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**BRITISH ASSOCIATION FOR BIOLOGICAL
ANTHROPOLOGY AND OSTEOARCHAEOLOGY
ANNUAL REVIEW**

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WELCOME TO THE BABAO ANNUAL REVIEW FOR 2008

Once again this year's annual review is full of exciting and varied contributions, reflecting the wide range of research undertaken by members. The reports on excavation and analysis of human remains show how much archaeology was undertaken in 2008, although one suspects the amount of excavation and analysis reported on next year will be much reduced, following the economic downturn. Hopefully something positive will come out of the gloom, with many post-excavation projects currently getting some well-deserved attention and some long-awaited site reports being published.

This year I had to slightly change the criteria for submissions, as (due to the wonderful amount of work we are all undertaking) the Review was getting rather lengthy. Hopefully by asking all Units and Departments to keep their summaries to two pages, the Review will continue to be informative, yet still cost-effective.

In 2009 the annual conference returns to Bradford, and I look forward to seeing you all here in September.

Happy Reading,
Jo

ASSOCIATION NEWS

BABAO Chair's Report 2008

By Holger Schutkowski

BABAO is thriving! We have grown year on year and are now an association, which is 380 strong. I hasten to say that credit goes to all of you, the members, who keep BABAO alive through active participation in our scholarly activities and lively contributions to the BABAO email list or the Contact BABAO facility. It is

heartening to see so much active engagement.

BABAO has widened its service to the membership and the public. The website has a FAQ section now, which is frequently used by those who seek advice on matters related to human remains. We agreed on a Code of Ethics and discussions are in full swing whether this needs to be accompanied by a policy document on best practice.

Representations were made to ebay to denounce the continued practice of selling human remains in breach of their own regulations. We have set up a monitoring system to detect and report similar cases on a regular basis so that they can be removed, and we hope that this will discourage sellers from offering such incriminated items in future.

BABAO has played an active role in the discussions about the Burial Law reform and has, in conjunction with other stakeholders, been able to push for a solution that allows as little bureaucratic intervention and as much opportunity for scientific study of human remains as possible. BABAO continues to offer advice to museums and other institutions with holdings of skeletal remains over issues of reburial and retention and we have made our views very clear on various occasions, for example at Symposia of the Higher Education Academy, in articles published in popular media or through interviews. Most recently we contributed to the consultation over human remains from Avebury. All these representations can be found on our website.

The 2008 conference was held in Oxford and marked the 10th anniversary of the Association. Superbly organised by Louise Loe and her team and staged in most appealing surroundings it was a great success and yet another testimony to the rewardingly high standard of our scientific

and professional activities. This year, we were again able to issue Small Grant awards in support of ongoing research, even though sadly only in the academic category. The winners of the 2008 competition are Mercedes Okumura (Cambridge) and Sara Inskip (Southampton). Many congratulations!

For a number of years now it has been my great pleasure to thank the managing committee for their sterling work and the support they give to the Association. This time my sincere thanks go to Sonia Zakrzewski and Jane Hughes as outgoing members for their excellent and most valuable contributions as Secretary and non-executive members. I welcome Piers Mitchell and Mary Lewis as new members and I am grateful that they accepted their nominations. 2008/09 also marks my last year as chair of BABAO. I would like to thank everyone who I had the privilege to work with over the last years for the collegiate atmosphere and good spirit of our meetings and for the encouraging support from the membership.

With all good wishes for a successful year!
Holger Schutkowski

Report from the Membership Secretary *by Tina Jakob*

The positive trend is continuing and 2008 saw a further increase in our membership, which now stands at 351 active members (compared to 282 in 2007). Again, high numbers of membership renewals are responsible for this, since renewing your membership is now even easier with online credit card payments being possible for the first time.

Student member numbers are strong and now comprise almost 40% of our membership; a slight increase from last year (39.0%). The majority of our members work in academia as lecturers

and researchers, in contract archaeology and museums. A more detailed breakdown of our background can be obtained from the table below (members can be in more than one category). In the category of Other Occupations diverse professions such as administrator, amateur archaeologist, communications officer, medical artist, receptionist and conservator are included. Our association thrives on this broad range of occupations and affiliations and this provides us with a dynamic and interesting membership.

MEMBERSHIP CATEGORIES IN %	
Students	139 (39.6)
Academics	47 (13.4)
Work in Unit	35 (10.0)
Anthropologist/archaeologist	23 (6.6)
Osteologist	21 (6.0)
Researchers	19 (5.4)
Unemployed	17 (4.8)
Work in Museums	11 (3.1)
Medical	10 (2.8)
Forensic specialists	9 (2.6)
Retired	6 (1.7)
No information supplied	15 (4.2)
Other occupations	13 (3.7)

We recruited 95 new members during 2008 (75 in 2007) and already have 22 new members joining us this year (19 last year). Overseas subscriptions increased substantially from 36 to 54, representing 15% of the membership. Our overseas members mainly come from other European countries (n=30), including the Republic of Ireland, Greece, Sweden, Finland, Italy, Germany, Denmark, Norway, Hungary, Portugal and the Netherlands. We also have nine members from the United States, six from Canada and one from Trinidad and Tobago, as well as four from Australia, three from New Zealand and one member from Japan.

One quarter of you (n=91) have chosen to pay their subscription fee by standing order and this percentage has slightly decreased from the previous year due to

the availability of online payments, and I can only encourage you to choose this paper-free method of paying your subscription.

Please do not hesitate to contact me if there are any questions regarding BABAO membership; either at the address inside the front cover of the Annual Review, directly at betina.jakob@dur.ac.uk, or through our website at www.babao.org.uk.

Report from the Student Representative

By Kirsty McCarrison

There are currently in excess of 90 students signed up to the *BABAO Student Members* Facebook group created in 2008 and a handful of students who have chosen to receive email updates instead. Discussions have included the sale of human remains, information requests, comments on a variety of exhibitions held throughout the country and importantly, opinions on a certain archaeological 'drama' aired last year! The group page is updated with relevant news stories, links to radio and TV shows that may be of interest and of course, upcoming conferences. Also included are a few photographs from members' archaeological and osteological activities; more are always welcome.

If you haven't yet joined and would like to be part of the group please search for the group (*BABAO Student Members*). If you don't wish to join but would like to be kept up to date with things then please email me at k.e.mccarrison@dur.ac.uk and I will add you to the email group.

Thanks to all those who have so far contributed to the group.

Keep working hard!

Kirsty

Call for Nominations

BABAO Managing Committee

By the next AGM in September 2009, the following posts will be available:

POST	PRESENT MEMBER
Chairman	Holger Schutkowski
Representative from a professional organisation	Simon Mays

The initial term of office will be for three years. All nominations must be proposed and seconded and contain a person statement of maximum 100 words by the Nominee. Nominees, proposers and seconders must be BABAO members. Please send nominations to Piers Mitchell (email: p.mitchell@clara.co.uk) by Friday 17th July. A list of nominations will be sent out to members with the Agenda for the Annual Meeting.

PEOPLE

Christopher Knüsel is now Associate Professor in Bioarchaeology at the University of Exeter.

Sarah Matthews has joined the osteology team at MOL Archaeology as Senior Osteological Processor.

Carina Phillips and Milly Farrell were appointed as Wellcome Museum Project Co-ordinator and Assistant Curator to the Odontological Collection (respectively) at the Hunterian Museum at the Royal College of Surgeons.

Dr Rebecca Redfern has joined the team at the Museum of London Centre for Human Bioarchaeology.

Duncan Sayer is an associate/part-time lecturer at the Centre for Death and Society, School of Social and Policy Science, the University of Bath.

NEWS AND PROJECT UPDATES

Global History of Health (UK contributions)

The Global History of Health Project (<http://global.sbs.ohio-state.edu/>), headed by Rick Steckel (Ohio State University, Columbus), with Phil Walker (University of California, Santa Barbara) and Clark Larsen (Ohio State University, Columbus) continues to progress well. In January 2008, the 4th Progress Meeting was held in Douai in France. The aim of this phase of the overall project ('European module') is to document health and wellbeing of people from prehistory to the early modern period in Europe using a standard web based recording system. See the BABAO review for 2008 for previous update.

In Douai, Phil Walker presented an initial analysis of the data extant in the database. Analysis concerns nearly 11,000 skeletons from mainly the medieval period from 22 countries. The first analysis was in preparation for the poster symposium on the project to be held at the American Association of Physical Anthropology meeting in Chicago in March/April 2009.

Charlotte Roberts would like to again thank all the BABAO community for considering contributing to the Project and particularly thank those who eventually did offer data, and also those people who have and are inputting the data for the project. This is a hugely ambitious project but one that should provide us with quite a large window on health in Europe over time.

The Creation Museum, Kentucky: a review from Britain

By Simon Mays

The Creation Museum in Kentucky, USA, exists to promote Young Earth Creationism (YEC). This is a literal interpretation of the Biblical Book of Genesis which holds that the earth was created in 6 days. YECs claim that Creation happened about 6000 years ago, basing this on a chronology calculated from genealogies in the Bible in the mid 17th Century by James Ussher, Archbishop of Armagh. The Creation Museum opened in May 2007. Its location in northern Kentucky was apparently chosen because it is within a day's drive for nearly 70% of America's population. The money to build it was raised from private donors by the ministry *Answers in Genesis*, founded by the Australian Christian Fundamentalist, Ken Ham. The museum covers 60,000 square feet and mainly comprises a series of tableaux featuring models of animals and humans (many of which are animatronic), video installations and conventional signage

I was in the US for the American Association of Physical Anthropologists (AAPA) meeting in Columbus last Spring, and I took time out to visit this museum. The first thing I noticed when I arrived was a phalanx of burly security men and their alsatians. This was by far the biggest security presence I have ever seen outside a museum, and it seemed doubly incongruous given the museum's bucolic location. What were they worried about – extremist elements from the AAPA? The second surprise was the admission fee, which at \$21 was shockingly high by US standards. I was troubled that so much my meagre public-sector salary should go into the coffers of Ken Ham and his acolytes, but in the interests of fact finding I paid up.

The first of the exhibits is a reconstructed dinosaur dig. This was used to illustrate scientific versus Biblical interpretations of fossil evidence. The scientific point of view said that the animal died and his body was quickly covered by water-born sediments, resulting in eventual fossilisation. The Biblical scholar agreed with this in essence, but was able to identify the likely source of the water-born sediments as the Great Flood of Noah. The implication was clear – the scientist failed to realise the full significance of the find as he did not have the benefit of the Bible to guide his thoughts. Succeeding exhibits developed this theme, considering aspects such as the age of the earth, and the variety and complexity of the flora and fauna, and contrasted explanations based on the Bible with those based on generally garbled or simplistic versions of science. Because of the inadequate way in which the scientific versions were presented, the Biblical explanations came across as the more coherent. In echoes of the sort of arguments one often hears from post-modernist academics, the signage repeatedly emphasised that the scientific view of the natural world is merely one interpretation of the facts, with no claim to supremacy over other views.

The next set of rooms explored the social consequences of a belief in evolution rather than divine creation. The displays said that there has been a progressive denigration of the Bible and erosion of its authority. In the USA, the rot set in with the 1925 Scopes monkey trial and things generally went downhill from there. To demonstrate where this sort of thing inexorably leads, one travels down a graffiti-smearred passage to an exhibit with videos showing teenagers discussing drugs, pornography and abortion. It was here that I noticed, with a swell of patriotic pride, that the UK had a mention, in the form of a Bishop predicting that Christianity here would be extinct by 2050 at present rates of decline. Later exhibits

carry these themes even further. Fascism, genocide and racism are laid at science's door as examples of what can happen in societies which accept evolution and lose the moral compass provided by Christianity.

The next exhibit explored the wonders of creation. This is one of the best presented areas of the museum with a light and airy room and some excellent video installations. If only the sophistication of the arguments matched that of the technology. Instead we get well-worn stuff, such as the complexity of living creatures is too great to have arisen by natural processes unguided by a creator ('the human eye is more complex than the most sophisticated camera', etc); the earth is so perfectly suited for life it must have been designed for it; and the genetic code of DNA is in effect a language, and languages are only created by sentient beings.

I then passed tableaux depicting Adam and Eve, Cain and Abel, and Noah and his Ark. This last is the most extensive section of the museum, with a large and really rather impressive "reconstruction" of part of the Ark, together with speculations as to its engineering features. Some of these are absurdly detailed, such as extended discussion about where on the Ark Noah might best have situated the door (the narrator was commendably open-minded on the matter). There were also some attempts to answer obvious objections (Q: How did they fit dinosaurs onto the Ark? A: They only took baby dinosaurs to save room). The Museum also struggled gamely to explain in reasoned terms where all the water came from to cover the entire earth's surface during the Great Flood and how it quickly receded again to re-expose the land.

Given that they believe in a 6000 year old creation, YECs have the unenviable self-imposed task of explaining how major

surface and subsurface geological features formed over such a short timescale. In response they try to blame most things on the Great Flood and other catastrophes such as volcanic eruptions. Sometimes though, their explanations are rather more bizarre and entertaining (eg coal deposits were formed by debris from ante-diluvian 'floating forests' which beached after Noah's Flood). Inconvenient dating evidence, such as dinosaur bones coming from earlier strata than human remains, is dismissed with the comment that stratigraphy is not to be trusted as burrowing animals soon mix up layers. We are also reminded that scientific dating (eg C14) is fallible whereas the Bible is not.

Towards the end of the exhibits, there are quite a few mounted casts of dinosaur skeletons. Anatomically, these (to my admittedly untrained eye) looked OK, as did their assignments to geological periods. However, as might be expected, the absolute dating was somewhat eccentric, for example the Cretaceous period was given a date of 2348BC. As YECs believe all species that ever lived were created at the same time, we are told that humans and dinosaurs co-existed, and indeed human hunting may have contributed to their demise. Strangely, given the ethos of the museum, there was also a section on the *evolution* of the horse, albeit in double-quick time to cram it into the YEC chronology, and starting from an ancestor taken on the Ark.

Back in the lobby is an area where those with no shame one can obtain a souvenir photograph of their visit. Declining this opportunity, I headed straight for the exit. Passing one of the guard dogs, which growled at me (Can they train those things to sniff out anthropologists?), I made my way out to the 'Paradise Garden'. This is an area of landscaping featuring yet more plastic models of people and animals. When I visited, the landscapers and earth-

moving equipment were much in evidence, so paradise was clearly still a work in progress.

Who, besides a curious British scientist, visits such a museum? Even on a cold, wet weekday morning in April it was well-attended (vehicles for at least 100 people were parked in the car park). However, the queues in the foyer were at the desks for members and organised tour groups. There seemed to be few casual visitors. Perhaps the main function of the Museum is to reassure believers rather than convert sceptics. There were quite a few church parties, and the names on the buses in the car park seemed to suggest the place was particularly appealing to the various Baptist denominations. Some of the Church group visitors wore traditional dress. All ages were present, including families with children. Despite the proximity of Cincinnati, with its large African-American population, all visitors were White. From overheard conversations, most seemed middle class and well-educated. The only visitor comment I heard concerning the content of the museum was a woman complaining that scientific views were given undue prominence.

The museum is said to have cost \$27million. I can well believe it - it certainly has an no-expense-spared, well-constructed feel to it. The exhibits, particularly the video installations, are slickly presented, although many of the tableaux and the animatronic Biblical characters are rather cheesy. Unless you count a Bible that belonged to Ken Ham's parents, there are no genuine artefacts, so clearly no scholars are going to visit to conduct research. It's debatable therefore whether it can truly be called a museum. In feel, it is more like a theme park.

In the mid 19th century, many churchmen who opposed the idea of evolution by natural selection feared a loss of the

Church's role in social control. If the teachings of the Church on the origins of life could be successfully challenged, where did that leave the Church's authority on matters of morality and social order? This fear is clearly shared, 150 years on, by those responsible for the Creation Museum. However, most Christian denominations have by now come to terms with modern biology and geology, and are sufficiently sophisticated that they do not to see the scientific overturning of a literal interpretation of the Book of Genesis as a threat to Christian theology. One can understand the social concerns of groups like *Answers in Genesis*, but the sort of retreat from reality that the Creation Museum represents is hardly likely to provide solutions to the complex problems that beset society today. The museum represents a rather desperate attempt to twist reality into supporting a position that was starting to feel outmoded even 150 years ago.

The positions taken and the arguments presented in the Creation Museum are utterly laughable for anyone with any iota of scientific knowledge. So how much should the existence of such an institution concern us? The problems posed to science teaching in the USA by Creationism, often in its pseudoscientific guise of Intelligent Design, are well known, but should we in Britain worry about fringe groups trying to resurrect arguments that, for most of us, were settled in the 19th century? In Britain, Biblical creationists are a tiny minority and do not have the political clout they have in the USA. Over here, anti-science feeling tends to find an outlet, not in Creationism, but in 'New Age' beliefs, such as Alternative Medicine and some forms of Neo-Paganism. As we know from recent interventions by some Neo-Pagan groups in reburial debates in Britain, those who seek to provide intellectual support for these sorts of beliefs when they come into conflict with science often invoke the

relativist position that there is nothing special about science and that other belief systems are just as valid. There are strong parallels here with the arguments put forward in the Creation Museum, and the relative success of Creationists in advancing an anti-science agenda in the USA sets a disturbing precedent. We should remember that public opinion may tend to gravitate toward a position, initially viewed as extreme, if those promoting that position are allowed to do so unopposed. Mindful of this, our US colleagues have been energetic in opposing the anti-science views of Christian fundamentalists. We as scientists should be ready to debate with those who hold anti-science views, whether based on Creationism, 'New Age' or other agendas, and we must exploit opportunities to promote science, and human osteology in particular, as they arise.

Ethics and Human Remains: The Case For a Code of Practice

Dr Judi Sture

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At the annual conference in September 2008 I presented a paper showing how an ethics Code of Practice could support our work with human remains. I recognise that this is an issue that concerns many colleagues, with overtones of regulated practice. One of the principal reasons behind my paper was an attempt to allay such fears.

What we say and what we do There are two things I have recognised very clearly over the last few years when developing ethical approval policies and processes, and training researchers in ethics. One is that we are judged on what *we do* rather than on what *we say*. The other is that if we don't take care to protect ourselves and those who are associated with what we are doing, legal implications can loom very

large. But *how* do we protect ourselves? How can our statement of ethical beliefs help us out there in practice in the “real world”? I believe that if we look at ethics from a social sciences perspective (see the table below), the issues are easier to grasp, and they are certainly more easily understood by the public and other people with whom we come into contact when we are researching.

The right to work with human remains Our right to carry out research on human remains is no longer automatically accepted by sections of the public and the days of taking ethical standards for granted are gone. Our existing ethical approaches to our work now need to be refined and explicitly and effectively stated. We have gone some way towards this by adopting our existing Code of Ethics. However, I suggest that we need to go further by clarifying our Code of Ethics (CoE) and also adopting an ethics Code of Practice (CoP).

We are increasingly faced with pressure groups who are ultimately claiming what amounts to human rights-based access to, or control over, the material we excavate and the collections we curate and research. The long term benefits of our research are not understood or are increasingly considered less important than the claims of injury or offence made by minority groups. Sooner or later some of us may have to defend our right to research in a legal scenario. As professional practitioners we have to be adept at protecting and promoting our work within recognised frameworks including those of ethics. This is important not only to ourselves and to science, but to the wider public itself through our continuing work to enhance knowledge and understanding of our shared human past.

I believe that by revising our existing Code of Ethics and developing alongside it a Code of Practice, we will provide both our

colleagues and the interested general public with a supportive and clear framework. Such a framework need not impede our practice and would offer clarity and assurance to the public about our motivations and actions.

