

How do archaeologists make sense of human remains?

It's always interesting to go to a talk about archaeology as it provides time and space to reflect on what we know and what we understand, especially when new knowledge is presented. SSARG members are lucky in having a series of talks arranged by the group which cover a broad range of subjects. At other times we can go to conferences in our area (such as reported last month from Weston). In November, SANHS and SWHT co-hosted a talk on human remains which had a range of different approaches and time periods under discussion.

One of the lectures, from Tom Booth, a bioarchaeologist at the Francis Crick Institute, introduced us to the work of genome research and how it has changed views of population and cultural change in Britain. This was an introduction to the genetics of prehistoric people and was a very complicated presentation describing the sequencing and mapping of genetic data. What is reported here is not especially related to Somerset as it was the general approach to the sequencing of the data and the subsequent interpretation of these that was the easiest to grasp.

He described new ways of examining DNA such as negative generation sequencing which means that scientists can examine millions of DNA data from a tiny sample. His work at the Francis Crick Institute is sequencing whole-genomes of more than 1,000 ancient British people, using skeletal samples from the last 5,000 years. The research uses the latest methods in sequencing and analysing DNA from ancient samples and in lab conditions which prevent contamination from the present-day reaching the historic samples. Together they are building a highly detailed picture about the genetics of people who have lived in Britain. The Aveline's Hole cave site in the Mendip Hills is Britain's earliest dated cemetery and one of few British archaeological sites where Mesolithic human remains have been excavated. It contained skeletons of at least 21 individuals dating to ca. 8300BC. Samples of this bone were included in the study. The genetics can also indicate the appearance of the people.



One of the skeletons analysed was that of Cheddar Man, whose skeletal remains have been dated to 7100 BC. DNA suggests that, like most other European hunter-gatherers of the time, he had dark skin combined with blue eyes. Genetic analysis shows that the Neolithic farmers, by contrast, were paler-skinned with brown eyes and black or dark-brown hair.

Towards the end of the Neolithic, in about 2450 BC, the descendants of the first farmers were themselves almost entirely replaced when a new population - called the Bell Beaker people - migrated from mainland Europe. So Britain saw two extreme genetic shifts in the space of a few thousand years.

Left: a reconstruction of Cheddar Man.

During the third millennium BC, two new archaeological pottery styles expanded across Europe, replacing many of the more localised styles that preceded them. The Corded Ware development in north-central and north-eastern Europe was associated with people who derived most of their ancestry from populations related to Early Bronze Age Yamnaya pastoralists from the Eurasian Steppe. In western Europe there was the equally expansive Bell Beaker culture, defined by assemblages of grave goods that included stylised bell-shaped pots, copper daggers, arrowheads among other artefacts. The oldest radiocarbon dates associated with Beaker pottery are around 2750 BC in Iberia, which has been interpreted as evidence that the Beaker culture originated there. Regardless of the geographic origin, by 2500 BC, the Beaker culture had spread throughout western Europe and reached southern and Atlantic



France, Italy and central Europe, where it overlapped geographically with Corded Ware. Within another hundred years, it had expanded to Britain and Ireland.

This grave is the richest Bronze Age find in Britain. Around 100 objects were found, including the complete skeleton of a man, three copper knives, two small gold hair

tresses, two sandstone wristguards, 16 flint arrowheads and five pots. Other tests on the enamel found on the Archer's teeth revealed that he grew up in central Europe. They could not reveal how long he had lived in Britain, only that he must have lived in the Alps region while a child, either Switzerland, Austria or Germany.

Left: The Amesbury Archer c. 2,300BC with Beaker pots in Salisbury Museum.

A major debate in archaeology has revolved around the question of whether the spread of the Beaker culture was mediated by the movement of people, culture, or a combination of both. The term 'Bell Beaker' has been used to refer to the distinctive pottery style found across western and central Europe at the end of the Neolithic, initially assumed to have been spread by a genetically homogeneous population. The idea of a Beaker Folk became unpopular after the 1960s as scepticism grew about the role of migration in mediating change in archaeological cultures, although J.G.D. Clark speculated that the Beaker culture expansion into Britain was an exception, a prediction that has now been borne out by ancient genomic data.

Genome-wide data have revealed high proportions of Steppe-related ancestry in Beaker -associated individuals from Germany and the Czech Republic, showing that they derived from mixtures of populations from the Steppe and the preceding Neolithic farmers of Europe. However, a deeper understanding of the ancestry of people associated with Beaker culture requires genomic characterization of individuals across the geographic range and temporal duration of this archaeological phenomenon.

