

SHARP INTERIM REPORT

2009 Season



Edited by
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&
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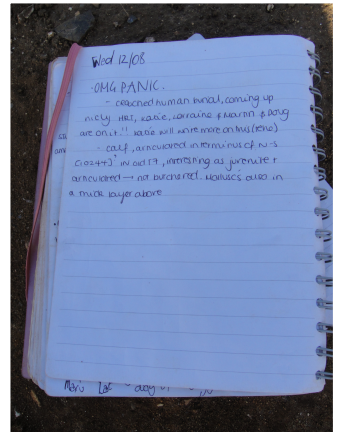
2009 season gallery



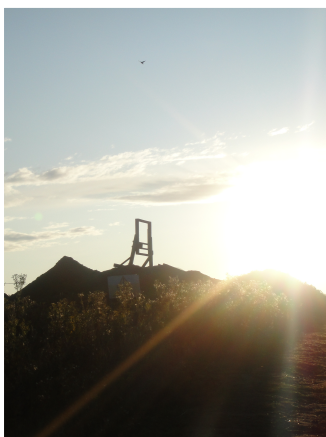
A virgin site. Trench 10 opened and awaiting the start of the season.



BERT students excavating Trench 11



So much for no more burials! Site notebook on the day that the Early Bronze Age burial was discovered.



The sun sets over the Chalk Pit field spoilheap.



BERT students enjoying a theory session outdoors.



Air vent in mortuary building at Sedgeford aerodrome.



Trench 10 excavations begin to take shape.



Just another one of the many meetings required to keep the season going..



Back-filling Trench 10 during close-down week.

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Welcome

This latest issue brings you news of our excavations from 2009 and as you will see, these covered a broad range of archaeology which continues to give us a fascinating glimpse of human settlement activity at Sedgeford.

From the amazing discovery of an Early Bronze Age burial, through the emerging picture of the Anglo-Saxon settlement itself and closer to the present day with the initial excavations of the First World War aerodrome.

In addition to news on our excavation activity, there are also many interesting articles on our ongoing research.

You will also notice that we have changed the look and feel of the report. This is all part of trying to make the project more accessible and engaging to the general public. We have also tried (and failed!) to come up with a new name for the report. We think that 'Interim Report' is too staid a term for what we are trying to achieve. Any suggestions for a new title would be gratefully received.

I hope you enjoy reading this latest issue and look forward to seeing you during the forthcoming excavation season.

Gary Rossin

For further information about the project and our work visit our website
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Trench 10, looking north-east.



Searching for the settlement: Chalk Pit field excavation

By Jon Cousins

2009 saw the third year of excavations in the northern end of Chalk Pit field, which lies to the south of Boneyard field, where our first large open area excavation was opened way back in 1996 looking for the Anglo-Saxon burial ground. In Chalk Pit field a series of five evaluation trenches were opened in 2007 (numbered one through to five) which revealed some interesting results. This was followed in 2008 with four larger open area trenches numbered from six to nine, (see 2007-2008 interim report). For our third season two trenches were opened, trench 10 (T10), which shall be discussed here, and trench 11 (T11) which is discussed else where in this publication.

T10 (located to the north west of the 2008 trench 6) covered an area of 23m by 29m and included several trenches from previous seasons within it's area. Evaluation trench 2 (from the 2007 season) was located within the excavation area of T10, which allowed us to nicely tie in and expand on what we had previously discovered. Also within our new trench was the 2008 season trench 7 (T7), although having been opened it was

never excavated due to time limitations. Within T10, T2 was located towards the northern limits of excavation and T7 was roughly west of centre. Lastly the south-west corner of T10 incorporated the north-east corner of the 2008 T6. The reasoning for this was that the best evidence we've had yet for structural remains of the potential settlement is located in this corner of T6, running on beyond the edge of excavations. It therefore made sense to include this area, of partial structural remains in T6 with T10 so that we could see the full extent of the structural feature.

T10 was archaeologically a very busy trench, with many inter-cutting linear features, post holes and beam slots (both relating to the possible structure), and a burial. Once the machine had opened the trench and the first weeks volunteers had cleaned it back, the first thing that was obvious was how many linear features there were. To the western side of the trench a series of linear features run north-south and to the northern end of the trench more run east-west. In all there were eleven linear features on an east-west

alignment, all but one of these are located towards the northern end of T10. These linear features appear to be the northern plot boundary of the structure/structures first revealed in T6, perhaps being reinstated over a period of time indicating the longevity of this boundary. In places the boundary 'ditches' stop and start again after a gap of up to a metre suggesting an opening within this boundary - a possible entrance to the plotted enclosure? At least one of these boundary ditches showed evidence of a steep sided and flat bottomed base where a fence could have been placed.

Three north-south aligned linear features on the western side of T10 are at this stage in the excavations being interpreted as the western boundary ditch of the structure mentioned above. Again it appears at present to be the same boundary being reinstated a number of times. In the tumulus of one of the north-south ditches the burial/dumping of the partial remains of a calf was discovered. The calf had an articulated spine, ribs and sacrum. Its head had been truncated by a later east-west aligned ditch and the long bones were not in articulation but had possibly been moved and incorporated into a neighbouring context at some point. The burial was covered in a layer of mussel shells, most of which had been steamed open, shown by the fact that the valves were intact. Initial examination of the remains show that the animal was quite young and there doesn't seem to be any butchery marks visible. Why the calf and the mussel shells were placed at the termini of the ditch is unclear but it seems to suggest that some ritual activity was going on but further interpretations are to follow.

The linear features heavily inter-cut each other in various places, with at least five crossing

over each other at one place. This 'spaghetti junction' of ditches was quite hard to untangle but in the end we managed to decipher which came first. As mentioned earlier the structure that was being bounded by these linear features was first seen in T6 during the 2008 season and so this part of T6 was reopened so that we could see the whole of the feature within the 2009 T10 excavations. The feature that is being interpreted as a structure (or structures) consists of a series of post holes within foundation trenches and beam slots. In fact as it stands we are interpreting these as two structures that represent the re-building of the same structure on nearly the same footprint so that the remains now overlap each other. This interpretation is due to how the cut features, the post holes and beam slots are set out on the ground. Both structures suggest it is not a large building we are dealing with, its measurements being 5-6m wide and 8-9m long approx., comparable with buildings from other known sites of this period. So again it seems that we have re-establishing of the building like we have for the boundary of this structure showing continuation of use within this area of the Chalk Pit field. There was very little dating evidence, if any, from the structural features but if they are contemporary with the linear boundary ditch system, which did produce a large number of datable artefacts, this part of the settlement looks to date from the late-middle to the late Anglo-Saxon period (750-1000AD).

At present the overall interpretation is that we have a structure that has been replaced at some point by a structure of similar size on almost the same footprint, that is being bounded by a fence, on at least its northern side, maybe in the early stages of the settlement. It is likely that the

Signs of ritual activity? The partial remains of a calf, covered by a layer of mussel shells, found in north-south running ditch in Trench 10.



*Evidence of
re-cutting plot
boundary ditches?*



structure was bounded on all sides. We've already observed the northern and western boundary within T10 and possibly the southern boundary within T6 (in 2008). All these boundaries have been reinstated over time. We have yet to see if there is an eastern boundary but one would imagine that there is and this hopefully will be proven in the 2010 season. Within the plot boundary we've seen large amounts of shell fish processing taking place as revealed by the large quantities of muscle, oyster and cockle shells that have been recovered from ditch fills.

Other features, that didn't have a direct relationship with the structure or its boundaries included a series of linear features on a north-south alignment toward the northern limits of excavation. Four ditch termini (the end/start of a ditch) were seen about six to seven metres north of the edge of T10. These were larger than the settlement boundary ditches, measuring about two-three metres in width, with a depth of about one and half metres, again much deeper than the boundary ditches. All four linear features had been re-cut several times. Dating from the pottery places these again within the late-middle to late Anglo-Saxon period. What these ditches represent is an interesting question. As we can see only a short section of these features within T10 it is hard to say how long they are, however considering their depth and width it's easy to imagine that they continue for some length even perhaps going into the Boneyard field. Could these ditches represent a boundary to the cemetery? We have already found what we believe to be the western boundary ditch of the cemetery, within the excavations of New trench in Boneyard. Could this then be the eastern boundary ditch to the cemetery? With further work in the post excavation of both the Boneyard site and that of Chalk Pit we will

hopefully be able to come to some conclusion on this.