Codes of Ethics and Codes of Practice So what is the difference between a Code of Ethics and an ethics Code of Practice? Simply this: a Code of Ethics says *what we believe, consider or aspire to* and the Code of Practice says what we should *aim to do in order to enact our stated beliefs*. A Code of Practice simply relates action to the belief that is expressed in a Code of Ethics.

Additionally, a Code of Practice offers more professional protection to practitioners than a Code of Ethics because we are most likely to be challenged on our *practice* rather than on our *beliefs*. Such protection is worth pursuing in the current climate. A Code of Practice also benefits other parties because it can outline a process whereby they can have a voice (but not necessarily a final say) in some of our processes.

What does a CoP cover? A CoP is clearly linked to the accepted ethical principles of research. These include voluntary participation; fully/partially/reasonably informed consent; anonymity or confidentiality; the “no harm” principle; beneficence; and responsible dissemination of findings. Other issues may arise in specific contexts but these headings tend to cover most eventualities.

A CoP is clearly linked to up-to-date methodology and method in all stages of professional practice, which makes its guiding role more robust and relevant. Guidance can cover excavation, storage, all aspects of research, professional and public access, transport of material, reburial issues, museum and other display contexts. In other words, it can be applied

to any aspect of our work with human remains.

It may outline a facility for practitioner-lead consultation, which guides a process of engagement with special-interest groups or others within the debate/decision making section where necessary. It shows us *how* to decide if consultation is necessary or not.

It may link to an ethics approval process (even if that is just a check-list) but it does not need to do so. It tells us when to seek further advice and where we may find such advice.

It does not aim to stipulate every minute detail of practice, but provides a framework *within which professionals can exercise their own judgement safely* in an ongoing process, not simply as a one-off event before work starts.

Importantly, it is not fossilised – it needs to be revised regularly to accommodate changes in the law, research methodology, and so on.

This approach is an “applied ethics” perspective and does not directly engage with the philosophical underpinnings of our work, which is another issue. The differing philosophical approaches between ourselves and others is a foundational issue that cannot be addressed quickly or easily, but by addressing the practical issues we can at least be seen to engage with the current and changing debates around us today.

I am definitely *not* proposing a CoP that tells us prescriptively what to do or not to do at any level. We need to acknowledge and trust the self-regulation and sense of professional responsibility that we develop in ourselves and in our students and junior colleagues. However, for all practitioners to be fully informed and aware of the ethical issues inherent in any research or

other work, a programme of education is called for. That may be addressed in due course. By adopting a CoP we would simply be formalising in writing a set of *guidelines* that highlight the issues that require consideration in our research designs and practice. This is important for public relations, in addition to being a valuable tool for our practice.

For example, a CoP need not specify specific regulations around data collection. We are already working as a profession towards standardisation of our data collection and recording processes, and that in itself is an ethical practice. Accordingly, a CoP can simply make a general statement that incorporates an expectation that researchers will ensure that they use only recognised, up to date, valid and reliable data collection and recording methods. As practitioners we are already engaged in this approach. The CoP is simply stating formally that this is what practitioners are already expected to do. If a researcher can justify his/her practice under those guidelines, then the CoP is being adhered to. Likewise, if a new approach is being undertaken to some research, then a careful, defined and written consideration of the methodological rationale and ethical implications can be provided in the research design. In this way, new approaches can be taken showing their justification. This is simply good practice, but also complies with an ethics CoP. What I am proposing is a CoP that shows us *how* to make decisions about what is ethically highly risky, or what is less ethically problematic.

A CoP can be what we want it to be. It may contain a very small number of absolute rules agreed by the organisation, or it may not. But the majority of the CoP would be a set of *guidelines* that colleagues are expected to consider and make reference to in their research designs

and other plans. A CoP does not have to be a set of rigid rules and requirements.

Who makes decisions and takes responsibility? This is a key issue in considering ethics in practice, as it is the point at which work can be influenced unduly by others outside the discipline. By considering the decision-making process we can see how the ethical issues listed below can be managed.

This table shows who is typically involved in making ethical decisions about the human body. One column considers living subjects of research or treatment, and the other, human remains or deceased subjects. This gives us a basis for comparison between those working with living subjects and ourselves as biological anthropologists.

ETHICAL PRINCIPLE	LIVING SUBJECT	HUMAN REMAINS
<i>Voluntary participation</i>	Individual	<i>Curator, ? others</i>
<i>Informed consent</i>	Individual	<i>Curator, ? others</i>
Anonymity	Individual	Curator/researcher/? others, or may not be applicable
Confidentiality	Individual	Curator/researcher/others, or may not be applicable
<i>No harm</i>	Individual & Researcher	<i>Curator, Researcher, ? others</i>
Beneficence	Individual & Researcher	Curator, Researcher, ? others
<i>Responsible dissemination</i>	Researcher – maybe in agreement with subjects	<i>Curator, Researcher, ? others</i>

The italic type here indicates where I think problems are most likely to arise for us as practitioners (but not exclusively). You can see in the italic text that as well as the curator and the researcher, there is space for others to apply pressure in these areas. There are clear differences between who has control over these decisions depending on whether the body in question is living or dead. The living adult is assumed to be self-determining, but a child or an adult incapable of making decisions would not be; neither would a dead person be unless he has left some written instructions. We as researchers and curators have been used to taking all of these decisions throughout our careers.

A set of practical guidelines in the form of a CoP will help us to agree who the decision makers should be in any given research or intervention situation. By doing this, we will actually come up with

processes that will also benefit us when we are confronted by special interest groups or even unaccommodating colleagues.

How a Code of Practice can support and protect our practice Today, it is as important to be *seen* to be doing something properly as well as *doing* it properly. In an increasingly litigious world in which people are more familiar with their rights than ever, we can use the ethics process to help us, while at the same time showing others how it facilitates their understanding of what we do.

If we act now to show that we are considering how to accommodate external pressures in a reasonable way, while we are not under any specific pressure, we will come up with a more coherent, balanced process. This will also have the benefit of producing a framework that will

help to alleviate inter-professional difficulties.

By showing clearly what our beliefs are and how we enact them, and that we can incorporate a scheme in which the views of non-professionals can be heard in our processes where necessary, we can interact with interest groups yet maintain the professional lead in the process. We don't *have to* do whatever is pressed on us, but we should be *seen* to listen and consider.

In the day-to-day scenario, a CoP provides a safety net, possibly a check list, and a pre-approved framework in which we can make decisions on ethical issues without having to reinvent the wheel in every new case.

I hope that this paper goes some way to alleviating concerns about possible perceived restrictions involved in adopting a Code of Practice. No doubt these issues will continue to be discussed for some time yet. I am happy to discuss this topic with anyone who would like to contact me.

The analytical advantage of using the cranial measurements defined by W.W. Howells

By Richard Wright
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In December 2008 I came to England to give a three day course on CRANID - a freely distributable and freely usable package for detecting ancestry from cranial measurements (Wright, 2008). Bournemouth University hosted the course.

Participants helped with improvements to presentation of the results and the manual. These improvements are now being put

into a revised version of the package, with the title Cr6aInd.EXE.

This revised package will have the same URL for downloading and saving as the existing Cr6Ind.EXE

<http://www.box.net/shared/static/n9q0zgtr1y.EXE>

No names no pack-drill, but I am surprised to see the general lack of adherence in Britain to the craniometric definitions of W.W. Howells (Howells, 1973). By contrast two different systems seem to be the definitions of choice - those in Buikstra and Ubelaker (1994) and those with the Biometric Laboratory codes defined by Brothwell (1972). I wonder why this is so.

One may not relish the definitions of Howells, but his simple linear measurements do give access to a worldwide collection of crania for comparison. For example, in CRANID6 there are 74 samples containing 3,163 crania from around the world. To make a comparison with these it is necessary to measure only 29 of the linear dimensions defined by Howells.

Focusing on Europe, there are, in the CRANID6 database, samples that are not found in Howells's database, and therefore not in Fordisc 3.0. These samples include Poundbury (Romano-British), London (Medieval), Italy (recent) and Denmark (Neolithic).

By contrast, the measurements defined by Buikstra and Ubelaker and by the Biometric Laboratory do not give an entry to much of a database.

Or am I mistaken?

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Life and death in East London: ongoing project update

By Natasha Powers, MOL Archaeology

Osteological and archaeological research on three, culturally discreet, samples continues with 1310 individuals recorded. Comparison between the three groups will enable us to look at the link between religious beliefs, social behaviour and health. This project is a rare opportunity to combine data derived from separate developer funded excavations. Continuing throughout 2009, the work will result in the publication of a thematic MOL Archaeology monograph on London in the 19th century.

The cemetery of *the Catholic Mission of St Mary and St Michael, Whitechapel (LUK04)* has provided a sample of 705 individuals (268 adults and 437 subadults). Situated in one of the poorest areas of London and in use for only 11 years (1843-1854), epigraphic evidence suggests this burial ground served a population chiefly of Irish descent, some of whom came to England during the Great Famine of 1847-8. The adult male/female ratio was

1.4:1. Amongst the subadults, mortality peaked around one year of age. A large number of infants who died between one and six months of age had suffered from rickets (47.5%: 19/40) and 20% (8/40) had evidence of scurvy. A particularly interesting aspect was the high number of adult males with pipe notches in their teeth (55/139 dentitions: 39.6%). Significantly higher than previous samples from London, this rate may reflect cultural and socio-economic factors. Those who had smoked pipes suffered increased levels of chronic disease and an earlier death. Close by lay *Sheen's burial ground, Commercial Road (CXL06)*. This private (commercial) ground was in use from the 1830-1856, and 254 individuals from the cemetery have been analysed. There were 88 subadults (34.6%) and 166 adults (51 males and 78 females). Metabolic disease also featured prominently within this sample, with a case of scurvy in a 6 month old sub-adult, and fourteen cases of rickets, three of which were resolved cases found in adults. There were two cases of tuberculosis, a possible case of treponematosi, and severe osteomyelitis in an adolescent. Of particular note was the skeleton of an elderly female with advanced multi-focal Paget's disease. Sarcomatous change in the right femur had led to pathological fracture. A mature adult female was found with a partial dental prosthesis, made from ivory, fitting into the right maxilla. Analysis of the final of the three sites is still ongoing. Recording the 351 individuals recovered from *Bow Baptist burial ground, Payne Road, Bow (PAY05)* in 2006 is largely complete, but a second phase of excavation in late 2008 has provided an additional 80 individuals. Dating from 1820-1870, analysis has revealed a wide range of pathological conditions including possible congenital syphilis, evidence of surgery (amputation) and autopsy. This is the largest Baptist group archaeologically recovered in Britain, and coffin plates and cemetery

plans have enabled the identification of over 100 individuals.

Dental calculus and plants in ancient human diet

By Karen Hardy

*ICREA Research Professor at the
Universidad Autonoma de Barcelona, Spain.
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I'd like to introduce myself as I joined BABAO in 2008. Though I have been working in archaeology for a long time (I obtained my PhD from the Institute of Archaeology UCL in 1993) I have only recently begun to work with human remains. I spent many years working on the Mesolithic of west coast Scotland (e.g. Hardy & Wickham-Jones in press, 2002, Wickham-Jones & Hardy 2004) before gaining a Marie Curie EU Outgoing International Fellowship in 2005 to study the way in which ancient starch survives in archaeological contexts and how this can be used to learn more about the role of carbohydrates in pre-agricultural diet. Starch-based foods constitute 50-70% of the energy intake of most humans today. Starchy food was extremely important in the past too, most of the major early domesticates, wheat, rice, maize, millet and potato, are starch-based.

Following my time as an OIF at the University of Sydney, I returned to the University of York. A discussion with Arlene Rosen of the IoA at UCL led me to explore the possibility that starch granules might survive in dental calculus. Despite widespread use of starch granules to reconstruct aspects of diet, particularly in America and South East Asia, many aspects of the survival and identification of these in archaeological contexts remain unexplained. The prospect of being able to analyse material in a closed context such as dental calculus was very appealing.

Dental calculus occurs when plaque biofilms accumulate and mineralize and is associated with chronically poor oral hygiene (Little et al., 1963; Little and Hazen, 1964). Plaque biofilms comprise complex mixed microbial communities within an extracellular polysaccharide matrix. Most people have dental plaque biofilms on and around their teeth though the rate of calculus formation is variable and is associated with individual differences in diet, salivary flow, local pH and genetic factors.

Dental calculus can be found around the teeth in the supragingival area, which is above the gum-line, or in the subgingival area, below the gum-line in the gingival crevice. Subgingival calculus in particular can accumulate and endure for long periods and may slowly build up throughout extended periods if it is not removed (Ånerud et al., 1991). Calculus was common among non-industrialized communities in the past, largely due to the lack of dental hygiene.

Saliva is a rich source of amylase; starch granules in uncooked or partially cooked starchy food need to be broken down for digestion to occur and salivary amylase begins this process in the mouth. But some starch gets trapped in plaque before it has degraded and once it is trapped, it is protected from the salivary amylase.

The gingival crevice is somewhat protected from salivary amylase and may form an area of preferential survival of starch. Microbial communities here are proteolytic rather than sacchrolytic (utilising protein as substrates rather than sugars). The resulting metabolic by-products of proteolytic metabolism, such as ammonia, result in localized raised pH which encourages plaque mineralization as precipitation of calcium phosphate is favoured. Once calcified, calculus is as hard as bone and is commonly preserved on archaeological teeth (Hardy et al 2009).

I obtained a variety of dental calculus samples and with the help of Hannah Koon (University of York), established a method to degrade the calculus while preserving the organic material inside. Almost every sample I examined contained what appeared to be starch granules.

Identification of starch however, is only partially possible using optical techniques. Starch granules have the ability to cross polarise due to their crystallinity however other materials do the same. The ability to cross polarise can suggest, but not confirm, the presence of starch granules. My connection with the University of Sydney led me to establish a collaboration with two plant biochemists, from the Faculty of Agriculture, Food and Natural Resources there. Together, we have successfully degraded many starch granules extracted from ancient dental calculus using a starch specific enzyme. This is the only method that proves that the objects found are biochemically intact starch granules (Hardy et al 2009).

I have now examined a range of samples from a wide variety of ages and from a range of different contexts. I continue to explore the way in which we can obtain the maximum amount of information from dental calculus. As with all destructive work related to human remains, sample supplies are not unlimited and samples are very precious. The next stage of my work will use dental calculus from recently deceased primates from Edinburgh Zoo kindly provided by the National Museums of Scotland.

I am working with protein specialists as I observed 'green stuff' in some of my samples. While they have confirmed the presence of proteins, it is not yet clear if these are linked to dental bacteria or food eaten. Likewise I am embarking on a collaborative project to explore whether DNA survives in dental calculus.

Having begun this work I discovered from Don Brothwell that he and Keith Dobney worked with dental calculus during the 1980's. Though they did not attempt identification, they produced some wonderful SEM photos of phytoliths and pollen embedded in dental calculus (Dobney & Brothwell 1986, 1988). Another recent publication demonstrates that others have also noticed the potential value of calculus (Henry & Piperno 2008).

The possibility of extracting microfossil evidence of food from dental calculus offers outstanding opportunities for dietary reconstruction of the most difficult kind, plant genera. Currently we are unable to identify starch granules morphologically beyond genus level. However even to be able to do this is a giant leap forward. With this method we will be able to address the role of carbohydrates in pre-agricultural and where sample survive we can look at evolutionary diet. For all populations we will be able to explore questions related to consumption of starchy plants for example did Neanderthals *really* eat inner bark (Sandgathe & Hayden. 2003)? We can look at this as certain trees store their starch in their inner bark, and is presumably why it was used by the Sami (Bergman et al 2004, Niklasson et al. 1994, Zackrisson et al. 2000). With cemeteries we have the potential to look at a wide range of questions. Are there gender or age related differences in diet within populations? Can we identify periods of stress through a change in the type of plants (domesticated to wild for example)? How were new plants introduced into the diet? These and many other questions can be addressed.

An example of the type of work which is possible is illustrated by work I conducted in Turkey. I extracted numerous large granules from Iron Age human dental calculus from the site of Kaman kalehoyuk

in Anatolia. The size and shape of the granules suggest they almost certainly came from a tuber. As no record of tuber agriculture is known for this time here, it demonstrates that the people must have been collecting wild resources to supplement their diet (Hardy in press).

Samples of dental calculus were taken from several skeletons from the Norse site of St Ninian's Shetland. In addition to many starch granules found in the samples, pollen, most likely from a pine (*Pinus spp.*) and fungi were also found. Fungi have been found in other samples. We are not yet sure whether the fungi are post mortem however the work with modern primate samples should resolve this. Phytoliths can also be present in dental calculus.

It is possible that dental calculus is still removed as part of the cleaning process. An article in *British Archaeology* (Hardy 2009) was written with the express aim of highlighting the importance of dental calculus, as I am doing here. We still do not know the true extent of the value of dental calculus, however what is certain is that it contains direct information of the kind that is sometimes impossible to find elsewhere, on diet. It is a part of the skeleton and should always be preserved.

I have recently become an ICREA research professor at the Universidad Autònoma de Barcelona. I am in the process of setting up a laboratory here and am looking for research students who wish to work with me on this exciting new research. There are opportunities to obtain funding and anyone interested should contact me as soon as possible. It is not necessary to speak Catalan or Spanish but it will require you to spend a large part of your time in Barcelona.

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Physical anthropology and legislation: European perspectives and beyond

By Nicholas Marquez-Grant (*LGC Forensics*) & Linda Fibiger (*School of Archaeology, University of Oxford*)

Methodologies and legislative frameworks regarding the excavation, lifting, analysis, curation and potential reburial of human skeletal remains differ throughout Europe. As work forces within the European Union and beyond have become increasingly mobile and international research collaborations are steadily increasing, the need for a more comprehensive understanding of different national research traditions, methodologies and legislative structures within the academic and commercial sector of physical anthropology has arisen.

The current project is intended to provide an overview of current practice and legislation regarding the excavation and study of archaeological human remains in different countries. Establishing how human osteology and palaeopathology are practiced and dealt with throughout Europe and beyond will allow the sharing of knowledge between countries and form the basis for pan-European exchanges and discussions on best practice. Although the focus is on Europe, a number of comparative studies from different parts of the world, including New Zealand, USA, North Africa, South America and Southeast Asia, will also be incorporated.

Currently, invited contributions by researchers, curators and commercial osteoarchaeologists from more than 40 European countries are in preparation, in addition to a number of contributions from the other continents. This project is to be

published as an edited volume in 2010. Some of the main questions to be addressed in the volume include the state of the current legislation regarding human skeletal remains in each country; who needs to be contacted when discovering human skeletal remains; whether a licence is needed to excavate human skeletal remains; whether the osteological analysis of archaeological human skeletal remains is compulsory; how long physical anthropology has existed as a discipline in each country; whether any regional anthropological methods have been developed within the country; what specialized associations and academic courses exist.

It is planned to follow the publication with a conference for students, academics and professionals. This will provide the opportunity to further discuss the results presented in the volume and to continue the main aim of the project: to share knowledge and experience between countries and to contribute to the development of the discipline.

Royal Hospital Haslar

By Sophie Beckett, Cranfield University

The Centre for Archaeological and Forensic Analysis at Cranfield University continues its excavations on the site of the burial grounds of the Royal Hospital Haslar in Gosport, on the Hampshire coast of southern England. The work is part of a wider Land Quality Assessment in partnership with Defence Estates, an arm of the Ministry of Defence, who are forming plans for the future of the Hospital site when it ceases to be operational in 2009 or 2010. The nature and extent of the Haslar burial grounds is significant as they will fundamentally affect any future plans for the property.

