economics. In November I had the pleasure of speaking about the Post Medieval skeletal collections as part of the Hampshire Field Club & Archaeological Society annual conference with the theme of the conference on Pre-Modern People on the Move: migration, immigration and ethnicity. On an evening at the end of November (when England were playing a World Cup match!) I had the pleasure of talking about the Centre for Human Bioarchaeology and unique skeletal collection for EMAS (University of London Extra-Mural Archaeological Society).

I had great fun in November when taking part in two sessions with schools for *My London Story* a project funded by The Kusuma Trust UK and organised by the museum Learning team as part of BBC 100, celebrating the centenary of the BBC. The Learning team organised a programme of activities focusing on young people's experiences of London, to engage with 2000+ year 8 & 9 students (13 to 14 years old) and for up to 40 life stories to be collected through projects with the ten different secondary schools, exploring themes of identity, belonging and place. As part of the programme curators were asked to take part in 14 sessions, to talk to the young people about their role and the stories that can be told about people from the museum collection they curated. The school groups that I met during my two sessions were super and really engaged in the project. After hearing about the skeletal collection and the wealth of stories that can be revealed from the curated individuals they were captivated and asked an amazing array of questions that were really insightful. Hopefully some budding osteologists for the future.

The BABAO annual conference in September was deftly brought together and organised with a great two day programme. The keynote speakers gave excellent presentations and I really enjoyed listening to the podium presentations with the range of interesting research topics. It was fun to get back in to character with Gathertown to visit the rooms with the great mix of poster presentations which again highlighted the variety of research being undertaken. I was very surprised and delighted to be presented a BABAO Service Award and honoured to be awarded alongside Charlotte Roberts and Jackie McKinley. A further surprise was the knock on my front door and when opened to be presented with a magnificent bouquet of flowers from Becky's lovely daughter Isobel. Thank you for such a wonderful surprise with the award and the beautiful flowers, I was extremely touched and greatly appreciate the award.

The new major exhibition *Executions* opened at the Museum of London Docklands in October (14 October 2022 – 16 April 2023) that explores *how public executions were an undeniable feature of city life for over 700 years and how they have shaped Londoners' lives and the city's landscape*. As part of the planning process for the exhibition, the potential inclusion of skeletal human remains was raised. Following many meetings and discussions, working alongside Becky and with a very good project team who understood concerns and ethical considerations in relation to the display of human remains, the decision was made that within the contextual framework and narrative one set of skeletal human remains from the medieval period and a digital interactive based upon disarticulated mandibles and maxillae found in the 1960's from the site around Tyburn would be included. Being part of the process working with one of the exhibition project assistants on the digital interactive was very interesting in seeing the development of the interactive and helping create an engaging 3D means for visitors to be able to learn about the five individual people from the disarticulated remains. The exhibition project team and lead curators throughout the exhibition content were able to navigate through a very sensitive and emotive topic

In December I was so pleased to be able to announce that the web pages in relation to the Impact of Industrialisation on London Health

project were published and accessible through the Museum of London website: https://www.museumoflondon.org.uk/collections/other-collection-databases-and-libraries/centre-human-bioarchaeology/impact-industrialisation-london-health.

The web pages follow the themes within the project publication *Manufactured Bodies: The Impact of Industrialisation on London Health,* and there is a link to the Impact Radiographic Images Database where all of the radiographic images used in the project can be accessed and are searchable through the on line database.

Work continues with the many processes for the preparation of the museum move with the wide-ranging curated collections, including the extensive archaeological skeletal collections. During the transition of the move to new location, unfortunately, research visits to the CHB are not possible but the CHB can assist with sharing digital data and cemetery site information for research. Please do contact the CHB with enquiries for any support we can offer with your research project.

Sunday December 4th saw the closure to the public after 45 years of the Museum of London at London Wall. This was done to enable the decanting of all of the galleries and packing the museum collections comprising of 500,000 objects, in the ongoing preparations for the move to the new museum location at West Smithfield to open in 2026. It is very strange now going in to the museum at London Wall with none of the noise generated by the visitors and school groups, but I look forward to hearing again the sounds of people and excited school groups when the new museum opens.

Oxford Archaeology Heritage Burial Services

Mark Gibson and Lauren McIntyre

Team

Oxford Archaeology South:
Louise Loe (Head of Heritage Burial Services), Lauren McIntyre (Osteoarchaeologist), Mark Gibson (Osteoarchaeologist), Helen Webb (Osteoarchaeologist), Annsofie Witkin (Osteoarchaeologist)
Oxford Archaeology East:
Natasha Dodwell (Osteoarchaeologist and Head of Finds and Environmental), Zoe Ui Choileain (Osteoarchaeologist and Finds Assistant)
Oxford Archaeology North:
Stephen Rowland (Archaeology Project Manager)

Fieldwork

Cambridgeshire

Hinxton, Cambridge
Large open area excavation with dispersed prehistoric to Roman remains including field boundaries and trackways dividing up the site. A Bronze Age barrow with seven inhumation burials and three deposits of cremated bone was located at the north of site. Works are ongoing.

Worts Causeway, Cambridge
Middle Bronze age field system with some settlement activity and a round barrow. Nineteen inhumations and five cremation burials (urned and unurned) were excavated in and around the barrow. A further four, as yet undated, inhumations and two cremation burials, not associated with the barrow were identified.

Northwest Ely
An Iron age and early Roman settlement site with a probable Iron Age inhumation within a boundary ditch and two isolated inhumations, radiocarbon dated to the Late Iron Age/Early Roman period. Also, a single urned, Roman cremation burial.

Wintringham (site 3)
A large, multi-phase, open area excavation with intense Iron Age and Roman rural settlement and agricultural activity overlying a Bronze Age field system and settlement. Thirty poorly preserved inhumations, 10 cremation burials and numerous disarticulated elements were identified. The majority of inhumations are Roman, of which some were clustered in two small groups in the corner of field systems

and others were seemingly isolated. A high proportion of inhumations of this date (at least 11) have been decapitated. Several undated, crouched burials are spread across the area and may be contemporary with the prehistoric activity identified at the site. The cremation burials are both urned and unurned and date to the Bronze and Roman periods. Excavation continuing in 2023.

The site features in episode 3. series 10 of Digging for Britain:
https://www.bbc.co.uk/iplayer/episode/p0dm7yn3/digging-for-britain-series-10-3-headless-romans-and-anglo-saxon-gold
Newmarket Road, Burwell
A Late Bronze Age settlement with numerous post-built structures and almost 300 large storage pits, 30 of which contained at least one element of disarticulated human bone. These elements where predominantly limb bones and crania and several showed evidence of modification (e.g. cut/chop marks and polishing). The partial remains of an articulated adult and a crouched burial, with three disarticulated crania and a disarticulated mandible placed above it in the grave fill, were also recorded. There is also evidence of earlier funerary activity on the site; a flexed Early Neolithic skeleton buried within a small ring ditch which was marked by a large post and a single unurned Middle Bronze Age cremation burial.

East Riding of Yorkshire
Trinity burial ground, Hull, A61 improvement scheme
Staff returned to site in the spring to excavate a small area of the cemetery that was previously inaccessible during the main phase of works. An additional 23 burials were uncovered, analysed on site for demographic data and reburied outside of the area of impact. The demographic data was added to the corpus previously gathered from the excavations over the previous two years (see below).

Hertfordshire
Grange Paddocks Leisure Centre, Bishop Stortford
Almost one hundred late Roman inhumations were excavated from this roadside cemetery. The skeletons were generally very poorly preserved with bone only identified in two thirds of the graves. Several of the graves appear to have been marked by broken quern stones and, whilst most were unfurnished, several pins were recovered. An earlier Roman cremation burial with several accessory vessels was also identified.
The site features episode 1, Series 10, Digging for Britain
https://www.bbc.co.uk/iplayer/episode/p0dm7nh1/digging-for-britain-series-10-1-roman-towns-and-tudor-shipwrecks

Oxfordshire
Crab Hill Wantage eastern Link Road
Two adult and two juvenile inhumations were recovered in addition to three deposits of disarticulated bone. One inhumation was buried in a late Bronze Age hilltop ditch enclosure with a small iron knife at the waist.

Somerset
Fiddington, Somerset
Four inhumations were excavated, including one which was buried prone with a bone comb, cowrie shell, finger rings, beads around the pelvis and a bent iron object across the back of the leg. The burial is probably Saxon, but it sits within a Middle Iron Age enclosure.

Suffolk
Land North of Castleton Way, Eye
Excavations at a former airfield revealed a cemetery of over 70 graves dating to the Anglo-Saxon period. Unfortunately, having been buried in sand, the preservation of bone was extremely poor with some skeletons surviving only as ‘shadows’ and many graves being devoid of any bone. Whilst the primary focus of this excavation has been the extraordinary number of grave goods identified, it is hoped that peptides analysis on the surviving tooth crowns will provide data on the sex of individuals.

Warwickshire
Ashorne Solar Farm
As part of preparatory works for a solar farm development, two poorly preserved inhumations and one cremation were found

adjacent to a ditched boundary, probably Roman, based on pottery sherds. The site was adjacent to Great Chesterton, a Roman roadside settlement on the Fosse Way.

As well as the above sites, individual or small numbers of burials were found at the following sites:
Panshanger Aerodrome, Herts (three unurned deposits of burnt bone recovered from alongside Bronze Age and Iron Age settlement features)

Land South of Faversham, Kent (one Iron Age/Romano-British unurned cremation deposit)

Exeter College, Oxford (one fragment of human bone found during construction work for a library and annex, probably medieval in date)

Frewin Hall, Oxford (small amount of disarticulated human bone was found in a pit, belonging to one individual and radiocarbon dated to the Saxon period).
This site featured in series 10, episode 3 of Digging for Britain:
https://www.bbc.co.uk/iplayer/episode/p0dm7yn3/digging-for-britain-series-10-3-headless-romans-and-anglo-saxon-gold

Begbroke Innovation District, Oxfordshire (two undated inhumation burials)

Malabar farm, Daventry (one inhumation and four unurned cremation deposits, undated but suspected to be late Bronze Age or Iron Age)

Northampton Relief Road (three unurned, undated cremation deposits) Warrington Road, Olney, Bucks (one disarticulated skull of possible Roman date)

Cheltenham Minster Gardens Regeneration (watching brief in post-medieval burial ground on low impact works as part of the regeneration of the Minster gardens. No burials excavated)

Project Phoenix, Swindon (two unurned cremation deposits of possible Roman date)

Post-excavation analysis/reports

Bedfordshire
Church St, Langford
Three discrete deposits of highly fragmented cremated bone, clustered adjacent to a Bronze Age enclosure ditch, were radiocarbon dated to the later Middle Bronze Age/early Late Bronze Age. Although little osteological information could be obtained from the small quantities of very fragmentary bone, the deposits add to the growing corpus of diverse prehistoric funerary activity in this region and highlight the importance of obtaining radiocarbon dates on seemingly insignificant deposits.

Buckinghamshire
Fleet Marston
This assemblage comprised 400 discrete, articulated inhumations and 46 deposits of burnt bone, all provisionally dated to the Roman period. Recovered from six excavation areas, the majority - 395 inhumations - were from a northern and a southern Roman cemetery.

As part of the post-excavation assessment a 20% sample of 11 burnt bone deposits and 80 inhumations was fully analysed from across the excavation areas. The inhumations were in a good to fair condition and comprised 64 adults and 16 juveniles. Of the adults, 40 were male, 23 were female and one was of unknown sex due to missing features. Dental and skeletal pathology and trauma were prevalent and included examples of healed fractures, tuberculosis, leprosy, hip dysplasia and dwarfism. One female adult had a rare neoplastic disease, considering the date of the individual. The eleven burnt bone deposits were from six features and were thought to represent at least six individuals; one prime adult female, one adult male, and four unsexed adults/adolescents.

Cambridgeshire
Waterbeach Barracks
Post-excavation assessment was undertaken on 42 inhumations, disarticulated human bone from twelve non-burial related features, seven urned cremations and six unurned cremations, all provisionally dated to the Roman period.

Despite the poor preservation of the skeletons, some valuable information was still preserved; 40 of them still had the potential provide information on their age, whilst 33 of the 39 adults had enough surviving landmarks for sex estimation. Dental and skeletal pathologies were also observed. Of the burnt bone, two of the deposits contained a moderate amount of bone (200-500g), eight contained less than 100g and two had very low weights (less than 10g). Only one of the smallest deposits did not contain any identifiable elements.

Cheshire

A51 Tarvin Road Improvement Scheme, Chester

Following the completion of an archaeological watching brief by OAN on bridge improvement works, a disarticulated cranium was washed out of a riverbank. The cranium was fully analysed and a sample for C14 dating was taken. The sample returned a Late Iron Age to Roman date.

Dorset

Dorset Visual Improvement scheme

The assessment of 30 cremation deposits from a variety of features across eight excavation areas has been completed. The deposits span several periods from the early Neolithic through to the middle Bronze Age and the Roman periods. In addition, a total of 110 out of 219 prehistoric skeletons and skeletons from an early medieval cemetery have been washed and assessed so far. Assessment will continue in 2023.

Hampshire

Land West of Linford

One undated inhumation burial was recovered from a sub-oval pit during an evaluation of the site as part of the Lower Thames Crossing project. Radiocarbon dating failed to produce a date for the skeleton because of poor preservation of the bone collagen.

Gloucestershire

Twigworth

Four inhumation burials of mid-Iron Age to early-Roman date have been fully analysed and reported.

Kent

Land South of Faversham

One Roman neonate skeleton and one undated, unurned cremation deposit were found during an evaluation. The technical report is now complete.

Rhodaus Town, Canterbury (for Canterbury Archaeological Trust)

This mid to late Romano-British cemetery has undergone three stages of excavation in recent years. The full analysis of the 199 most recently excavated inhumation burials has been completed further expanding the information already gained about the cemetery population. Despite the poor state of preservation, it was possible to estimate the sex of 88 of the 143 adults (55 male, 33 female). Forty of the skeletons were juvenile and16 were too poorly preserved to allow any age estimation to be made.

London

St. Paul's, Hammersmith

The full technical report on 649 post-medieval burials dating between 1828 and 1854, from the western churchyard, will be issued this year.