Tom Booth said that sequencing results support a model in which cultural transmission and human migration both played important roles, with the relative balance of these two processes depending on the region. In parts of Europe, Beaker culture expansion was driven to a substantial extent by migration. The arrival of people associated with Beaker culture precipitated a profound demographic transformation in Britain, exemplified by the presence of individuals with large amounts of Steppe-related ancestry after 2450 BC.

The British Beaker and Bronze Age samples were dispersed geographically, extending from England's south eastern peninsula to the Western Isles of Scotland, and came from a wide variety of funerary contexts (rivers, caves, pits, barrows, cists and flat graves) and diverse funerary traditions (single and multiple burials in variable states of anatomical articulation), reducing the likelihood that the sampling missed major populations.

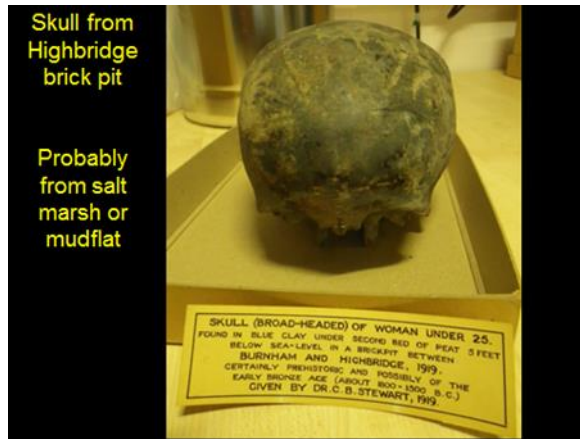
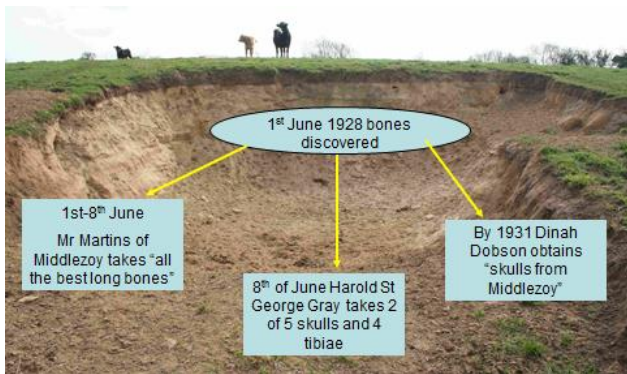
He also considered the possibility that different burial practices between local and incoming populations (cremation versus inhumation) during the early stages of interaction, could result in a sampling bias against local individuals.

While it is possible that such a sampling bias makes the ancestry transition appear more sudden than it in fact was, the long-term demographic impact was clearly profound, as the pervasive Steppe-related ancestry observed during the Beaker period and absent in the Neolithic persisted during the Bronze Age, and indeed remains predominant in Britain today.

Quite literally, the research enables the researchers to travel back in time to see how events like the Roman conquest, the Black Death or the Industrial Revolution changed the biology of people who lived in Britain. For further information, see <https://europepmc.org/article/PMC/5973796> whence much of this information was drawn.

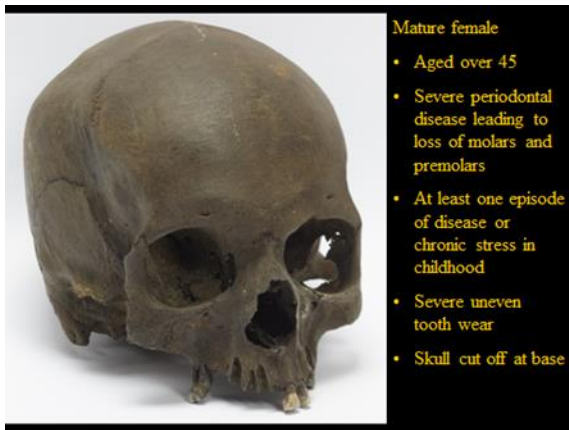
Human remains from the Somerset wetlands

Also in prehistory, but closer to home, Richard Brunning (South West Heritage Trust) delivered a talk on various prehistoric human remains from the Somerset wetlands.



The Greylake site where Mesolithic remains were found and the skull from Highbridge brick pit.

Much of this will be familiar to SSARG such as the discovery and significance of the Greylake Mesolithic remains (the only open air Mesolithic cemetery in the UK), the Neolithic skull from the Highbridge brick pit and the middle Iron Age Sowy skull (below). You can see that recovery of the bones from Greylake was haphazard to say the least and indeed, some of them deposited into safe keeping in Bristol, were destroyed when the city was bombed in WW2.