Between the opening of the Royal Hospital Haslar in 1753 and 1826 (when a major

review of burial practice took place), the whole of the area to the south-west of the hospital building, including 'the Paddock' and areas now covered by buildings and gardens, was utilised indiscriminately as an unconsecrated burial ground for those who died in the hospital. It has been estimated that there are in excess of 30,000 burials in this area, making it probably the largest burial ground of people who have served in the British military in Europe, if not the world.

The 2008 season saw over twenty people on site and the excavation of skeletal remains from the Paddock area for further analysis. It is hoped that this work will continue in 2009 and we welcome students from other universities who wish to join the excavation, although places have to be limited.

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Discovery and Analysis of an Anglo-Saxon Bladder Stone

By Sophie Beckett, Cranfield University

A urinary stone has been discovered by the Sedgeford Historical and Archaeological Research Project (SHARP), Sedgeford, Norfolk, from an Anglo-Saxon juvenile burial. The recovery of urinary calculi from the archaeological record is rare and the Sedgeford calculus is the oldest known urinary stone from Norfolk. X-ray diffraction analysis of the calculus, combined with osteological evidence, has enabled conclusions to be reached about its possible cause and hence, the sex of the individual. These are different to the interpretations that would have been assumed, based only on consideration of historical records of urinary stone disease.

The analysis of the Sedgeford urinary stone has produced award-winning results. A presentation of the results won the prize for best presentation, in the Under-30 category, at the Awards for the Presentation for Heritage Research in September 2008. In addition, a small grant for public activities was awarded to SHARP by the Royal Society of Chemistry. This enabled the results of the analysis to be presented to the general public during SHARP's 2007 summer excavation season. See: Beckett S, Hatton M and Rogers KD (2008) The Discovery and Analysis of a Urinary Calculus from an Anglo-Saxon Burial in Sedgeford, Norfolk. *Norfolk Archaeology* XLV: 379-409.

Grotta Scaloria (Manfredonia, Puglia, southeastern Italy)

By Maryanne Tafuri, John Robb, Chris Knüsel, Tamsin O'Connell, E. Elster, and E. Souter

This project is an osteological, taphonomic and isotopic re-study of the human skeletal remains from Grotta Scaloria, a Neolithic cave in southeastern Italy, carried out through a collaboration between researchers from the Cotsen Institute of Archaeology (UCLA)(Elster), Cambridge University (J. Robb, T. O'Connell, E. Souter), the University of Rome (M. Tafuri), and the University of Exeter (C. Knüsel), in association with the University of Genova and the Soprintendenza Archeologica della Puglia.

Grotta Scaloria (Scaloria Cave) is a two-chambered cave located in Manfredonia (Puglia, Southeastern Italy) with many exceptional features. In the Lower Cave, a pool of water was found surrounded by Middle Neolithic pots deposited as part of rites of a cult of water. The Upper Cave was the site of an extensive Early-Middle Neolithic cemetery. The cave was

excavated by Marija Gimbutas and Santo Tiné in 1978 and 1979 and only partially published shortly later (Winn and Shimabuku, 1980). The human skeletal material was mainly concentrated in the so-called Upper Chamber, where a number of trenches brought to light commingled remains. The bones were assembled in two distinct collections according to year of excavation (1978 and 1979) and followed somewhat separate destinies. The 1979 collection was studied by John Robb in 1991, while the 1978 remained unstudied except for a brief report by R. Gilbert (1980). Surveys in the Lower Chamber have reported the presence of further 'burials' (namely a complete skeleton and a mandible) that remained unexcavated as they were enveloped in stalactitic concretions. The human skeletal material is now being reunited for study at the Museum of Anthropology of the University of Rome.

In addition to basic osteological documentation of the collection, the re-study has two particular foci, taphonomy and isotopes. Taphonomically, the assemblage includes 1-2 articulated burials but is dominated by commingled, highly fragmented remains; a preliminary MNI is in the neighbourhood of 30-35 individuals. A preliminary inspection has found that many bones bear cut marks and/or signs of peri-mortem fragmentation. A complete taphonomic review will focus upon how the deposit was formed and what processes are responsible for its fragmentation, cut-marks and general disarticulation. In terms of isotopes, a preliminary study by E. Souter and T. O'Connell has found that, although nearby Neolithic communities had access to the full range of Neolithic domesticated animals and were living close to the Adriatic Sea, their protein was derived predominantly from plant sources and they had no discernable marine signal in their isotope signature. Further investigation of carbon and nitrogen isotopes at Cambridge will follow up this

work. Dental enamel will be used for Sr isotope studies through a collaboration with the Department of Geochemistry, University of Rome (Francesca Castorina) in order to trace patterns of mobility within the population. We have also been awarded AMS dates from the ORAU laboratory to directly date the human bone assemblage, which will add substantially to both the taphonomic and the isotope studies.

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MUSEUM REPORTS

Hunterian Museum at the Royal College of Surgeons

By Jane Hughes, Head of Learning and Access, Milly Farrell, Assistant Curator – Odontological Collection and Carina Phillips, Wellcome Museum of Anatomy and Pathology Project Co-ordinator

Our public programmes have attracted a record number of visitors to the Hunterian Museum over the last twelve months, with over 45,000 people engaging with the collections through workshops for schools,

family friendly events such as ‘Jones the Bones’ or lunchtime talks and evening lectures that have explored the history of anatomy teaching from Vesalius to virtual reality.

The use of the collections for teaching, research and independent study remains a priority for the museum department at the Royal College of Surgeons and we have recently appointed two new members of staff who will help to improve the services that we offer.

Milly Farrell was appointed as Assistant Curator to our Odontological Collection. Milly writes:

The Odontological Collection is a subsidiary research collection displaying dental and cranial anatomy and pathology. Over 10,000 faunal and human cranial specimens display a wide variety of dental development and pathology that have been collected over the past two centuries, originating from a range of geographical locations. The human material places a focus on cranial and dental growth from foetus to adult and the various malformations that can develop. A proportion of these 3,000 human specimens are archaeological which may enable certain investigations to be made on a wide temporal scale. The faunal cranial elements provide a vast range in taxonomy which holds the potential for comparative anatomy research; an aspect which may be of particular relevance to any evolution based studies. The majority of the collection is currently in store within the Royal College of Surgeons building, although specimens can be made available for study on request. Our online catalogue ‘Surgicat’ is also available at <http://surgicat.rcseng.ac.uk>

For further enquiries about access to the Odontological Collection please contact Milly Farrell: mfarrell@rcseng.ac.uk.

In addition, Carina Phillips was appointed as Wellcome Museum Project Co-ordinator. Carina writes:

The Wellcome Museum of Anatomy and Pathology houses the Royal College of Surgeons' modern teaching collection. The museum collection consists of 5000 specimens of human anatomy and pathology. This includes a wide range of skeletal material. Due to the museum's focus on teaching almost all the specimens (wet and dry specimens) can be handled allowing the skeletal material to be studied alongside the wet anatomy and pathology projections. It is therefore an important resource for study, particularly for individuals who usually only have the opportunity to study the skeleton in isolation. The collection also has the potential for research opportunities. The museum is not only accessible for personal study, but it is also available for teaching and is regularly used to support the MSc course in Skeletal and Dental Bioarchaeology at UCL.

For further information about access to the Wellcome Museum please contact Carina Phillips: cphillips@rcseng.ac.uk

The Hunterian Museum is open to all, Tuesday to Saturday, 10am to 5pm and admission is free. The Wellcome Museum of Anatomy and Pathology is open Monday to Friday 10am to 5pm, and some Saturdays and late night Tuesdays.

For further information about the museums please see our website www.rcseng.ac.uk/museums

**The Museum of London Centre
for Human Bioarchaeology
(CHB)**

By Bill White

Senior Curator of Human Osteology

Staff Changes

Dr Rebecca Redfern has joined us, filling a vacancy that lasted over 8 months. The CHB thus has been restored to its full-time complement of three staff and we hope that we are now providing a good service.

The Wellcome Osteological Research Database (WORD)

Work continues on recording the backlog of skeletons from archaeological sites excavated in the late 20th century. Becky is completing the input to Roman cemeteries, volunteers are completing the medieval sites, Jelena is recording the named sample from St Bride's Fleet Street and I am attending to post-Medieval sites excavated during the 1980s.

Meanwhile, worldwide interest in our online database is undiminished. In the full year to 31 December 2008 there were 39,791 visits to the website, including 21,507 visits from overseas and 2,651 repeat visits. The most visited archaeological site was the East Smithfield Black Death cemetery (1,527 visits), followed by the medieval cemeteries generally (1,484), the post-Medieval cemeteries (1,383), then the Roman cemeteries (1,081 visits). The topics of greatest interest during this period were the Centre for Human Bioarchaeology, London cemetery summaries, Database downloads, the Wellcome Collection "Skeletons" exhibition (see below), Research, Events and courses, Museum human remains policy, blunt-force trauma, osteoma, Black Death, Sex ratios.

Exhibitions

The joint exhibition with the British Dental Association Museum, entitled *A Bite of the Past* was mounted on 18 May. It ran until the end of June, being extended by two weeks because of the great interest shown.

The pinnacle of the year was the exhibition, mounted jointly with the Wellcome Collection at its gallery in

Euston Road. *Skeletons: London Buried Bones* ran from 23 July to 28 September and attracted 44,427 visitors. In addition there were family events organised at the Wellcome Collection, as well as an evening debate on Ethics and a two-day Scientific Frontiers Meeting on Bioarchaeology. *Skeletons* was extremely well received and attracted excellent reviews in such diverse publications as the *Times*, *Time Out* and the *British Medical Journal*. We showed a small number of the skeletons that have been recovered during rescue excavations in the London area over the past 35 years. A noteworthy feature was the provision of large photographs of those archaeological sites as they are today, making the mute points that the Museum of London has never gone prospecting for human skeletons and that those so rescued could never be reburied near their sites of exhumation, since the said sites have been built upon. Neither the Museum of London nor the Wellcome Trust received any direct condemnation of our temerity in placing the mortal remains of 26 of our forebears on public exhibition. Instead, one had to look through the comments left in the exhibition's Visitor's Book, wherein of 725 comments made only five challenged our right to display our fellow humans as we had done. Once again, the visiting public have re-iterated that they are comfortable with the display of human remains. The majority of written comments varied from "Cool!" or "Wicked!" to longer and more measured thoughts, many of them very moving. Overall, there was a great sense of privilege and gratitude that this very informative exhibition had been put before the public. Praiseworthy comments came from some who identified themselves as from the medical profession (several of whom later approached us with ideas for collaborative research) and from students or would-be students who said that the exhibition had clarified their thoughts and helped to point to the direction that they ought to follow!

Courses and public programme

The in-house and collaborative teaching and research with Birkbeck and Queen Marys continues. In addition there has been a vast expansion of outreach and popular events involving local schools.

Research

This is the final report that I shall submit to the *Annual Review*. Not an innovator myself, I believe that after I leave I shall be remembered as a 'facilitator'. I find it very satisfying that in 13 years on the staff of the Museum of London (the last six as a Curator) I have opened up the Museum's hugely important collection of archaeological skeletons for external research. At the beginning one might have received a single request from an MSc student or their supervisor: today it tends to be around 35 per annum, at all levels of interest up to post-doctoral research. In total, we have been pleased to accommodate over 150 researchers, from 40 academic institutions worldwide. With several UK universities in particular we are proud of the special relationships and networks that have been built and we look forward to this continuing.

Previously I have used this annual report to thank the five research osteologists who have worked in the Centre and moved on. I now should like to continue by acknowledging the work of Becky Redfern and our stalwart Jelena Bekvalac, who has worked here since October 2003. We have also been aided enormously by volunteers. Here I would single out Veronica Hunt, Milly Farrell, Stuart Forbes, Joanne Gilmore and Andy Tynan.

Human Remains Unit at the Natural History Museum

By Margaret Clegg and Heather Bonney

The Natural History Museum holds more than 20,000 sets of human remains ranging

from individual bones and crania to full skeletons and mummified material. The collection covers most geographic regions, and remains from the British Isles span a large timescale. It also holds a significant number of individuals of known age and/or sex.

The NHM has established a Human Remains Unit, in January 2008, based within the Palaeontology department. Margaret Clegg heads the unit. The unit is embarking on a project to create a digital archive of the remains held within the museum. This archive will include osteometric and non metric biological data, with photographic records and three dimensional laser scans. This should reduce the handling load on the collection, which is used extensively by both internal and external researchers. To facilitate the collection of these data, Heather Bonney joined the unit as Data Collection Project Manager in August 2008.

EXCAVATION AND ANALYSIS OF HUMAN SKELETAL REMAINS IN 2008

Osteological Analysis undertaken by Anwen Caffell

Anwen is currently an Honorary Research Associate at Durham University, and is involved with teaching lab classes there. She has also been conducting osteological contract work for York Osteoarchaeology (see York Osteoarchaeology), Archaeological Services Durham University, and Tyne and Wear Museums.

Stretton Grandison, Herefordshire, for Border Archaeology/ Archaeological Services Durham University

Excavations conducted by Border Archaeology in advance of the Ledbury Trunk Main pipeline programme revealed

the remains of several skeletons. Thirteen inhumation burials were uncovered, but only six were lifted and examined. These included two adults (a male and a female), an adolescent, a 2-5 year old juvenile, and two neonates. The male adult has been radiocarbon dated to AD 10-210; the adolescent has been dated to AD 550-660. Of the non-lifted skeletons, one was probably an adult and the remainder were apparently neonates or infants. The adolescent had been buried prone and decapitated, having suffered multiple perimortem blade injuries to the head, neck and right shoulder. Other pathological conditions present in this sample included joint disease, possible DISH, antemortem fractures, scoliosis, and non-specific infection. Dental disease observed included dental caries, calculus deposits, antemortem tooth loss, and enamel hypoplasia.

Five urned cremation burials were also excavated. Four contained the remains of adults, one of which was probably a mature adult; the fifth probably contained an adult, or possibly an older adolescent. Pathological conditions observed included healed rib fractures and joint disease.

M7/M8 Project, County Laois, for ACS Ltd./ Archaeological Services Durham University

Burnt bone fragments were recovered from 67 sites in Ireland, excavated as part of the motorway expansion scheme. The majority of sites contained small amounts of unidentifiable bone, but some sites yielded more substantial evidence for human cremation burials. Human bone was identified at nine of these sites, and these included: human remains associated with a fulacht (Johnstown 1); human remains recovered from the inner and outer ditches of a Bronze Age ring-ditch, and a posthole, all of which contained adult remains, but juvenile remains were only found in the inner ditch (Raynestown 1); possible human bone from a Neolithic pit (Castletown Tara 1); an urned cremation

burial (Collierstown 2); a cremation burial in a pit (Boyerstown 3); a cremation burial in a pit (Philpotstown 1); probable human bone in a pit associated with a burnt mound (Pottlebane 2); three mid/late Bronze Age cremation burials, one of which was urned (Tyrrellstown Bay 1); human bone recovered from two pits associated with a Bronze Age ring-ditch (Tyrrellstown Bay 2).

Arbeia Roman Fort, for Tyne and Wear Museums

A report on human remains (seven crania, a mandible and several bags of cremated bone) excavated at the site of Arbeia Roman fort in the late nineteenth century was published in 2005 (Croom and Caffell). However, since the date of publication a further cranium and bag containing cremated bone were discovered in museum stores. As with the previous material, there is little documentation concerning the archaeological context of the remains. This cranium was that of a middle-aged, possibly male, adult. Premature fusion/agenesis of the right occipitomastoid suture had led to asymmetry in the shape of the cranium, with the forehead bulging slightly on the right side, and the occipital bulging noticeably on the left side. Expansion of the left occipital had possibly encouraged the formation of ossicles within the left lambdoid suture, and the muscle attachment sites on the left occipital were more pronounced.

Bainbridge Roman Fort, West Yorkshire, for Tyne and Wear Museums

The remains of two partial skeletons (a mature female, and an unsexed old-middle adult) and disarticulated fragments of cranial vault were discovered during archaeological excavation at Bainbridge Roman Fort, West Yorkshire, between 1966 and 1968. Both skeletons had been buried within the headquarters building, and consequently are believed to be sub Roman. Joint disease had affected the

spine of the female. Both individuals showed signs of dental disease, typical for the period, including heavy dental wear, deposits of calculus, small carious lesions and antemortem tooth loss.

AOC Archaeology Group

By Melissa Melikian and Rachel Ives

AOC Archaeology Group has been involved with a number of projects through Historic Scotland's Human Remains Call-Off Contract, designed to help Council and local Trust archaeologists deal with the unexpected finding of human remains. We have also commercially excavated and analysed human remains from a number of Scottish sites. Analysis was undertaken on five prehistoric cremations found in pits associated with a settlement at East Langlee, Galashiels, Scotland. One incomplete adult cremation deposit was also found associated with burnt animal bone, Bronze Age pottery and prehistoric settlement activity from Newton Farm, Cambuslang, Scotland. Cremated bone was examined from prehistoric pits at the site of Newbigging Quarry, Carnwath, South Lanarkshire, although a very incomplete and small assemblage of bone was recovered limiting osteological interpretations.

Osteological assessment was undertaken the remains of four adults from an Iron Age cist burial from the Empire Site, Dunbar, Scotland. One of the individuals was buried with a sword and spear indicating possible parallels with other known warrior burials. An assessment was also undertaken on a crouched inhumation burial excavated from a cist at Druimsdale Machair, South Uist, Western Isles. The burial is thought to date to the Scottish Bronze Age (c.2000 BC to c.800 BC) and comprised an adult male with vertebral osteophytes, IVD, long bone

enthesophytes and bilateral supernumerary first maxillary incisors.

Analysis of two medieval Scottish osteological assemblages has now been completed and publications of the results are forthcoming as:

Melikian M (Forthcoming) The human bones. A report on the burials from Parliament House, Edinburgh, Scotland. *Proceedings of the Society of Antiquaries of Scotland*. This publication documents the analysis of 95 inhumation burials from a lower status extra-mural burial ground associated with St. Giles Cathedral from medieval Edinburgh dating between 1496 and 1566. The findings are compared with a higher status group previously excavated from the intra-mural burial ground in order to better understand the paleopathological evidence between the collections as divided by socio-economic status. Stable isotope analysis was undertaken on a sample of individuals from Parliament House and the higher status St Giles group in order to add further insights into socio-economic differences in diet from an urban context during the medieval period. Initial findings were presented in a poster at BABAO 2008 in Oxford and are currently being written up for specialist publication.

Melikian M, and Ives R (Forthcoming) The human bones. A report on the burials from Auldham, East Lothian, Scotland. AOC Archaeology Group Monograph. This report presents the results of osteological analysis of 242 inhumation burials associated with a medieval, small rural "lost" village in South Lothian. A range of pathological conditions were identified including infections, neoplasms and traumatic injuries. Of particular interest were several individuals identified with fatal cranial weapon-related injuries. Stable isotope analysis was undertaken to investigate the population origins and dietary composition of the sample. The results will broaden our insights into population movement and dietary practice

from the perspective of a small, rural medieval settlement from Lothian, Scotland. Initial findings were presented in a poster at BABAO 2008 in Oxford and are currently being written up for specialist publication.