Oxfordshire

Magdalen College, Oxford

Excavated as part of alterations to Magdalen College in 2012, a total 114 medieval skeletons have been fully analysed from a cemetery believed to have been associated with the nearby hospital of St John. The technical report has been completed and to further the osteological analysis, aDNA analysis is currently being undertaken.

Oxford Castle Mound

A small number of disarticulated bone fragments was recovered from the castle mound. Medieval and post-medieval burials have previously been discovered around the castle, so the disarticulated remains likely derive from nearby disturbed graves. The technical report is complete.

Graven Hill, Bicester

Human remains from this site comprise six contexts of unburnt disarticulated bone which span the Middle Iron Age to Medieval periods

and two Middle Bronze Age and Middle Iron Age cremation deposits. Skull fragments from one middle Iron Age deposit exhibited anthropogenic modification in the form of polishing, suggestive of deliberate curation. The technical report is now complete.

Middleton Stoney
The assessment of this assemblage involved fully analysing one burnt bone deposit, two deposits of disarticulated bones, one Iron Age inhumation burial and 26 out of 128 Anglo-Saxon period inhumations (a 20% sample). The 26 skeletons were primarily selected to provide a sample which represents the time span during which the cemetery was in use. Potential for aDNA analysis was another criterion.
So far, work has identified one skeleton with peri-mortem shoulder blade sharp force trauma and, in another skeleton, a rare aggressive cancer. Analysis of the rest of the assemblage is anticipated later this year.
Drayton Lodge Farm, Banbury
Post-excavation assessment of seven inhumations, one unurned cremation and one deposit of unburnt disarticulated bone. All human skeletal material was late Iron Age to Roman in date. One skeleton had a deformed auditory meatus, which would have caused hearing loss during life.

Somerset
Hinkley Connection C
Post-excavation assessment of burials from several sites across this scheme has begun. The skeletons comprise 21 neonates and one infant from a Roman settlement and four possible late Iron Age adults, all from Max Mill Lane, and one undated individual from land North of Barton. In addition, there are twelve possible Iron Age skeletons from Webbington Farm and five Roman skeletons from the Southern Overheads site. Samples for DNA analysis were taken.

Yorkshire
Hull Trinity Burial Ground
The post-excavation assessment report and updated project design were submitted to our client in early 2022. Subsequently, a detailed programme of full data analysis and reporting commenced. Initial DNA and isotope results were also received, pending specialist reports. The project will continue into 2023, with publication due in 2024. For project updates, see: https://nationalhighways.co.uk/our-roads/a63-castle-street-archaeology/

Teaching
Rewley House, Department for Continuing Education. Human bone workshops delivered on Certificate in Archaeology and Diploma and Advanced Diploma in Archaeology programmes.
Media
Digging For Britain, series 9, episode 3. One of the features covered the excavation and analysis work at the 18th-19th century Holy Trinity burial ground, Hull, including a behind the scenes look at the osteology work. The episode is available to watch at: https://www.bbc.co.uk/iplayer/episode/m00135s7/ad/digging-for-britain-series-9-episode-3

Sedgeford Historical and Archaeological Research Project (SHARP)

Sophie Beckett

Departmental Report:
2022 has been a difficult year for the Sedgeford Historical and Archaeological Research Project (SHARP). Founding Director Dr Neil Faulkner passed away in February and he is so very much missed. The 'experiment' in democratic archaeology that Neil established at Sedgeford in 1996 has become one of the largest and longest running independent archaeological training and research projects in the Britain. Neil leaves a remarkable and wonderful legacy. In the UK, and throughout the world, numerous organisations within the heritage sector have staff and/or volunteers who have gained some of their training at Sedgeford. SHARP's approach of participative public and community archaeology and the opportunities that the project has provided over the last 26 years has helped start and develop the professional archaeology careers of hundreds of individuals. SHARP hopes to continue its activities for many more years to come and is extremely grateful to the

continued support of Sedgeford landowners, the Campbell family.

2022 saw the return of a full six-week long excavation season during the summer, with the Human Remains (HR) Team back on-site for several weeks. Volunteers, who have completed SHARP's training in recording human remains, worked with the HR supervisors to continue recording the disarticulated bone from the Early Medieval cemetery site at Sedgeford.

HR volunteers also provided assistance with the ongoing curation of SHARP's skeletal archive and helped with the sieving of soil samples from the micro-excavation of the Roman vessel assemblage, that was discovered in 2019. The micro-excavations were carried out off-site by Human Remains Team supervisor, Dr Sophie Beckett and the video recordings and photographs taken during these activities will form part of an online short course on SHARP's Digital Trenches (www.sharp.org.uk/digitaltrenches).

The HR team also launched its photo donation portal on Digital Trenches as part of its grant from the National Archives Collaborate and Innovate programme Archives Testbed Fund. This is enabling SHARP to investigate whether photographs of excavations that are donated by volunteers and visitors to help overcome post-excavation challenges. If you have ever worked with SHARP and took any photographs at Sedgeford, please donate them (www.sharp.org.uk/digitaltrenches).

The Human Remains Team's on-site focus of post-excavation recording and analysis was possible due to the running of human osteology short courses at the FOLK of Gloucester in June and October 2022. The continuation of a National Lottery Heritage Fund award and funding from Gloucester County Council enabled SHARP to collaborate with Gloucestershire Archaeology and provide free osteology recording sessions for trained volunteers, also at the FOLK venue. This off-site activity format worked extremely well and has enabled progress to be made on the investigation of potential relationships between excavated articulated burials and disarticulated bone. Thanks to the hard work of the HR team and their volunteers, it has been possible to definitively reassociate a number of bone fragments from the disarticulated bone assemblage to specific individuals. Dr Sophie Beckett presented at the 'Fragmented' workshop hosted by University College Dublin in May 2022 and talked about the challenges of studying the Early Medieval cemetery site at Sedgeford caused by disarticulation and commingling of skeletal remains.

The SHARP Team was delighted to contribute to a recent Nature publication, in collaboration with the Max Planck Institute for Evolutionary Anthropology (https://doi.org/10.1038/s41586-022-05247-2).

The research has resulted in some exciting aDNA discoveries about the Early Medieval population of Sedgeford. Their ancestry profiles have helped to demonstrate that individuals with Continental North Eastern (CNE) ancestry were arriving in Eastern England as late as the 8th century. Several familial relationships within the SHARP skeletal assemblage were also identified, between three individuals, who all exhibit evidence of cranial trauma. A SHARP blog post explains more (https://www.sharp.org.uk/single-post/sedgeford-featured-in-major-ancient-dna-publication).

The Sedgeford aDNA results were revealed in a public lecture given by Human Remains supervisor Ray Baldry as part of SHARP's summer lecture series. The Human Remains Team have also been invited to give a lecture for the Norfolk and Norwich Archaeological Society in March 2023 (https://www.nnas.info/activities).

Human Remains Team supervisor, Dr Katie Mckinnon presented some of SHARP's research at the 2022 BABAO conference in the form of two posters 'Body Mass in an Early Medieval Population' and 'Puberty in an Early Medieval Population'. You can find Katie's blog post and keep up to date with other SHARP news on the SHARP website (https://www.sharp.org.uk/blog).

Congratulations to Katie on being accepted for PhD studies at the University of Edinburgh on the impact of socioeconomic status on neurodevelopment in babies born prematurely. In 2023, SHARP will run its human osteology short course in June and week of osteology recording for volunteers in October. For booking enquiries, please contact SHARP's Booking Manager (bookings@sharp.org.uk).

See also (https://www.sharp.org.uk/courses) for more information about other SHARP courses, volunteering and excavation opportunities.

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Wessex Archaeology

Elizabeth Darlington, Jacqueline McKinley and E. Robertson

Introduction

Alas, partly due to the on-going problems associated with CV19 in 2021 and the unusual working patterns that resulted in, we failed to submit a contribution to last year's BABAO review. As this year progressed, normality – or a new form of it – slowly resumed and the other team members (CB & ER) are now joining JIMcK in the office more rather than working from home and we have once more been able to welcome some visiting PhD resarchers.

Archaeological fieldwork – classed as 'key work' during the CV19 pandemic due to its connection with development – continued throughout the various periods of lock-down and, although no set-piece large scale cemetery excavation were undertaken by the company, the recovery of remains from numerous small burial groups, singletons and isolated deposits of human bone (both cremated and unburnt) continued. Many of these sites were located across southern and central England, and the remains from most have progressed through to at least assessment stage in the intervening months – the results being outlined below. Those yet awaiting assessment include Freemens Way Deal, Kent, a small mixed-rite cemetery, a inhumation and three cremation grave, with some impressively large vessels functioning as urns; Fargo Road, Wiltshire, which uncovered three inhumation graves located within a landscape of prehistoric scheduled monuments (further works expected in 2023); and continued excavation of the Anglo-Saxon inhumation cemetery at Netheravon, Wiltshire, with *Operation Nightingale* (community groups enabling injured service personnel to participate in archaeology).

The summary presents assemblages subject to 1) assessment, 2) full recording and analysis, and production of a publication report, and 3) publications. Most of the sites were prehistoric or Romano-British in date – with only three Anglo-Saxon/post-Roman, two medieval and two post-medieval – hence the small size of many of the assemblages. Two featured Neolithic remains, some 15 Bronze Age and 11 Iron Age, the latter often inclusive of those enigmatic, potentially 'placed deposits' of curated and manipulated skeletal elements.

It should be noted that although Kirsten Egging Dinwiddy (KED) left the burial archaeology team some two years ago now for a role in management, her osteological past continues to follow her with some joint analyses now completed by colleagues and two of her reports reaching publication stage in the Wiltshire county journal; more will undoubtably follow.

The following summaries exclude projects subject to client confidentiality.

1) Assessments *Undertaken*

A303, Sparkford – Ilchester (Area 3), Somerset (229432) (JMcK)
Human remains were recovered from two adjacent Romano-British (probably Mid–Late) inhumation graves situated close to the intersection between two ditches. The graves lay on a similar northwest – southeast alignment, but one of the burials had been made (supine and extended) with the head to the southeast and the other (extended and probably originally on the right side) with the

head to the northwest. Each grave contained the remains of an adult male.

A303, Sparkford – Ilchester (Area 5), Somerset (229432) (JMcK)
Human remains were recovered from 10 contexts including the remains of six inhumation burials. Most of the burials had been made within what were probably pre-existing pits or in graves cut through the fills of pits, all of which lay within a defined 28 x 10 m strip in the central area of the site. Redeposited bone was recovered from five contexts including amongst the remains of one of the *in situ* burials; single skeletal elements were recovered from the fills of two pits devoid of *in situ* remains, one within the same area as the pit burials and the other some 40 m to the west. With the exception of the one coffined burial which is probably of Romano-British date no datable artefactual materials were directly associated with any of the burial remains which are likely to include deposits of Mid Iron Age to Romano-British date.

A minimum of seven individuals are represented; four immature individuals and three adults. The former were all less than one year of age at death, all except one being less than three months. The adult remains comprised those of two females and one male. Observed pathological lesions include healed and un-united (rib) fractures in one adult female (inc. 'Parry fracture') and the severing of a finger tip in another, and an elderly male with DISH.

A303, Sparkford – Ilchester (Area 6), Somerset (229432) (JMcK)
Human remains were recovered from two features comprising an inhumation grave and a ditch inclusive of the placed deposit of a human cranium. No direct artefactual dating evidence was recovered with either mortuary deposit which are likely – on stratigraphic grounds – to be of a late prehistoric date. The meagre remains from the inhumation grave represent those of a mature/older adult (35–50 yr), possibly male, whilst the cranium is that of an adult male, 20–35 years of age.

A66, Penrith to Temple Sewerby, Cumbria (245640) (JMcK)
An evaluation of land to the south-west of the Late Romano-British cremation cemetery at Brougham encountered previously unexamined areas of the cemetery. Two graves, containing urned burial remains, were fully or partially investigated.

The remains of a minimum of two individuals (MNI) were identified; a young/mature adult, probably female (from the fully excavated grave) and subadult/adult remains (>15 yr), the latter comprising only a few fragments, probably from the grave fill rather than the burial remains *per see* (the latter were not disturbed). Large quantities of worked antler/bone veneer were recovered amongst the human bone throughout the fill of the vessel (spits 4–9) and from amongst the pyre debris within the grave backfill. These fragments will have derived from decorated boxes placed on the pyre with the deceased, or possibly from a funeral bier/couch on which they resided for cremation. Pyre goods of this form represented a common find recovered from the graves and other forms of cremation-related deposit at Brougham. Glass beads and fragments thereof, some unaltered by heat, some slightly so and others fully melted and fused to bone fragments were also encountered both amongst the pyre debris within the grave fill and amongst the burial remains. The bone onto which the glass has fused suggest some of the beads – presumably part of a necklace – lay adjacent to the deceased's hands which might have been laid across the chest.

Basildon, Essex (262290) (JMcK)
A fragment of human cranium was recovered amongst animal bone and sherds of mid to late Romano-British pottery from a secondary fill within a field boundary ditch. The human bone, together with other archaeological components (animal bone, pottery, charcoal and burnt clay) appear to have formed a general dump of debris made from one side of the ditch subsequent to it falling out of use. The fragment is of frontal/lateral parietal bone and derived from an older subadult/adult individual (>15 yr).

Future Chippenham, Wiltshire (254740) (JMcK)

Human remains were recovered from six contexts in evaluation trenches distributed across the central section of a proposed highway route. Unburnt bone – possibly the remains of two neighbouring *in situ* inhumation burials – was recovered from an alluvial deposit through which the graves has been dug (grave cuts difficult to define in this material). The four features containing cremated bone were rich in fuel ash/charcoal and at least one probably represents a formal deposit of pyre debris. The nature of the other deposits is not conclusive, but none appear to represent burial remains and are also most are likely to have comprised formal or incidental deposits of pyre debris. The presence of this material in these areas indicates that cremation was being undertaken in the immediate vicinity. The inhumation burials are currently undated but a clear (possibly Mid–Late) Romano-British date is indicated for one of the cremation-related deposits in the form of hobnails and fragments of pottery; the former at least representing the remains of pyre goods.

The unburnt remains represent those of a probable two individuals; a mature adult and a subadult/adult both of indeterminate sex. A minimum of two individuals are probably represented amongst the cremated remains.