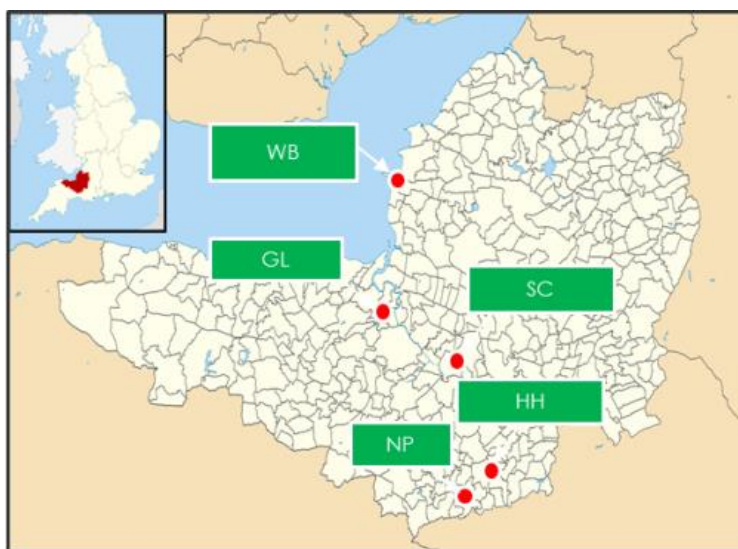
The Sowy skull (left) has already been reported in this newsletter and a summary of her characteristics is appended to this image.

As well as these, early Bronze Age remains have been found on the islands of Aller, Chedzoy, Grelake and Westonzoyland, middle Bronze Age cremations at Aller and finally late Iron Age inhumations, neonatals and skulls at Glastonbury Lake Village. Bones from existing collections can still yield valuable information as we have seen above and more recently, the study below has looked at another aspect of human remains.

Images above courtesy Richard Brunning

Mortuary practice in Somerset

Richard Madgwick of Cardiff University used local collections to review Iron Age mortuary practice in Somerset.



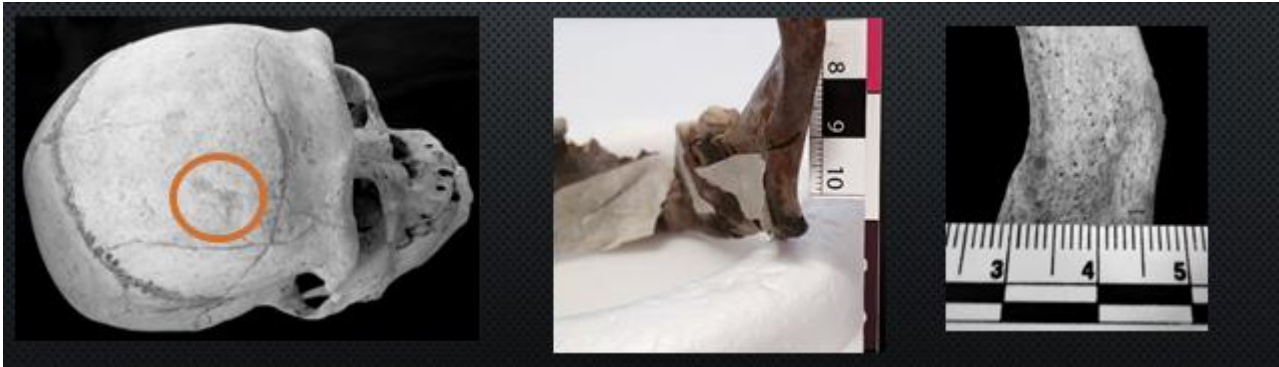
In Somerset, he looked in detail at 124 samples from South Cadbury, North Perrott, Glastonbury Lake Village, Worlebury and Ham Hill (see map left). He examined the samples using microscopy and isotope analysis to draw up an account of origins, diet, trauma and mortuary treatment of these individuals.

I will focus on the last two as the isotopic analysis required for origins and diet was too detailed for this reviewer.

Image ©Richard Madgwick

Richard outlined the variations to be found in levels of articulation and contexts across southern England where most research has been concentrated, but stressed that only a small proportion of the population (10%?) are represented and we really don't know what this means in making meaningful statements about mortuary practice or the peoples of that time.

Violence and conflict seems to have increased during the Iron Age, possibly due to social and economic upheaval. Many burials show signs of trauma which occurred at or just after the time of death. The most common injuries to the skeleton were from blunt force trauma (fractures) and sharp force trauma (cut or chop marks, penetrating damage). The majority of injuries occurred to the skull and long bones.