AOC Archaeology Group undertook osteological analysis on an important assemblage derived from Saxon *Lundenwic* and excavated from the basements of the London Transport Museum. The analysis was undertaken on nine of the earliest known Saxon cremation burials to date from *Lundenwic* and provided insights into burial practice such as the range of artefacts placed with the urned burials, the presence of double burials comprising an adult with a juvenile, as well as the inclusion of burned animal bone from meat offerings placed on the cremation pyre with the buried human bone. Several glimpses into the health of the individuals were gleaned through evidence of non-specific infection (periostitis) and a healed fracture. Two adult inhumations from a later phase of Saxon burial activity were also excavated and analysed, providing more evidence for burial practice and disease. An overview of the results was presented in a poster at BABAO 2008 in Oxford and the findings are currently being written up for specialist publication.

We are continuing the analysis of a large post-medieval assemblage comprising of c.692 inhumation burials from an overflow burial ground of St. James' Church, Bowling Green Lane, Clerkenwell. The individuals excavated mainly derive from the low socio-economic classes with a small number from the lower middle classes. The results demonstrate evidence for a range of pathological conditions including infections such as venereal syphilis and osteomyelitis, trauma represented by fractures and dislocations, as well as metabolic conditions such as vitamin D deficiency (rickets, residual

rickets and osteomalacia) and vitamin C deficiency scurvy. There are several instances of neoplastic conditions as well as some joint diseases that are not frequently documented in skeletal collections. Research is continuing to investigate these manifestations and cases will be documented in full. Of interest in the collection are a number of examples of dissected remains including evidence of incomplete cranial autopsies. Full publication of the results of the analysis contextualized through comparative analysis with other published post-medieval assemblages will be forthcoming in a dedicated AOC Archaeology Group monograph.

For further details or copies of osteological reports from any of the sites analysed by AOC Archaeology Group please contact the authors.

Headland Archaeology Ltd (Ireland)

By Carmelita Troy

The Osteology Department in Headland Archaeology Ltd (Ireland) has been involved in a number of very interesting projects over the past year. Human remains from government and county council road schemes and Office of Public Works projects have been analysed ranging from the Early Bronze Age to medieval in date.

I would like to take this opportunity to welcome osteologist Caoimhe Ní Thoibín and two recent osteology graduates from University College Cork, Niamh Carty and Darren Regan to the department.

Donacarney Great, Bettystown, Co. Meath, 07E0622

Osteological analysis was completed by Headland Archaeology Ltd on behalf of Archaeological Consultancy Services Ltd in October 2007. An early medieval east/west supine extended inhumation was

recovered from Donacarney Great, Bettystown, Co. Meath (07E0622) under the direction of Stuart Rathbone. Associated with the burial were some disarticulated human bones and animal bones. Four other burials were noted in the vicinity; however these were preserved *in situ*.

The burial represented an adult male, estimated to be 25 to 35 years at death with a living stature of 169.4 cm (5'6"). While approximately 50% of the expected remains were present, they were in moderate condition. Levels of oral hygiene were shown to be relatively fair. There were no signs of degenerative joint disease from the observable vertebrae or from the extra-spinal joints. The presence of dental enamel hypoplasia on a number of teeth suggests that this individual went through a number of episodes of stress in his childhood. The cause of this stress may also be related to the porosity on the orbits (cribra orbitalia) and the occipital fragment (porotic hyperostosis) which are indicative of a metabolic disorder relating to iron-deficiency anaemia.

Disarticulated remains present within the burial included a radius, mandible and two teeth which represented a MNI of one. The rate of dental attrition on the molars indicates that the individual was 17 to 25 years of age at death. However, it is not possible to determine if all of the disarticulated material came from one individual.

*A4/A5 Corridor Improvements
(Dungannon – Ballygawley/Annaghilla)*

An assessment of the human remains from the A4/A5 Corridor Improvements (Dungannon – Ballygawley/Annaghilla), Co. Tyrone, Northern Ireland, has been completed on five sites in January 2008 on behalf of Headland Archaeology (UK) Ltd. The human remains include 5 inhumations, 18 cremations and 133 token

burials. Further analysis is pending approval.

Lorrha Church, Co. Tipperary, E3809

The osteological analysis of human remains recovered during archaeological excavations at Lorrha Church, Co. Tipperary (E3809) was undertaken by Colm Moloney of Headland Archaeology Ltd during January and February 2008 in advance of restoration work to the upstanding remains of St. Ruádhán's Church by the Office of Public Works.

Fifty articulated burials were indentified, buried in an east/west orientation and supine extended position. Burials which were below the level of impact were recorded but left *in situ* leaving an excavated assemblage of 46 individuals. During analysis, four of these burials were found to represent more than one individual and were recorded as disarticulated bone. The articulated assemblage thus numbers 42 individuals, ranging in age from perinate to older adult. The disarticulated assemblage is made up of 2059 fragments from 20 separate contexts, including topsoil. Radiocarbon dates have been requested on a sample of individuals.

Of the burials examined, 40 individuals could be assigned to an age category. There were 24 sub-adults and 16 adults. The biological sex was determined and resulted in 9 females, 7 males and 2 ambiguous. The average stature was estimated to be 166 cm (5'4"). Females were found to have an average stature of 158 cm (5'1") and males an average of 173 cm (5'6").

Probably due to the small number of adults, the level of disease in the assemblage was deemed to be low. Disorders associated with nutritional deficiencies and joint diseases were the most common. The fracture rate was very

low, and no evidence for infectious disease was found.

The assemblage was deemed to be healthy and showed very low levels of disease and injury. No cases of infectious (either specific or non-specific) were found. Rates of stress indicators such as cribra orbitalia and dental enamel hypoplasia were relatively high. Oral health within the assemblage was poor. Of particular interest was the presence of several benign neoplasms within the adult assemblage. Evidence for interpersonal violence was recognised in one male individual. This man had suffered two blows to the head, one blunt-force on the frontal and a glancing blow from a blade to the back of the head. He also had a fracture to his lower leg and evidence for severe herniation of the intervertebral discs.

N11 Gorey-Arklow Bypass

Human remains were recovered from 9 sites by Valerie J Keeley Ltd in advance of the N11 Gorey-Arklow Bypass on behalf of Wexford County Council and the National Roads Authority. Osteological analysis was carried out by Headland Archaeology Ltd in May 2008 on 12 cremations, 18 token burials and 112 deposits containing minute quantities of burnt bone.

Excavations at Ask, Co. Wexford, E3502 produced a very extensive multi-period cemetery complex, with funerary/ritual activity spread across the site containing five cremation and five token pit burials. Of particular interest was one double cremation burial which represented one sub-adult (aged no more than 14 years of age at death) and a possible adult female. The weight of the cremation burial amounted to 1811.1 g. Blue-green staining was noted on a number of bones possibly indicating that the individuals were in possession of a copper ornament during the cremation process, however there were no metal artefacts found within the

deposits. Grave goods associated with the double burial did include ceramic beads.

Ardreigh, Athy, Co. Kildare, 05E0156

In September, a substantial project was undertaken by the Osteology Department in Headland Archaeology Ltd on behalf of Kildare County Council. A large cemetery was excavated, under the direction of Hilary Opie producing c.1200 articulated skeletons, c. 170 boxes of disarticulated remains and an urned cremation. Processing and analysis is currently ongoing.

Osteology at MOL Archaeology 2008

By Natasha Powers, Head of Osteology

MoLAS has become MOL Archaeology, with a new logo to accompany the new name. Our website has been updated with full details of all publications and items of project news at www.museumoflondonarchaeology.org.uk. The Osteology Team now has a blog. You can read more about our ongoing work at <http://mymuseumoflondon.org.uk/blogs/>.

In June, Sarah Matthews (MSc Forensic and Biological Anthropology, University of Bournemouth 2007) joined the osteology team as Senior Osteological Processor. Sarah has been putting her 'chain of custody' training to good use overseeing the processing of several hundred burials.

MOL Archaeology contributed to an English Heritage seminar on the importance of post-medieval cemetery assemblages, whilst Don Walker presented aspects of the Spitalfields medieval cemetery at the International Medieval Congress in Leeds and the 'End to History?' conference in Birmingham.

Full reports have now been published on The Black Death cemetery, East Smithfield (Grainger *et al.* 2008), All Saints, Chelsea Old Church, Royal Borough of Kensington and Chelsea (Cowie *et al.* 2008), St Marylebone Church (Miles *et al.* 2008) and St Benet Sherehog (Miles *et al.* 2008) – full details are in the members publications section

Research projects and commercial reports

The English Heritage funded publication "Skeletal evidence of disease from London's past", is currently in production. This will illustrate examples of skeletal pathology from the past 2,000 years via high quality photographic images.

Together with Paul Bland and his colleagues at the Department of Radiography, City University we are examining large numbers of post-medieval burials. In 2009, thanks to grants from the Roman Research Trust and City of London Archaeological Trust, work will expand to examine fracture healing in Roman London.

Details of our ongoing research into post-medieval London (c. 1400 individuals) may be found elsewhere in the Annual Review.

Basinghall Street, City of London (BAZ05), Roman, MNI=4

The assemblage included the N-S coffined burial of a child, with a lead bracelet placed over the chest, cut into the fill of an early boundary ditch. At the time of the interment, this area was used for industry and this formal burial adds to our knowledge of burial distribution in early Londinium.

City Bunhill burial ground, Islington (GDA06), Post-medieval, MNI=239

In use from October 1833 to August 1853, burial registers indicate c. 18,000 burials were made in this cemetery. Excavations during 2006 uncovered the remains of 239

individuals. Just over half the group were sub-adults (n=122). The adults consisted of 55 males and 58 females, plus four unsexed individuals. There was considerable evidence for skeletal pathology, including an eight year old child with bilateral spondylolysis in the fifth lumbar vertebra. Sixteen individuals had evidence of Vitamin D deficiency, fifteen subadults and one adult with resolved changes. Five of the subadults had suffered pathological fractures. Two cases of tuberculosis and a very advanced case of treponemal disease were identified.

Excavation and assessment

Numerous projects included the excavation of human remains, notably c.30 medieval burials from Mariner's House (Crutched Friars) (MCF06) and 80 post-medieval individuals from Bow Baptist Church (BBP08). Work was also carried out for Albion Archaeology, whilst L-P Archaeology employed the team to examine human and animal bone from the Roman Eastern Cemetery.

Globe Academy, Southwark (DVL05), Post-medieval, MNI=766

Known as New Bunhill Fields, this private (commercial) burial ground (c. 1821-1853) originally contained 10,000 burials. Assessment of 200 adults (26%) and 566 subadults (74%) showed the majority of the subadults (77%) died aged 1 month-6 years. Forty-eight adults (28 men, 17 women) and 62 subadults had biographic data. Unusual pathology included an advanced naso-pharyngeal carcinoma and a well-healed linear fracture transacting the left temporal, parietal and occipital of a male. Burial clothing and grave goods were recovered and included two plates, placed over the legs of one woman.

Royal London Hospital, Whitechapel (RLP05), Post-medieval, MNI=391

Excavations discovered a hitherto unknown cemetery to the rear of the anatomy school (c.1820-1850). The

excavated area contained 170 articulated individuals and 108 graves containing 511 body portions and up to 11 individuals per grave. In addition, nearly half the articulated men (37/79: 46.8%) and a quarter of the women (7/28: 25%) and children (3/13: 23.1%) had evidence of autopsy or dissection. In some instances, a coffin contained half a body; in others, missing limbs were replaced by parts from a second individual. Wired and stained specimens and wax casts of blood vessels and nerves were found. A peri-mortem femoral fracture hinted at the hospital as an accident and emergency centre. In 1822, William Millard was arrested for 'raising a body' from the Hospital. He died of goal fever in Coldbath Fields, still protesting that his work was officially sanctioned. Dismissed as 'hysterical' propaganda, his wife Ann's petition to clear his name provides the only known reference to a cemetery behind the dissecting room. After nearly 200 years, the archaeological evidence finally supports the Millard's protests.

The following material was also assessed this year:

Heron Tower, City (KPH06), unknown (redeposited) MNI=1

St Bartholomew's Hospital, City (BPB05), Medieval, MNI=316

Olympics development site (OL-08607), prehistoric cremation MNI=1

One New Change, City (NCZ07), Post-medieval, MNI=2

Gresham Street, City (GHB06) Medieval, MNI=2

Holywell Priory, Shoreditch (HLW06), Roman, MNI=8, Medieval, MNI=34

Upper St Martin's Lane, Westminster (USM06), Saxon, MNI= 9

St Peter's Wharf, Maidstone, Kent (KT-SPW06), medieval, MNI=119

Oxford Archaeology Heritage Burial Services

By Sharon Clough

Over the last year Heritage Burial Services has continued to undertake numerous fieldwork and post excavation projects. These are summarised below. We also organised and hosted the annual BABAO conference with Oxford University. This was very well attended we had some excellent contributions - thank you everyone, we enjoyed seeing you!

At the end of last year, we said goodbye to Nicholas Márquez-Grant who has moved on to work in Forensics. We wish him well. The current team comprises Louise Loe (Head of Burials), Ceridwen Boston (Assistant Head), Sharon Clough (Osteoarchaeologist), Helen Webb (Osteoarchaeologist) and Mark Gibson (Osteoarchaeologist field-based).

Summary of fieldwork and post excavation projects involving human remains:

Stockton, Warwickshire, St Michael's Church - Church extension revealed 8 adult inhumations and disarticulated bone. Earlier walls and features relating to the church were also uncovered. Grave memorial recording was also undertaken. Human remains examined and re-buried.

Calne, Wiltshire, Zion Baptist Church - Evaluation revealed 6 graves, 2 brick-shaft graves and 2 stone-lined graves. No human remains recovered for examination.

Laleham, Surrey, All Saints Church - Evaluation revealed 5 post-medieval inhumations. Human remains not excavated or examined.

Cheltenham, Trinity Church - Consultation on the churchyard which was completely paved with 207 recumbent ledgers.

Longworth, Oxfordshire, St Mary's Church - Service trench and extension revealed 60

inhumations. Skeletal analysis followed by re-burial.

Long Crendon, Buckinghamshire, St Mary the Virgin Church - Service trenches revealed 15 inhumations and charnel. Osteological analysis followed by re-burial.

Kirtlington, Oxfordshire, St Mary the Virgin - Service trench revealed 37 inhumations and charnel. Osteological analysis followed by re-burial.

Bawsey, Norfolk - Specialist report completed on 1 Anglo-Saxon adult female with a trepanation.

Goring, Oxfordshire, St Thomas of Canterbury - Work undertaken in advance of an extension, grave memorial recording, watching brief, test pits, intra-mural and extra-mural excavation of burials. Work on-going.

Weymouth Relief Road Project, Dorset, Ridgeway Hill - Recent excavation has revealed multi period burials. A crouched Neolithic inhumation, 4 cist burials Neolithic-Bronze Age date, Bronze Age round barrow with central cremation burial. Further Bronze-Age burials elsewhere, 6 in a cluster and 2 'beaker' burials further away. Roman burials focused on the round barrow and the nearby Roman road were also recovered. Analysis of the skeletal material is forthcoming.

Corpus Christi College, Oxford - A skull of uncertain dating was found with evidence for projectile trauma in the frontal bone. Full analysis has yet to be undertaken.

Staple Gardens, Winchester - 4 neonates, Romano-British found in association with timber building deposits. Specialist analysis and report. Remains retained.

Oxford Castle - Skeletal remains from both the medieval cemetery and Post Medieval prison (hangings, and autopsy evidence) full analysis is currently underway.

Darwen, Lancashire, Redearth Primitive Methodist Chapel - 122 post medieval inhumations (some stacked up to 7 deep), with associated coffin material including a coffin with a glass window and a fish tail coffin. High proportion of children and infants. Skeletal analysis not yet undertaken, exciting assemblage of industrial period working-class Darweners.

Bonn Square, Oxford, Burial ground of St Peter Le Bailey - Analysis is complete and will be reported on in *Oxoniensia* in 2009. Assemblage comprised 111 inhumations dating between 11th and 18th centuries and 171 inhumations dating between 18th and 19th centuries. All remains have been re-buried at the request of the Church. Poster for BABAO conference on the general health of the population was produced.

Lankhills, Winchester - Romano-British cemetery. The long awaited analysis and publication of the excavation by Oxford Archaeology at the site of Lankhills RB cemetery has been completed and the publication is expected to be out late 2009. This work, on 283 skeletons, 26 cremation burials and the associated grave artefacts and coffin nails, has produced some exciting results giving a fascinating insight into the lives of former inhabitants of late Roman Winchester.

Kingshill North, Cirencester - fieldwork in advance of development recovered 4 adults and 1 neonate. One of the adults was crouched with a beaker pot within a ring ditch. A programme of radiocarbon dating is taking place to establish date ranges for all these remains.

St Paul's Church, Hammersmith - Excavation has just begun (Jan 09) for the proposed extension to the church. Burial is assumed to have taken place from the 1660s-1850s. Approximately 50 burials have been excavated so far.

Recent publications

'Safe moor'd in Greenwich Tier' - A study of the skeletons of Royal Navy Sailors and Marines excavated at Royal Hospital Greenwich. By Ceridwen Boston, Annsophie Witkin, Angela Boyle and David R P Wikinson. Oxford Archaeology Monograph 5, 2008. Excavations by Oxford Archaeology in the old burial ground of the Royal Hospital Greenwich (1749-1857) revealed over 100 Greenwich Pensioners, who had ended their colourful lives at the hospital. These were the sailors and marines that sailed and fought in Britain's numerous wars of the 18th century. The hazards of naval life were clearly reflected on their skeletons, a rich collection of injuries and disease.

'In the vaults beneath' Archaeological Recording at St George's Church, Bloomsbury. By Ceridwen Boston, Angela Boyle and Annsophie Witkin. A programme of restoration involved the removal of 871 triple lead-lined coffins and monitoring of works in the churchyard. The elaborate named coffins of upper middle class parishioners provided a wonderful opportunity to greatly develop the new field of post-medieval coffin analysis, and to integrate historical, archaeological and osteological data in order to build a vivid picture of this population. Over 90% of coffins were named, which allowed a valuable opportunity to blind test osteological methods on 72 skeletons, whilst analysis of documentary and osteological evidence has challenged some long-held beliefs in post-medieval burial archaeology. Disease patterns in the St George's assemblage were greatly influenced by the longevity and affluence of this population, factors that also

underlay the necessity for elaborate and expensive dental treatment, including very early examples of fillings, filing and dentures. Oxford Archaeology Monograph – Due out early 2009.

**University of Leicester
Archaeological Services (ULAS) –
Human Osteological Services**
*By Harriet Anne Jacklin, Project
Osteologist, ULAS*

Angelinos Pumping Station, Oxfordshire

Period: Possible Iron Age

MNI: 3 inhumations

Report: Jacklin HA (2008) Skeletal Report on the Human Remains from Angelinos Pumping Station, Oxfordshire. ULAS Report No. 2008-194. Commissioned by Cotswold Archaeology.

Broughton, Milton Keynes

Period: Possible Roman

MNI: 1 inhumation

Report: Jacklin HA (2008) Skeletal Report on the Human Remains from Broughton, Milton Keynes. ULAS Report No. 2008-017. Commissioned by Archaeological Services & Consultancy Ltd.

Cleeve to Hagbourne Hill to Fyfield Water Main, Oxfordshire.

Period: Late Bronze Age/ Early Iron Age

MNI: 6 inhumations

Report: Jacklin HA (2008) Skeletal Report on the Human Remains from Cleeve to Hagbourne Hill to Fyfield Water Main, Oxfordshire. ULAS Report No. 2008-189. Commissioned by Cotswold Archaeology.

Coity, Bridge End, Wales.

Period: Bronze Age/ Iron Age

MNI: 4 cremation burials

Report: Jacklin HA (2008) Skeletal Report on the Coity Cremation Burials, Bridge End, Wales. ULAS Report No. 2008-178. Commissioned by Phoenix Consulting Archaeology Ltd.