Gravity Road, Puriton, Bridgewater, Somerset (218375) (JMcK)

The remains of a human cranium were recovered close to the base of ditch believed to be part of the Late Iron Age field systems. Although the complete cranium was not recovered, this does appear to represent the remains of a deliberately 'placed deposit', with the cranium already defleshed and dry and probably previously subject to curation. No direct artefactual dating evidence was recovered with the human bone, and although the date suggested for the ditch is indicative of the final deposition it might not provide a date for the human bone itself. The recovery of fragments from all parts of the skull, together with the compact *in situ* positioning of the remains, indicate that the cranium was probably complete when placed in the ditch. The remains represent those of a mature (25–45 yr) adult female.

Greenwood Avenue, Chinnor, Oxfordshire (255070) (JMcK)

Remains of three burials – two inhumation and one cremation (unurned) – were found in association with a Romano-British field system, the two adjacent inhumation graves being cut into the fills of one of the ditches. Both individuals inhumed in the ditch were elderly females but the sex of the mature adult from the cremation grave is currently unknown.

Numerous pathological conditions were observed in the two elderly females including extensive *ante mortem* tooth loss, secondary sinusitis and degenerative joint diseases. Numerous fractures to elements of the face and upper limb of one woman could reflect interpersonal violence. This individual had been decapitated – between C4 and C5 – the head and neck (to C4) being placed between her legs at knee level. The grave was of sufficient length to accommodate the head in its correct anatomical position – her feet being placed up against the end of the grave – which suggests the head was removed after the body was placed in the grave, possibly even some short time after burial.

Although much of the cremated bone is white in colour, indicative of full oxidation, skeletal elements from all areas commonly show hues of blue and grey indicative of incomplete oxidation and several finger phalanges are blue/black, demonstrating only charring of the bone. Such a widespread pattern of variable oxidation is suggestive of one or more variables in the cremation process, including insufficient fuel to ensure full oxidation, a pyre of deficient size to accommodate the corpse (e.g. hands on peripheries) and inclement weather forestalling the process.

Harlington School, Hillingdon, London (243981) (JMcK)

The truncated remains of an urned cremation burial, made in an inverted Middle Bronze Age vessel, were recovered from a grave adjacent to which lay a small pit containing a small amount of redeposited pyre debris potentially derived from the same cremation. There is evidence to indicate that an organic cover had

been fixed over the rim of the vessel prior to its inversion for burial.

The substantial quantity of bone recovered (1990.3 g) represents the remains of a minimum of three individuals (MNI): an infant (3–4 yr) and two adults (<35 yr and >35 yr), one male and one female..

Riding Court Farm, Datchet, Berkshire: Causewayed Enclosure (106001 – 4: PX 234401)(JMcK)

Human bone was recovered from 14 contexts associated with a fills of the Causewayed Enclosure. The majority of the bone (13 contexts) is unburnt and, given its location, is clearly Early Neolithic in date commensurate with the monument. A small amount of cremated bone was found in pit dug into the upper fill of a NW segment of the Enclosure ditch which is likely to be later Neolithic.

The unburnt bone was recovered from eight segments of the Causewayed Enclosure, predominantly those on the short northwest and southeast sides. With one exception – the articulated remains of a (?female) subadult – the bone comprises disarticulated and redeposited skeletal elements or parts thereof and in all cases, the human bone was recovered together with deposits of animal bone and other materials. Two deposits appear to have comprised what might be described as a 'placed' deposits, the frontal and facial bones of a subadult ?female and an adult ?male cranium. Most of the rest appears to have formed a component within dumps of material, at least some of which could be described as 'structured deposits' – i.e. more than just incidental dumps of 'refuse' in a convenient location, though the nature and potential meaning of these deposits is yet to be explored. At least five of these deposits were made on or close to the base of the ditch segments. The skeletal elements predominantly comprise parts of the cranium, mostly fragments of parietal and/or frontal bone – one fragment of frontal bone having a slightly polished appearance suggestive of handling during curation. There is also clear evidence of 'filleting' marks – fine cut marks indicative of defleshing – on a proximal ulna and an adjacent (not articulated) radial head.

Most of the bone represents the remains of adults but includes a minimum of one infant/juvenile and one subadult, and there is evidence for both female and male remains (minimum two of each).

Riding Court Farm, Datchet, Berkshire: Bronze Age mortuary deposits (106001 – 4: PX 234400) (JMcK)

Human bone – unburnt and cremated – was recovered from 22 features dispersed across the site external to the Causewayed Enclosure. Unburnt bone was found in 12 features including four inhumation graves, and cremated human bone was recovered from ten features including the remains of two, probably three, unurned burials. Currently there is limited dating evidence for any of the deposits though a Middle–Late Bronze Age range seems likely.

A minimum of 10 individuals is represented within the unburnt bone assemblage; mostly adults, including at least one over 40 years of age, with both sexes represented (minimum three females and two males). A minimum of five is represented within the cremated bone assemblage, again mostly adults, with those of a 4–8 year old child being found in one deposit accompanied by 'token' fragments of adult bone which could have derived from the same cremation as the adult bone identified elsewhere in the assemblage. Few pathological lesions were observed in the scan, probably in part due to the nature of the deposits and poor bone preservation.

Viking Link (Zone 2), Lincolnshire (218713) (CB & JMcK)

Part of an early Anglo-Saxon cemetery (late 6th – late 7th century), centred on a Bronze Age round barrow, was excavated in one section of the pipeline route. The 21 inhumation graves included one double burial. The 22 individuals identified comprised six immature individuals (<18 yr; predominantly subadults 13–18 yr, three female) and 16 adults with a commensurate number of females and males. At least one of each of the latter survived to >55 years of age. Pathological lesions were recognised in 17 individuals including fractures, probable

spondylolysis/spondylolisthesis, chronic sinusitis, *cribra orbitalia* and a possible case of brucellosis.

Elsewhere along the pipeline route redeposited disarticulated unburnt bone was recovered from various prehistoric ditch fills including the potentially 'placed deposit' of a 'curated' (polished appearance to surface) left humerus with evidence for dismemberment (filleting marks and a chop mark). The remains of an unurned cremation burial (adult male) of probable Mid–Late Bronze Age date were also recovered.

Wyck Beck Farm, Cribs Causeway, South Gloucestershire (239870) (JMcK)
Remains four inhumation burials; two made coffined, two prone (including one of the coffined burials which might also have been shrouded), all probably Romano-British in date. The bone
is very heavily degraded and severely fragmented, often comminuted. Each grave contained the remains of a mature adult, with both males and females represented.

2) Full analysis and completed publication reports (awaiting publication)

Axford–Ogbourne, Wiltshire (111450/SWIMG:2015.076) (JIMcK)
Human bone – all cremated with the exception of a fragment of unburnt cranium – was recovered from 12 features found at three sites across the Scheme. The deposits include the remains of at least three, but more probably seven unurned cremation burials; one Mid–Late Bronze Age and six Late Iron Age or Romano-British –fuel ash/pyre debris was recovered from all the grave fills.

A cranial fragment (adult left frontal) was recovered from the Early Romano-British backfill of an enclosure ditch which might have been functional in at least the latter part of the Iron Age. Residual mid- and late Iron Age pottery sherds were recovered from the fill, and it is likely that the fragment of cranium, radiocarbon dated to the Middle Iron Age, represented similarly 'residual' material rather than a 'placed' deposit. It is possible, however, that the fragment – or the skull from which it derived – might have been subject to curation prior to this final deposition particularly given the evidence for scalping.

Two of the Romano-British burials were associated with Wanborough Roman Town, with several others linked to a farmstead to the south. Most contained the remains of adults, three tentatively identified as female, a subadult singleton and the dual burial of a child (4–10 years) and an adult were also identified. Pyre goods in the form of animal bone from six of RB graves included fragments of song-bird sized bird, sheep/roe deer and pig.

'Operation Beowulf' Barrow Clump, Figheldean, Wiltshire (85375) (ER, KED & JIMcK)
Further investigations on the northeast side of the early Anglo-Saxon cemetery at Barrow Clump revealed a further 24 inhumation graves with a MNI of 29, bringing the total from the site to 110 (36 immature, 30 adult female and 33 male), and it is estimated two-thirds of the entire cemetery has now been excavated. This area of the cemetery contained a noticeably higher proportion of older adults that the focal area closer to the Early Bronze Age barrow, and further potential zoning is suggested by small clusters of young immature individuals and male adults.

In addition to the inhumation graves, cremated bone was recovered from seven features including the remains of a minimum of two, probably three, urned burials, a *memento mori*, two deposits which could represent one or other of the two aforementioned deposit types, and one of indeterminate form. The Anglo-Saxon date was ascertained from the associated ceramics, two of which indicate an early 6th century date, a general 6th century date being attributed to other finds. No cremation graves or other cremation-related features were encountered in the earlier stages of investigation within the main area of the cemetery. No fuel ash was recovered from any of the deposits containing cremated bone or from the surrounding fills which implies that the pyres lay well beyond the place of burial. It might also imply that all the deposits containing cremated bone at Barrow Clump had been curated, though for

how long or across what distances remains open to question. The apparently relatively short-term temporal variation in mortuary rite might – together with the suggestion of age-related zoning amongst the inhumation graves (see above) – indicate that this south-western area of the cemetery included some of the earliest burials made at the site.

Chapel Riverside, Southampton (107173; SOU1675) (ER & CB)

A Mid-Saxon to the medieval cemetery associated with an early chapel located adjacent to the river contained the remains of a MNI of 84 Mid-Saxon (*c*. 650 –750 AD; 29 inhumation burials and redeposited material) and 96 medieval individuals (all *in situ* from 86 graves). The majority (76.2%) of the Saxon remains comprised adults including a markedly greater proportion of males than females (60.9% and 37.5%). The medieval population had a higher number of immature individuals (43%), and amongst the adults the ratio of males the females was almost the reverse of that seen in the Saxon cohort (57.3% female and 39.3% as male).

Material from both phases presented a number of uncommon and interesting morphological and pathological features including a rare instance of achondroplastic dwarfism (a young child) and a number of individuals with sharp weapon trauma.

Coldharbour Road, Gravesend, Kent (208582) (JIMcK)

The remains of a Middle Bronze Age unurned cremation burial comprised a singleton found close to an undated boundary ditch. Small grave groups and single cremation graves of Mid-Late Bronze Age date have been found in the immediate vicinity of the site, particularly to the west and south-west. The truncated deposit comprised the well oxidised remains of a subadult/adult, 14–30 years of age, probably female, with a fragment of cremated animal bone (sheep) comprising the only evidence of pyre goods.

East Farm, Fovant, Wiltshire (231080) (JIMcK)

The remains of three Middle Bronze Age cremation burials were found during domestic building works. The first burials of this date to be recovered from the Nadder Valley to the south-west of Salisbury, two of the burials had been made unurned and one urned in an upright Bucket-shaped vessel which survived almost complete. The remains of four individuals were identified, one of the unurned burials – of substantial size (1156.9 g) – containing the remains of a young adult female and an infant. Pyre goods comprising animal remains (sheep/goat/roe deer) were recovered from all three burials and the graves all contained secondary deposits of pyre debris.

East Midlands Gateway, Leicestershire (101409) (JIMcK)

Human remains were recovered from six locations within the development zone. Unburnt human bone was found at four sites and comprised the remains of two inhumation burials (Middle Bronze Age and Early–Middle Iron Age), a possibly 'placed' deposit made in a ditch terminal and redeposited skeletal elements from ditch fills (Early–Middle Iron Age). Cremated bone was found at two sites and included the remains of two Late Bronze Age unurned burials, both accompanied by redeposited pyre debris, and a Romano-British cremation-related deposit of uncertain type also inclusive of pyre debris.

Most of the disarticulated Iron Age material had evidence for various forms of human and animal manipulation including canid gnawing, faint 'polishing' suggestive of repeated handling and cut marks. The frequency, shape and location of the latter – seen on an almost complete cranial vault – are not suggestive of violent peri-mortem trauma and they are not characteristic of a 'singular' desecration such as scalping, nor do they have the appearance of the fine, linear 'filleting' marks associated with defleshing. The marks are, however, indicative of human manipulation undertaken post-mortem but prior to the bone drying-out completely; potentially some form of ritual 'mutilation' of the cranium (possibly originally the entire head/skull). In addition, the singular presence of this human cranium amongst an unusual deposit of animal bone – inclusive of a substantial proportion of the articulated body parts of a horse – made in an enclosure ditch

terminal seems more than incidental or a simplistic deposit of 'debris'.

Hadspen Roman Villa, Somerset (217200, TTNCM: 10/2019) (ER & CB)
Parts of a small inhumation cemetery almost exclusively devoted to neonates, and numerous small grave groups and singletons were found adjacent to a Roman villa complex at Hadspen. The area was used for burial prior to construction of the villa – the 20 *in situ* burial remains included those of three Mid–Late Iron Age 'pit' burials, with two, possibly three, coffined burials amongst the Romano-British remains. The project benefited from a programme of aDNA, isotopic and peptide analysis which, amongst other data recovered, allowed the sex of many of the neonates to be determined.

Of the four Iron Age individuals identified one comprised a male infant, one a mature adult female and another an elderly male. Some 64% of the Romano-British assemblage comprised neonates, with similar numbers of adult males and females (over half of them elderly i.e. >55 yr). The scientific analysis of the neonatal remains showed a preponderance of females (six of the seven sampled), however, as only 43.8% of the neonates could be sexed the data could be presenting a bias view. Isotopic analysis indicates four individuals had childhood origins outside of the south-west, possibly in the east of England or Scotland.

Pathological conditions observed included numerous fractures, maxillary sinusitis and a probable case of mastoiditis in a young adult male.

Hinton Fields, Kingsworthy, (106870) (CB)
The *in situ* remains of a Middle Bronze Age infant inhumation burial were recovered from a pit. The burial had been made directly above a mound of flint nodules, built-up some 0.50 m from the base. The infant expressed an interesting anatomical variation to their lambda sutural bone.