Images show examples of blunt force trauma (ringed), a chop mark, and a cut mark. Images are of individuals from Ham Hill, Meare West Lake Village, and Glastonbury Lake Village respectively. ©Richard Madgwick

He examined the wounds under the microscope to determine the type of weapon used and when the injury occurred. Some trauma marks were inflicted before death and others post mortem. Healed trauma and perimortem trauma shows violence was commonplace. He illustrated some examples, seen above. The skull from Ham Hill has an unusual incised wound on the frontal bone. Could this be evidence for trepanning? Or, there is evidence of skull pieces being perforated and possibly worn as amulets, so was this an attempt to extract a piece of bone for this purpose? Meare Lake Village has the highest proportion of individuals showing trauma with 7/13 having sharp force trauma. Glastonbury Lake Village has the lowest proportion of trauma with fewer than 20% having signs of trauma.

Looking at mortuary treatment, Richard asked how did remains become disarticulated and as a follow-on, was secondary burial practised? Unusual burial practices took place during the Iron Age. Complete inhumations, cremations, and deposits of single elements were all being practised. Richard examined sections of bone to establish the nature of preservation and whether bacterial alteration or bioerosion had taken place. This was to identify whether the bones had been buried intact and later exhumed for disarticulation, or whether pre-burial disarticulation had taken place. The histology showed a mixed pattern but many of the bones showed bioerosion consistent with exhumation. Nevertheless, Richard said that just because dismemberment may have been part of burial rituals, this does not mean the dead were shown any lack of respect or reverence. However, the reasons for the variation in burial rites remain unknown.

In summary, Richard presented a complex picture of mortuary treatment with variation within and across the different sites from which he took samples. We still don't know how death was treated in the Iron Age for the majority of the population as we still have only a small number of bones and sites from which to draw any conclusions.

Later burial practices

Bob Croft, carefully reading from a script from Cotswold Archaeology, told how recent work on an early medieval cemetery excavated as part of the archaeology at Hinkley Point revealed more than 300 burials dating from the 5th – 7th centuries. Many of the graves were intercutting and these sequences needed painstaking unpicking by the archaeology team. The cemetery showed a central rectangular area of concentrated burials suggesting containment within a structure of which no evidence remains. These graves have an east/west orientation. Later graves to the south have a marked NE/SW orientation.

The characteristics of some parts of the cemetery were illustrated. One grave had two youngish men and an infant of 1-5 months lying between them. Another grave contained a skeleton of teenage man with 7 placed limpet shells. In fact, there were very few grave goods except shells and beach pebbles across the cemetery. There were equal numbers of men and women. The slight peaks in young and older adults may be due to demographic catastrophe such as an epidemic of some sort. Various scientific tests were described and a few haplogroups identified.

Although it was very interesting, I am unable to illustrate this further as Bob was only presenting an interim report and further data cannot be revealed until the full report is published.

Here we had four studies examining human remains. There is an increasing emphasis on the post excavation laboratory scrutiny of bones to tell us about the origins of people, how and where they lived, died and were buried. Now for a change of pace (and not part of the SANHS/SWHT day), a quick look at some burials found through work carried out by members of the former South Cadbury Environment Project, the precursor to SSARG. Clare Randall, our research director reports first.

Eastcombe Farm

In 2002, a crouched inhumation was discovered in a test pit that was widened to allow full excavation. The burial was in a roughly oval pit, the backfill of which contained fragments of Black Burnished ware suggesting a first century AD date. The burial was in a very shallow oval cut made into the remnants of a probable bank or lynchet apparently associated with the boundary of the field system. The body was extremely tightly crouched lying on the left hand side, the knees drawn up to the chest and the arms wrapped around the knees. The head was to the west-north-west, facing north.

The crouched burial from the test pit in Eastcombe Farm paddock was nearly complete, with only a few smaller elements missing. However, the condition of the bone proved to be poor and often fragmentary. The individual has been identified as a male with a probable age range of 35-45 years and was between 5'3" - 5'5" tall.

There was notable degenerative change in the fifth and sixth thoracic vertebrae and all the lumbar vertebrae. The general oral health represented in this individual is poor. While the attrition pattern on the teeth is particularly light, there is a considerable degree of caries, abscesses, ante-mortem tooth loss and periodontal disease, and a notable build-up of calculus. Carbohydrate rich diets encourage calculus formation due to the promotion of plaque (Hillson 2001, 265). A soft high carbohydrate diet would explain the pattern of calculus, caries and unworn teeth.



Eastcombe Farm Test Pit: male, 35-45 years. 160.48cm – 167.02cm or 5'3" - 5'5 ¼".