Ely-Haddenham, Cambridgeshire

Period: Possible Roman

MNI: 1 inhumation

Report: Jacklin HA (2008) Skeletal Report on the Human Remains from Ely-Haddenham, Cambridgeshire. ULAS Report No. 2008-018. Commissioned by Archaeological Services & Consultancy Ltd.

Honeybourne to Wormington (Worcestershire), Pipeline Project

Period: Roman

MNI: 1 inhumation

Report: Jacklin HA (2008) Skeletal Report on the Human Remains from the Honeybourne to Wormington (Worcestershire), Pipeline Project.

ULAS Report No. 2008-185. Commissioned by Cotswold Archaeology.

Pode Hole Quarry, Peterborough

Period: Bronze Age

MNI: 2 inhumations

Report: Jacklin HA (2008) Skeletal Report on Two Bronze Age Skeletons, Pode Hole Quarry, Peterborough. ULAS Report No. 2008-013. Commissioned by Phoenix Consulting Archaeology Ltd.

St Mary's Works, Norwich

Period: Post Medieval

MNI: Small group of disarticulated remains

Report: Jacklin HA (2008) Skeletal Report on a Group of Disarticulated Human Remains, St Mary's Works, Norwich. ULAS Report No. 2008-085. Commissioned by Northamptonshire Archaeology.

St Michaels Church and Cemetery, Vine Street, Leicester

Period: Medieval

MNI: 286 inhumations

Status: Ongoing (for details see BABAO Annual Review 2007)

St Peters Church and Cemetery, Vaughan Way, Leicester

Period: Medieval

MNI: 1341 inhumations

Status: Ongoing (for details see BABAO Annual Review 2007)

Wolverton, Milton Keynes, Site 1

Period: Late Iron Age/ Early Roman

MNI: 1 inhumation and 1 cremation burial

Report: Jacklin HA (2008) Skeletal Report on the Human Remains from Wolverton, Milton Keynes, Site 1. ULAS Report No. 2008-084. Commissioned by Archaeological Services & Consultancy Ltd.

Wolverton, Milton Keynes, Site 2

Period: Anglo Saxon

MNI: 81 inhumations and 3 cremation burials

Status: Analysis of remains pending.

Report: Jacklin HA (2008) Skeletal Assessment Report on Eighty-One Saxon Skeletons and Three Cremations from Wolverton (Site 2), Milton Keynes. ULAS Report No. 2008-083. Commissioned by Archaeological Services & Consultancy Ltd.

Wormington (Worcestershire) to Sapperton (Gloucestershire), Pipeline Project

Period: Late Bronze Age/ Early Iron Age and Roman

MNI: 3 inhumations and 2 cremation burials

Report: Jacklin HA (2008) Skeletal Report on the Human Remains from the Wormington (Worcestershire) to Sapperton (Gloucestershire), Pipeline Project. ULAS Report No. 2008-184. Commissioned by Cotswold Archaeology.

Wessex Archaeology

By Jacqueline I. McKinley & Kirsten Egging Dinwiddy

Cemetery Excavations

The company has undertaken the excavation of eight cemeteries over the last

18 months; three Romano-British (RB), three Anglo-Saxon (AS), one post-medieval and one multi-period. Small grave groups (up to 12) and singletons (inhumation and cremation burials) have been investigated at a further 14 sites, with a temporal range from Early Bronze Age (EBA) - Early Anglo-Saxon (EAS) and across the country from Hampshire to Cornwall and from Wiltshire to the Outer Hebrides.

Two of the RB sites were situated on the west site of Dorchester, Dorset, one (*Little Keep*; remains 27 inhumation burials) forming part of larger urban cemetery adjacent to that at Poundbury and the other (*Poundbury Farm*; 34 inhumation burials) several small demographically mixed clusters. Little Keep is notable by virtue of its location and the high proportion of prone (41%) and decapitated (17%) burials it contained, together with the preponderance of older adults and a high rate of male trauma (including weapon); all of which may be indicative of the nature of this particular cemetery group. The burial groups from Poundbury Farm - which included one made in a stone sarcophagus - have the appearance of small 'family' groups associated with individual farmsteads. One of the two urned cremation burials features the rare survival of a clay 'plug'. Excavations at *Winchester Hotel* (51 inhumation burials) revealed the eastern margins of the Winchester Lankhills cemetery. Further excavations at *Boscombe Down, Wiltshire* brought the total number of graves from this c. 100 hectare site to c. 40 prehistoric (singletons, small groups & communal graves) and c. 250 RB (from five inter-visible cemeteries). A stone sarcophagus containing the remains of a dual burial was recovered in this latest phase of works.

Two of the Early Anglo-Saxon (EAS) cemeteries, *Aldbourn* (26 inhumation burials) and *Collingbourne Ducis* (70 inhumation and two cremation burials),

both lay in Wiltshire on the western margins of EAS expansion and form parts of larger grave groups. The latter included many furnished graves, including a 'bed' burial. A possible case of leprosy and a juvenile with blade injuries suggestive of a 'violent' death have been identified at Aldbourne (Report by Anthea Boylston in prep.). The 19 inhumation burials excavated at *Twyford School, Winchester, Hampshire* also part of a much larger cemetery; grave goods include weapons, knives and personal ornaments and there is a possible case of TB.

Part of a 'lost' small town cemetery was excavated in Wilton, Wiltshire (*Wilton Autos*) with the remains of a min. 88 individuals (44 *in situ*, rest redeposited; 16-17th century date) recovered from a 5 x 6m area. There was no previous knowledge of a cemetery in this area.

Osteological Reports

Cremation cemeteries

The remains of small groups (4-10) and single cremation burials from eight sites dispersed across southern and central England and covering a broad temporal range (MBA- AS) have been subject to examination. Those from *Tranmer House, Sutton Hoo* (for Suffolk County Council) included similar deposits to those noted at the main site to the south (but no boat!), the cremation rite showing characteristics of both the Anglian tradition and those from the south of England.

The assemblage from *St. Dunstan's, Canterbury, Kent* (for Canterbury Archaeological Trust) represents a moderately large RB urban group (128 cremation-related deposits, including 70 urned, unurned & combination burials (one amphora and one casket)). Unusually, the remains from three burials included no skull; and animal bone inclusions comprised the usual pig and bird, and the less frequently encountered dog.

Inhumation cemeteries

Small groups (4-10) and singletons from several sites ranging in date from the early Neolithic-LRB have been examined. Some of the remains from one of the Beaker graves excavated in Wiltshire (*A303 Stonehenge Project*) showed some indications of post-depositional manipulation of the remains - an observation which is becoming increasingly frequent for remains of this date.

The assemblage from *Little Keep, Poundbury, Dorchester, Dorset*: (see above) will be presented in the forthcoming report: McKinley, J.I. and Egging Dinwiddy, K. 'Deviant' burials from a late Romano-British Cemetery at Little Keep, Dorchester. *Proceedings Dorset Nat. Hist. Archaeol. Soc.*

Mixed-rite cemeteries

Five southern English sites (MBA-RB) with the remains of small groups (2-8) and single burials (inhumation and cremation) have been examined and reported on together with larger assemblages from four sites. Three of the latter lay in Kent including a collection of small LBA-ERB sites excavated as part of the *Margate and Broadstairs Pipeline Project*; one of the ERB cremation cemeteries within the group included several casket burials whilst a second included a high proportion of amphora burials and possible 'token' cremation burials/cenotaphs.

Amongst the larger assemblages, those from *Allansdale, Barra, Outer Hebrides* (EBA; eight inhumation and two unurned cremation burials) includes many neonates and shows evidence for the re-use of cist graves, revisiting to add and/or remove material. The RB assemblage from *Springhead, Kent* (one cremation burial & remains 61 inhumation burials) includes an important assemblage of 51 neonates/foetuses associated with settlement and the temple complex precinct. The AS remains from the same

site (29 inhumation burials) were too poorly preserved to do other than indicate age and sex. This was similarly the case with the 23 LRB inhumation burials from *East Hill House, Dartford, Kent*.

York Osteoarchaeology Ltd

By Malin Holst and Anwen Caffell

York Osteoarchaeology Ltd carries out osteological analysis of assemblages from Britain and Ireland. Malin Holst teaches undergraduates and Master's students in Human Skeletal Biology at the University of York, and Anwen Caffell is an Honorary Research Associate at Durham University. Malin Holst spent much of 2008 excavating a large group of skeletons from Syningthwaite Priory, North Yorkshire on behalf of Mike Griffiths and Associates. The skeletons will be analysed by York Osteoarchaeology Ltd in 2009.

Heslington East, York for the Department of Archaeology, University of York by Malin Holst

A single skeleton was radiocarbon dated to the late Roman period (302 AD \pm 39 years). It lay in a flexed position in the vicinity of a high status Roman building. The burial contained a young middle adult male. Worn teeth, dental chipping and evidence for muscular trauma suggest that he carried out habitual activities that involved the teeth and caused physical strain. He had also incurred an injury to the lower limb muscles and suffered from receding inflammation of the shins. Severe destruction of the vertebrae in the lower spine, as well as fusion of the sacrum to the pelvis suggests a diagnosis of gastrointestinal tuberculosis, which is currently being tested using DNA analysis.

Mitchell Laithes, Dewsbury, West Yorkshire for Northern Archaeological Associates Ltd by Malin Holst

Three assemblages of cremated human bone were recovered from pits located in

the centre of a Bronze Age barrow. One of the burials also contained an Early Bronze Age 'pygmy cup', thought to date to 2000-1500 BC, while another burial contained bone beads. A further burial, located 10m to the southwest of the barrow, was interred in an inverted collared urn. The burials contained large quantities of bone, representing between 37% to the 93% of the amount of bone expected from a modern cremation. All of the burials contained the remains of adults; in two cases these were old middle or mature adults. The latter burials contained a male and a female who had suffered from degenerative joint disease during later life, particularly in the spine.

89 The Mount, York for Mike Griffiths and Associates by Malin Holst

The skeleton had been interred in a gritstone sarcophagus with a plain lid, which was filled with soil to the top, above a thin irregular layer of gypsum. Once excavated, it was found that the coffin contained disarticulated human remains, as well as animal bone, a copper alloy item and numerous fragments of animal bones and teeth. Many of the human bones were found throughout the soil fill of the coffin, but the legs, parts of the hip and parts of the skull were found beneath the gypsum. It is possible that the burial had been robbed and the surviving remains had been re-interred under the gypsum to prevent further disturbance. The skeleton was that of a middle-aged or mature woman. She showed evidence for dental enamel hypoplasia and periosteal inflammatory lesions of the tibiae. Both of her first metatarsals displayed evidence for mild osteoarthritis and she also had degenerative joint disease in her hips and spine.

Dower House, Brockhampton, Gloucestershire for Nick and Penny Fresson by Malin Holst

A single skeleton was radiocarbon dated to 223 \pm 44AD. The skeleton was a mature

adult female, and relatively tall, but of very gracile build. The lack of muscular development on her bones could suggest that she was recently paralysed, or that she was sickly and not able to participate in manual tasks, or alternatively, that she was of such high status that it enabled her to avoid manual activities. During later adulthood, she fractured the first left rib, which had not healed. She had also developed mild to moderate degenerative joint disease in her spine, ribs, hips and knee

Norton, North Yorkshire for MAP Archaeological Consultancy Ltd by Malin Holst

A single cremated bone assemblage was recovered during installation of street lighting in Norton, North Yorkshire. The skeletal remains were recovered from an intact Roman urn. The burial contained the remains of a gracile adult female.

119 Tiddington Road Stratford-upon-Avon for Warwickshire Museum Field Services by Malin Holst

Four Roman burials were excavated from within the confines of a Romano-British settlement, including an adolescent, a young adult of undetermined sex, a young middle adult female and a mature adult male. The burials were uniform and interred in coffins, with the exception of a female, whose skull had been interred on her shins. The male and female had suffered from arrested growth during childhood and the male had *cribra orbitalia*. The male had sustained trauma to the muscles of the rotator cuff, *os acromiale* of the right shoulder and a well-healed clavicle fracture. The mature man had degenerative joint disease to the shoulders, right elbow, left wrists, hands, hips and spine and osteoarthritis in his neck and in his left hip.

St. Peter's Church, Addingham, West Yorkshire, for West Yorkshire Archaeological Services by Anwen Caffell

Two partial skeletons and disarticulated remains were recovered during excavations in 2007 at St. Peter's Church, Addingham, West Yorkshire. The trenches abutted excavations carried in 1989 and 1990, when 45 individuals from an 8th-10th century cemetery were recovered (analysed by Boylston and Roberts, 1996). Both partial skeletons were adults, one (unsexed) probably between 25-45 years of age, and the other (a male) probably an old-middle or mature adult. Dental disease was present, including calculus, caries, dental abscesses and antemortem tooth loss. The data on dental disease were combined with that recorded for the original skeletal sample.

Felindre to Brecon, Brecon to Tirely and Milford Haven to Aberdulais pipeline excavations, for Cambrian Archaeological Projects and Cotswold Archaeology on behalf of RSK Group Ltd. and for Network Archaeology by Anwen Caffell and Malin Holst

Burnt bone recovered from 51 sites in advance of the construction of a natural gas pipeline in South Wales was assessed. In the majority of cases the amount of bone was small, and species could not be identified. Eleven sites contained definite or potential deposits of human bone. These included a Bronze Age cremation cemetery; a cremation cemetery of prehistoric or Roman date near a henge and twelve Bronze Age cremation burials excavated from a ring-ditch enclosure. It is expected that the material from these sites will undergo full analysis at the next stage of the project.

DEPARTMENTAL REPORTS

**BARC, Archaeological Sciences,
University of Bradford***By Jo Buckberry*

2008 was a busy year in Bradford! This summer we hosted the latest Palaeopathology Short Course, supported by the Institute for Bioarchaeology. With over 30 delegates from around the world, and an international group of lecturers, Bradford's curry houses and tourist attractions were kept very busy – as were all the staff who made the course such a success. I'd like to take this opportunity to thank everyone who was involved, especially the lab team – Anthea, Alan, Darlene, Nivien, Sarah, Becky, Jen and Gemma – who worked tirelessly to keep the skeletons in order. Huge thanks also to Chris Knüsel for organising everything. This September we will be hosting the 11th Annual BABA O conference.

The publication of “Leper's outside the gate”: excavations at the cemetery of the hospital of St James and St Mary Magdalene, Chichester, 1986-93' was celebrated with a book launch and seminar, presented by Anthea Boylston, Keith Manchester and Alan Ogden, followed by a buffet and wine reception.

After his sojourn in Bradford, Gristhorpe Man has returned to the refurbished Rotunda Museum in Scarborough. We shall miss him but a synthetic paper highlighting the main new discoveries and an in-depth monograph detailing the full programme of analysis undertaken on the skeleton and grave goods are being prepared for publication by project directors Nigel Melton and Janet Montgomery. Nigel presented 'The Gristhorpe Man Project: the 21st-century investigation of a 19th-century discovery' at the British Association's Festival of Science in Liverpool. He shared the runner up prize in the 'Awards for the

Presentation of Heritage Research 2008' with Shirley Curtis, one of our current master's students, who presented 'Stable isotope analysis of bone collagen: weaning practices at medieval Poulton, Cheshire', based on her undergraduate dissertation undertaken at the University of Liverpool.

The skeletal report for the Mappa Mundi excavations at Hereford Cathedral is all but complete. Other contract osteology undertaken this year has included a 7th-century cemetery from Aldbourne (Wilts), an Anglo-Scandinavian cemetery at Masham (Yorks) and a single individual from Ledsham (Yorks). Anthea also undertook assessments for Wessex Archaeology for the Saxon sites of Collingbourne Ducis and Aldbourne, both in Wiltshire. Hot off the press!! The Norton Priory monograph arrived on our desks this week (see members' publications).

This summer we were sad to say goodbye to Chris Knüsel, who has taken up the position of Associate Professor in Bioarchaeology at the University of Exeter. Chris inspired both students and colleagues with his incisive scholarship, infectious curiosity and award-winning teaching, particularly in his favourite subjects of funerary archaeology, anatomy and palaeopathology. We celebrated his now post in true Bradford style, sharing his favourite food and drink - curry and beer - in the Division, and later migrated to the pub. Very best wishes Chris!

New PhD Student:

Emma Brown: The Antiquity of Hallucinogen Use in Coastal Peru. Funded by the AHRC.

Ongoing PhD Research:

Julia Beaumont: Irish names in a London Cemetery: is it possible to identify Irish immigration in 19th-Century Lukin Street?

Amy Dapling: The Archaeology of Infanticide in Anglo-Saxon and Medieval Britain

Sarah King: Engendered violence and trauma in the European Iron Age

Ben Neil: Osseous remains and cave taphonomy in the Yorkshire Dales

Victoria Mueller: The end of the world? Famine, plague and climate change in 14th century London

Nivien Speith: Skeletal evidence of the social persona: Life, death and society in early-medieval Alamannic communities

Rebecca Storm: Human skeletal asymmetry: A study of directional and fluctuating asymmetry in assessing health, environmental conditions, and social status in English populations from the 7th to the 19th century

Fiona Tucker: The Treatment and Use of Human Remains in the Atlantic Scottish Iron Age

Joseph Warham: Biosphere mapping of strontium isotope ratios in the British Isles

Jen Wooding: Manifestation, identification and diagnosis of tuberculosis in faunal remains from an archaeological context

Dissertations Submitted for the MSc Human Osteology and Palaeopathology, 2008:

Emily Beales: Raunds Furnells: a bio-cultural investigation of the pathology of the adult skeletons

Monika Borkowska: A comparative analysis of stress indicators in skeletal remains of two populations from different living environments

Rhea Brettell: "Impious easterners": oxygen and strontium isotopes as indicators of provenance in early medieval cemetery populations

Lydia Carrington-Porter: Is it worth it? The effects on an osteological teaching collection of standardised curatorial protocols

Maria Giannoukou: A comparison of fracture-trauma in two post-medieval British populations of different socio-economic status

Tim Gocha: Tooth cementum annulation for estimation of age at death in cremated remains

Rachel Howcroft: The interaction between diet, disease and stable isotopes: a study of bone and teeth from the Anglo-Saxon cemetery at Raunds Furnells

Aidan Mulkerrin: Clarification of the apparent association of Bronze Age cups with infant cremations in Scotland

Romy Müller: The biomolecular archaeology of leprosy

Chris Reid: The development of standard procedure for recording osteoarthritis in the major appendicular joints

Hilary Sale: An assessment of Barium in British archaeological human tooth enamel as an indicator of provenance

Sam Walsh: A study of the Neolithic human remains from Sumburgh cist, Shetland

Institute of Archaeology & Antiquity, University of Birmingham

By Megan Brickley

People

Dr Martin Smith left the University of Birmingham to take up an appointment at Bournemouth University. Rachel Ives was awarded her PhD and took up an appointment with AOC Archaeology Group, London. David Swinson formally joined the team at Birmingham with his appointment as an honorary research fellow in paleopathology. Megan Brickley was promoted to Reader in Biological Anthropology.

Projects involving human remains

No new projects involving human remains were started by Birmingham Archaeology, but a full report was commissioned on the Romano-British skeletons excavated from Dean Farm, Bishop's Cleeve, Gloucestershire. Presentations on the excavations undertaken in Birmingham,

including St. Martin's, were given at a well attended day conference on Life, work and death in Birmingham City Centre 1100-1900: A synthesis of information obtained through the PPG16. This research will be published later this year.