Hornsea off-shore, Lincolnshire (110494: 110491 SPE2 & 110498: Px 221790) (JIMcK)
Elements of unburnt human bone were recovered from 12 contexts distributed across five areas of investigation, dispersed along some 25 km of the scheme-wide route. The majority of the assemblage comprises fragments of disarticulated, redeposited bone recovered from the fills of various ditches forming components within co-axial field systems and enclosures and relate to agricultural and settlement activity spanning the Middle Iron Age to the late Romano-British periods. A mid–late Romano-British grave (coffined burial) had cut through the fill of a similarly dated roadside ditch. The partly articulated but heavily manipulated and deposited remains of an adult male were recovered from the fill of an 12th–13th century medieval drain.

A minimum of four, possibly six individuals were attributed a Mid–Late Iron Age dates, with evidence for human manipulation of remains associated with excarnation and working (deliberate polishing) of bone. A minimum of four, possibly five individuals were attributed a Romano-British date, with evidence for sharp weapon trauma, post-mortem cuts marks and canid gnawing. Although clearly disturbed and redeposited from an unknown – but obviously neighbouring – location, the 12-13th C human remains recovered from the ditch/drain fall into the classification of a 'non-normative' burial. It might be significant that the parish boundary lay just 5 m to the south of the ditch the body perhaps having been disposed of in a liminal location, on the margins between two parish authorities suggesting the man fell into one of the 'excluded' groups for whom no one parish would accept responsibility. There are, however, indications of an unhealed blunt weapon trauma to the man's skull, which strongly suggest he met a violent death; the un-successful casualty of a small skirmish or unfortunate victim of a murder, his cause of death suggests these remains are those of a clandestine burial rather than someone who was for some reason excluded from the parish churchyard.

Horton, Kingsmead Quarry, Bedfordshire (71808) (CB)
In situ burial remains were recovered from across the extensive area archaeological investigations together with redeposited

cremated and disarticulated unburnt bone. The remains of a Beaker period inhumation burial (??female adult) comprised the earliest deposit. Thereafter, a small mixed rite Middle Bronze Age cemetery comprising the remains of 24 urned and unurned cremation burials interspersed with seven inhumation graves. The MNI 27 cremated were identified including four immature individuals and 13, predominantly male (MNI 10) The inhumation burials included those of three immature individuals and three adults including two males. Dispersed small grave groups and singletons of a similar date were recorded in other parts of the site including the remains of three inhumation and two unurned cremation burials; fine cutmarks on one adult female skeleton suggest defleshing. A small mixed rite cemetery of Romano-British date included the remains of five inhumation (two immature individuals, three adults and three unurned cremation burials (two adult males and one female) together with a bustum-style grave.

Hunter's Moon, Chippenham (JIMcK)
Middle Neolithic cremated remains redeposited (from an adjacent primary deposit) in the fill of a ?Bronze Age ditch adjacent to a potential mortuary complex crossing a wide temporal range.

King's Gate, Amesbury Down, Wiltshire (85685 inc. 65537)(JIMcK)
Middle Bronze Age mixed-rite burial group comprising one cremation and three inhumation graves (tight grouping approx. 2.60 m diameter area). C14 analysis shows tight temporal range with inhumation burials forming earliest and latest in sequence. MNI seven – the urned cremation burial (>1800 g bone) included the remains of three individuals (two adults – female and male – and a juvenile) and one of the three inhumation burials (subadult, two young adults male and female) including redeposited bone from a second individual. Analysis of 'mobility isotopes' showed one of the inhumed individuals was likely to have originated from southern-central England, whilst the other two were unlikely to have been from this area of the country, data from the cremated bone proved to be undiagnostic. Pyre goods from the cremation grave included bones of a dog and cattle.

A redeposited human tibia was from one of several Early Iron Age pits to the NW of the MBA grave group, close to the Middle Iron Age enclosed settlement at Southmill Hill.

Land Adjacent to Wentwood Drive, Bleadon, North Somerset (115540/2; WESTM: 2017/3) (ER & CB)
The majority of the 35 inhumation graves excavated were Romano-British in date. A small cemetery included the remains of seven adults (mostly females) including accompanied by a perinate. The remaining 18 graves – all but one of which comprised those a neonate – were located on settlement terraces. Peptide analysis showed both males and females were represented amongst the babies.

In addition, dispersed small inhumation grave groups and singletons – five Iron Age graves (remains seven burials) and five Late Iron Age – Early Romano-British graves (eight burials) were widely distributed across the site including graves dug into the fills of repurposed storage pits.

Adults across the temporal range presented low levels of disease, infection and deficiency alongside the expected age-related changes and a number of fractures which may be associated to interpersonal violence.

New Covent Garden Market (NCGM), London borough of Wandsworth (NNE16; 107902–3) (KED, ER & CB)
Although the cemetery had supposedly been subject to clearance in the mid 20th century, human remains were recovered from 106 contexts within the former St George's churchyard, Nine Elms, Battersea (1824-1870). The assemblage comprised 89 *in situ* coffined burials, four probably coffined burials and a moderate quantity of redeposited bone from grave fills, cemetery soil and grave clearance debris. The MNI of 97 represents approximately 3% of the original cemetery population. Close to half those recovered were immature individuals and all but one of the 52 adults could be sexed (19 male, 32 female). The many pathological conditions recorded include examples of deficiencies, venereal

disease, interpersonal violence, and there were numerous examples of plastic changes resulting from the wearing of corsets. A number of individuals had been autopsied.

Parmitter Drive, Wimbourne, Dorset (108073)(JIMcK)
The Middle Bronze Age cremation cemetery, which included the remains of five urned burials and a probable two *memento mori* deposits made in ceramic vessels, were found in association with one of two adjacent ring ditches, the second of which included the remains of a single urned burial within its confines. The MNI of nine included six immature individuals (juveniles and subadults), with two of the burials containing the remains of two individuals. Micro-excavation of the burial remains demonstrated that in some cases the primary container for the bone comprised a flexible organic bag which was then placed in the vessel, and the discrete inclusion of 'token' fragments of adult bone in three of the younger individual's urns. Pyre goods, in the form of small quantities of cremated animal bone, were found in four of the burials, with a broad range of species comprising sheep, pig, cattle, deer, bird and dog.

The remains of an unurned cremation burial, C14 dated to the Late Neolithic period, was found elsewhere on the site; young adult female, pyre goods of worked bone, cattle and sheep-sized animal.

Rossington, Doncaster, Yorkshire (114502)(JIMcK)
Remains mid Romano-British unurned cremation burial, grave cut through fills two intersecting ditches; older adult.

Somerton Primary School, Somerton, Somerset (205157/8) (ER & CB)
A multi-phase cemetery (Iron Age through to Late Romano-British), comprising a series of distinct spatial groups, included 58 inhumation graves many of which were stone lined and capped (local limestone slabs) with at least three featuring a form of 'tented' or *cappuccina* structure. The earliest graves lay within a roundhouse (adult male) and a rubbish pit cluster (neonate). The Romano–British phases formed four distinct groups of varying sizes with a few outliers. MNI 55 (18 immature, 19 adult males and 17 females) with an additional eight (4 immature, 3 adult males and 1 female) from redeposited material dispersed across the site. Pathological conditions include pathological fractures associated with osteomalacia, evidence for chronic respiratory disease and scurvy. The results of peptide analysis for sexing of the immature individuals is awaited.

Southern Strategic Support Main (SSSM), Barrow Gurney to Cheddar, Somerset (110760/66, TTNCM 2016/83) (ER)
A mid-late Romano-British inhumation grave cut through the fill of an enclosure ditch; older adult male with multiple fractures. Redeposited bone from a second adult was also recovered.

St Peter's Church, Ropley Hampshire (111181) (KED & ER)
The remains of 35 post-medieval – late 19th-century inhumation burials (two from a brick tomb) were recovered during the rebuild and extension of the burnt-down church; redeposited bone from cemetery gave a further MNI of 36. A wide age range from foetal to elderly adult was recorded in both the articulated and disarticulated material. Pathological lesions included evidence for trauma and one individual with a probable above knee amputation.

Yatton, Phase 2 and *Yatton School Site, North Somerset (117820; 208940)* (CB)
Large post-Roman inhumation cemetery (min. 559 graves) with a distinctive sub-circular form, variable grave orientation with arrangements in mostly N-S rows and following margins of cemetery 'boundaries'. Common intercutting and poor bone survival lead to MNI of 198 from *in situ* remains (33 immature (inc. two female subadults), 130 adults (inc. 32 females and 42 males), 33 un-aged. A further 66 MNI was calculated from the disarticulated remains that could not be re-assigned to a the discrete burial remains. Pathological conditions observed were limited (bone condition) largely comprising

degenerative changes, with some traumatic lesions and a possible trepanation.

Singletons and small grave groups of earlier date were also recorded including the remains of one Middle Bronze Age inhumation burial (adult female); one Early-Middle and two Middle Iron Age (all adults), one mid-late and four later Romano-British (male and females adults and a juvenile). Redeposited cremated bone was also recovered from a Late Bronze Age–Early Iron Age deposit and a Romano-British pit.

York Osteoarchaeology

Anwen Caffell, Benn Penny-Mason, Elina Petersone-Gordina, Jordi Ruiz Ventura, Katie Keefe, Malin Holst and Paola Ponce

This review does not include sites that included fewer than three skeletal assemblages.

Dig Ventures, Whittenham Clumps, Little Wittenham, Oxfordshire, JRV & PP
Forty-one Roman skeletons were mostly buried supine extended, but five were prone and two were decapitated. They consisted of 21 mostly older adults (eleven males and ten females), two adolescents, four older juveniles, ten younger juveniles, three infants, and a neonate. The proportion of non-adults (48.8%) was high, probably as a result of childhood stress (rickets, scurvy, cribra orbitalia and DEH). Some healed trauma was observed, as well as infection, such as sinusitis and endocranial periosteal lesions. Females were affected more frequently by joint disease than males, likely because males tended to die at a younger age. Dental health was moderate, with little calculus, ante-mortem tooth loss, and caries, but much periodontitis.

MAP, Marygate, York, AR
Six Roman skeletons included a male mature adult, a young juvenile and four perinates. The mature adult had healed trauma, Schmorl's nodes, and degenerative joint changes, while the juvenile had periosteal reactions on the ribs, long bones and the endocranial surface of the skull.

MAP, Yapham Road, Pocklington, East Riding of Yorkshire, AR
Twenty-one skeletons date from the Iron Age or Roman period. Orientations varied widely, while the skeletons were interred on their left side, mostly in crouched positions. There were eight adults (three females and five males), with males having better longevity than females, while the majority of the population was made up of younger non-adults, particularly perinates, three younger juveniles, an older juvenile and three adolescents. DEH was seen in the older non-adults. Trauma was prevalent, particularly deliberately inflicted injuries. Accidental trauma affected the hands and toes, a vertebra and a rib. Two individuals had *spondylolysis* and four had *osteochondritis dissecans*. Sinusitis affected two individuals and ribs lesions in four skeletons. Two adolescents had hypertrophic pulmonary osteoarthropathy. Degenerative joint changes affected all spines and the hips, knees, wrists and shoulders. One individual had multiple myeloma. Dental health was poor.

University of Leicester Archaeological Services, Sutton upon Ashfield, Nottinghamshire, BPM
Eleven Early Bronze Age cremated bone assemblages contained at least one adult, with three burials including two individuals (2 neonates and 1 adult). The assemblages contained an average of 65% of the amount of bone expected from an adult cremation.

University of Leicester Archaeological Services, Marble Street, Leicester, JRV
Three Roman skeletons, which are part of a larger cemetery previously analysed, included a mature adult male, an old middle adult female, and an adult of undetermined age and sex. Both the male and female had joint disease, trauma and all three individuals had poor dental health.

University of Leicester Archaeological Services, Waterside, Leicester, EPG & JRV
Nine Roman and 445 eleventh century skeletons were excavated. The Roman skeletons were mostly adults (mostly older, 4 males and 4 females) and a perinate, and were

buried in a ditch or other features nearby. Much healed trauma, DEH and infection were observed. One individual had DISH. Joint changes were prevalent, and dental health was poor.

The 445 medieval skeletons were buried in single, mass and double graves, but followed Christian burial traditions. The majority were adults, aged 36 years and over, with females outliving males and being slightly better represented. However, 40.9% of the population were non-adults, most of whom were aged one to six years. Almost a quarter of the population had trauma and joint changes were common, while infectious disease was rare. The prevalence rate of calculus, periodontitis, dental cavities, and abscesses was higher than the period average. A catastrophic event of unknown aetiology (presumably an epidemic or famine) occurred during the time of use of this cemetery and is currently being investigated using biomolecular analyses.

WYAS Archaeological Services, Halifax Bus Station, Halifax, West Yorkshire, PP
Eight post-medieval skeletons, including six adults (2 males, 2 females) and two older juveniles, aged nine to twelve, were analysed. DEH affected five individuals, sinusitis in two individuals and degenerative changes in four adults. Dental health was moderate.

DEPARTMENTAL REPORTS

Cranfield Forensic Institute
Cranfield University

Nicholas Marquez-Grant, Sophie Beckett, Nivien Speith and Dave Errickson

Cranfield Forensic Institute's (CFI) research and teaching is undertaken on two campuses now, our Bedford Campus and the Shrivenham campus, the latter primarily for ballistics and explosives teaching and research. Most of the forensic anthropology teaching staff includes Dr Nicholas Márquez-Grant, Dr Nivien Speith, Dr David Errickson with contributions and other human remains related research and teaching by Prof. Peter Zioupos, Dr Sophie Beckett, Mr Roland Wessling, Ms Stephanie Giles, and Mr Peter Masters and a number of PhD students. Our work encompasses collaboration with other colleagues in bone chemistry, soil science, ballistics and explosives.

The year started with a great cohort of national and international students, with the Forensic Archaeology and Anthropology MSc being one of our most popular courses. The new labs, our virtual autopsy table and new research facilities (including a taphonomy facility) and international collaboration, has made our MSc research stronger and stronger every year, with a number of publications stemming from this work. Excavations continued at a Roman site not far from Cranfield, directed by Dr David Errickson.

The start of Nivien Speith in September 2021 has seen 2022 as a year of great activity and support in biological and forensic anthropology, with Nivien contributing to many fields in CFI. She has made a real difference to the anthropology staff's profile and student experience! David Errickson has continued to be an excellent Course Director and involving our students and graduates in further work on WWI and WWII sites.
Indeed, the CRICC (Cranfield's Recovery and Identification of Conflict Casualties) team have been very active this year 2022. Three missions in Italy and one in Germany on average 4 weeks long, took place searching for US WWII casualties. Our graduates were part of these deployments which were also open to members outside Cranfield University. Likewise, Nicholas Marquez-Grant continued his work on Spanish Civil War and the dictatorship that followed in terms of archaeological excavation and anthropological analysis. Further work on these periods is to continue in 2023. He also continued to undertake forensic casework as Chartered Forensic Anthropologist in the UK.