The small finds that were recovered from T10, and other trenches on Chalk Pit field, don't suggest a particularly high status site, not to say that the small finds are lacking in excitement. T10 produced a number of interesting finds including an eighth century French coin marked RP, which was the currency of the mid-eighth century French king, Pepin the Short (see page 14), and a number of indigenous coins of around the same period. Parts of two riding spurs of continental design, again dating from the same period. This suggests trade links to the continent of one form or another. Also a very nice example of a middle Anglo-Saxon safety pin style brooch was recovered.

As always during the last week something different, difficult and very exciting turned up. A crouched burial within a pit dating to the late Neolithic to early Bronze Age was discovered in the south-west corner of Chalk Pit. Again this is discussed in more detail in the article on page 7.

Looking at the results of the geophysical survey carried out in previous seasons, and the excavations that have been done already we can hypothesise that the settlement on the Chalk Pit field is laid out in squared plots in a band on an east-west alignment sitting on a ridge overlooking the cemetery, in what is now Boneyard. There seems to be around four or five of these plotted boundaries shown on the geophysical survey. Behind these there appears to be a large D shaped enclosure which is possibly an animal enclosure. With further excavations over the next few years this hypothesis can be tested.

Early Bronze Age
burial. S8001 in situ



Skeletons in the cupboard (and in the settlement)

By Martin Hatton

When supervisors introduced themselves on Sunday mornings I usually said that I, as a member of the Human Remains Team, was there under false pretences since no one was going to find any human remains. I was wrong; twice.

On the first occasion the error was somewhat 'technical'. This skeleton was excavated in 1999 but had been classified as 'disarticulated bones' and remained unrecorded. On the box, someone had inserted an S in front of the context number (1592), implying that they thought it was an articulated skeleton, but it still remained in the disartic rack until Susan Robertson studied it during the 2009 season. Since it was excavated as disartic there was no Burial Record Sheet. However we were able to find the context sheet for (1592) in the primary archive. A photo (found by Tim Snelling) and the sketch on the context sheet allow us to place (1592) in the farthest north-east corner of Reeddam.

The analysis by Susan Robertson has shown that the skeleton, now known as S1069, is substantially complete: of the skull the face is

missing, as are the cervical (neck) vertebrae, the left ulna and radius (bones of the lower arm), the carpals (wrist bones) and much of the pelvis. The missing bits of the pelvis mean that sex determination had to be based mainly on cranial features and consideration of general size and robusticity. These factors suggested that the individual was 'very strongly male'. The absence of teeth, the auricular surfaces and one of the pubic symphyses made determination of age difficult. However this was clearly a mature adult, probably about 35-45 years old at the time of death.

Estimated height (based on femur length) was approximately 6ft. The femoral heads (top of the upper leg bones) were noticeably large, and the maximum diameter corresponds to a body mass estimate of 99.34kg. For a 6ft male this equates to a body mass index (BMI) of 29.3; a figure which today would be classed as overweight, verging on obese. A high BMI could be linked to well developed muscles, but there are a number of pathological changes often associated with obesity.

A number of the vertebrae are fused together by large, protruding osteophytes (extra bone growth), which can be linked to diabetes and obesity.

There is also a small, distinct crest of bone on the superior edge of the superior pubic ramus (top of the front of the pelvis). It has some similarities with the extended pubic tubercle shown in Cox and Mays, which is 'usually associated with females known to have experienced more than three births'. Clearly this cannot be the explanation here, and Susan suggests an alternative on the recording form; 'carrying extra midriff weight'. Clearly this is an important articulated skeleton to have been 'rediscovered' and studied for the first time.

The second time I wrongly forecast that 'no human remains are going to be found' was a completely new discovery in an area well beyond the bounds of the Boneyard cemetery. It was found in the most south-westerly corner of Trench 10 in the north-east part of Chalk Pit field. Chalk Pit field is the area we have been excavating since 2007, and contains abundant evidence of occupation, building structures and small plots delineated by ditches. We believe it is the site of the middle Anglo-Saxon village, which the cemetery served. The south-west corner of Trench 10 was not the most exciting area from an archaeological point of view. It contained a small quarry pit and a few small, intersecting ditches. Katie Mckinnon was supervising the excavation of these ditches when one of her volunteers - Josh White - disinterred some bones with a mattock! A finds tray containing these was shown to me and I confirmed that they were human. They included approximately half a mandible (lower jaw), two unfused humerus proximal epiphyses (shoulder joints) and two unfused femur distal epiphyses (knee joints), plus other fragments.

The only way you can get a chin, shoulders and knees close together is either in a completely

disarticulated jumble or in a crouched burial; this was the latter. Typically in a crouched burial the knees are bent and drawn up to the chest, and the chin is also often tucked into it. This is the first crouched burial that we have found at Sedgeford. All the burials from Boneyard have been extended supine, west-east aligned burials. In this burial the head was to the south-east and the feet to the north-west. Unusual though it is for us, crouched burials are not so very rare in archaeology. They have been found dating from at least the Neolithic, in increasing numbers in the Bronze and Iron Ages, and continuing into the Roman period and beyond. They have even been found in the Anglo-Saxon period. Of crouched burials in this period Sam Lucy writes: 'Sometimes this is the dominant rite ... More often, though, it is a minority rite' (Lucy: 2000, 80).

The only date that could be put on the Sedgeford crouched burial based on the stratigraphic evidence was that it was middle A-S or earlier. The contexts immediately above the burial, and the grave fill itself, yielded no datable material, so arrangements were made to get a sample of bone from the skeleton itself radiocarbon dated. The resulting date from this was 2458 – 2200 cal BC, 95% prob. (ORAU), thus placing it in the earliest part of the Bronze Age; so early that some people refer to it as the 'metal-using Neolithic' (Roberts: 2008, 69). It was at this time that what is sometimes called 'the Beaker burial rite' appears (*ibid.*). This produced 'single crouched inhumations covered by barrows and often accompanied by ceramic beakers, [and] represents a break from older traditions, though continuities can be argued.' (*ibid.*) Unfortunately, ours was one without a beaker. And the barrow, if it had ever existed, had been ploughed out or lost by colluvial movement (down hill wash) of the soil. Clearly more work will be required next season to determine if this was just a single burial, as seems

The crouched burial was found just metres away from the Anglo-Saxon building structures.



Katie McKinnon
recording the
excavation of S8001

most probable (but don't trust my judgement— see opening paragraph), or whether there are others nearby. The possibility of finding other evidence of the Bronze Age must also now be considered.

Clarification of the ditches above it had to be completed before excavating the skeleton, and Doug Mitcham joined the team for this. Once the skeleton was exposed, several other volunteers had a chance to work on it. Even Sophie Beckett, Lorraine Horsley and I, all members of the Human Remains Team, contributed to the excavation and actually got our trowels dirty! The grave-cut was 'sub-oval' and appeared to be deliberately sized to accommodate the body. The southern limit wasn't fully excavated because of the shape and size of the excavation trench. On the northern side another feature cut into the grave cut. It was rectangular but with curved corners on its northern edge, about 0.7m long by 0.25m wide. It contained nothing and we can only speculate as to its purpose. One possibility is that it was a platform used during the interment, another is that it contained some sort of grave marker. In the grave-fill itself there were two pieces of worked antler; a tiny iron object, possibly a nail; and a large unworked flint near the feet.

The end of the season was nearing and so rapid recording of the skeleton in situ, followed by cleaning and osteological analysis and recording, was necessary so that it was all completed on the first day of shut down week. Maria Tiplady, and Ray and Zannah Baldry were all roped in to help too. The skeleton (S8001) is a sub-adult and is reasonably complete apart from much of the face, particularly the right side, and virtually all of the hand bones. In contrast, all of the foot bones were recovered including all the epiphyses of all the phalanges. Much of the bone is quite badly broken, particularly the cranium, and the sutures have largely separated.

Half the teeth are present, including three third molars (wisdom teeth) which show no real signs of wear. Based on tooth eruption charts, an age at death of about 20 years is the best estimate. However, most of the epiphyses were unfused. Of particular note is the lack of fusion between the three pelvic bones in the acetabulum (the hip socket for the femoral head). These would normally have commenced and completed fusion in males by 14-17 years, and by 11-15 years in females. Hence we have a skeleton that appears to have died at about 20 years old on the basis of its teeth but at about 16 years old on the basis of the (lack of) fusion of its bones.