Bournemouth University, Centre for Archaeology, Anthropology and Heritage and Centre for Forensic Sciences

By Ian Hanson and Martin Smith

People

2008 has been an exciting year characterised by additions and expansion at the Centre for Archaeology, Anthropology and Heritage, and Centre for Forensic Sciences at Bournemouth. New facilities, additional staff appointments and expansion of collections, with continued and growing success with taught courses, publications and contributions to the RAE in the area of biological anthropology, forensic archaeology and anthropology maintain and improve standards within the university.

Dr Marie Louise Jørkov, Lecturer in Forensic Anthropology was appointed in October 2007, has research interests in a variety of areas of biological anthropology including trauma and stable isotope analysis. Marie moved from University of Copenhagen to join the School and is currently taking charge of teaching on the Forensic and Biological Anthropology MSc and leadership of the new Human Osteoarchaeology MSc. In October Dr Martin Smith was appointed as Lecturer in Forensic and Biological Anthropology and is currently settling in to teaching and research commitments. Dr Amanda Korstjens, Lecturer in Biological Anthropology was appointed in 2007, a primatologist with particular interests in behavioural strategies and environments

and putting considerable energy into both research and teaching in palaeoanthropology. In addition to their archaeological interests Martin and Marie join an expanding team at Bournemouth with interests in forensic work including the Head of the Forensic Centre Prof David Osselton (former Chief Toxicologist and head of R&D for the Forensic Science Service) and DNA specialist Dr Wei-Jun Liang.

Ian Hanson, leading the forensic MSc programs and Paul Cheetham leading BSc archaeological and forensic sciences degree, continue to develop new approaches to search, location, recovery and recording of human remains, both from the archaeological and forensic archaeological perspectives. The publication of the *Scientific Investigation of Mass Graves* and the *World Archaeological Congress Handbook of Forensic Anthropology and Archaeology* exemplify this.

Teaching

The school is now enjoying the benefits of a large new osteology teaching lab, opened in October with a wide range of newly purchased casts and equipment, as well as a new human bone store. These facilities have allowed for a substantial expansion in available storage for collections, and improved practical teaching at both undergraduate and MSc levels, and are competently administered by Demonstrator in Archaeology and Anthropology Patricia Furphy, a former Bournemouth MSc graduate. The MSc courses in osteoarchaeology and forensic and biological anthropology are strong with 24 students, 7 of whom are from overseas. The forensic archaeology course has 20 students, 5 from overseas. The new recovery and identification of human remains course, combining osteological and forensic archaeological units recruited 6 students in its first year. The final results for the 2008 MSc courses were very

pleasing with 9 students obtaining distinctions. Summer short courses run during 2008 to develop student experience and practical skills were very successful with 52 students attending. These covered excavation of mass graves, skeletal analysis in temporary mortuaries and recovery of remains from air crashes. In December we were privileged to have Professor Richard Wright teach a master class to 31 osteologists and students on his cranial analysis package CRANID. Bournemouth did well in its class in the recent RAE now being rated as the top 'new' university for archaeology.

Research Projects

The final preparations (legal and ethical permissions etc.) are currently being put in place for the first of a series of new outdoor research facilities being developed for use by the School of Conservation Sciences. During early 2009 it is intended to commence the first of several collaborative projects studying decomposition and scavenging using an area of woodland acquired by the department for the purposes of running actualistic research. In addition to anthropological and archaeological expertise the school has the benefit of a variety of specialists to bring to bear on such research including environmental, entomological and geological specialists.

Plans are also being finalised to investigate a previously unexcavated Cotswold-Severn tomb during the summer of 2009. Headed by Prof. Tim Darvill this is intended to be major project, again involving a wide range of specialisms. Preliminary geophysical surveys appear extremely interesting with the project as a whole looking highly promising. Following the publication of Martin Smith's forthcoming book on earlier Neolithic human remains written with Megan Brickley the project may offer a chance to test some of their ideas.

Staff have been involved in overseas projects, osteological analysis and excavations in Europe, Africa and the Middle East, including cemetery and pyramid excavations in Egypt and Jordan.

MSc student research continues to produce excellent research in the areas of osteology, forensic anthropology and archaeology, taphonomy and related sciences. Presentations of students work took place in 2008 at conferences in London and Vienna, and were published together with Ian Hanson in *Criminal and Environmental Soil Forensics*.

Centre for Archaeological and Forensic Analysis, Cranfield University

By Sophie Beckett, Andrew Shortland and Anna Williams

The Centre for Archaeological and Forensic Analysis (CAFA) forms a major part of the Cranfield Forensic Institute, both relatively new institutions. CAFA splits roughly equally into work on forensic and archaeological subjects, both for organic and inorganic materials. However, it maintains a particular strength in the analysis of bone by a range of physical, chemical, mineralogical and isotopic techniques. CAFA welcomes collaborative projects with other institutions and over this last year has run collaborative projects with Harvard, Leuven and Oxford Universities, the Getty Institute of Conservation, British Museum, Metropolitan Museum and Art and many more.

CAFA and the Cranfield Forensic Institute continue to grow. Professor Margaret Cox, Mark Viner and Roland Wessling of the INFORCE Foundation joined the department in August 2007, bringing with them their expertise in atrocity crime and mass grave excavations. Dr Karl Harrison, forensic archaeologist with LGC Forensics

joined us as a Fellow of the Institute and as lecturer in forensic archaeology. Professor John Clement has also become a Fellow of the Cranfield Forensic Institute. Professor Clement is the Inaugural Chair of Forensic Odontology at the University of Melbourne and has considerable expertise and experience in forensic odontology and forensic anthropology. Sophie Beckett has been appointed as Research Fellow and will be undertaking research into the composition and chemistry of bone mineral and X-ray diffraction analysis of archaeological materials. In all, the Centre now has some twelve members of staff who have interests in forensic and/or archaeological bone, or inorganic archaeological materials, especially glass, glaze and ceramics.

CAFA currently has six PhD students working on archaeological or forensic projects:

Melanie Sapsford: Salt and soda in ancient Egyptian medicine and related industries

Sophie Beckett: XRD of bone for species determination

Susy Kirk: Glass and glass weathering at LBA Nuzi

Nicola Attard-Monalto: Provenancing of ochres

Jamie Fredericks: Development of new tools for forensic analysis of DNA from Compromised Bone

Rebecca Scott: Forensic and archaeological analysis of glass

The MSc in Forensic Archaeology and Anthropology continues to go from strength to strength, and is now in its third year. All students in the 2007 intake passed, and the course prize for the outstanding student was awarded to Rachel Cochrane. The intake for 2008 rose to 12 full-time students and 6 part-time students. It is hoped that in 2009, a modular Masters programme will be launched, where students can construct their own 'bespoke' Forensic Masters course from a combination of a wide range of

compulsory and elective modules. MSc Forensic Archaeology and Anthropology Dissertations completed in 2008 include:

Juliet Barrowman: Study of the variation in colour change during the decomposition process of individuals with differing skin pigmentation

Tamsen Clarke: An investigation into the ballistics of 17th century cannon firing case shot

Rachel Cochrane: Random or ritual? An investigation into infant jar burials at the ancient Mesopotamian city of Nuzi

Anna Davenport: Understanding the burial landscape at Royal Hospital Haslar

Tanya Leakey: Determining the position of bloodstains when impacting differently textured surfaces

Charlotte Malone: Life, death and disease: An investigation into the burial practises at Haslar Royal Naval Hospital 1750-1850 AD

Dominic Monaghan: The effect of temperature change on time since death estimation among different sized cadavers, both on the surface and buried

Helena Rogers: The identification and quantification of decomposition gases derived from four pig cadavers: a preliminary study

Caroline Sims: Diatom profiling of human remains recovered from waterways

Joanne Smith: A comparison of bone trauma caused by historic and modern firearms

Steven Walden: Bullets on bone: a critical assessment of the current status and understanding of the impact of ballistics on the adult human skeleton.

In February 2008, a large contingent from the Cranfield Forensic Institute attended the American Academy of Forensic Science Conference in Washington, DC, and presented several oral and poster presentations:

Beckett S: Species Identification of Fragmented Bone: Evaluation of a New Method of Pyrolysis and X-ray Diffraction Analysis

Cox M: Experiential education: the use of simulation in training in forensic anthropology and archaeology

Fredericks J and Simmons T: DNA quantification of burnt skeletal tissue

Wessling R: Realism in simulation training: examples of mass grave excavation and mass fatality incident mortuary simulation exercises

Wessling R and Loveless T: The importance of forensic photography in domestic and international forensic operation

Magnanti B and Williams A: Decomposition and post-mortem interval: A critical analysis of British medico-legal investigation and trends in South Yorkshire, 1995 – 2002

Williams A and Temple T: Mass graves as a waste disposal solution?

Centre for Anatomy and Human Identification, College of Life Sciences, University of Dundee

By Patrick Randolph-Quinney

It has been another busy and productive year in Dundee. Following on from the expansion of academic staff numbers in 2007, we were pleased to welcome Catherine Carr to the anatomy teaching staff. In July we hosted the 13th Biennial Scientific Meeting of the International Association for Craniofacial Identification (IACI) attended by over 80 delegates from 20 countries. In September we hosted the Biannual Meeting of the Institute of Anatomical Sciences. Professor Sue Black was awarded the Lucy Mair Medal for Humanity in Anthropology and was made a Fellow of the Royal Anthropological Institute.

Teaching

Our second cohort of students graduated from the BSc (Hons) programme in Forensic Anthropology under the direction of Dr Patrick Randolph-Quinney, and our taught MSc in Human Identification

graduated another successful year under the direction of Dr Caroline Wilkinson. 2008 also saw us graduate our first cohort of MSc Forensic Art and Medical Art students under the direction of Gregory Mahoney. We wish all our graduated students every success for their future endeavours.

2008 saw the first year of the MSc in Human Anatomy under the direction of Dr Roger Soames. This innovative one-year taught Masters programme provides a solid foundation in human anatomy and considers all aspects of gross anatomy through direct examination and contextualisation. The international origin of students, as well as the mix of recent and experienced graduates, provides a dynamic learning environment for the development of ideas within the field of anatomy education. The programme provides a focus for human gross anatomy training and a foundation for basic, clinical and surgical anatomy research.

Further details of our undergraduate and postgraduate courses can be found at <http://www.lifesci.dundee.ac.uk/CAHId>

Forensic Caseload

2008 saw us continue to be actively engaged in forensic casework in the areas of human identification, biometry, facial reconstruction and approximation, forensic anthropology, and forensic archaeology.

2008 also saw the establishment of the Virtual Anthropology Consultancy Service (VACS). This service, the first of its kind in the UK, offers a free identification facility for UK Police Forces in the event that skeletal remains are discovered. One of the first questions to be asked on the discovery of skeletal remains is 'are they human?' A negative response has a significant positive financial impact for the force involved as it means that valuable resources are not diverted to responding to a possible investigation. Alternatively, an

affirmative answer ensures that appropriate procedures are duly implemented. To date over 40 cases have been submitted for identification, with a dozen UK Police forces having taken advantage of the facility to date. Whilst the majority of cases submitted turn out to be non-human in origin (assorted bones of ungulates, domestic pets, and even a seal flipper) a small number have been positively identified as human, and thus necessitated further forensic enquiry. The demand for this service was largely realised during informal discussions undertaken during the anthropology awareness training section of the UK DVI (Disaster Victim Identification) programme that is delivered jointly by the University, NPIA (National Police Improvements Agency), CIFA (Centre for International Forensic Assistance) and UK DVI.

National Disaster Victim Identification (DVI) Training Programme

2008 saw the second phase of UK DVI training at Dundee in association with ACPO, NPIA, and CIFA. This collaborative training scheme has now successfully trained 500 officers representing every UK Police Force. These officers will form the National UK DVI response team in the event of mass fatalities involving British nationals caused by events such as natural disasters or terrorist attacks. *Disaster Victim Identification: The Practitioner's Guide* is due to be published by Dundee University Press. Edited by Sue Black, Graham Walker (UK DVI Commander retired), Lucina Hackman (DVI Programme Convenor) and Clive Brooks (NPIA). The guide is the key reference book in this developing area, for police officers and other professionals. The book accompanies the University of Dundee course, but it is also designed as a standalone reference text for all professionals in the field. It is the first of its kind internationally.

Educational Outreach

Outreach and public engagement are central to the operating ethos of the Centre

for Anatomy and Human Identification. Active and full participation in this important element are expected from all staff from the Head of the Centre, through all academic teachers and researchers to postgraduate students. We feel it is our duty to dispel the 'Mickey Mouse' science that surrounds the likes of CSI, Bones and Silent Witness and so we seek to enthuse and encourage by addressing the reality of the subject, the limitations of our science and research within a legal framework and the difficulty but sheer and thorough excitement of research that serves justice. As such, 2008 saw us continue a successful series of outreach programmes, bringing aspects of our work in forensic anthropology and human identification to 18 Scottish schools. We also ran a series of outreach classes through the Royal Society of Edinburgh, Sensations Science Centre Dundee, and Techfest. For adults our outreach activities included Café Science and the British Association Festival of Science amongst others.

Current Postgraduate Research Students

Craig Cunningham: The internal architecture of the developing skull.

Lisa Fairbairn: Anatomical considerations of subacromial impingement syndrome.

Lucina Hackman: Age determination in the living in relation to asylum and immigration.

Iain Huggins: Familial patterns of hand geometry.

Won-Joon Lee: Practitioner racial bias in forensic facial reconstruction.

Helen Meadows: Vein pattern analysis.

Marc Moghbel: Functional anatomy of the ligaments of the foot.

Andrew O'Malley: The internal architecture of the developing scapula.

Amy Tilotson: Facial decomposition and the prediction of facial appearance.

Department of Archaeology, Durham University

By Becky Gowland

The Dawson building, where the Department is housed, has been undergoing refurbishments for several years now and in September 2008 they were finally completed. As well as welcoming the Department of Anthropology into the building, we now have some new laboratories, including DNA and bioinformatics labs. Also, in December we were delighted to hear that the Department had been ranked first for Archaeology (on Grade point Average) for the 2008 Research Assessment Exercise!

People

Charlotte Roberts has returned from her two year Leverhulme Trust funded research leave and is back directing the MSc in Palaeopathology. In Charlotte's absence the MSc was convened by Tina Jakob who is now an Honorary Research Fellow. Currently Tina is involved in the excavation and analysis of the human skeletal remains from El-Salha, a prehistoric and historic cemetery site in Central Sudan. We are also pleased to welcome Dr Greger Larsen (RCUK Fellow). Greger specialises in ancient DNA and will be setting up a laboratory at the Department.

New research students for 2008

Marta Diaz-Zorita Bonilla: Reconstructing social structure through bioarchaeological analysis – Government of Andalusia, Spain

Jennifer Sharman: Testing age and sex estimation methods on known documented skeletal collections from Portugal, England and Canada

Research students who submitted/had their viva in 2008

Francisca Alves Cardoso: A Portrait of gender in two 19th/20th century

Portuguese populations: A paleopathological perspective

Charlotte Henderson: Musculo-skeletal stress markers in bioarchaeology: indicators of activity levels or human variation? A re-analysis and interpretation
Rosa Spencer: Testing hypotheses about diffuse idiopathic skeletal hyperostosis using stable isotope and other methods

Current Research Students

Karen Bernofsky: Bioarchaeological study of respiratory disease in Britain

Jaime Jennings: Conflict in the Borders of England and its impact on late medieval populations

Kirsty McCarrison: Osteological and biomolecular study of prehistoric tuberculosis in Britain – NERC funded

Michelle Munde: An isotope approach to diet within the multi-faith society of Medieval Spain – AHRC funded

Paola Ponce: Patterns of activity-related pathology in Amerindians from South America – Durham Doctoral Award funded

Beth Upex: Enamel hypoplasia in Caprines: a marker of environmental and agricultural change

Julie Thomas: A global perspective on 19th century malaria

The following MSc in Palaeopathology students successfully completed their dissertations in 2007-08

Orsolya Laszlo: A study of influence of stress on skeletal growth in non-adults - comparative analysis of a subadult population from the medieval Hungarian cemetery of Kana

Kathryn Reusch: Eunuchs and Castrati: Skeletal effects of pre-pubertal castration

Jessica Self: Skeletons in the closet: The British contribution to the history of Paleopathology

Robin Taylor: Relationship between health and geological location and its changes over time in early Medieval England

Sophie Tynan: The application of skeletal trauma in archaeology explored through

the comparison of culturally different populations

Rebekah Watts: Non-specific indicators of stress and their association with age at death at Fishergate House, York

Current Projects

Biomolecular archaeology of tuberculosis in Britain and Europe - NERC funded project (2007-2010) – Charlotte Roberts and Professor Terry Brown of the University of Manchester as investigators and Abi Bouwman (Manchester) and Darlene Weston as PDRAs – see BABAO review 2008 and webpage (<http://www.dur.ac.uk/archaeology/research/?mode=projects&id=353>). Having completed Year 1 which concerns sample collection from skeletons in museums and other institutions around Britain and the rest of Europe (by Dr Darlene Weston), the analysis is now beginning at Manchester. We would like to thank all those people who are BABAO members for their cooperation in sample access and collection.

The Bamburgh Bowl-Hole Anglian cemetery: a contextual study. – AHRC funded project (2006-2009) – Charlotte Roberts with Sam Lucy and Graham Pearson as investigators, and Sarah Groves as PDRA, in collaboration with the Bamburgh Research Project – see BABAO review 2008 and webpage (<http://www.dur.ac.uk/archaeology/research/?mode=projects&id=278>). Recording of the human skeletal material is complete and analysis of the data is providing a picture of life and death in this Early Medieval Northumbrian population. The current phase of the project continues with the exploration of migration using Strontium and Oxygen isotopes from tooth enamel, and diet using Carbon and Nitrogen isotopes from bone collagen. The most recent results suggest a significant degree of mobility amongst both humans and animals. The project will be pausing in 2009, as Sarah Groves is taking a year out

to have a baby in March, but will return to complete the project in 2010. We wish Sarah all the very best!

Bioarchaeology of leprosy

Charlotte Roberts' Leverhulme Trust Fellowship funded writing a book entitled: *A bioarchaeology of leprosy: a global perspective on a declining disease* (University Press of Florida); finalisation of the manuscript will be complete at the end of summer 2009. (see webpage: <http://www.dur.ac.uk/archaeology/research/?mode=projects&id=279>)

Indigenous or incomers? A mobility study of people with pre-Columbian venereal syphilis at Hull Magistrates Court

Charlotte Roberts, Andrew Millard, Graham Pearson (Earth Sciences), aided by Dr Colin MacPherson (Earth Sciences) and Dave Evans (Humber Archaeology Partnership). See BABAO review 2008 and webpage (<http://www.dur.ac.uk/archaeology/research/?mode=projects&id=382>).

History of Palaeopathology volume

(see webpage: <http://www.dur.ac.uk/archaeology/research/?mode=projects&id=400>)

Jane Buikstra (Arizona State University) and Charlotte Roberts are co-editing a book for Oxford University Press involving over 70 contributors and with a global perspective (in terms of people, regions, developing trends, themes and so on). This should be a very useful volume documenting the key contributors in the development of palaeopathology, along with how individual countries have shaped what palaeopathology is today.