Staff attended a number of conferences including the European Meeting of Forensic Archaeology in Dresden, Germany; Negotiating the Human Remains: Justice,

Ethics and Culture in dealing with human remains in Geneva, Switzerland; X International Phoenician-Punic studies congress in Ibiza, Spain; the European Association of Archaeologists' meeting in Budapest, Hungary; the 49th Annual Paleopathology Association meeting in Denver, Colorado; and the 1st International Forensic Science Symposium, Catania, Italy. Dr Nicholas Márquez-Grant visited the Committee for Missing Persons in Cyprus in September 2022 through an Erasmus Staff Mobility Grant. Together with Dr Francisca Alves-Cardoso (Universidade Nova Lisboa, Portugal; Visiting Fellow, Cranfield University), Dr Márquez-Grant is co-PI on a project on frailty and palaeopathology by the Science and Technology Foundation in Portugal.

Department of Archaeology
Durham University
Tina Jakob

The new MSc in Forensic Archaeology and Anthropology led by Daniel Gaudio and Becky Gowland started in October 2022 and our first intake of students are enjoying this exciting new programme. Many activities have been organised to train students with the aim of providing them with a solid competence in realistic scenarios and preparing them for the forensic profession. Amongst these activities are courtroom testimony (conducted in a specialist room resembling a courtroom), a simulated excavation, and talks by internationally renowned guest lecturers. In addition, Daniel Gaudio and the team are organising fieldwork in Italy to analyse a mass grave of victims who went missing during the First World War. Daniel Gaudio has been involved in this type of investigation for several years now and has recently widened his sphere of research. By using from a more holistic biocultural perspective, he is exploring the impact the retreat of Alpine glaciers is having on human society.

We also celebrated our amazing results in the latest REF and we were delighted that Becky Gowland's research that focusses on training forensic practitioners was chosen as one of our Impact Case Studies (https://www.durham.ac.uk/research/research-impact-at-durham/case-studies/improving-the-identification-of-human-remains/). In collaboration with the International Red Cross, Becky had also developed an online course that is available to anyone interested in forensic archaeology and anthropology (https://www.futurelearn.com/courses/forensic-archaeology-and-anthropology). This course is extremely popular and 29,746 (and counting) have enrolled so far.

Becky Gowland has now completed her time as Deputy Executive Dean (People and Culture) but will move on to become Acting Deputy Provost. Best of luck in your new role Becky! She will of course keep up her research in bioarchaeology and PhD student supervision.

Charlotte Roberts is Co-I with Sarah Inskip (Leicester University) on the British Academy Small grant: Tracing the invisible: A multi-isotopic approach for assessing the mobility of individuals in Medieval English leprosaria (1st April 2022 - 30th March 2024).

Congratulations go to Jo Moore, who is currently on maternity leave spending time with her baby boy. Bryony Rogers, one of our PhD students, has temporally taken over as technician of the AIPRL (Archaeological Isotope and Peptide Research Laboratory) and in conjunction with Darren Gröcke's SIBL (Stable Isotope Biochemistry Laboratory) they continue multi-isotopic analyses as well as biological sex estimation using peptide analysis. Janet Montgomery is still working on the ERC-funded Foodcult Project (PI Dr Susan Flavin) https://foodcult.eu/ with Dr Alice Rose as PDRA.

Eva Fernández-Domínguez remains involved in several research projects and is Project PI on 'What´s in a house? Exploring the kinship structure of the first world´s first houses' (https://www.liverpool.ac.uk/archaeology-classics-and-egyptology/research/projects/what-house/what-house-background/) with Dr Jessica Pearson from the University of Liverpool as CO-I. The project aims to decipher biological and social relationships in different burial settings of the first farming groups of the Northern and Southern Levant

across the PPNA and PPNB (ca. 9000-7000 BCE) using ancient DNA and isotopes of mobility. This project is employing two Post-Doctoral Research Assistants: Dr Kelly Blevins, PDRA in ancient human genomics at Durham University and Dr Hannah Plug, PDRA in Bioarchaeology at Liverpool University.

In February 2022 we welcomed a new PDRA to the ancient DNA laboratory, Maïté Rivollat, who is working on the ROAM Project jointly between Durham and the University of Ghent, Belgium. Maïté is studying genetic diversity of the last Mesolithic groups in Belgium.

In addition to these research activities, the Department of Archaeology has a thriving community of MSc and PhD students. Simon Hughes has completed his dissertation entitled 'Measuring the impact of research access for human skeletal remains stored in English museum contexts'. Matthew Lee is our latest addition to the PhD group. Matt's dissertation investigates mobility and kinship in Early Medieval Northumbria using dental morphology and archaeological science.

MSc Bioarchaeology

Daphne Claisse
Stable isotope analysis at the late Iron Age site of Stanwick (NorthYorkshire)

Emily Foste
PPY23 Y-STR analysis on a subset of the Scottish Soldiers from the 2013 excavations at Palace Green, Durham

Elizabeth Scales
Establishing a subsistence baseline for the Mesolithic of Atlantic Scotland

Gracie Sharpe
Home is where the hearth is…or not? An experimental study of the application of magnetic susceptibility signatures for detecting temporary hearth use during the Mesolithic period

Han Zhao
Health and Social Status in a Medieval Population from Blackfriars, Newcastle

MSc Human Bioarchaeology and Palaeopathology

Kenzi Archer
The Backbone of Britain: A comparative study of vertebral joint disease in British medieval and post-medieval populations

Calantha Babineau
To Be or Not to Be: A Discussion and Comparison of Paleodemography through the Age and Sex Estimation of Manchester's Hanging Ditch Skeletal Sample

Melissa Bailey
Cerebral Palsy in the Archaeological Record

Olivia Boss
Microscopic linear enamel hypoplasia in the Coach Lane assemblage: Methodological considerations in seeing stress

Ellie Chipps
Care in the Age of Decapitation: A Study of Decapitation Burial at the Late Romano-British Site of Lankhills and the Importance of Non-Adults in Decapitation Studies

Dean Hanvey
Do Hips Lie? An Archaeological Review of the Purkait (2005) and Rougé-Maillart *et al*. (2009) Methods for Sex and Age Estimation of the York Fishergate House and Coach Lane Skeletal Populations

Noel Hincha
Between the Devil and the Deep Blue Sea": a Multi-Isotopic Analysis of Mobility and Health in 18th-19th century Kingston-Upon-Hull

Euan Johns
Beyond the Cutting Edge: A comparative study of imaging techniques on Romano-British decapitations

Maïa Magalhães-Filion
Waste Not, Want Not: Evaluating the potential of ribs, vertebrae, scapular, and clavicles in trauma studies

Eltje Müller-Stewart
The Archaeology of the Asylum:

Reconstructing the Archaeology and Bioarchaeology of the Nineteenth Century British County Asylum

Eloise Potter
3D Optical Profilometer: A New Tool For Analysing Peri-mortem Trauma and Post-mortem Breakage

Maggie Puchner-Hardman
Health inequities in antiquity: an investigation of malaria syndemics in ancient Rome

Sanyu Shen
Children of Hull: a stable isotope investigation of infant weaning practices in 18th-19th century Hull

Claire Spahn
Outside the Gate, Inside the House: Gender, Leprosy, Care in Later Medieval England

El Stefani
Toxic elements exposure during the British Industrial Revolution: A trace elements analysis of lead, arsenic, and mercury at Kingston upon Hull

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Keele University
Chris Aris

Introductions
The team at Keele University is delighted to make their first report in the BABAO annual review. To briefly introduce our group, we operate within the Forensic Science program, and are an interdisciplinary team with specialists in forensic, biological, and dental anthropology, and geophysics. Our team members include both academic staff members as well as masters and PhD students.

New people and research
Our first report comes with the announcement of two new lecturers starting at Keele in April 2022, Dr Amber Collings and Dr Chris Aris. Their appointment also comes with two School funded PhD studentships, both in forensic anthropology, starting in September 2023. These studentships will support ongoing research lines at Keele including inter-environmental decomposition analysis, development of dental taphonomy, analytical analysis of biogenic materials (bone, teeth), and bone diagenesis analysis for post-mortem relocation identification. Other research areas within the team include forensic chemistry, forensic entomology, forensic geoscience and geophysics, environmental and wildlife forensics, forensic odontology, and forensic pedagogy. George Goodison also joined the team in October of this year. During her PhD, George will be investigating pedagogic approaches to human remains identification in professional settings. She joins an existing post graduate team including Hannah Cross whose research is working towards developing multi-faceted methods for burnt bone identification.

New facilities
We are extremely excited to announce the development of two new labs to support anthropological research, specifically the development of 3D scanning and printing facilities, and a designated histological and microscopy laboratory for analysis of skeletal material. This will add to the existing indoor analytical facilities and outdoor DEFRA-approved taphonomy research facilities already established at Keele.

Conferences
This year we have had members presenting at the following conferences: Denver X-ray Conference (USA), KIITE Education Conference, EAFE (Spain), CSFS, and BABAO. We have also had a large number of students (UG and PG) submit abstracts to the Death to Discovery conference at Wrexham Glyndŵr University where we also have Chris Aris giving a series of workshops on advanced skeletal identification.

Current PhD student abstracts:

Hannah Cross
Burnt bone is notoriously difficult to identify as it often is heavily fragmented, commingling, and lacking sufficient biological material required for DNA analysis. There is therefore a requirement for a robust methodology which can identify bone, regardless of sample size and condition, whilst eliminating the

subjectivity associated with macroscopic examination. In the search to develop such a technique, this PhD project has explored the fundamental properties of bone and its thermal degradation process by measuring physical and chemical changes to the micro and nano-structure of bone. A series of experiments have been conducted which utilise various analytical techniques to measure bone parameters before, during, and after heating. X-ray diffraction (XRD) and Fourier-transform infrared spectroscopy (FTIR) have demonstrated success in identifying species specific characteristics, however additional variables must be considered before such techniques can reliably be incorporated. This research has explored the effects of different quantities and types of soft tissue as well as variation caused by prolonged heating durations across a range of temperatures to improve the application of such techniques. In situ experiments have also been conducted which can be utilised as a rapid and inexpensive diagnostic tool to identify the species of origin of unheated bone specimens. Changes to the micro-architecture of bone in three-dimensional space has also been investigated, with the acquired morphometric data indicating a new a successful tool to identify the species and predict the temperature bone was exposed to. This multifaceted investigation has unlocked new identification techniques whilst improving the accuracy of current methods.

George Goodison

The use of human remains as a teaching resource is not a new concept; although used throughout the centuries as an aid in the medical field, in more recent years human remains have been used for a broader subject base. The aim of this study is to determine the usefulness of human remains as a teaching material in the field of forensic science. Many institutions do not have access to real human remains and so rely on textbooks and cast material. This study will seek to determine if there is a divide in learning between students who have access to real human remains and those who do not. In order to complete this, a series of surveys will be conducted; the first targeting students currently studying at universities within the UK; the second, surveying professionals working across the UK to determine whether they had access to human remains as part of their learning and whether access, or a lack thereof, helped or hindered in their early stages of work. With the findings provided, a series of workshops with current students will be conducted to attempt further understanding as to the best methods of learning, using both real and artificial human remains. The outcomes of this will aid in the development of guidelines for a more universal pedagogical approach, designed to both standardise and optimise teaching in forensic science.

Liverpool John Moores University
Satu Valoriani

Ongoing Projects and News

After the pandemic, the university is now back to teaching face-to-face. Our Undergraduate course in Forensic Anthropology is ongoing with great success, led by Dr Alex Wilshaw, and the Human Evolution and Behaviour course, led by Dr Richard Jennings, has reached its second year. The MSc in Forensic Anthropology, led by Dr Matteo Borrini, has confirmed its trend in national and international student recruitment.

Prof Joel D. Irish is working as a project Bioarchaeologist for the analysis of the Neolithic remains from Gebel Ramlah (Egypt) in collaboration with Jacek Kabacinski (Combined Prehistoric Expedition, Polish Academy of Sciences). Prof Irish is also a Research Associate for the Rising Star (Dinaledi) Expedition for the study of Homo naledi (PI Lee Berger and the Centre for the exploration of the Deep Human Journey, University of Witwatersrand).

Dr Laura Buck is currently leading an investigation (National Science Foundation funded) in collaboration with Professor Tim Weaver (University of California, Davis, USA) to develop criteria for detecting morphological evidence of hybridisation in the fossil record and Dr Jay Stock (Western University, Canada) in the "ADaPt Project: Adaptation, dispersals and phenotype". Laura is also investigating the craniofacial

morphology of Pleistocene hominins and its relationship with sinus size and function.
Dr Mark Grabowski is worked with CAS Oslo for the just completed project "Evolvability: A New and Unifying Concept in Evolutionary Biology?" and with a group conducting fieldwork in the search for Miocene fossil apes in Creu Conill, Spain.
Dr Kyoko Yamaguchi is currently participating in a project in collaboration with the University of the Ryukyus and Kanazawa University, Japan on Genome Wide Association Study on Externally Visible Traits in Humans.
Dr David Jordan is carrying out geophysical surveys and geoarchaeological investigation for the Government of North Macedonia, the Institute for Archaeological research-Skopje and the Archaeological Museum of the Republic of Macedonia (EU COST funding), excavations in the lower Dee valley in collaboration with Chester University and Wrexham Museum and surveys with community archaeology groups in the NW of England.
Dr Satu Valoriani is working with Dr Rui Portela Martiniano (LJMU) on a project combining craniometric and aDNA analysis to understand migration in medieval Gloucester. In July 2022, Dr Valoriani organised a workshop on cranial fragments identification for the IACI 2022 conference hosted by Face Lab and LJMU.
Dr Kevin Cootes is leading the Poulton project and the excavation of the archaeological site. Since 1995, a minimum of 790 individuals were recovered from a small rural farming community (early 13th-early 17th c. AD). During the 2021-22 season, 20 skeletons were excavated. An additional small assemblage of human remains deposited within domestic refuse were recovered from Iron Age features. Genetic analysis of 21 individuals from Poulton is being conducted by the Crick Institute as part of the 'Whole Genome Study'.
The Research Centre in Evolutionary Anthropology and Palaeoecology is also hosting a series of seminars. More information can be found here: https://www.ljmu.ac.uk/research/centres-and-institutes/research-centre-in-evolutionary-anthropology-and-palaeoecology/seminars

Staff News
Dr Satu Valoriani was appointed as a permanent lecturer in Forensic Anthropology, and we would like to welcome back Dr Julie Roberts as a part-time Forensic Anthropology lecturer.