Our current explanation is that poor nutrition or childhood disease affected the skeleton and the teeth differently. These factors can significantly influence the age at which epiphyseal fusion occurs, whereas 'dental development is the more accurate method of ageing non-adult skeletons

because teeth are not as affected by 'environmental influences' such as poor diet or disease during growth' (Roberts:2009, 130). In fact, S8001 has possible hypoplasia (grooves in the tooth enamel) on both mandibular canines. This is often attributed to just such environmental influences.



It is not possible to sex this skeleton by the usual morphological methods because it is sub-adult. However we have recently done some work in which we have sexed juveniles from Boneyard on the basis of tooth measurements (Richardson et al, in prep.); by using this method we believe our skeleton is probably male. As an unfused skeleton it is not strictly legitimate to apply the equations usually used to estimate height from long bone length to S8001. Nevertheless, in the absence of any other method for obtaining an estimate, one has been made on this basis. The equation gave a height estimate of approximately 5ft 8in, which is just below the average height for a Boneyard adult male.

It is not possible to identify a cause of death from the skeleton of S8001. However a number of anomalies of possible pathological origin were noted. There was a lump on the lateral (outward facing) side of the right fibula (the smaller of the lower leg bones). This might be the result of a well-healed fracture. The right auditory meatus (ear hole) is an irregular shape, and the right mastoid process (a bony protuberance near the ear) itself is missing. Taken together these may suggest a soft tissue infection of the ear canal. An infection could cause thinning of the cortical bone, making it more susceptible to erosion in the soil, or even destruction of the bone by a mastoid abscess. Extension of the infection to the cranial cavity can even be fatal.

Both femora (upper leg bones) show signs of lateral (outward) bowing, and of internal rotation at the mid-shaft resulting in a knock-kneed appearance. The tibiae (larger of the lower leg bones), however, seem to be straight and the bowing does not look like that usually associated with rickets.

One particularly significant pathological anomaly is the fact that all the posterior neural arches on every segment of the sacrum, in the middle of the pelvis, are open (unfused). The arches of vertebrae above the fourth lumbar are clearly closed, but the fifth lumbar vertebra (the one directly above the sacrum) has possible irregular fusion of the two halves of its neural arch. *Spina bifida* is 'the most common of all spinal congenital defects in which incomplete midline bony closure appears in one or more neural arches ... especially the sacrum' (Aufderheide & Rodriguez-Martin: 1998, 61). There are two different forms. One is called *spina bifida occulta*; the other *spina bifida cystica*.

In *spina bifida cystica*, herniation of nerves or spinal cord through the gap in the neural arches occurs. This is a serious clinical condition. In its most severe form it can be quickly fatal, but in the past even the less severe forms would not have been conducive to long life. Depending on the severity, complications can include paralysis, incontinence and hydrocephalus. In the other form, although the neural arches are unclosed, there is no herniation of the spinal cord. This is referred to, by clinicians, as *spina bifida occulta* no matter how many neural arches are open. *Spina bifida occulta* is said to be 'clinically insignificant' (Waldron: 2009, 219). The problem from an osteoarchaeological point of view is in deciding whether a case of *spina bifida* is of the *occulta* or *cystica* form, as there is no direct evidence of whether there was associated herniation. *Occulta* is widespread in living populations and is

undertaken. The general condition of the leg bones of S8001 suggest that he was not paralysed. However the bowing and knock-kneed gait might be explained in terms of him always having walked whilst bending forwards from the waist in order to relieve pressure and pain in his lower back.

Overall we currently have insufficient evidence to show that S8001 suffered from even the least severe form of *spina bifida cystica* rather than *spina bifida occulta*. However, even if it was the *occulta* form, there are indications that it may not have been 'clinically insignificant'. As Ortner (2003, 463) explains: 'In living patients some vertebral arch defects will be covered over by connective tissue, fat, and skin with no disability. These tissues...disappear in the postmortem environment and deciding the severity of *spina bifida* in human skeletal remains will not always be possible. However, in general, the more skeletal elements that are involved the more severe the problem was likely to have been.' If the covering tissue was thin, S8001 may have suffered a lifetime of lower back pain and been very vulnerable to knocks or blows in that area. Whether the debilitating effects of such chronic pain could also have contributed to his retarded skeletal fusion, and even premature death, is an open question.

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Open sacrum of S8001 (left).



A potted history of Anglo-Saxon Sedgeford, c. AD 450-1066

By Neil Faulkner

The Anglo-Saxon settlement on the Boneyard-Chalk Pit site appeared suddenly in the landscape. Previously, until around AD 700 or 750, people seem to have lived in a number of small settlements dispersed across the parish. The evidence is hazy, mainly antiquarian reports of odd finds of Early Saxon funerary urns and inhumation burials at scattered locations. But if the cemetery evidence reflects settlement distribution, Sedgeford conforms to a general pattern: that Early Saxon settlements tended to be small, dispersed, and internally uniform (that is, without evidence for significant social inequalities).

A new power rising

Why should a new, nucleated settlement appear suddenly in the early 8th century AD (or perhaps a little earlier)? It probably reflects major changes in the wider world. A new power was rising: that of the Middle Saxon aristocracy, led in this region by the Wuffingas family, who had established themselves as kings of East Anglia in the late 6th century AD. They built an international trading port at Ipswich, a royal cemetery at Sutton Hoo, and probably a palace at Rendlesham. To make good their power – to ensure they could levy tribute and raise a militia – they divided up their territory into great estates and granted these to kinsmen and loyalists ('ealdormen': the Anglo-Saxon equivalent of medieval barons). They converted to Christianity and become patrons of the Church, so that the clergy became local spokesmen for royal power.

The success of this system depended on effective control over land and labour – that is, on exploitation. Tribute extracted from peasants was the basis of the kingdom's wealth. And militia service was the basis of the royal army. Achieving this must have had a massive impact at a local level.

During the 7th century AD, the archaeology of Anglo-Saxon England implies a period of transition. Nucleated settlements replace small, dispersed ones. Enclosures around and internal boundaries within settlements replace the open pattern of the 5th and 6th centuries. High-status buildings appear alongside simpler ones. Local handmade pottery is replaced by mass-produced wares (from Ipswich) and occasional fancy imports. And coins appear in large numbers for the first time since the Romans.

A Church mission station?

Sedgeford seems to fit neatly into this general picture. Not only does our settlement start around AD 700 or 750, but the Church appears to be a major player. Perhaps the king or the local ealdorman made a grant of land to the Church, with the idea that Sedgeford would serve as an ecclesiastical centre (a 'minster') for the surrounding area. A minster was a sort of mission station in the early development of popular Anglo-Saxon Christianity. Certainly, we have a large cemetery. Around 120 skeletons were lifted in earlier excavations and are now held in the Duckworth Collection in Cambridge. SHARP

Excavating some of the plot boundary ditches in Chalk Pit field



excavated around 300 in the Boneyard-Reeddam excavations (1996-2007). Extrapolating from these figures, and based on what we know of the probable extent of the cemetery, the total number of burials may have been around 1000. The cemetery was enclosed, it was well-ordered, and the burials, in shrouds or occasionally coffins, were oriented east-west and without grave-goods: in other words, it carries all the hallmarks of Christian Church management. Presumably, there was a church on the site. Perhaps it was even within the excavated area, in the north-western part of the Old Trench excavations on Boneyard, where there were no burials: but if so, we failed to recover clear evidence.

A thegnly residence?

There may have been a secular elite presence as well. Sedgeford could have been the seat of a 'thegn' – the Anglo-Saxon equivalent of a knight, one rung down the hierarchy from the ealdormen. There was good evidence for a high-status structure in the New Trench excavations on Boneyard. We found three sides of a substantial trench to support a palisade or wall. It ran for 17m down the longer side, where it was broken by an entranceway. If it was a palisade, it represents a very substantially built enclosure. If it was a wall, it represents a huge building.

The main part of the new Middle Saxon village lay further up the slope, where the Lower Chalk Pit excavations are now under way (2007-present). A magnetometry survey has revealed a huge D-shaped enclosure on the southern side,

bounded by massive ditches, and between this and the modern farm track we seem to have a series of square or rectangular plots. It was this part of the field, on the lower slope, that yielded the greatest concentrations of Anglo-Saxon occupation debris during fieldwalking – animal bone, pottery, oyster shell. Excavations have since shown substantial building foundations: the beam-slots and post-holes of Anglo-Saxon 'halls' – long rectangular buildings thought to represent family residences. Probably, each plot contained only one main building at a time; but when we dig we find the evidence for successive replacements.