Department of Archaeology, University of Southampton

By Sonia Zakrzewski

Research Students

There are several research students working within the department on osteological and anthropological topics. Lisa Cashmore, funded through the British Academy Centenary Project (*From Lucy to Language*), working with Sonia Zakrzewski, has submitted her thesis exploring bilateral asymmetry in the hands and humeri of hominids. Sarah Inskip, under the supervision of Sonia Zakrzewski and Joanna Sofaer, has continued her analysis of gendered differences in the palaeopathological and MSM expression in medieval Christian and Islamic groups (particularly in Spain). Her last field season was funded by a BABAO small grant, for which she has been extremely grateful. Alison Moore, working with Louise Revell, is completing her research into social and skeletal recognition of the elderly within Roman Britain. Ellie Williams, under the supervision of Sonia Zakrzewski and Jo Sofaer, has just started a project studying the differences in diet and activity patterns within Cistercian, Benedictine and Augustinian religious orders in Britain and France.

Dissertations Approved for the MA in Osteoarchaeology 2007-8

Pedro Andrade: Lifestyle Reconstruction of an Early Pottery Period Population from the Choapa River Basin, IV Region, Chile: A Comparative Study from the Archaeological Site MLP PTF 13.

Demetra Aristotelous: Deciphering Injury Patterns Using the Method of Zonation: The Ante-Mortem and Post-Mortem Fractures from the Staines Skeletal Collection

Katharine Edwards: An osteoarchaeological investigation into the functional adaptation of the foot to shoes: A stepping-stone identity

Amy Reville: An investigation on the use of human remains as an educational resource in museums.

Lauren Turnbull: Establishing a model of skeletal adaptation, trauma and disease for use in the identification of gladiators from among Roman remains.

Jolene Twomey: An analysis of non-metric traits using a skeletal sample from the medieval site of Ecija, Spain.

Callista Vink: The Animal Bone Assemblage from Roman Worcester

Sarah Green: Life and Death in the West Wing: an initial data report on a selected sample of the faunal remains from Barcombe Roman Villa

School of Science & Technology, University of Teesside

By Tim Thompson

The small contingent of anthropologists at the University of Teesside is continuing to develop the teaching and research within the School. Teaching continues to be delivered on a number of Forensic, Crime Scene and Applied Science modules and has been enhanced by the acquisition of a new skeletal collection. We have also been involved in the development of the new cross-university MSc in Mass Fatalities Management and Victim Identification degree.

Our research is also continuing, with development and publications in the areas of bone taphonomy, trauma and the application of forensic anthropology. Our Leverhulme Trust funded research into the use of body modifications has been moving forward well, and we'd like to thank all of those who have contributed to the survey so far. As a result of this, we've even been cropping up in the Times Higher and on Radio 4 and the World Service. We are also continuing with our consultancy work too.

Related MSc dissertations submitted for the Forensic & Crime Scene Investigation Pathways

Azeem, Z. (2008) SEM/EDS analysis of the elemental composition of bone when burnt at different temperatures.

Kerr, S. (2008) Identification of unique features of arrow wound tracts.

Current PhD Research students

Starkie, A. The use of body modification as a tool in human identification (funded by the Leverhulme Trust).

**University of Wolverhampton,
Research Centre in Applied
Sciences (RCAS), Department of
Forensic and Molecular Science**

By Christopher J. Rogers

Postgraduate Research

Research is currently being undertaken on the decomposition of hair, cartilage and bone in a burial environment (see postgraduate student abstracts).

Undergraduate Research

The Department of Forensic and Molecular Sciences also have numerous undergraduates working on taphonomic studies. Such research projects include:

- Fungal successions on mummified remains.
- DNA Identification of fungi growing on hair post mortem.
- Post mortem degradation of articular cartilage.

The subject group also offers learning and teaching based projects, which involve researching a topic, producing educational materials and testing these materials on student volunteers in teaching sessions. Such projects include:

- Methodology in forensic anthropology (e.g. age or sex determination)
- Forensic taphonomy.

**POSTGRADUATE RESEARCH
ABSTRACTS**

PhD Abstract

Liz Bell, International Centre for Cultural and Heritage Studies, Newcastle University (continuing)

Giving up the Dead: Museums, Ethics and Human Remains in England

Human remains have been at the centre of a worldwide ethical debate for over two decades. In England, this debate, which has come to be known as the 'reburial issue', and other concerns relating to the treatment of the dead, have resulted in the passage of legislation and guidance. It is the aim of this research to evaluate the impact and effectiveness of this legislation and guidance upon museums in England.

In 2004, the Human Tissue Act 2004 came into effect, giving nine national museums the power to de-accession human remains from their collections. Under the same law, museums are now also required to purchase a licence to store and display human remains under 100 years old. In October 2005, the Guidance for the Care of Human Remains in Museums was published by the DCMS. Although the Guidance was mainly developed to address concerns relating to requests for repatriation, it deals with all aspects associated with the care of human remains; a best practice document designed to be developed and adapted by museums in order to suit their own individual needs.

This research represents the first England wide survey of museums, both in terms of appreciating the origin and number of human remains in museum collections and in terms of individual museum responses to recent legislation and guidance.

PhD Abstract

Emma Brown, University of Bradford
(continuing)
Supervisors: Andrew Wilson, Timothy
Taylor, Ben Stern and Rob Janaway
Funding: AHRC

The Antiquity of Hallucinogen Use in Coastal Peru

There is cross cultural evidence that suggests naturally occurring psychoactive compounds have been used by ancient populations for thousands of years.

Archaeological evidence, in the form of snuff trays, depictions in ceramics and plant remains have been recovered from sites in the Central Andes dating back almost 3,000 years. The use of these substances continues today in traditional folk healing practices. However, proving the use of certain substances such as ayahuasca and San Pedro cactus in antiquity is difficult, as it is likely these substances were drunk as decoctions, therefore not identifiable in the archaeological record.

A novel approach to determine the use of these substances in the past is the analysis of hair for drug metabolites. There have been a number of successful analyses of ancient hair for coca and alcohol markers.

The aim of this project is to expand on this research to determine the antiquity of hallucinogen use in Peruvian coastal populations using liquid chromatography tandem mass spectrometry (LC-MS/MS).

Diachronic and gender-relevant data thus produced could inform reformulation/rejection of hypotheses concerning the social context of plant domestication in the Americas, in which the relative significance of shamanic or 'medicinal' cultigens, and the relationship between gender, status and prestige are moot.

MPhil Abstract

Laura Buck, University of Cambridge
(2008)

Behavioural Factors in Catarrhine Skeletal Variation

The study is an investigation into intraspecific variation in the catarrhine skeleton. 475 specimens from collections in the UK were measured using standard morphometric techniques. The species used were *Gorilla gorilla*; *Pan troglodytes*; *Pongo pygmaeus*; *Hylobates* sp.; *Papio* sp.; *Trachypithecus obscura*; *Ptilocolobus badius*; *Colobus guereza*; *Cercocebus torquatus*; *Lophocebus albigena*; *Macaca mulatta* and *Chlorocebus aethiops*. Regions of high and low variation were identified throughout the body. Behavioural and non-behavioural factors associated with regional skeletal variation were tested to make inferences about the action of stabilising selection and plasticity. Variation was found to be significantly higher in the postcrania than the cranium, in the forelimbs compared to the hindlimbs and in the diaphyses compared to the epiphyses or bone lengths. The non-behavioural factors considered were phylogeny, size and sex. The behavioural factors considered were degree of suspension, degree of terrestriality, habitat complexity, locomotor complexity, dietary complexity and degree of seed-predation. Possible examples were found for both stabilising selection and plasticity throughout the body, but no firm conclusions of causation were drawn. These results are of interest within the context of the study of human and non-human primate variation and may inform the debate surrounding the uniqueness of the human capacity of phenotypic adaptation (e.g. Wells and Stock, 2007; Foley, 1987).

Foley, R. (1987) *Another Unique Species: Patterns in Human Evolutionary Ecology*.

Harlow: Longman Scientific and Technical.

Wells, J. C. K. and Stock, J. T. (2007) *The Biology of the Colonising Ape*. Yearbook of Physical Anthropology 50:191-222

PhD Abstract

Lisa Cashmore, University of Southampton (submitted 2009)

The expression of bilateral asymmetry in the hands and humeri: a methodological comparison

The population-level preference for the use of the right hand is one of the defining characteristics of *Homo sapiens* and as such, its evolutionary origins within the human genus remain a topic of interest. Identifying hand preference in extinct hominin species is complicated by the difficulty in distinguishing markers of laterality in the bones of the upper limb. These difficulties are further compounded by the range of osteological methods available to study asymmetry and the under-representation of the bones of the hand in such studies.

To better understand the evolution of handedness within the hominin lineage the effect of methodology on asymmetry expression must first be clarified, as this in turn influences our notions of handedness in individuals and groups. The current study took a conclusive approach to the measurement of upper limb asymmetry in both modern human and non-human primate samples. To assess the contribution that the bones of the hand can make to asymmetry research, data from the metacarpals and phalanges were compared with that from the humerus, a more commonly-studied region of the upper limb. Both metric and musculoskeletal stress marker (MSM) data were collected and compared in order to assess the comparability of asymmetry profiles

generated by contrasting methodological approaches. Asymmetry was determined for a sample of modern human skeletons and a non-human primate sample comprising *Pan troglodytes schweinfurthii* and *Gorilla gorilla gorilla*.

Two key findings emerge from these analyses: 1) The expression of asymmetry differs, in terms of both direction and magnitude, between the bones of the hand and the humerus. Differences are also apparent between the metacarpals and phalanges. 2) Metric and MSM methods differ in the asymmetry profiles they generate, with the MSM method generally underestimating the magnitude of asymmetry present in a sample, relative to that identified by a metric approach. In addition, the various skeletal samples studied exhibit variation in their relative asymmetry profiles which can be attributed to potential differences in functional recruitment patterns in the upper limbs of these individuals.

Together, these findings clearly highlight the care that must be taken in analyses of asymmetry, due to the level of methodological variation present in currently inter-changeable approaches. The relatively neglected region of the hand has an important contribution to make to our understanding asymmetry in the upper limb. The results of this study recommend the adoption of a more inclusive approach to the study of upper limb bilateral asymmetry, particular when inferences are to be made regarding handedness. By combining methodological approaches and incorporating data from across the upper limb, a more accurate picture of asymmetry expression will emerge and allow us to better understand the evolutionary development of this trait in our hominin ancestors.

DPhil Abstract

Colleen Cummings, University of Oxford
(2008)

**Food and Society in Late Roman
Britain: Determining Dietary Patterns
Using Stable Isotope Analysis**

This thesis combines an in-depth review of Roman dietary practices as evidenced by texts and archaeological remains with carbon and nitrogen stable isotope analysis of the bones of individuals living in late Roman Britain. By using the wealth of information on dietary practices in the Roman world, models of characteristic Roman diets are constructed. These are then compared to the results of carbon and nitrogen stable isotope analyses of human and animal remains from a range of sites in Roman Britain. Humans and animals from eight sites in Southwest England are analysed – Cirencester, Gloucester, Winchester, Alchester, Asthall, Bradley Hill, Hucclecote and Stanton Harcourt, most dating primarily to the late third and fourth centuries.

The primary findings of this study indicate that the types of diet typically presented in Roman literature – either extreme grain-based veganism or elaborate marine fish based elite menus – are not found to be standard for the people of Roman Britain. Rather, most individuals show elevated nitrogen levels consistent with a primarily terrestrial based diet comprising a range of foodstuffs, and in particular the importance of pork, eggs and fowl is suggested. The people buried in the towns show more heterogeneity than those living in rural areas, and the spread of carbon values indicates the consumption of small, but consistent amounts of marine or freshwater fish. Indeed, when grave types are compared, those buried in more elaborate coffins do show a tendency towards marine fish consumption, confirming earlier stable isotope studies in Roman Britain, and suggesting that while large

amounts of marine fish were not standard in the diet, the connection between marine fish and elite culture found in the written record of Roman dietary practices was also current in Roman Britain.

PhD Abstract

Jonny Geber, Queen's University Belfast
(continuing)

Supervisors: Dr. Eileen Murphy, Dr. Colm Donnelly and Dr. Mark Gardiner.

**They died in the Great Irish Famine:
the osteoarchaeology of the Kilkenny
workhouse famine burials**

The recent development at the former workhouse in Kilkenny City has revealed sixty-one mass-burial pits containing the skeletal remains of more than 900 individuals. The burials were made over a period of approximately three years at the height of the Famine (1845-1852). More than half of the buried individuals are non-adults.

Although the skeletal assemblage found at the Kilkenny workhouse represents the tragic and inevitable end for many people during the catastrophe that was the Great Famine, for us they offer the opportunity of a unique insight into the health and social aspects of these people. By extension, using the assemblage and the existing documentary evidence, the study will add to our knowledge on how the Famine struck this pauper population and what the living conditions in the workhouse were like during this horrific period in Irish history.

The research will focus around three themes: the biocultural aspect of this mid-nineteenth century population; the stresses of the Famine as illustrated by mortality, deprivation and poor health amongst the workhouse inmates; and the management of the Famine crisis by the Kilkenny workhouse as indicated from the

archaeological record in combination with osteoarchaeological analysis and archival records and other sources such as folklore and art.

PhD Abstract

Maria Jelaca-Tavakoli, University of Reading (2008)
Supervisor: Dr Mary Lewis

A Forensic Approach to Estimation of Stature from Dimensions of the Skeletonised Lumbar and Sacral Spine

Stature estimation is an essential step for forensic anthropologists in the identification of unknown individuals. Current stature estimates rely heavily on the measurement of the long bones. Often, however, the long bones are either damaged or absent. This research aimed to provide standards for the estimation of stature based on dimensions of the lumbar spine and sacrum for use in both forensic and archaeological contexts.

Measurements of 3530 lumbar and sacral vertebrae were collected from 385 males and 206 females (364 Black; 227 White) from two South African and a North American collection of known individuals (Pretoria, Raymond Dart, and Hamann-Todd). Multiple regression equations were then tested against 152 fully documented individuals from the Terry Collection housed at the Smithsonian Institution, Washington D.C. In order for standards to be considered accurate enough for use in a forensic context, they needed to produce 95% confidence intervals. The accuracy of stature estimates in the Black populations resulted in 20% and 31% confidence intervals, while in White populations the outcome was 18% and 33% for males and females respectively. Hence, the use of the lumbar and sacral vertebrae for the estimation of stature in unknown individuals is not recommended for Black

and White North American and South African populations.

The relationship between vertebral dimensions and biological sex was also analysed.

Maximum lumbar length (LML) proved to be the most sexually dimorphic measurement, with males proving to have larger and more robust spines than females, with measurements providing an accuracy of 81%. The lower spine has never before been used for sexing, and has potential when added to the anthropological tool kit used for identification of unknowns in both forensic and archaeological contexts.

PhD Abstract

Christopher J. Rogers, University of Wolverhampton (continuing)
Supervisors: Dr. Wera M. Schmerer, Dr. Michael P. Whitehead, Dr. Raul Sutton.

Dating Death: Forensic Taphonomy and the Post Mortem Interval

This doctoral research involves the analysis of the decomposition of hair, cartilage and bone in a burial environment and falls under the discipline of forensic taphonomy. Within the forensic arena it is widely understood that as the post mortem interval (PMI) increases the level of accuracy for methods used to determine the PMI decrease. In the later stages of the decomposition process such intervals may only be estimated based on the visual appearance of the body and the investigators own personal experiences.

This research aims to document changes to the aforementioned tissues based on macroscopic, microscopic, molecular and microbiological analysis. Focus will be on a wide variety of phenomena, from the appearance of post mortem crystals through to the determination of fungal successions and changes to tissue

microstructure. Bone and cartilage will be harvested from porcine subjects to act as human analogues whilst the hair will come from a human source. The samples will be interred in the ground, simulating shallow graves of forensic significance. Burial will occur for specific time periods to document successive changes.

The density and consequent persistency of the aforementioned tissues will allow for analysis of samples in the intermediate (weeks) and long term (years) post mortem intervals. This timeframe is of great interest to numerous forensic personnel including forensic pathologists, anthropologists and archaeologists.

This research brings together the specialist academic backgrounds of all research persons, such backgrounds include; forensic science, forensic and biological anthropology, biochemistry, mycology, genetics and ancient DNA analysis. This PhD aims to be completed in 2010.

PhD Abstract

J. Sharman, University of Durham
(continuing)

A Test of Age and Sex Determination Methods on Documented Skeletal Collections

This project aims to study variation in the ageing process and sexual dimorphism in populations of different geographic location. Sex and age identification of human remains are essential for most bioarchaeological studies, including paleodemographic reconstructions, and are of the utmost importance in forensic anthropology. Accuracy in the methods of estimation is essential. Many methods exist and are applied to skeletal remains from populations of all time periods globally. However, studies show differences in the expression of sex characteristics and rates of ageing in

populations from different locations and time periods; thus, some methods may be more appropriate to particular samples than others.

This project tests age and sex techniques on 'documented' 17th to early 20th century adult skeletons from Canada, England, South Africa and Portugal. Age determination will be based on fourth rib, cranial suture and pelvic changes (the pubic symphysis and auricular surface). Sex determination will be based on morphological skeletal features such as the subpubic concavity and skull morphology. Differences between estimated and known values will be tabulated and synthesized for each collection.

By comparing the variation in accuracy between sex and age estimates for the skeletal collections, the efficacy of each method will be analysed for individuals of different spatial and temporal locations. This will help future studies, in that possible error in sex and age estimates may be recognized and avoided, or at least accommodated, providing more confidence in data produced from such studies.

PhD Abstract

Alex Starkie, University of Teesside
(continuing)

The use of body modifications as a tool in human identification

The identification of individuals in forensic contexts is continually being expanded and challenged. The range of contexts and level of proof of identification are also increasing, further stretching the boundaries in which identification scientists and biological anthropologists must work. Body modifications are one resource that remains, as yet, relatively little investigated. This research aims to redress

this issue, by highlighting the potential aid for identification body modifications present, both in creating general profiles of individuals, as well as being used in more absolute terms of identification. This research is being conducted through a number of different investigations. To date, chemical analysis of tattoo inks has been conducted, in order to determine elemental signatures of different manufacturers, with promising results. Further analysis of the same inks at a later date will be conducted in order for comparison, as well as other manufacturer's inks, to compile a comprehensive database for use in the field. A national survey pertaining information regarding what body modifications the modern, wider, British public display has also been underway for a number of months. Previously studies focused primarily on sub-sections of society such as convicts and drug-users and their relation to tattoos and other body modifications, creating a biased view of which sections of society engage in body modification. A second, more in-depth survey questioning the motivations behind body modifications has also begun, giving rise to some surprising results. Over the next two years DNA analysis of body jewellery, archaeological plotting of jewellery movement post-mortem, lymph node extraction and analysis and radiological evidence of modifications will be undertaken.

CONFERENCE REPORTS

The 10th Annual BABAO Conference

By Alan Ogden, University of Bradford

This was hosted by Oxford Archaeology and Oxford University at St Anne's College, Oxford, led by the team of Louise Loe, Ceridwen Boston, Mark Pollard, Linda Fibiger, and Hannes Shroeder.

We had the honour of sharing with Don Brothwell his views and comments on 10 years of research in biological anthropology, which he delivered in the keynote lecture "Flesh and Bones: a Decade of viewing the People of the Past" to set the scene for the theme underlying the Conference.

In addition to the customary Open Sessions, the conference was organised under two main headings: "Osteoarchaeology at the Molecular level" and "Biocultural approaches to the study of human skeletal modification". These were all well supported with presentations and posters.

There is not space to report on every presentation or poster, but some papers and posters suggested important changes in how we go about reporting aspects of Biological Anthropology.