Completed MSc projects (Academic Year 2021/22)
Tabitha Brogden: A comparative investigation into osteoporosis in rural and urban medieval bones from the North and South of England encompassing age and biological sex.
Alice Brown: Development of metric long bone age estimation for juvenile remains compared existing dental eruption
Holly Jane Cooke: surface area of 3D femoral features for use in sex determination: a study on medieval remains
Claire Louise Densham: presence of osteoarthritis within a late medieval (13^{th} – 15^{th} Century) population from Poulton Chapel Graveyard.
Lucy Beth Fox: the effects of household cleaning substances on sharp force bone trauma: an investigative study using porcine ribs, x-ray imaging and scanning electron microscope technology
Georgina Georgiou: the effects of corrosive substances on porcine rib bone to aid criminal investigations
Emma Gough: a palaeopathological study of a skeletal assemblage excavated from sites 3/89 and 13/83 at Southgate Street, Gloucester
Kiri Griffiths: give 'em pumpkin to talk about: is a pumpkin burial a sufficient analogue of human decay in a grave to be useful as training aids in detecting graves?
Anne-Alicia Guignaud: the impact of natural disasters for British medieval societies, using historical and archaeological data to compare the resilience and sustainability of urban and natural environments.
Megan Hudson: Analysis of charnel pits in Poulton, Cheshire: unusual burials at a medieval chapel
Emma Jay Hutson: Extracting ancient DNA from medieval bones: a comparison of pre-extraction methods
Nadine Cashman: New approaches to craniometry: sexual dimorphism in skull

Olivia Mackay: Living the highlife: the association between geographic variation and bone measurements
Raffaella Minella: Defining holiness: the contribution of a forensic approach to ancient relics in a pioneering study on the collection from Westminster Cathedral (London, UK)
Clarissa Arlene Ochoa-Valdez: Using standard metric methods to test the reliability of leg bones for sex determination on skeletal remains from two medieval populations in England
MacKay Sara Pollard: How common accelerants differentially alter porcine remains: an in-depth look at the effects of ignitable substances on thermal morphological damage of pig rib bones.
Bethany Quinn: Exploring the effects of different types of water on DNA analysis of skeletal remains.
Stephany Mary Roberts: The comparison of Schmorl's nodes prevalence: in rural and urban populations, sex and age
Jack Robinson: An investigation into the impact of post-mortem fire upon skeletal blunt force trauma and sharp force trauma
Hollie W. Smith: Examining the reliability of Walker's non-metric method for sex determination, on British agricultural and urban medieval populations, using skull morphology and craniometrics.
Giada Sciâdi Steiger: A proposal for cut marks' classification and analysis: serrated vs non-serrated knives
Emily May Wales: Unintentional dental modifications seen on two skeletal assemblages – A study to determine if modifications were due to dietary habits or occupation
Chloe M Wright: Juvenile mortality in medieval Britain: a detailed analysis of the Poulton population

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Teeside University

Gillian Taylor

People

Professor Tim Thompson was recently elected President of the Chartered Society of Forensic Sciences. With a membership of around 3000 academics and practitioners, the Society supports both forensic archaeology and anthropology. In addition, Tim is the Chair of the QAA Subject Benchmark Statement Review for Anthropology and has been joined on the Advisory Group by a number of BABAO members.

News

We led another year of "Pint of Science" for Middlesbrough, returning to an in-person event. We had speakers discussing dark tourism and human identity, volcanology and peats, and front-facing medical advancements. Last year we achieved some of the highest online view counts; this year we achieved some of the best-selling events across the UK, which was an exceptional achievement during such difficult times.

We have also been pushing forward our 3D imaging research profile, contributing toward the international research project *Putting the Empire on its Feet*. A wide collection of Roman leather shoes from Vindolanda Museum were captured and are currently being investigated to show discreet evidence and anthropometrics of men, women and children that occupied the fort nearly 2,000 years ago.

Public lectures have included Dr Gillian Taylor speaking at Café Scientifique Stockton – Muck and Magic of soils

Current PhD Students

The application of geometric morphometric analysis to the process of weapon identification in trauma analysis

Rebecca Strong

Geometric morphometric analysis quantifies shape employing landmarks to record the morphological points, thus allowing for detection of subtle shape changes of an object. The aim of this project is to test the applicability of geometric morphometrics to the analysis of trauma sustained to the human body, in particular the skeleton within a forensic context. The primary objective is to employ geometric morphometric analysis to trauma, specifically sharp force trauma, to determine if weapon type can be identified.

Within the current literature, studies on the analysis of sharp force trauma in forensic contexts have focussed on using morphological and metrical features to differentiate and deduce a potential weapon or tool type which has likely caused an injury. Previous research, however, has demonstrated cutmarks created by the same type of weapons can produce cutmarks that are both morphologically and metrically different. Therefore, making identification of weapon type from cutmarks a subjective process. With sharp instruments continually being the leading cause of homicide in England and Wales according to government statistics, a less subjective method could improve weapon identification methods.

Diagenetic processes of skeletal remains discovered in the northern region of Pakistan

Mehwish Bashir

The aim of this research is to study the diagenesis of human bones found at different archaeological sites in Pakistan. The work is focused on studying the micro-structure of bones using X-ray fluorescence (pXRF) and Fourier-transform infrared spectroscopy (FTIR). More specifically, the diagenesis studies are being carried out for the skeleton and bones found in northern areas of Pakistan. Recently, some excavations have been carried out at Warukay Gujar-Banr Graveyard, Pakistan in collaboration with Taxila institute of Asian civilizations. The bones samples found at this site has been measured using FTIR and pXRF. The initial analysis from the data shows that the bone samples are fossil, not burned. Further analysis is being carried out to understand the bone age and diagenetic process under environmental conditions for the mountainous region of Northern Pakistan. The work will be extended to comparative study of bone diagenesis of mixed graves at Gandharan Grave Culture i.e. graves contains both burned and unburned human remains. The hydroxyapatite crystallization due heat-induced transformation and fossilization will be compared using XRD and FT-IR experimental techniques.

Biological Antropology Research Centre
University of Bradford

Jo Buckberry

The Biological Anthropology Research Centre (BARC) at the University of Bradford have had a busy year through 2022. The School of Archaeological and Forensic Sciences was awarded the Queen's Anniversary Prize (QAP) for longstanding expertise in developing archaeological technology and techniques, with a formal presentation from Prince (now King) Charles and Princess Anne at St James' Palace. We received a £3m infrastructure award from AHRC towards 'Capability for Human Bioarchaeology and Digital Collections' (CapCo) led by Andrew Wilson. Both QAP and CapCo cited our 'Digitised Diseases', open-data resource for sharing data on human skeletal remains (www.digitiseddiseases.org) that was a stimulus for this investment. Our new capabilities will enhance data capture and data sharing to further develop our aspirations to integrate our human remains collection and share them online with researchers and the public. Our upgraded facilities include investment in cross-sectional imaging, with a new computerised tomography suite with Fujifilm NewTom 7G Body Plus Cone Beam CT (first in the UK), a metrology-grade ZEISS Metrotom 1500 Micro-CT (second in a UK university) and enhanced research data storage. These coupled with new surface imaging using custom structure-from-motion photogrammetry and structured light scanning rigs for mass 3D digitisation of assemblages will allow us to advance the analysis and interpretation of our human skeletal assemblages and associated artefactual evidence and enhance opportunities for collaboration. We have also added multi-channel GPR for 3D sub-surface prospection of cemetery sites and upgraded the stable light isotope facility with a Liquid Chromatography IsoLink that adds to our Thermo Delta V Isotope Ratio Mass Spectrometer to provide compound specific isotopic analyses for reconstruction of diet, health, disease and lifeways from past populations and enhanced biobank capabilities. Analysis and characterisation have been further enhanced

by new investment in FTIR microscopy (Bruker Lumos II FTIR microscope) and 3D microscopy (AliconaSL). As you can imagine, a lot of time has been invested in procurement, estates refurbishment and installation, but our research continues.

Jo Buckberry's collaboration with Gillian Crane-Kramer, SUNY Plattsburgh on 'Palaeopathology at the Rise of Industry' collated data of over 5000 skeletons to evidence the negative impact the Industrial Revolution had on health in Britain, and our virtual special issue of the International Journal of Paleopathology is almost complete.

Julia Beaumont was awarded a British Academy / Leverhulme small grant for 'A closer examination of dietary information in permanent teeth: comparing stable isotope data from co-forming deciduous and permanent teeth where diet and medical history is known', exploring the vital first 1000 days of development, utilising the Curtis et al (2022) method. Ruth O'Donoghue and Mandi Curtis are working on their BABAO-funded research 'High temporal-resolution carbon and nitrogen dentine microsampling from two non-adults with severe cuspal enamel hypoplasia'. Hannah Koon and Shirley Curtis-Summers are continuing multiple isotope projects. We were very sad to mark the passing of Ann Manchester in February. Ann's connection lives on through the annual award of a Prize in her name and we are happy to report that Keith Manchester is busy working with a broader team of authors on the next revised edition of 'The Archaeology of Disease'.

We were delighted when MSc Human Osteology and Palaeopathology graduate, Ben Brace, joined our technical team. At the end of 2022, BSc Forensic Archaeology and Anthropology graduate Mike Offley left our technical team to pursue a life ling dream of moving to New Zealand – best of luck Mike!

Finally, our research students have been presenting at BABAO and further afield and we have welcomed many researchers from the UK are overseas into our labs, which have now re-opened for external research following the pandemic.

Completed PhD Research

Mandi Curtis: Microscopic sampling of dentine and bone collagen: Development of sampling methods for carbon and nitrogen analysis.

Ongoing PhD Research

Rebecca Cadbury Simmons: The Less Dead: Assessing the Importance of Disarticulated Human Remains' (NECAH).

Corinne Feuillatre: Bringing up Baby: in search of novel biomarkers for nutrition and obesity risk using stable isotope ratios in incremental tissues in mother/infant pairs (Faculty of Life Sciences)

Isobel Grimley: A lost world: assessing frailty from archaeological skeletal remains of children, adolescents and young adults (School of Archaeological and Forensic Sciences)

Georgia Holmes: The Northern Powerhouse. A Multidisciplinary Study of Disease in Northern English Towns in the Nineteenth Century.

Chelsea Landon: Consanguineous Marriages and Congenital Conditions in English Populations from the 8th to 19th Centuries AD (AHRC Heritage Consortium).

Dulcie Newbury: Beyond the Binary: Funerary archaeology, gendered identity, and its impact on contemporary society (Faculty of Life Sciences).

Ruth O'Donoghue (submitted): Seen but not heard: Reconstructing the early life history of the Industrial child through carbon and nitrogen stable isotope analysis of dentine collagen (AHRC Heritage Consortium).

Aoife Sutton: Pathological bodies: specimen preservation, death and display in Britain, 18-19th centuries (NECAH).

Marie Weale: The life course of Vitamin D: the risk of deficiency in British Archaeological Populations (Isle of Man Government).

Dissertations Submitted for the MSc Human Osteology and Palaeopathology:

Liz Ayrton: "We must yoke up the children to work in the factories." An investigation into child labour and skeletal trauma in London during the industrial revolution

Rhiannon Chambers: Public opinion on displaying human remains in museums.

Laura Csontos: Preservation and evaluation of the Anatomy and Pathology Resource Centre collection: Ethical and practical approaches.

Savannah Hatch: Was Venus to Blame? A Multidisciplinary Investigation of the Treatment of Women with Venereal Syphilis in Britain's Past.

Jessica Jenkins: Attitudes, Burial, Communities, Death: Investigating Inhumations and Pathological Isolation in Anglo-Saxon and Medieval Britain.

Wiktoria Klimek: Victorian faces: the effects of mouth-breathing and air pollution on the facial shape.

Anna Knudsen: The Oral Microbiota of the "Headless Romans".

Magdalena Linic: Possible new bone lesion associated with scurvy and/or age-related developmental change in sub-adults.

Charmaine Lovatt: Exploration of Isotopic Lifeways through Incremental Dentine Collagen in Irish Migrants to Montreal, Canada.

Megan McGrath: A Bioarchaeological Study of Care in Roman Britain.

Zaynab Mohungoo: A Multi-disciplinary investigation of non-adult porotic hyperostosis and cribra orbitalia in Anglo-Saxon and medieval populations.

Chloe Muscat: Cranial Morphology in Maltese Neolithic Populations.

Rebecca Nutbourne: Hidden Malignancy: The Use of Radiography to Identify Malignancy in Skeletal Collections.

Jan Prellert: Improving Archaeological Craniometrics and Trauma Analysis Using Digital 3D Reconstruction of Skulls.

Lewis Scullion: Comparison of Imaging Techniques for Optimal Documentation and Interpretation of Osteological Cases with Surviving Soft Tissue.

Elsa Seyr: Comparison of sex assessment methods for sub-adult human remains using osteological and peptide methods.

Kerry Showalter: Farmers or Fighters? A multi-disciplinary approach to Viking interactions with medieval communities in northern Britain and Ireland.

Meike Wanjek: Death, Hospitals, and Bayesian Statistics: Investigating Health using Palaeodemography.

Stef Yolov: Comparative study of non-adult human and sheep long bones: Formulating a systematic method of morphological comparison to aid in the differentiation of the two.

School of History, Classics and Archaeology
University of Edinburgh

Linda Fibiger, Jonny Geber and Sophie Newman

It has been another busy year in the School of History, Classics and Archaeology, with all teaching being fully back to an in-person format. We have also seen the return of more social events with the new MSc Human Osteoarchaeology cohort, including a group visit to the 'Anatomy: A Matter of Life and Death' exhibition at the National Museum of Scotland, and a One Health Archaeology Christmas Pub Quiz. The 'One Health Archaeology Research Group' (https://www.ed.ac.uk/history-classics-archaeology/research/research-groups/one-

health-archaeology) has continued to be successful, hosting guest speakers for both in person and online events.