The settlement continued to evolve.

Excavations have shown Late Saxon ditches cutting through Middle Saxon boundaries. The geophysics plot appears to show droveways running through the D-shaped enclosure. Animal bone assemblages imply a shift towards hunting. Late Saxon horse equipment has been found, including two spurs. Perhaps the secular elite was becoming more prominent in Sedgeford life. Perhaps the Church was eclipsed in the Danelaw period (c. AD 871-917), when the village was under Viking overlords.

A new Saxo-Norman settlement

At some point, probably between AD 900 and 950, possibly a little later, another sudden shift occurred. The Boneyard-Chalk Pit settlement was abandoned (which is why its remains are so well-preserved and accessible today), and a new settlement focus was established north of the River Heacham in the area where the parish church

2005 excavations of the waterlogged Boneyard Old Trench



stands today. SHARP's investigation of the church indicates an 11th century date for its foundation, and excavations at West Hall (1996-2000) and in Saggy Horse Field (2003) have revealed a new Saxo-Norman settlement in the 10th or perhaps 11th century. From this developed the later medieval village. Excavations in Ladywell Field (2002) revealed the foundations of a 13th-15th century manor, and historical documents record another, where West Hall stands today, still part-bounded by its moat. Test-pitting in the back gardens of the modern village by the Sedgeford Village Survey in 2003-2004 recovered collections of pottery from which the later phases of development of the medieval and post-medieval settlement have been plotted.

Pots, pins, and radiocarbon

How can we date the transition from Middle Saxon 'South Sedgeford' to Late Saxon 'North Sedgeford'? Boneyard-Chalk Pit produces a sherd of Ipswich Ware (c. AD 720-850) for every two sherds of Thetford Ware (c. AD 875-1100). But the Late Saxon period was pottery-rich compared with the Middle Saxon, such that you need five sherds of Thetford to imply a similar level of activity to that represented by just one of Ipswich. The implication is that South Sedgeford had been abandoned by the mid 10th century AD.

By contrast, Ipswich Ware is rare in North Sedgeford: just 20 sherds from SHARP excavations compared with 510 of Thetford Ware, a ratio of 1:26. Moreover, the North Sedgeford Thetford Ware is a late assemblage: it has as many bowls as jars, whereas there is only one bowl for every four jars in South Sedgeford. Equally, whereas diagnostically Middle Saxon small-finds have been recovered from South Sedgeford, they have not been found in North Sedgeford.

Four radiocarbon dates have confirmed this dating. A human skeleton and a fragment of

disarticulated human bone from the South Sedgeford cemetery were dated cal. AD 662-881 and cal. AD 689-887 respectively, and a horse skeleton (associated with two human burials in the same cemetery) cal. AD 670-820. By contrast, a burial in North Sedgeford found in a probable early chapel at West Hall was dated cal. AD 1010-1180. Thus, on the evidence of pottery, small-finds, and radiocarbon dates, it seems safe to regard South Sedgeford as a settlement of the 8th to 10th centuries, and North Sedgeford as a new settlement focus of the Saxo-Norman period.

Facts, theories, and guesses

Some things we know. Our 300 skeletons are real, and much that we say about their age, sex, and pathology is almost certainly correct. But the idea that they were buried by missionary clerics, or the idea that in life they were ruled by a horse-riding thegn, is only theory. And beyond that are guesses. Why the shift from Middle Saxon South Sedgeford to Saxo-Norman North Sedgeford? Was it because of the arrival of new Viking lords in the late 9th century, or new Anglo-Saxon ones in the early 10th? Was it related to a major landscape reorganisation to exploit the agricultural resources of Sedgeford in new ways? Did it happen at the same time as the flooding of the Reeddam? We do not know. The search for answers to these and many other questions continues.

Acknowledgements

With thanks to all my many colleagues whose work and ideas have been shamelessly plagiarised (and no doubt misrepresented) in this little interpretive foray. And thanks, too, to all the hundreds of SHARP volunteers whose work underlies the knowledge and understanding we have achieved in the last 14 years.

The church of St. Mary the Virgin, Sedgeford which was to become the focal centre of Sedgeford in the later medieval period.



Two more medieval coins

By Naomi Payne

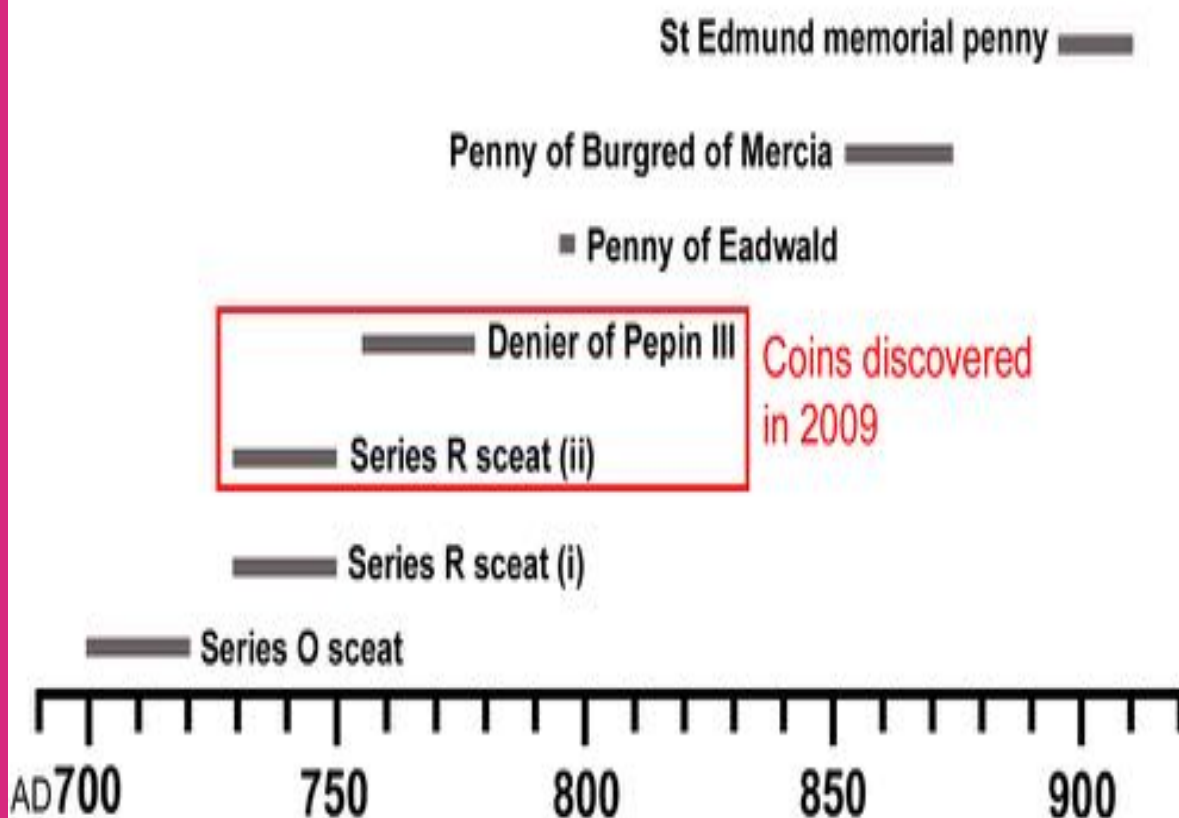
During the 2009 summer season, two Anglo-Saxon coins were discovered in sealed layers during the excavations in Chalk Pit field. This brings the total number of early-medieval coins discovered by SHARP in the Boneyard and Chalk Pit fields to seven (figure 1). Not a huge number you might think, but the further we explore the settlement, the more we are likely to find.

Certain other Middle Saxon sites have proved to be fairly coin-rich and as such they are often argued to be sites of a rather special character. During the excavations of the settlement at Flixborough, North Lincolnshire, 67 coins were found that dated from between c. 700-1000 AD. At Brandon, Suffolk, the coin count was 20+. And although excavations have been fairly limited at Bawsey, just down the road near Kings' Lynn, around 200 coins have been discovered, mainly through metal detecting. At the present time, the Middle Anglo-Saxon settlement at Sedgeford seems to have been just that; we have no definite evidence for any particularly unusual characteristics, although hints are starting to emerge. In general however, so few sites of this date have been comprehensively excavated that it is difficult to say what is 'normal' during this period.