Markers of Occupational Stress (MOS):

Francisca Cardoso reported on 603 skeletons from Portugal with biographical data documenting age at death, sex, cause of death and occupation. She reported that MOS did not reflect sexual division of labour and that age at death was a major confounding variable throughout analysis, showing that social factors were more important than occupation. A pertinent conclusion was that present methods of MOS recording and analysis were inadequate. These themes were echoed by Charlotte Henderson *et al.* in their review of MOS papers over the past 10 years.

Hair: This grows at about 1cm a month, and with liquid chromatography tandem mass spectrometry (LC-MS/MS) an immense amount of in-vivo chronological change can be documented. This was shown in the poster by Emma Brown *et al.* who reported on the 15 year-old "Llulliaillaco Maiden", an Inca "capacocha" mummy. The Maiden's hair

revealed alcohol and coca levels during the final year of her life as she took part in the prolonged feasting and pilgrimage preceding her sacrifice at a mountain shrine.

Digital Technology: John Cassella *et al.* reported on the Hulton Abbey skeletal digitisation project. This makes data available to a wide audience without further damage to delicate and friable bones, or can providing future access even to *reburied* skeletal material. The potential of new digital radiographic techniques were discussed by Michael Henderson *et al.* and Sonia O'Connor with Jo Buckberry who illustrated the impressive results now possible.

Palaeopathology: Heidi Dawson and Mary Lewis reminded the audience that TB in subadults often went unrecognised and appealed for greater consideration of this possibility when assessing skeletal remains. Megan Brickley, Simon Mays and Rachel Ives reported that Vitamin D deficiency was now linked not only to rickets, but also to cardio-vascular problems, neoplasia and Paget's disease. They discussed the differences between rickets and osteomalacia. They stressed that two assessors should be used and only agreed findings recorded. Residual deformities should not be reported as active rickets and ribs should always be looked at in detail. In addition they noted that antero-posterior femoral bending is suggestive of osteomalacia rather than rickets. It is important to remember that children survived rickets which was often low-level, chronic and cyclical.

This year the Jane Moore Prize went to Emma Nelson for her highly enjoyable talk on "Finger length ratio (2D:4D) and social group ranks in female rhesus macaques (*Macaca mulatta*)", which had us all comparing our 2D:4D ratios as we listened. Emma Brown and colleagues won the best student poster presentation on

"Evidence for coca and alcohol ingestion in the final months of the Lullailaco Maiden's life", and one of our hosts, Linda Fibiger, won the best student podium presentation with "Violence and conflict in Neolithic Europe: cranial trauma reconsidered", bringing together data from a wide range of sites.

In case any readers who did not go to this conference are concerned that it was unduly serious, I have to report that the accommodation and catering were excellent and that the Conference Dinner which was held in the august surroundings of Wolfson College and the Annual Quiz which, not surprisingly, was held in the Wolfson College Bar, were great successes.

International Congress on Biomedical Sciences in Archaeology

*By Piers Mitchell, Imperial College
London*

This three-day congress was organised by Constantinos Trompoukis of the University of Crete and Rethy Chhem of the University of Toronto. It was held from 24-6 Septembers at a hotel on the northern coast of Crete in Greece. There were seven sessions on the themes of bioarchaeology, palaeopathology, paleoradiology, biomolecular methods, chemical analyses, mummy studies and the history of medicine.

Nine keynote lectures were given by invited speakers, funded by a grant from INTERREG III A Greece-Cyprus (European Union), and twenty-one further papers were also presented. British based keynote speakers included Don Brothwell (York) who opened the congress with a talk on comparative palaeopathology in animals, Piers Mitchell (Imperial College London) who described the biomedical techniques that have been applied to

populations in the medieval Middle East, Terry and Sonia O'Connor (York and Bradford respectively) who highlighted the advantages of digital radiography over traditional film imaging, Mike Richards (Durham) who gave an overview of the isotope research undertaken so far on classical Greek communities, and Rosalie David (Manchester) who discussed Egyptian mummy research. Social events included a trip to the excavation at Minoan Knossos, a visit to the Archaeological Museum of Crete, poolside meals, and Greek dancing. An edited book of articles from the conference is planned.

The strengths of this congress were the well-balanced choice of session themes, and that many of the world's top experts attended. The topics covered were actually broader than the conference title might suggest, due to the contribution from a number of historians. The meeting also improved awareness of the potential of bioarchaeology to a number of Greek archaeologists attending the sessions, who mentioned to me how such techniques were not taught in most archaeology courses in Greece. A further workshop is to be held in September 2009, and a similar conference is planned for 2010.

Review of the 2008 Awards for the Presentation of Heritage Research

By Sophie Beckett

The 2008 Awards for the Presentation of Heritage Research was held in Liverpool in September. This event formed part of the annual Festival of Science, organised by the British Association for the Advancement of Science. Presentations on archaeological and heritage research were made to a public audience. Five out of the nine presentations given this year were on biological anthropology and osteoarchaeology topics and three of these presentations were prize-winners.

The first prize was awarded to Dr Peter Marsden from the Shipwreck and Coastal Heritage Centre, Hastings for a presentation on the wreck of the Amsterdam.

The second prize was shared between Shirley Curtis from the University of Liverpool and Dr Nigel Melton from the University of Bradford. Shirley Curtis presented research on 'Stable Nitrogen Isotope Analysis of Bone Collagen: Weaning Practices at Medieval Poulton, Cheshire, UK' and the talk by Dr Nigel Melton was entitled 'The Gristhorpe Man Project: the 21st Century Investigation of a 19th Century Discovery'.

The under-thirty prize was awarded to Sophie Beckett from the Sedgeford Historical and Archaeological Research Project and Cranfield University for a presentation entitled 'Girl or Boy? Poor Hygiene or Poor Diet? A Urinary Stone from an Anglo-Saxon Burial'.

Other talks, related to biological anthropology and osteoarchaeology included a presentation on 'Raising the Dead: Discovering the Anglo-Saxon Cemeteries in East Anglia' by Richard Hogget from NAU Archaeology and a presentation on 'Practising Chronometric Hygiene: Evaluating Published Anglo-Saxon Radiocarbon Dates' by Jamie Anderson from Oxford University.

All the talks were well presented and extremely interesting and, the day was thoroughly enjoyable.

Further information about the BA Festival of Science and the Awards for the Presentation of Heritage Research in 2008 and 2009 can be found at www.the-ba.net/festivalofscience and www.english-heritage.org.uk

FORTHCOMING CONFERENCES

**Fourth Annual Workshop in
Forensic Archaeology and
Anthropology**

9th to 13th March 2009

Venue: Cranfield

This week-long residential short course provides an overview of forensic archaeology and anthropology. It concentrates on practical aspects of the subject through laboratory and field-based sessions, lectures, seminars and case studies. It features Cranfield University's special strengths in multiple casualty incidents and the examination of explosions and ballistic injuries. It is an intensive course, taught by a wide range of experts with much practical archaeological or forensic experience. For further information, see www.cranfield.ac.uk/forensics

**New Research on Medieval
Childhood: An interdisciplinary
Workshop**

12th March 2009

Venue: Sheffield

This workshop is jointly hosted by the Society for the Study of Childhood in the Past and the Society for Medieval Archaeology at the University of Sheffield. It highlights new research on children and childhood in the medieval period and brings together historians, archaeologists and art historians. Graduate students are welcome to present posters of relevant work.

<http://www.shef.ac.uk/archaeology/conferences/sscip/index.html>

**Paleoanthropology Society 2009
Annual Meeting**

31st March to 1st April 2009

Venue: Chicago, USA

The annual Paleoanthropology Society meeting will be held in Chicago on Tuesday and Wednesday, March 31 and April 1. The meeting is scheduled just before the AAPA meeting.

<http://www.paleoanthro.org/>

**36th Annual Paleopathology
Association Meeting**

31st March to 1st April 2009

Venue: Chicago, USA

The Conference Organizing Committee invites you to participate in the 36th PPA annual meeting. The scientific sessions will begin with workshops held on Tuesday morning and podium presentations that afternoon. Podium and poster sessions will continue throughout Wednesday. On-site registration and check-in will begin on Monday evening 30th March.

http://www.paleopathology.org/2009_Mee ting_Info.html

**78th Annual Meeting of the
American Association of
Physical Anthropologists**

31st March to 4th April 2009

Venue: Chicago, USA

The 78th annual meeting of the American Association of Physical Anthropologists will be held in Chicago, March 31 to April 4, 2009.

<http://www.physanth.org/annmeet/index.html>

**ASA09: Anthropological and
archaeological imaginations:
past, present and future**
6th to 9th April 2009

Venue: Bristol

The 2009 meeting of the Association of Social Anthropologists in the UK and the Commonwealth will take place on April 6 to 9 at the University of Bristol. The conference aims to stimulate a major reconsideration of the complex links which obtain between social anthropology and archaeology. Though social anthropology has had an uneasy relationship with archaeology we believe that the transformations that both disciplines have experienced in recent decades mean that it is time to overcome this reticence, indeed that there are many reasons; intellectual, epistemological, methodological and practical, to do so. All panel submissions are welcome, whether from the theoretical or ethnographic point of view. Considerations which take into account the experience of four-field anthropology from an international perspective are also very welcome.

**Panel 05 - The archaeology of family
and kinship**

This panel welcomes papers from scholars who are attempting to develop original archaeological and anthropological approaches to the study of family, kinship and relationships. Interdisciplinary, and new theoretical models are welcome!
<http://www.nomadit.co.uk/asa/asa09/panels.php5?PanelID=518>

**Workshop in Musculoskeletal
Stress Markers (MSM):
limitations and achievements in
reconstruction of past activity
patterns**

2nd to 3rd July 2009

Venue: Coimbra, Portugal

The organising committee, on behalf of the Research Centre for Anthropology and Health, would like to invite you to participate in the Workshop in Musculoskeletal

Stress Markers (MSM): limitations and achievements in reconstruction of past activity patterns to be held in Coimbra, Portugal, July 2-3, 2009.

Website:

<http://www.uc.pt/en/cia/people/WinMSM>

For further information please write to@
workshopmsm@student.antrop.uc.pt

**Pushing Up Daisies:
Environmental, Archaeological
and Forensic Interactions
Annual Workshop.**

13th to 17th July 2009

Venue: Cranfield

This week-long residential short course aims to highlight the important two-way interaction between forensic and traditional archaeological practices, such as excavations and the environment. It will explore the impact of archaeology on the environment, and investigate issues surrounding sustainability of archaeological sites within the environment. It will also focus on the ways in which the environment affects archaeological and forensic evidence, and how practitioners can use knowledge of natural environmental systems to aid investigations of crime and the past. For more information, see www.cranfield.ac.uk/forensics

Approaches to Ancient Medicine
24th to 25th August 2009

Venue: Newcastle

Following on from the earlier conferences at Newcastle (2000, 2005 and 2007) and Reading (2001, 2003, 2006 and 2008), the next "Approaches to Ancient Medicine" conference will be held at Newcastle University on Monday and Tuesday 24-25 August 2009.

Call for Papers

If you are interested in giving a paper at the Newcastle conference, please send an abstract of up to 200 words to me at the address below by 27 February 2009 at the latest. There is no theme, and any proposal within the broad definition of Ancient Medicine (including Egyptian and Near Eastern medicine) and its reception will be considered. It is hoped that the programme will be finalised in late March 2009.

British Association for Biological Anthropology and Osteoarchaeology 11th Annual Conference

18th to 20th September 2009

Venue: Bradford

The 11th Annual BABAO Conference will be hosted by the Biological Anthropology Research Centre, Archaeological Sciences, University of Bradford between Friday 18 and Sunday 20 September 2009. The conference is open to both members and non-members.

Further details will be circulated via the BABAO email list and posted on the BABAO website shortly.

3rd Meeting of the Paleopathology Association in South America
14th to 16th October 2009

Venue: Necochea, Argentina

The conference organising Committee invites you to participate in the 3rd PAMinSA will be held in the city of Necochea, province of Buenos Aires, during the Argentine spring of 2009. The Meeting will have three types of presentations: special sessions, podium presentations and posters. The Scientific Committee and the Organizing Committee are working towards generating a list of special sessions with diverse and relevant themes that will cover the current issues across the discipline. For forthcoming information please follow the link:

<http://www.paleopathology.org/PAMinSA%202009.html>

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BABAO SMALL RESEARCH PROJECT GRANTS – 2009

In October 2004 the BABAO committee approved funding for a series of small project grants which are available, by competition, to ALL members of the association. A copy of the application form is found in the Annual Review and upon the association website.

This year **two grants, of not more than £1000 each**, will be available. **One of the grants is reserved for research in the contract sector, and the other is reserved for the academic sector.** These grants may be used to support research in biological anthropology and osteoarchaeology, both to undertake the research directly, and to commission specialist services required in the course of the research project. They may NOT be used to fund conference attendance. Specialist equipment required to undertake a project is unlikely to be funded unless it is highly specific to the research project, and, if this is the case, the applicant must also demonstrate that the funds could not reasonably be obtained from other sources (such as the developer).

The closing date for receipt of applications for the current year is **15th May 2009**. Applications, complete with a 2 page summary CV, must be sent electronically to the General Secretary (Piers Mitchell, p.mitchell@clara.co.uk) or by post to the committee, care of Dr Jo Buckberry, BABAO Project Grants, Division of Archaeological, Geographical and Environmental Sciences, University of Bradford, Bradford, West Yorkshire, BD7 1DP.

Grant proposals will then be reviewed by the committee. Notification will be given to the applicants, the BABAO e-mail list and the BABAO webpage.

Grant winners are expected to present their research at the BABAO conference in the year following the award (so 2009 grant winners are expected to give either a paper or a poster at the 2010 conference).

Guidance Notes

Section 1: To be completed by the applicant. Please give full and complete postal address, and, where applicable, affiliation.

Section 2: Please give brief details of current appointment (e.g. postgraduate student, lecturer, contract osteologist with ##### company, freelance osteologist). If the applicant is a student, please provide details of the degree being taken, the name of supervisor (who does not need to be an association member), and the name of the institution.

Section 3: The brief name for the project may be placed upon the BABAO website.

Section 4: Please provide brief outline details of the research project. These details should be suitable for a non-expert audience, and the grant winner should be aware that these details will be placed upon the association's website.

Section 5: This section requires more detailed description and information about the research project being proposed / undertaken. Do not exceed the word limit for each box. The timetable for research is particularly important as the committee requires the projects being funded to be completed within one year. Where possible, sample sizes etc. should be included.

Section 6: Some institutions / organisation (e.g. some universities) require ethical permissions for research involving human remains or modern populations. Please complete this section only if this is applicable to the proposed research project.

Section 7: Please provide a breakdown of the budget required from the association. Travel should use the cheapest possible suitable mode. Accommodation may be requested where appropriate. All costs should be included in the application.

Section 8: Students must obtain a signature from their supervisor.



BABAO c/o Jo Buckberry
 Division of Archaeological,
 Geographical & Environmental
 Sciences
 University of Bradford, Bradford, West
 Yorkshire,
 BD7 1DP

**Grant Award
 Application
 2009**

Compliance with the Data Protection Act 1998
 In accordance with the Data Protection Act 1998, the personal data provided on this form will be processed by
 BABAO and may be held in a computerised database or in manual files.

RESEARCH PROPOSAL

1. Name of applicant

Address for correspondence

Title:
First name:
Surname:

Postcode:
Tel no:
Email:

2. Present position

Present appointment and employer (If student, please indicate degree in progress, name of supervisor and institution)

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3. Details of grant requested

Title of project (not more than 15 words)

Sum requested
 to the nearest £

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4. Project summary

Information on your research project may be placed upon the BABAO website. Please use this space to provide a description of your research in a way that could be used for a general – i.e. non-expert - readership. (Maximum 100 words.)

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5. Project information

Please provide concise details of your planned research project in the following boxes in order that the research validity and potential of your project can be assessed. (Maximum 500 words in **each** box.)

Research question(s) or problem	
Aims & objectives	
Research methods	
Timetable (Research is expected to be presented at the BABAO conference [either paper or poster] in the year following the award.)	

6. Ethical aspects of the proposal

a) Are there any ethical implications arising from the proposed research?

Yes No

If yes, please give details below of what they are and how you intend to address them.

--

7. Budget summary

Give a summary of the total costs that will be incurred; then complete the detailed breakdown below.

Summary	Cost (£)
Travel and subsistence	
Equipment	

Please itemise and justify expenditure requested for travel and subsistence, and equipment and materials.

Description	Justification	Cost (£)

8. Signature and date

I agree to complete the intended research within the BABAO timeframe, and will provide a break-down of my spending to the BABAO committee.

Signature of applicant		Date	
Signature of supervisor (for student applicants)		Date	

**All applicants must be members of BABAO by 1st April in year of submission.
Closing date for applications: 15th May.**

Please attach a 2 page summary CV to this application, and post to the above address or (preferably) e-mail to p.mitchell@clara.co.uk.



BABAO c/o Jo Buckberry
 Division of Archaeological,
 Geographical & Environmental
 Sciences
 University of Bradford, Bradford, West
 Yorkshire,
 BD7 1DP

**Grant Award
 Application
 2009**

Compliance with the Data Protection Act 1998
 In accordance with the Data Protection Act 1998, the personal data provided on this form will be processed by
 BABAO and may be held in a computerised database or in manual files.

RESEARCH PROPOSAL (Commercial)

We welcome proposals from individuals working in the commercial sector. Preference will be given to those projects which enable scientific research, such as isotopic analyses, or synthetic site studies beyond the remit of developer funded work. Grants to cover staff time and the subsequent costs to the employer incurred during research or involvement in external projects will also be considered.

1. Name of applicant

Address for correspondence

Title:
First name:
Surname:

Postcode:
Tel no:
Email:

2. Present position

Present appointment and employer (if funding is requested to cover costs incurred to any commercial organisation that is not your present employer, please give details)

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4. Details of grant requested

Title of project (not more than 15 words)

Sum requested
to the nearest £

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4. Project summary

Information on your project may be placed upon the BABAO website. Please use this space to provide a description of your research in a way that could be used for a general – i.e. non-expert - readership. (Maximum 100 words.)

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5. Project information

Please provide concise details of your planned research project in the following boxes in order that the research validity and potential of your project can be assessed. (Maximum 500 words in **each** box.)

<p>Research question(s), non-commercial archaeological / osteological project details or problem</p>	
<p>Aims & objectives</p>	
<p>Materials: please give dates of excavation and stage of any associated commercial project (e.g. assessment)</p>	
<p>Research methods</p>	

<p>Please state why this project cannot be covered by PPG16 funding.</p>	
<p>How will this project assist in your personal and professional development?</p>	
<p>How will this project achieve the objective of bridging the gap between commercial work and that of academia?</p>	
<p>How will your results be disseminated to the public at large?</p>	
<p>Timetable (Research is expected to be presented at the BABAO conference [either paper or poster] in the year following the award.)</p>	

6. Ethical aspects of the proposal

a) Are there any ethical implications arising from the proposed research? Please include issues of client confidentiality which may prove problematic to the dissemination of your results.

Yes No

If yes, please give details below of what they are and how you intend to address them.

7. Budget summary

Give a summary of the total costs that will be incurred; then complete the detailed breakdown below.

Summary	Cost (£)
Travel and subsistence	
Equipment	
Services of external specialists	

Please itemise and justify expenditure requested and explain why this cannot be covered by developer funding.

Description	Justification	Cost (£)

8. Signature and date

I agree to complete the intended research within the BABAO timeframe, and will provide a break-down of my spending to the BABAO committee.

Signature of applicant

Date

**All applicants must be members of BABAO by 1st April in year of submission.
Closing date for applications: 15th May.**

Please attach a 2 page summary CV to this application, and post to the above address or (preferably) e-mail to p.mitchell@clara.co.uk.