Linda Fibiger recently received a University of Edinburgh Munro grant for the project 'Lambay Lives: Investigating the long-term human history of an Irish Sea island', which will involve the bioarchaeological and biomolecular analysis of a multi-period and multi-context assemblage of human remains from Lambay Island in Co. Dublin, Ireland. She also delivered a number of invited presentations, including 'Introducing Dead Images: Skulls collections, museums and the creative co-production approach' for the Paleopathology webinar 'The human body on display: Ethical considerations and museum practice' in February. In September, together with her colleague John Harris from Social Anthropology, she also presented at the 'Negotiating the Human: Justice, Ethics and Culture in Dealing with Human Remains Conference' organised by the Unesco Chair in international cultural heritage law, the Art-Law Centre, the University of Geneva and the International Cultural Property Society. Her talk focused on 'Picturing the dead: When, where and how is it acceptable to show images of human remains'.

Jonny Geber has worked on developing both archaeological and osteoarchaeological research projects. In the last year, his research has focused mainly on the Knockroe passage tomb (Co. Kilkenny, Ireland) cremated bone assemblage (c. 200kgs!), as part of the Passage Tomb People project (PI: Dr Jessica Smyth, University College Dublin) in collaboration with Professor Muiris O'Sullivan (University College Dublin). The project team have just been granted permission by the National Museum of Ireland to assess the human remains from the Fourknocks passage tomb (Co. Meath); another site of national significance in Ireland. In May, he travelled to Grenada in the Caribbean together with Dr Esther Mijers (senior lecturer in history at the University of Edinburgh) to investigate the potential for a collaborative research project with local community partners that explores Scotland's colonial legacy in the Caribbean and is now desperately trying to go back! Furthermore, he is continuing his social bioarchaeological research on late modern anatomical collections, focusing on the lived experience of structural violence and social marginalisation during the era of modernity, industrialisation, and secularism.

Sam Leggett joined the SHCA in January 2022 as a Leverhulme Early Career Fellow for her project 'ArchaeoFINS - medieval archaeology of fishing around the Irish and North Seas'. By combining multiple lines of evidence (isotopes, pottery residues, traditional archaeo-historical data) for the first time at scale (both geographically and chronologically) in Scotland and its islands, ArchaeoFINS will show the nature and speed of change in fish consumption around the Irish and North Seas. It will demonstrate the mechanisms behind these shifts, re-centring the Atlantic Archipelago in the narratives of migration and changing foodways in the Middle Ages. ArchaeoFINS will scientifically confirm debates over the Fish Event Horizon in Europe and challenge perceptions of its catalyst, which can now be achieved due to the advances in biomolecular archaeology. Alongside this she is involved in multiple collaborative projects, see https://www.ed.ac.uk/history-classics-archaeology/about-us/staff-profiles/sam-leggett.

Sophie Newman continues to collaborate with colleagues in ORCA/UHI on the Newark Project, and is still acting as Committee Secretary for the Society for the Study of Childhood in the Past (https://sscip.org.uk/). Sophie and Sam have also recently received a grant from the Munro Research Fund for a project entitled 'Life histories of health and disease: a multidisciplinary approach to assessing the impact of vitamin D deficiency on childhood and later adult health outcomes'.

Ongoing PhD research

Coskun, G.: Facial Evaluation of a Contemporary Adult Greek Population Sample: Comparison of Two Methods

De Pace, M.: An investigation of the survivability and mortality of Medieval

Mesembrians through physiological stress markers and dietary reconstruction

Girdwood, L.-K.: A Comparative Analysis of the Evolution of Oral Health Pathologies and Stable Isotope Ratio Dietary Indicators through the Historic Period in Two Contrasting Medieval Populations from Scotland, UK, and Ibiza, Spain.

Hannah Harrison: Home is where the heart is: Domestic infant burials in Ancient Egypt's Middle Kingdom (c 2055 BCE – c.1795 BCE)

Hapanova, V: Childhood diet and weaning on Belarusian lands from the Middle Ages to the Modern Times

Reeve, I.: Morbidity and mortality in relation to the environment: a comparison of British urban and rural skeletal populations

Smith, E: The influence of diet and physiological stress on stable isotope ratios

Zhang, W.: Violence and conflicts along the ancient Silk Road: A bioarchaeological research on the human remains unearthed from cemeteries in late Bronze Age to Han (1000 BC-200 AD), north-western China

Dissertations Submitted for MSc Human Osteoarchaeology programme 2021/22

Alonso, V. (2022) *Bioarchaeological profiles: Lifestyle analysis of the upper-class individuals at Whitehorn Priory.*

Bissonette, D. (2022) *Metrical Estimation of Sex from the Talus and Calcaneus for Two Mediaeval Scottish Populations.*

Chen, P. (2022) *From Childhood to Adulthood: Association Between the Early-Stages Stress and the Risk of Mortality in Medieval Scotland.*

Coleman, E. (2022) *Reassessing the Living Stature of Individuals from Early Bronze Age IA Bab adh-Dhra', Jordan via the Development of a Population-Specific Method.*

Collins, E. (2022) *The Effects of European Medieval Armour on Long Sword Inflicted Skeletal Trauma.*

Condon, A. (2022) *Osteoarchaeological Illustration: An analysis and application of illustration for human remains.*

Davidson, T. (2022) *The Relationship between Temporomandibular Disorders and Dental Pathologies in a Medieval Scottish Population.*

Dickinson, R. (2022) *The Objectification of Cranial Collections by Late Modern Archaeologists and Anatomists.*

Gentle, R. (2022) *Childhood Origins, Migration and Mobility in Early Medieval England.*

Gillin, E. (2022) *Bayesian Analysis of Human Diets in Neolithic Scandinavia.*

Maher, C. (2022) *Anthropology and Human Crania: 19th Century Theory through the Lens of a Historical Scottish Museum Collection.*

Malan, E. (2022) *Down to the Bone: Identifying Post-Mortem Treatment Prior to Cremation.*

Nicholls, V. (2022) *Sex Differences in Cervical Degenerative Joint Disease in Medieval Scotland.*

Pawar, N. (2022) *Lower Limb Asymmetry and Degenerative Spinal Pathologies: An Insight into the Presence and Nature of their Relationship.*

Pruski, K. (2022) *Dead or Alive? Observing How Burial Environment Affects Bacterial Bioerosion.*

Smithers, G. (2022) *Sign of the Times: An Investigation into the Presence of Harris Lines in Adult Skeletal Remains of Victims of the Great Irish Famine (1847-1851).*

Tosner, L. (2022) *The Visibility of the Medieval Scottish Elderly: The implications of*

skeletal ageing method application and the interpretation of past populations.

Wort, A.M. (2022) *Sex Differences in the Expression of Linear Enamel Hypoplasia Within the Eastern, Medieval Scottish Lowlands.*

Department of Archaeology
University of Sheffield
Lizzy Craig-Atkins and Nina Maaranen

We have some good news from Sheffield this year, following the confirmation that postgraduate teaching and research will continue as part of a new research centre for Archaeology (as yet unnamed!), which will be launched in 2024 at the same time as we restructure into a collaborative working arrangement with the departments of History and Biosciences. Our established masters courses, doctoral community and post-doctoral projects will continue and we are looking forward to working with new colleagues on exciting new Biological Anthropology projects in the School of Biosciences.

With the removal of COVID restrictions we were delighted to welcome visiting researchers back to Sheffield in the summer of 2022:

Dr. Lesley Harrington (University of Alberta, Canada; Twitter @laharrin) studied the Coronation Street collection as part of a collaboration with Dr. Helen Kurki (University of Victoria, Canada; Twitter @anthrokurki) to investigate skeletal developmental plasticity, funded by the Natural Sciences and Engineering Research Council (NSERC) of Canada.

Elsa Van Ankum (Twitter @AnkumElsa), a PhD student in the University of Saskatchewan's College of Medicine (Canada), visited the collections to shed light on why contemporary human wisdom teeth become impacted and if Industrialised diet contributes to this phenomenon. Her work has recently been featured in several Canadian news outlets (Saskatoon StarPheonix, CBC Radio).

Dr Heather Tamminen accessed individuals of known age and sex as part of an ongoing pilot study, involving the use of 3D digitisation, funded by an Early Career Researcher grant from Bournemouth University.

Maëlys Crabouillet, a Master's student from the Anthropology department of the University of Montreal, visited the Sheffield collections to investigate correlations between shoe rigidity and metatarsal pathologies, with further comparisons to Euro-Canadian's individuals from Quebec.

As we continue welcoming visitors to Sheffield, we would also love to hear from our previous visitors about how access to the collections have helped your research. Short written testimonials (emailed to any of us) would be appreciated to enable us to advocate for new facilities and continued support from the University for our large osteological collections.

Updates

Lizzy Craig-Atkins is looking forward to the publication of the edited book from her Material Body in Archaeology and History project which is due for publication by Manchester University Press in 2023. Work on the Torksey Project also continues with new isotope data generated over the summer and a publication forthcoming and an exciting wait to see if the project, which has been nominated for CBA Research Project of the Year, will win in 2023! Lizzy has also been focused on Roots and Futures, which explores community engaged place-based heritage in Sheffield, following the award of an AHRC grant this year.

Nina Maaranen started as the new Human Osteology Teaching Technician and collections manager in April of 2022. Her research focuses on the eastern Mediterranean and Western Asia, with recent publications regarding populations in Syria, Lebanon, Jordan and Egypt from the Chalcolithic to the Bronze Age. She's doing active field work at

the Sidon College Site in Lebanon for Dr Claude Doumet-Serhal, working on the Middle Bronze Age cemetery.

Many thanks and congratulations to the 2021-2022 cohort of Masters students, with a notable mention to the following students who graduated with Distinction: Peter Jones, Rhianna Sullivan and Matilda Jones from the Human Osteology and Funerary Archaeology program, Robyn Brennan and Sophie Firth from the Palaeoanthropology program and Stephanie Baron from the Osteoarchaeology program. During the 2022 Autumn Semester we have welcomed in the new cohort of HOFA, Osteoarchaeology, Palaeoanthropology, and Archaeological Science Masters students.

Ongoing Doctoral Research Projects

Barlow, A.: Coming of age: a biocultural investigation of reproductive practices in Industrial Britain. Ford, J.: Hyaenas and Neanderthals in the British Middle Palaeolithic.

Knox, E. L.: A multidisciplinary investigation into the social impact of foetal and mother mortality during the industrialisation of England

Lee, H.: A social bioarchaeological analysis of collective identities and personhood at Corinth, c. 1050-330 BCE.

Marino, R.: The mistreatment of children through the lens of abuse and neglect: how can bioarchaeology better approach these issues?

Meza Escobar, O.: The Cementerio General de Santiago skeletal collection: lifeways and health experience of the population of Santiago de Chile ca. 1850-1970.

Oleman-Grace, K.: Homo erectus life history: revisiting regressions in the light of recently recovered smaller-brained individuals.

Waller-Cotterhill, C.: One foot in the grave: an experimental examination of the effectiveness and development of the Anglesey Leg and an analysis of prostheses during the long Nineteenth Century.

Watkin, T.: A comparative three dimensional geometric morphometric analysis of the fourth and fifth carpometacarpal joints in humans, primates and fossil hominins, and its application in hominin early stone tool use.

Wigley, B: A bioarchaeological examination of the impact of early-life stress on later health outcomes using procrustean assessments of dental fluctuating asymmetry.

Conferences and events

Nina Maaranen organised an EAA session with her colleague Dr Arwa Kharobi (Masaryk University) titled "Bioanthropology in Western Asia: Moving forward", held in honour of Prof Holger Schutkowski who passed away in 2020. We would like to thank all our speakers; Dr Berenice Chamel, Prof Christopher Knüsel, Prof Arkadiusz Sołtysiak, Dr Tina Saupe, Prof Sonia Zakrzewski, Dr Christina Stantis, Dr Mahmoud Mardini, Motahareh Amjadi, Dr Caroline Laforest and Prof Megan Perry. Sam Purchase gave three talks this year:

Purchase, Samantha, Lizzy Craig-Atkins, and Jaydip Ray. 2022. *X-rays & Lifeways: A non-destructive method to study mastoiditis*. 23rd Paleopathology Association European Meeting.

Purchase, Samantha, Lizzy Craig-Atkins, and Jaydip Ray. 2022. *Telltale Breaths: Respiratory-related health in the late Anglo-Saxon/Saxo-Norman and Industrial North-East of England*. January Meeting of the Saskatoon Archaeological Society.

Online Activities

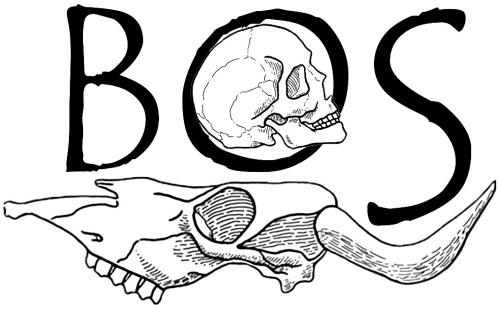
You can find regular updates regarding research projects and upcoming events via personal and project pages on our departmental website. The Department of Archaeology is also active on Facebook (https://www.facebook.com/ArchaeologyShefield), Twitter (Shef Archaeology @UniShefArch), and YouTube

(Archaeology Sheffield). Lizzy Craig-Atkins is on Twitter at @ecraigatkins, Sam Purchase is on Twitter at @ SamanthaPurcha1, and Nina Maaranen is on Twitter at @nmaaranen.

Bioarchaeology & Osteoarchaeology

University of Southampton (BOS)

Sonia Zakrzewski



2022 was another *interesting* year with teaching through the immediate "post-pandemic" period. Through the use of hybrid methods, we managed to maintain all our teaching, even if we sometimes had to bring back social distancing to ensure that it could take place.