The first of the two coins discovered in 2009 was a Series R sceat (see fig 2), dating from c. 730-50 AD. Another coin of this type was found in the Boneyard Evaluation Trench (located close to where the marquee is now normally erected) in 2000. Sceattas (pronounced "she-attas," singular sceat, pronounced "skeet") were the first silver coins to be produced in the British Isles after the end of Roman administration c. 410 AD. The earliest examples date from c. 680 AD and similar coins were also minted across the North Sea, in Frisia and Jutland. The Series R sceat has no legend (writing), so the ruler who issued the coin is unknown, but the distribution of this type suggests it was minted somewhere in East Anglia. The motifs on both sides are very stylised. The obverse is thought to feature a standard and the reverse, a bust (head in profile) wearing a radiate (spiky) crown.

The second of the 2009 season coins was a denier of Pepin III (figure 3), dating from 755-68 AD. This coin is particularly interesting as it was minted abroad and must have come to Sedgeford, directly or indirectly, through trade with continental Europe. Pepin III (714-768 AD), sometimes also called Pepin the Short or Pepin the Younger, was the first Carolingian King of the Franks, the people who gave their name to what

Fig 1 Coins found during excavations of Boneyard and Chalk Pit field



Series R sceat (fig. 2) Denier of Peppin III (fig. 3)



later became France. He was the son of Charles Martel, who established the Franks as the ruling dynasty of the kingdoms which made up the old Roman province of Gaul. Pepin's son, Charlemagne, became the most powerful ruler of early medieval Europe.

Pepin came to power in 741 AD, ruling part of his father's territory as it was split with his brother Carloman. The two brothers initially selected Childeric III (a member of the previous Merovingian dynasty) to act as nominal King of the Franks. With their help during this period, the Frankish church strengthened and advanced the conversion of the Anglo-Saxons. In 747 AD, Carloman retired so that he could become a monk. Pepin, with the consent of the pope, St. Zacharias, then forced Childeric into a monastery and in 751 AD had himself proclaimed king. These processes created the Christian, imperial, continental Europe, which influenced Anglo-Saxon England in terms of religion, art, trade and the form of government. All of this happened during the period of the Anglo-Saxon settlement at Sedgeford.

The coin's denomination, the denier, was a French coin first produced in the Early Middle Ages. Its name was derived from the small Roman silver coin, the denarius. It was introduced together with an accounting system in which twelve deniers equalled one sou and twenty sous equalled one livre. The Anglo-Saxon equivalent of the denier was the penny, 240 of which (prior to decimalisation) made up one British pound or 20 shillings. The symbol for both the old denier and,

until recently, the penny used in the United Kingdom and elsewhere was "d".

The coin's obverse features the legend +NPIPI, which is the king's name, Pepin, with a Christian cross above and a fairly crude representation of an axle below. On the reverse are the letters RP, which is short for 'Rex Pepinus' (King Pepin). The coin may have been minted in Dorestad (modern Netherlands), Verdun or Angers (modern France), all of which are within the boundaries of the Frankish Kingdom. At the time that this coin was imported into England, there was regular trading contact between much of the east coast of England and the continent. Only six examples of this particular coin have previously been found in England and these are almost all on coastal or river sites, which would have made trade with Europe easier. Sedgeford is only five miles from the sea and near to probable Anglo-Saxon ports on the north Norfolk coast, so the new find fits in well with the existing distribution.

Mussel shell filled
ditch excavated in
Trench 10 during
2008



Sedgeford sub-fossil molluscan faunas: current sampling strategies and the implications for future research

By Adrian Donaghey

The 2008 and 2009 seasons saw excavations continue in Chalk Pit field (site codes SH08 CNE and SH09 CNE, respectively). To the best of my knowledge, since 2007 when excavations began in this area, sub-fossil molluscan faunas have been collected as part of the excavation and environmental sampling processes. However, no systematic analysis of the retrieved specimens had taken place. This was regrettable for two reasons. First, it has long been known that the retrieval of the shells of land snails from within or beneath archaeological features has the potential to offer insights into the past environment. Second, it is only by quantitative evaluation of the collected specimens that the effectiveness of the current sampling strategies can be determined. With this in mind, those sub-fossil molluscan specimens recovered during 2008 and 2009 were analysed. Given the low number of samples available it seemed highly unlikely that any meaningful

statistical analysis could be conducted. However, it was hoped that whatever data was obtained would, at the very least, enhance the interpretation of the site and inform any future research strategies.

Sampling and identification

At the present time sub-fossil shells of land snails have not been recovered from the excavations in Chalk Pit field in any systematic manner. Those specimens that do find their way into the site archive come by one of three routes. The majority of the shells discussed in this paper (87% or 98 out of a total of 113) have been retrieved by hand during the excavation process. These shells were air-dried, cleaned with a soft brush and then bagged and labelled. Flotation and wet sieving of a soil sample from SH09 CNE T9 (9022) produced nine shells (or 8% of the total assemblage). Finally, dry-sieving of incremental soil samples (to 4mm) - taken for the purpose of

marine shell analysis - produced a further six land snail shells from contexts including SH09 CNE T10 (10079) and (10185).

In most sub-fossil molluscan samples the periostracum (the pigmented outer surface layer) has been lost and this can sometimes complicate identification at intra-family level. In the case of *Cepaea nemoralis*/*Cepaea hortensis* from Sedgeford (figure 1), loss of shell pigmentation, frequent damage to the lip region and shell dimensions that would be appropriate to both species has necessitated the use of the more general term 'Cepaea species'. However, given their very similar habitat requirements this should not significantly affect any subsequent environmental analysis. *Cornu aspersum* and *Cepaea* species were studied using a hand lens; all other shells were examined using a binocular microscope at x10 and x30 magnification. Identification of individual specimens was undertaken in accordance with the measurements, ratios and descriptions given by Cameron (2008) and the Field Guide produced by Kerney and Cameron (1979). In addition, digital callipers were used to record the height and width of each shell in millimetres to two decimal places. Given the relative inexperience of the author all identifications were rechecked by Derek Howlett, a conchologist based in Norfolk.

In most cases the shell apex, mouth and body whorl remained sufficiently intact to enable shell height and width measurements to be taken. Although all 'complete' shells were measured, given the limited number of shell bearing contexts from Trenches 7, 8 and 9 in 2008, and Trench 11 in 2009, it was decided to limit further analysis to samples from SH08 CNE T6 and SH09 CNE T10. According to Davies (2008, 5) in order to provide a meaningful dataset samples should comprise a minimum of one hundred and fifty shells. Given that only thirty shells were recorded for 2008 and eighty-three for the 2009 season, it is unrealistic to expect to be able to subject them to detailed statistical scrutiny. Nevertheless, the information that can be obtained from our limited set of values may still offer a means of approaching issues such as the effectiveness of the sampling strategy, or whether the current dataset adequately reflects the in-ground sub-fossil land snail population.

The height and width measurements were placed into four separate data ranges by shell characteristic and trench number. The minimum, maximum and median of each range of numbers were established along with the lower and upper quartile values for that data set. Microsoft Excel was then used to generate a series of box plots to display the results. The small pool of data for Trench 6 limits the viability of any results. That said; the median values for both shell height and width retrieved from this trench during 2008

cluster around the 20-25mm point. A similar pattern occurs in respect of the median values for Trench 10 with both results falling between 25 and 30mm; close to the boundary of the upper quartile. Moreover, the dataset for 2009 clearly shows a tendency towards retrieval where the height, width or both dimensions of the shell exceeds 20-25mm. In part, this is no doubt due to the fact that these larger shells exhibit a more robust overall structure and so survive better in the ground when subject to environmental and agricultural processes. It might therefore reasonably follow from this that only the more robust shells survive on site. However, the wet-sieved soil sample from SH08 CNE T9 (9022) yielded a collection of nine shells with an average height of 2.51mm and an average width of 4.97mm, demonstrating beyond doubt that sub-fossil shell survival at Sedgeford is potentially good. Since all of the samples from Trench 10 and all but one from Trench 6 were recovered by hand, the implication that excavators are identifying and collecting the biggest shells only becomes inescapable.