The test pit after excavation (with extensions!) and showing Clare in the foreground to the right

Not much pathology, other than general wear and tear, but the oral health represented in this individual is poor – advanced caries, abscesses, ante-mortem tooth loss, considerable calculus and periodontal disease. Late Iron Age - formal burial is only really re-introduced from the LIA onward.

The test pit was at least 1.5m deep – loads of hillwash, I remember the bruises from getting in and out. In a field boundary – there is a tendency elsewhere for boundaries to attract burials, or it could be part of a wider cemetery as elsewhere they tend to be in small (at least as far as excavated) cemeteries. Only analysis was standard macroscopic.

Clare Randall

Sigwells excavation 2003

A similar burial found during another SCEP excavation, this time up on Sigwells, which many of you will remember.



Adult crouched burial facing east (F046) Sigwells 2003

F046 was a pit cutting two others, with a crouched adult human burial on the pit floor, lying on its right side with the head to the south, arms folded so that the hands rested on opposing shoulders, with no obviously deliberately accompanying artefacts. The skeleton was very well preserved with only a few small bones from the feet missing. There was some damage to the ends of the long bones, but the condition of the bone was largely good. The adult would have been between 5'5" and 5'8" tall. One of the arms had sustained damage and the bone had foreshortened by at least 3mm. Oral health was good. (From Clare's report on human bone from the reference below):

Report: [Tabor, R. South Cadbury Environs Project: Interim Fieldwork Report, 2002-2003](#). University of Bristol report (2004) (page 25, 55). Copy in HER collections. HER digital source: 13107. Globe icon Available online. Accessed 27th December 2019.

Hicknoll Slait 2001

And also, but this one much later, a Saxon cemetery from a SCEP excavation in 2001 at Hicknoll Slait, in the parish of Compton Pauncefoot. The outcrop overlooks South Cadbury hillfort to the west. Richard Tabor, who led SCEP, excavated this burial.



A total of five trenches were excavated in September 2001. Trench 1a was located adjacent to and immediately north of the water reservoir, Trench 1b was located immediately east of 1a. Within 1a two graves were excavated. The first grave had good preservation of the skeleton, with a complete skull and mandible. A large waste chunk of flint was recovered from inside the skull. The fact that the skull was intact, jaw closed and grave undisturbed implies that the object was deliberately placed in the mouth at the time of burial. Comparable rites have been noted in Late Saxon and Medieval contexts. An iron knife was

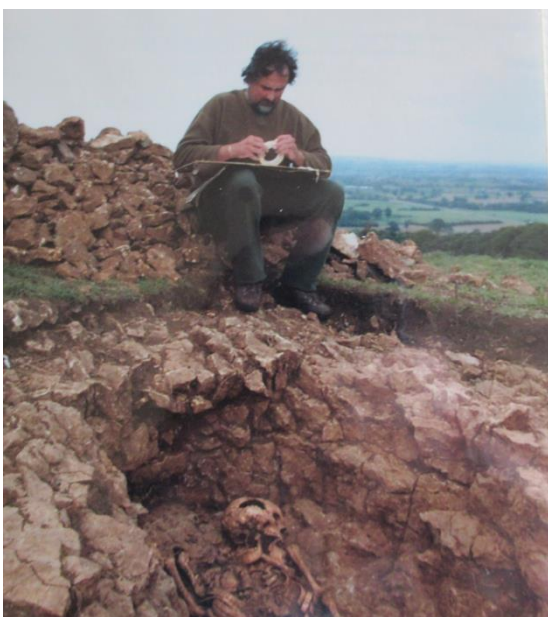
also located with the burial. The skeleton has been provisionally assessed as an adolescent male. The second grave was orientated NW-SE and located 0.7m north of grave 1. The skeleton was well preserved (although not as well as skeleton 1) and placed in the supine position with the head to the NW. Around the cervical vertebrae flecks of copper and a fragment of a glass bead were recovered, suggesting that a necklace consisting of copper alloy links and glass beads may have accompanied the burial. The vertebrae and the jaw may have become displaced when the grave was robbed for this necklace. The lack of a robber pit suggests this may have happened soon after burial. The right hand was disarticulated from the right arm suggesting that a bracelet or ring may have originally accompanied the burial.

This HER entry was taken from: www.somersetheritage.org.uk/record/16311 accessed 27th December 2019

More can be found in Richard's book: [Cadbury Castle: the hillfort and landscapes](#) The History Press Stroud Glos 2008, pp 172-174.

MC

And finally...



Richard Tabor recording the Hicknoll Slait burial 2001. He appears to be attempting to tape permatrace to drawing board. Bit windy!