Prof **Alistair Pike** has been continuing his isotopic studies, including analysis of the effects of hair products! Quite a change from Pleistocene dating! Prof **Joanna Sofaer** has been developing projects that look at the role of heritage and the historic environment in wellbeing. Dr **Jaco Weinstock** has been continuing his analysis of the fauna from Amara West, and has also been looking at faunal colonisation and management through ancient DNA analyses. Prof **Sonia Zakrzewski** gave a keynote talk at a conference celebrating 1000 years of Solomon Ibn Gabirol in Jerusalem – but sadly only to present virtually! She also joined the advisory board of the Natürhistorisches Museum in Vienna, and is looking forward to future visits there.

Dr **Sarah Stark**, having taught for a year at UCL's Institute of Archaeology on their MSc in Bioarchaeological and Forensic Anthropology, started working at Historic England. This enabled us to start developing our links with Historic England (as we already have with Dr **Simon Mays**). It was wonderful to take our Masters students there as, since COVID, we have been unable to get back into the dissection lab at the hospital. There has also been some change in the staffing at the **Centre for Learning Anatomical Sciences**, with Dr **Skantha Kandiah** as the new head, and we are hoping to get back to taking our students in soon.

Bioengineering continues to go from strength to strength. As well as their work on prosthetics, Dr **Alex Dickinson,** and Prof **Martin Browne** were part of the Bioengineering and Computed Tomography team that has been looking at reconstructing fingerprints from high resolution CT data.

Our fourth cohort of MSc Archaeology students has now graduated. Some of these followed a wide curriculum, whereas others followed a Bioarchaeology pathway. Those following the latter pathway were required to take compulsory modules in the Bioarchaeology of Human Remains and the Analysis of Archaeological Faunal Remains, together with optional modules in palaeopathology, themes in osteoarchaeology and molecular archaeology.

Current Research Students

Steph Evelyn-Wright and **Emily Mitchell**, having completed their PhDs in 2021, were finally able to graduate in 2022. Steph Evelyn-Wright studied attitudes to and recognition of disability in Roman burials at Alington Avenue in Dorset, using fictive narrative ('*faction*') as a method of communication. Emily Mitchell undertook a holistic study of the healing and treatment of trauma on board the Mary Rose, integrating analysis of the medical treatise with the medical chest contents found on board and bioarchaeological

analysis of the 'fairly complete' skeletons recovered.

Jessica Coughtrey, co-supervised by Sonia Zakrzewski with Dr Iwona Kozieradzka-Ogunmakin (University of Exeter), funded by AHRC SWW, started her doctoral research looking at activity patterning and long bone morphology in ancient Egyptian populations.

Continuing Doctoral Student Research Topics:

Elizabeth Aubin – Variation in Roman and Anglo-Saxon cremation mechanisms

Ferenc Toth – Gender and violence in Alba Iulia (distance student)

Kaylea-Ann Raczkowski Wood – Neanderthal mobility and locomotion: a finite element analysis

Emma van der Velden – Real Roman Britain: a skeletal and isotopic analysis of rural and urban populations in the south

Dissertations Approved for the MSc Archaeology (Bioarchaeology) 2021-2022

Emily Globe − Investigating Heterogenous Causes of Frailty in the Anglo-Saxon Cemetery at Great Chesterford using the Developmental Origins for Health and Disease Hypothesis.

Roisin Mackie − Overlooked but on Display: Disability and Human Remains in Museums.

Ann-Kathrin Schmidt − Age differentiation in the Anglo-Saxon Mortuary Rites at Great Chesterford.

Megan Speechley − An investigation into the diet of the late-medieval friars and laypeople buried at Southampton Franciscan Friary.

Ying Sui − Analyse whether domestication syndrome exists. To what extent can we say that there are common domestication syndrome traits among domesticated species?

Anna Vékony − An Investigation into the Relationship Between Dental Pathology and Bone Lesions Attributed to Chronic Maxillary Sinusitis at Wharram Percy, North Yorkshire.

Dissertations approved for other Archaeology Masters degrees that were linked with bioarchaeology, zooarchaeology and/or palaeopathology

Holly Baker − A Conceptual Approach in the prediction of Seasonal Birthing in the Middle and Upper Palaeolithic within the genus Homo: an Energetic and Climatic perspective (MSc Archaeology - Palaeoanthropology)

Lucia Perry − What Can Upper Palaeolithic Burials Tell Us About Identity and How It Was Created, Recreated and Perceived in Upper Palaeolithic Society? (MSc Archaeology)

Thea Zijlstra − Fishing for Answers: An Analysis of the Mid-Saxon Fish Remains from Burrow Hill, Suffolk (MSc Maritime Archaeology)

In addition, some students delayed their dissertation submission for COVID and health reasons.

School of History Archaeology
University of Winchester
Heidi Dawson-Hobbis

Departmental report

In September 2022 a new School of History and Archaeology was created which incorporates all programmes in History, Classics, Archaeology and Anthropology.

Prof Tony King has participated in an international project to set up a Roman-period faunal remains database, hosted at the Max Planck Institute, Jena, Germany and curated by staff at Masaryk University, Czech Republic. A project description and case study covering Roman Italy has been published in Journal of Archaeological Science: Reports, vol. 47, 2023. His work on faunal remains from the Roman temple site at Hayling Island, Hampshire, UK, has recently concentrated on the interpretation of the admixed human remains in the faunal depositional material. An initial consideration of this has been published in a volume on Religious Individualisation (Oxbow Books, 2023). Interpretation of the Hayling Island faunal remains in terms of 'sacred flocks and herds' has also been a focus

of research, published in a volume on The Economy of Roman Religion (OUP, 2023).
On a May evening Dr Monika Knul shared her skills in zooarchaeology with the Andover Trees United Youth Team, a Jane Goodall Institute's Roots & Shoots affiliated group as they set out to discover Harmony Woods by night as part of their John Muir Discovery awards. Monika provided a microscope, a bag of Barn Owl pellets, tweezers and identification guides, one for each of the youth team. She taught the team how to analyse the owl pellets and to identify the small bones and teeth and to determine which species of small mammal they had belonged to. The participants found this a truly fascinating workshop.
Prof Niall Finneran was part of an EU funded project led by Dr Jen Dickinson which focused on studying youth entrepreneurship and heritage tourism among Barbadian, Brazilian and Rwandan Diaspora communities in Europe. One aspect focused on the social memory among younger Rwandans of the 1994 genocide. The genocide museum in Kigali in Rwanda makes use of human clothing and human remains in trying to convey the horror of these events, and the site also acts as a repository for human remains of victims of the genocide. Death, and by extension human physical remains, are very much at the centre of this heritage experience. Their work with younger Rwandans in the European diaspora has tried to understand how this form of problematic heritage fits in with their view of what the heritage of Rwanda is, and above all how younger entrepreneurs can make sense of this dark heritage to create respectful and meaningful tourist pilgrimages aimed at getting the diaspora to engage with the events of 1994.
Sadly, this year saw the final group of graduates in the MSc Human Osteology and Funerary Studies. However, research continues in the department with a new lab group for students both past and present being formed this year by Dr Heidi Dawson-Hobbis, and projects included documenting disarticulated human remains and animal bones retrieved from an area excavated for the lift shaft at Winchester Cathedral.

Dissertations approved for the MSc Human Osteology and Funerary Studies (graduating 2022)

William Garrard – The Treatment of the Corpse in Iron Age South-Central Britain: an analysis of the archaeological sources regarding articulated and partially articulated human remains.
Susan Gross – Fit for Work? Evidence of habitual physical labour among leprotic residents of the St Mary Magdalen Leprosarium, Winchester in the eleventh and twelfth centuries AD.
Bethany Pennycard – Liminal Locations: what are they and how have they been used and associated with burial practices in the UK and Ireland during the Bronze and Iron age?

POSTGRADUATE RESEARCH ABSTRACTS

The Archaeology of Hidden Identity: The Case of a Female Burial from Lowbury Hill

Summer Courts
Cranfield University

PhD Abstract (ongoing)
PhD research seeks to provide the first holistic assessment of an important rural Roman and Early Medieval site at Lowbury Hill, Oxfordshire. It re-evaluates the site and its significance through time by re-examining the material culture evidence and the two Early Medieval burials found there. A comprehensive osteological analysis will be supplemented with archival research into documents related to previous excavations of Lowbury Hill and a reanalysis of the small finds recovered. The landscape archaeology of the site, in the context of the surrounding countryside, will also be explored. The research aims to answer key questions about the hitherto understudied female burial and challenge previous citations of this individual being an example of human sacrifice and ritual violence. It will also review current interpretations of the site being that of a

Roman temple. Macroscopic and radiographic osteological investigations have been undertaken at Cranfield Forensic Institute. Stable isotope analysis and radiocarbon dating will be obtained in collaboration with Scottish Universities Environmental Research Centre (SUERC) and aDNA analysis will be undertaken in collaboration with Dr Stephan Schiffels at the Max Planck Institute for Evolutionary Anthropology. The research will shed light on the hidden identity of the female burial, add nuance to our understanding of the male burial, and improve our understanding of how Lowbury Hill was used by past communities, and why they felt it was an appropriate place to bury their dead.

Supervisors:
Prof. Amy Smith (University of Reading), Dr Sophie Beckett (Cranfield University) and Angie Bolton (Oxfordshire Museums Service)
Funding: AHRC SWW DTP Collaborative Doctoral Award

A Voice for the Voiceless? Bioarchaeology in Popular Culture

Ellie Chambers
University of Chester

PhD Abstract (ongoing)
The relationship between archaeology and the mainstream news media is a complex one, and something that demands further attention. In recent years we have seen an increase in biomolecular studies creating grand narratives, particularly with reference to ideas around migration and race which feed into modern political discussions. Such studies are presented to the public through the mainstream media and subsequent discussions through the social web, reaching a much larger audience than other forms of public archaeology are able to. However, stories are often sensationalised, misappropriated for political use, or simply communicated incorrectly, causing large discrepancies in both public understanding of heritage, as well as in bioarchaeological evidence and processes. My thesis aims to explore this phenomenon, particularly to identify where in the process of taking a piece of research from conception to wide-scale public reception interpretations become racialised, sensationalised, and politicised. Combining public archaeology, bioarchaeology, a review of archaeology's relationship with race (past and present), and media studies, this thesis takes an interdisciplinary approach to understand the nuances of the relationship between bioarchaeology and the news media. It will also contribute a significant dataset of bioarchaeological studies in the news to further understanding of the sorts of studies that are published and the narratives that are built around them. Digital platforms are constantly evolving, as are news outlets' intentions and political positions. Therefore, this research is designed to identify current issues and suggest improvements going forward, however it cannot be seen to be 'a solution', but one element of an ongoing process of learning and adapting to a changing society.

Supervisors:
Professor Howard Williams, Dr Amy Gray Jones

Quantification of osseous alterations of the medial epicondyle of the humerus: methodological and bioarchaeological research

Elle Liagre
Bordeaux University

PhD Abstract (ongoing)
The medial epicondyle of the humerus is a particularly important anatomical area for identifying activities practiced during the lifetime of individuals/groups (Dutour 1992, Dutour 2000, Villotte et al. 2010) and the sexual division of labour in the past. A number of recent studies demonstrate a significant frequency of changes observed unilaterally, preferentially in males (Villotte et al. 2010, Knüsel 2011, Villotte and Knüsel 2014, Varalli et al. 2020). These changes, based on comparison with clinical medical studies (e.g. Patel et al. 2014), are probably associated with the throwing motion: the throwing of objects (by hand or by use of throwing boards, for example), but also in other activities such as

the use of axes or in stone tool manufacture (Knüsel 1992, Villotte and Knüsel 2014, Polet et al. 2019). However, the qualitative recording of changes in the medial epicondyle - and more particularly in the area of the insertion of the medial collateral ligament - remains particularly subjective. This prevents systematic comparisons on a large scale. This thesis, based on published articles, has three objectives: The first is to define a method to quantify the surface irregularities of the medial epicondyle of the humerus, in particular using imaging (surface scanning). The second is to apply this method to a set of European collections of Anatomically Modern Humans from different periods to specify the lateralization, frequency and extent of modifications according to sex, age-at-death, environmental conditions, and socio-economic contexts. The third objective is to test this method on Neanderthal remains in order to investigate possible sexual division of labour in these past human groups.

Supervisors: Professor Christopher J. KNÜSEL (Bordeaux University) and Dr. Sébastien VILLOTTE (CNRS)

CONFERENCE REPORTS AND REVIEWS

Nothing submitted

FORTHCOMING CONFERENCES, COURSES AND WORKSHOPS

We are pleased to announce that **BABAO's 24th Annual Conference** in September 2022 will be hosted by University College of London.

More information to follow.

The 7th Sudan Studies Research Conference
(Hybrid) will be held on the 4th & 5th May at the University of Naples L'Orientale, Italy. Call for papers has been extended to the 21st February, please send to admin@sudan-conference.com. Registration will open on March 1st 2023. For more information contact Dr Samantha Tipper on Samantha.Tipper@aru.ac.uk or follow #DUSESG on Twitter for updates.

Short course: Human osteology
will be held at Anglia Ruskin University in Cambridge. The short courses are aimed at students, professionals working in heritage, archaeology and forensic sectors as well as anyone with an interest in human osteology. The course will cover topics such as excavation and recording techniques, the human skeleton, estimation of biological sex and age at death and will be delivered through lectures and hands on practicals. The course is delivered by Dr Samantha Tipper, Senior Lecturer at Anglia Ruskin University and Dr Charlotte Primeau Associate professor at the University of Warwick. For more information contact Samantha. Tipper@aru.ac.uk or visit store.anglia.ac.uk to reserve your spot.

Distance Education in Wildlife Forensic Sciences & Conservation
University of Florida
https://masters.wildlife.forensics.med.ufl.edu/about/faculty/john-cooper-dtvm-frcpath-frsb-cbiol-frcvs-and-margaret-cooper-llbfls

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MEMBERS' PUBLICATIONS 2022

Allen, M.G., Howsam, C. and Lawrence, C. Farming in the Vales: Middle Bronze Age Farming and a Late Iron Age/Romano-British Settlement at Grove Airfield, *Oxoniensia* 87, 195-248.

Allen, M.G., Davies, A. and Thacker, G. Between Hill and Valley: Iron Age, Romano-British and Anglo-Saxon Settlement and Farming Activity at Crab Hill, near Wantage, *Oxoniensia* 87, 249-324.

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