The recovery of shells with a height or width of 20mm+ may not, in itself, be particularly problematic provided that those that are recovered have a diagnostic value. To date, hand retrieval has produced sub-fossil shells from only five species of land snail, and just two of these - *Cornu aspersum* and *Cepaea* - account for around 75% of the total number of individuals recovered. According to Kerney (1999), *Cornu aspersum* (the Garden or common snail) is a probable Romano-British introduction and is widespread throughout southern Britain. It lives in widely varied habitats from grassland to sea cliffs to deciduous woodland. *Cepaea nemoralis/hortensis* (the brown- and white-lipped snails) are also widespread throughout most of Britain. These native species first appeared in the early postglacial period and again occupy catholic habitats. Given their widespread nature and ability to live in, or adapt to, most environments they are not useful indicators in terms of palaeo- or neo-environmental studies. Consequently, they have limited archaeological value to the project.

Consideration must also be given to the method of selecting locations from which sub-fossil molluscan samples are retrieved. Vertical sampling is the most common method employed on most archaeological sites. However, Davies and Grimes (1999) and, Rouse and Evans (1994) have previously demonstrated how intra-site faunal variations can occur across small-scale areas, and Whittle et al. (1993) have shown how horizontal sampling across a buried land surface can offer insights into the vegetation characteristics of that location in the past. Therefore, both vertical and lateral sampling regimes can have much to offer.

Lateral sampling requires a soil surface buried by a discrete event or, at the minimum, the researcher to be satisfied that sedimentation or deposition of disparate deposits has not been diachronous (Davies 2008). Therefore, on present evidence best practice for excavations on Chalk Pit field would be to take continuous incremental samples from exposed sections, so that faunal variation by time depth could be assessed. The continual retrieval of sub-fossil shells from dry and wet-sieved deposits should also continue in order to provide supplementary evidence about discrete sealed deposits. Adopting a new vertical sampling strategy from the 2010 season onwards would additionally remove the current sampling bias and help determine whether the paucity of individuals and species is a true reflection of the snail populations during the sites history.

Discussion of retrieved species from 2008 and 2009

In view of the foregoing it is not intended to include within this discussion mention of any *Cornu aspersum* or *Cepaea* species from Trenches 6, 9, 10 or 11. Moreover, given that the position of the shells within any given stratigraphic layer is unknown and that experimental work by Carter (1990) has indicated that soil processes can cause the downward movement of a shell within a soil horizon by as much as 5mm year⁻¹, it is inadvisable to use the presence or absence of *Cornu aspersum* as a terminus a quo for any given layer or feature. Consequently, excavations during 2008 and 2009 produced four species of sub-fossil molluscan fauna requiring further analysis: *Hellicella itala*; *Trichia hispida*; *Trichia striolata* and *Candidula intersecta*.

In the following discussion common names and habitat information derive from Kerney (1999). *Hellicella itala* (or the Heath snail) is a Late Postglacial native species that prefers dry, sunny and calcareous grasslands, dunes or screes. It is less

tolerant of cultivation than many species and is suppressed in areas of widespread woodland. Although declining in recent years across eastern England it continues to inhabit north-west Norfolk. *Trichia striolata* (the Strawberry snail) is an Early Postglacial native species that prefers damp and shaded places but can also be found in waste ground, tall grassland, under walls and amongst human rubbish. *Trichia hispida* (the Hairy snail) has retained a broad distribution across most of Britain since its appearance in the Late Glacial period. Although it avoids areas of deep shade, like *T. striolata* it occupies areas where there is ground litter, moist well-vegetated grasslands, waste ground and along the base of walls. However, some varieties have also been found inhabiting fairly dry exposed sites. Finally, *Candidula intersecta* (the Wrinkled snail) is a common snail that prefers dry grasslands and exposed situations, waste grounds and readily colonises man-made habitats on well-drained calcareous soils. According to Kerney (1999, 179), it is probably a relatively recent introduction from southern Europe.

Three of the species *H.itala*, *Trichia* and *C.intersecta* are all commonly found on dry, exposed, calcareous grasslands or waste ground that is only likely to have been subject to limited cultivation. Although specimens of *Trichia* are limited to a single context (9022), sub-fossil shells of *C.intersecta* (four contexts) and *H.itala* (eight contexts) are spread widely across most of the excavated areas. Moreover, despite many of the *itala* samples coming from later secondary deposits, contexts (0136), (9022) and (10185) would all appear to be linked to specific construction or depositional events (in the case of (0136) associated with Late Saxon pottery). In addition, *Trichia* and *C.intersecta* are also commonly associated with man-made habitats. With this in

Cepaea nemoralis
Gwynedd, 2002 (left).
Cepaea Species
SH09 CNE T10
(10030) (top right)
SH09 CNE T11
(11000), (bottom
right)



mind, it is interesting to note that shells of both species were recovered from (9022) a pit into which articulated animal bone had been placed; and *Candidula intersecta* shells also came from (9028), a ditch fill containing animal bone, Thetford Ware, charcoal and possibly slag. Although at present the evidence is extremely limited, the sub-fossil molluscan faunas do provide some support for the idea that during the mid- to late-Saxon period the area covered by Trenches 6 – 11 comprised an open, exposed and well-drained area of calcareous grassland that saw significant human activity (but, perhaps, minimal cultivation). One potential anomaly is the presence of *T.striolata* from two separate contexts in Trench 11 (11000) and (11013). Episodes of marine shell dumping were noted in (11013) and it may be this activity that attracted the species. However, *T.striolata*'s preference for damp and more shaded places may point to the existence of a further structure in this area; or it could indicate that historically increasingly dense vegetation existed towards the west of this trench. Samples from future deposits will hopefully help provide some answers.

Conclusion

The retrieval of sub-fossil molluscan fauna over the past two years, by dry- and wet-sieving, has begun to produce results that may ultimately assist in building a picture of the environmental history of the area surrounding the excavations. This method of recovery should continue in future seasons. However, from the 2010 season it needs to be supported by a better targeted campaign of vertical (and where appropriate lateral) incremental sampling of exposed sections, in order to construct an accurate picture of the sub-fossil molluscan populations through time. Whilst hand-retrieval of snail shells may continue to provide some information, it should be appreciated that this is likely to be of extremely limited value. Analysis of samples recovered by hand during 2008 and 2009 clearly shows that a digger is most likely to notice shells with at least one dimension in excess of 20mm. These larger shells are the most robust and therefore survive longest in the soil; however, in the case of *Cornu aspersum* and *Cepaea* species their ubiquity and ability to occupy a broad range of ecological habitats make them the least useful for the purposes of environmental analysis. In many cases the shells most useful as environmental indicators are only likely to be collected by sieving to a size of 0.5mm following flotation (Davies 2008, 5-6) a process to be introduced for molluscan rich samples from the 2010 summer season onwards.

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Excavating the building structures during the 2009 season.



SHARP building area report

By Kathryn Creed & Matthew Cross

The number of burials found in SHARP's long excavation programme suggests there should be a settlement nearby. During the last three years attention has been turned to a nearby field, which is showing ever-growing potential to be the domestic residence of some of the people found in the cemetery. The current excavation site was field-walked, and surveyed using geophysical equipment, prior to digging commencing in the 2007 excavation season. Three full excavation seasons now confirm a high ratio of early medieval features. This year, trench 10 (T10) was opened, partially overlapping a complicated area of trench 6 (T6) from 2008. The new archaeology exposed in T10 has allowed a fuller understanding of the features of T6.

As found in previous seasons, the archaeology under the topsoil is below the original Anglo-Saxon ground level; all are features cut in to the ground and then filled through a number of processes rather than raised earthworks. The earth between the modern ground level and the archaeology is a dark-brown topsoil, ploughed over many centuries, which contains the displaced and redistributed Anglo-Saxon surface and its contents. The sites preservation is constantly worsened by the local geography and weather; the site experiences heavy rain from its exposed position, which washes the soil down the slope towards the river. Occasionally long plough

marks, from particularly deep ploughing, can be seen cutting through the archaeology under the topsoil, and the plough will cut ever deeper as the topsoil is gradually washed away. This process can be seen within the archaeological layers, where centuries of hill wash have already been deposited in between occupation layers.

The archaeology however endured these hardships, and a number of linear features appeared in the new section of T10. These corresponded with features defined and excavated in T6 and with features identified in the geophysical survey. The majority of the features are boundary ditches, predominantly running east-west and with a staggering number of re-cuts, but with a number of north-south ditches running along the western side of T10. To the south-east of these features four walls were identified, belonging to two similarly sized buildings which overlap (roughly 12m x 5m). Unfortunately only the long walls have been identified. The end walls, which would identify which overlies the other, and thus which building was earlier, have not been found from either building. This is either due to destruction since, or perhaps differing, more ephemeral, construction methods on the shorter walls; or indeed a mixture of both. The long walls are made up of a sequence of linear holes created to take substantial wooden posts and the surrounding packing material required to keep

them upright and secure. The packing survived in places, generally large flints local to the area. Also pieces of burnt daub remained within the backfill of the features, along with brown soils with chalk and gravel inclusions. The daub could be burnt either because of the placement of the hearth within the building (which would have slowly 'fired' the clay within the daub) or because the building was partially burnt down to clear the site.

The correct term for the wall features was hotly debated by the team, the original title of 'beam slot' suggested a misconception of buried beam lintels, into which vertical posts would have slotted. In their fully excavated form, they appeared to be connected post holes, where the ends of the timbers were supported by earth and packing stones rather than inside a beam which would have quickly rotted. By connecting the post holes, the builders could have control over the ground surrounding the posts, filling it with compacted soil with stone and gravel inclusions and, on one occasion, clay. Rotting would also have been an issue for the section of the posts which were buried; experimental archaeology at West Stow, Suffolk and Bede's World, Northumberland indicate that it would have been a familiar problem to the builders and the occupants/users of the building. It is most likely that the design of the structure would have taken this in to account, with the support of the building shifting from the posts to the rigid walls over time. Yet the structural engineering of these structures is almost entirely modern conjecture. There are no standing Anglo-Saxon buildings in Britain and the construction methods and architectural style differs widely from the continent (where some waterlogged sites have preserved partially standing buildings but with noticeably different 'footprints').

The buildings themselves differ slightly in construction methods. The western building has deeper and much more substantial footings and packing stones, with the post holes possibly set within a roughly one metre deep ditch, running

the length of the building. The eastern building had smaller and shallower post holes. However, this may indicate it is the later building, and the surface level rose between the collapse of the first and construction of the second building. However, it could be that the eastern building utilised a completely different construction method, or was a less substantial building which did not need the deep footings of the western building. Both buildings are of a similar width as there is a maximum distance of about 7m that a roof can stretch across without needing substantial additional central posts or aisles.

One peculiar feature in both of the buildings is a round hole of approximately fifteen centimetres in diameter going down through the chalk gravel and into the clay layer beneath. When the first of these was found it was thought to be either a stake hole of an earlier feature or a sink hole (this is where running water in a flood or river eddies and carves a hole down into the ground). These can sometimes be mistaken for post holes but often undercut the top when they reach a softer layer. Our holes did not undercut, and we wondered if they could be a form of Anglo Saxon ground testing. The natural ground is a complicated series of human made features (ditches, pits etc) and glacially dumped material. The south part of the site is very different with hard gravel deposits to the north with sandy deposits; it would not seem unreasonable that the Saxons tried to work out what the conditions were before they built a long lasting structure.

There are some flaws in this theory. There are only two of these holes, and they do not seem to track the edge between the gravel and the sand geology. Also the full extent of the building may not yet have been uncovered, lying under the southern edge of T10. The southern half of T10 therefore remains open to allow us to investigate the building further during the 2010 excavation season.

Looking for answers!
Sometimes untangling the complex picture of the features proved to be a demanding task...



“I Can See Clearly Now the Rain has Gone”: Trench 11 excavations

By Mark Blagg-Newsome

The power of a summer storm! The elements gave us a unique opportunity to record a large portion of the Anglo Saxon settlement in section.



As these 1972 lyrics by Johnny Nash would suggest, the weather (and in particular the rain), had a huge impact on the decision to open up an eleventh trench, creatively named Trench 11 (T11) in Chalk Pit field. It hadn't been planned that an eleventh trench would be opened for excavation during the 2009 season as we already had our hands full with the extensive features in the larger scale open-area site of Trench 10 (T10). However, in late June the villagers at Sedgeford experienced a rain storm that will be talked about in folklore for years. The Fring road was blocked for weeks with earth shifted down the hill by the rain, and the ground floors of many houses were flooded. The deluge also cut a deep scar through the surface of the hill in Chalk Pit field revealing the archaeology below. For the SHARP archaeologists this 60m x 1.5m (approximately) ditch provided a unique opportunity to see a portion of the Anglo-Saxon settlement in section.

After negotiations with the land owner, we were allowed to use this scar and excavate it for one season only. With this in mind it was decided that we would fully excavate to the natural all features that appeared in the 60 metre section of the trench and plan small features if they were not cut by the side of the trench. Any features cut by

the edge of the trench would be recorded on the huge 60 metre long section drawing of the trench. After excavation was complete we would take a small scale (1:100) plan of the entire trench to capture the main features running through it. We would then compare this with the 1:100 plan of T 10 to see if any of the features found in T 11 continued through into it. This could give us an indication as to the western extent of the settlement on Chalk Pit field. Any finds discovered might also indicate whether particular areas of the site were dedicated to different activities (i.e. industrial vs. domestic) as potentially indicated by excavations in previous SHARP seasons on the hill.

To complete the important task of excavating and recording Trench 11 man, woman and child were all conscripted to the cause...well, the BERT's were anyway. All the BERT trainees did their supervisors (James Westoby and Mark Blagg-Newsome) proud because not only was the excavating and recording completed but there was also time, towards the end of the season, for the BERT's to get stuck into some of the T 10 archaeology as well.

Finds from two contexts in particular caught our attention during the latter part of the season, both located at the northern extent of T 11 (the bottom of the Chalk Pit field). The first was what appeared to be a redeposited clay oven, which seemed to be sealing a probable ditch feature that also contained animal remains, primarily from domesticated sheep. This find seems to confirm what was suggested in previous seasons - that as you travel further west over the site, the settlement becomes more industrialised in nature. Evidence of horn core processing from similar contexts in the northern extent of T 11 also supports this theory.

The other find of interest from T 11 this season was the remains of two lengths of articulated sheep thoracic vertebrae, possibly from two specimens. At first it was thought that these might be the remains of Anglo-Saxon sheep processing, but then one of the locals told us about sheep being kept in the field during the post-war period. The lack of other dating evidence, and the fact that the pit feature containing the sheep remains was one of the latest features stratigraphically, may well give credit to the suggestion that this was an intrusive modern context rather than evidence relating to the Anglo-Saxon settlement. Instances such as this really show that if we are to understand this complicated site at Sedgeford, the knowledge held by local people can be just as informative as the material we dig up from the ground.

Archaeological impact of the Sedgeford dig: Clues for a future generation

By Matthew Cross

At the end of shut down week Jon said to me that he wondered what the archaeological impact of SHARP would be, considering that all the structures are temporary. I had been thinking about this for some time and so have decided to write a small piece on this.

The obvious place to start would be the excavations, which have taken place over the past fourteen years. Around the village, during the various sub-projects run by SHARP there have been a number of trenches dug. These trenches range from large scale open area excavation of Boneyard field to evaluation trenches and various test pits dug in people's gardens for the village survey.

The trenches may have some interesting finds within them. Any ditch that has been sectioned will probably now have different fills from the section removed. The backfill may have some modern finds within it such as broken tools and things people want to get rid of. For example shoes, clothes, plastic bags and hazard tape are all things that may have been dumped back in the various trenches. These could give future archaeologists some fun with bimodal finds; some ~750AD and others ~2000AD.

An interesting find during the 2009 season was a test pit dug into Chalk Pit field during the 1997 season. This test pit concluded that there was nothing of interest in the field. I am glad this conclusion was wrong. The test pit was simply put into the wrong place, a mistake that could happen to anybody. When backfilling a 'marble effect' occurs in the section, however over time diffusion takes place and this effect is lost. The time scale for this process is unknown though we know from Roman examples that encampment turf layers are preserved in the soil, so our backfilling (by hand or machine) may be preserved in the soil for quite a while.

Moving from the excavations onto the camp site, what evidence would we have here of SHARP's presence other than the close proximity of the main excavations. The area that immediately springs to mind is the Enviro (environmental archaeology) hut. Around the hut there have been significant efforts by the current Enviro supervisor to raise the ground level, so that the water drains away effectively into the old boneyard trenches and river.

Around Enviro's work station there are layers of turf (from the track scraping of a few years ago) and stones from the residue. As well as this there is a channel dug and planked up to allow

for easy water drainage. How long would the latter survive as it is a wooden construction dug into the top soil? The various soak away holes dug around the camp, either for the sinks or to stop the marquee from flooding, may not survive either as they are also dug into the top soil.

All the huts, as previously mentioned, are temporary structures as are the tents and the rest of the infrastructure for the dig. Any evidence that would remain would be ephemeral. General rubbish is collected up and removed from site by contractors and the camp site is given one final clean up during shut down week. Things that could survive in large quantities are tent pegs, cigarette ends and lost coinage and jewellery. There may well be other small pieces of plastic that survive, or cans and bottles that escaped detection during the clean up.

In conclusion I feel that there would be far more evidence of where SHARP is through the close locality of all the trenches rather than the actual camp site itself. There would, in reality be hardly any evidence for the location of the camp in the archaeological record except for lost personnel items; possibly there would be nothing recognisable as the camp. Perhaps then future archaeologists will speculate that this field in Sedgeford was used for ritual purposes. One thing is sure they will certainly have to use their archaeological imagination.



The bladder stone that wasn't

By Martin Hatton

In *A Decade of Discovery – The Sedgeford Historical and Archaeological Research Project 1996-2005* there is the statement “From two . . . burials we have recovered what we believe to be bladder stones.” (Hatton and Burrill: 2005,14). The two burials in question were S3010, a young teenager of indeterminate sex, and S0193 a young (25-35 years old) adult male c.178 cm (5ft10in) tall. At the time this report was written it was not possible to make a more definite statement than this. The information that there might have been two bladder stones found at Sedgeford was also included in a catalogue produced by Stephanie Ashworth (Ashworth: 2005,44-8).

Since then both ‘stones’ have been studied and analysed in detail. In both cases visual comparisons were first made with the collections of urinary and other calculi held at the Hunterian Museum of the Royal College of Surgeons. Both were then subjected to X-ray diffraction analysis at the Centre for Archaeological and Forensic Analysis, Cranfield University.

The results relating to S3010 have been fully reported in a recent issue of *Norfolk Archaeology* (Beckett et al: 2008,397-409) and were the subject of a prize winning presentation by Sophie Beckett at the British Association Festival of Science 2008. The results for the ‘stone’ from the grave of S0193 are presented here for the first time.

As shown in *fig. 1*, the stone from S0193 is almost spherical, measuring 12.9 x 11.8 x 10.1 mm (maximum dimensions taken approximately at right angles to one another). It differs in size and shape from the S3010 calculus which is oval,



fig. 1



slightly flattened ‘like a water-washed pebble’ and 32.7 x 25.6 x 17.4 mm. They are also not identical in colour: the S3010 calculus is pinkish-brown on the outside whilst the S0193 ‘stone’ is a brownish-yellow colour. When found the calculus from S3010 had been partly eroded on one side ‘to reveal a number of distinct separate layers, or laminae. The second layer was a light bluish-grey and beneath that the underlying layer appeared to be pinkish white’ (Beckett et al:2008,401-3). In contrast, the ‘stone’ from S0193 appears to be

(*fig. 1*) Stone from grave of S0193.
(*fig. 2*) Bladder Stones from A Descriptive and Illustrated Catalogue of the Calculi and Other Animal Concretions Contained in the Museum of the Royal College of Surgeons in London Part 1. Anon:1842,24&78



fig. 2

much harder and denser and shows no signs of erosion, friability or layering.

Although the two ‘stones’ are quite different in appearance urinary calculi vary widely in size, shape, and colour and there are examples which looked similar to each of them in the Hunterian collection. In particular two bladder stones are illustrated in a catalogue of 1842 (Anon: 1842) which appear to show some similarities of shape, colour, and texture to S0193’s ‘stone’. These hand coloured drawings are reproduced in *fig 2*. The small process projecting from the specimen on the left (spec.A168) is attributed to the parts adjoining the process being dissolved as a result of ‘the use of alkaline medicines’ (Anon: 1842,24).

On the basis of these visual comparisons it was concluded that both of the ‘stones’ might be urinary calculi. To test this both were subjected to X-ray diffraction analysis at Cranfield University.

The method used and the results obtained for the S3010 calculus are fully described in the *Norfolk Archaeology* article (Beckett et al: 2008,397-409). The analysis showed that this ‘stone’ consisted solely of poorly crystalline calcium hydroxyapatite and β -tri-calcium phosphate thus showing that, as we believed, the stone was of biological origin. A urinary calculus, almost certainly a primary bladder stone (i.e. one which forms in the bladder rather than one that forms in the kidney and then migrates to the bladder).

The results of the ‘stone’ from the grave of S0193 showed that it consisted entirely of quartz (a form of silicon dioxide, SiO₂) and was therefore of geological origin.

It is slightly disappointing that only one of the two ‘possibles’—that from S3010—was, in fact, a bladder stone, however one out of two is a good result. Calculi of all types (gall, kidney, or bladder stone) are rarely recovered archaeologically. One reason for this, is that ‘some [calculi] may not be recognised by the excavator’ (Roberts and Cox: 2003,17). This is not surprising. As this account shows, even when specimens are compared in a museum environment it is still not possible to be certain that presumed calculi are not, in fact, just geological stones. Such certainty requires sophisticated chemical analysis.

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Open to the public

By Pauline Fogarty

As part of the project's commitment to public archaeology a site open day is held each year to tell the public about the ongoing work achieved and to promote archaeology to the general public. It is a great chance for the local community to get a real insight into what has been discovered and a good opportunity for children to have a hands on experience of what archaeology is all about. The 2009 open day was a great success with just over £1000 being raised for the project.

Volunteers and visitors alike had a great day, which fortunately stayed rain free. In the marquee there were spinning demonstrations as well as a living history display giving the public an insight into the people of Anglo-Saxon Sedgeford. Tours of the site ran throughout the day, giving the public a chance to see the site of the Saxon settlement (currently being excavated) associated with the cemetery that has been excavated by the project in previous years. Visitors saw the footprint of two substantial structures and various associated land enclosures. Some members of the SHARP team gave twenty minute talks on a variety of subjects from Anglo-Saxon food to zooarchaeology. There was also the chance to see one of the skeletons found in the cemetery in previous years and some displays of our recent finds.

Children visiting the site had the opportunity to dig on their own special "archaeological dig" where there were coins, pieces of pot and, according to rumour, even a sword! In the marquee, there was face painting and activities for the kids to get involved with such as pottery and

finds identification and writing with a quill pen. A number of different competitions ran throughout



the day, such as 'Sponsor a grid square', where the public try and guess where the next small find will be uncovered and 'Torc-la' for the children.

And when visitors tired of all the activities there was Pat's fabulous cake stand and great refreshments provided by Janine & Amanda enabling visitors to find their second wind. All in all a great day!

Some of the youngsters who came to the Open Day enjoying a variety of activities.



Excavating some of the standing buildings at the First World War aerodrome.



If you go down to the woods today... Sedgeford Aerodrome Project - report from the first fieldwork season

By Anna Gow

On 28 November 1916 Zeppelin LZ61 was shot down over Lowestoft by Egbert Cadbury and Robert Leckie. Getting lost in thick fog on the way back from their mission, Cadbury found that Sedgeford Aerodrome was the only local airfield to have lit flares along its runway and so they landed there safely. More than ninety years later SHARP has launched a project aimed at understanding more about how the airfield was used, not only as an active airfield during WWI but also as a decoy airfield during WWII.

To get this project started we ran a one week course in 2009 entitled 'Zeppelins, Fighters and Ack-Ack: An introduction to modern conflict archaeology'. Providing a flavour of techniques employed in modern conflict archaeology this course allowed students a chance to undertake desktop research with contemporary plans, aerial photographs and old documents, as well as carrying out a comprehensive evaluation of the site with field reconnaissance and survey using hand-held GPS receivers and detailed investigation of a mortuary building, an air-raid shelter and a rubbish dump.

In preparation for this course a small team met with the land owner, William Barber, and one of his employees, Mike Frost (who has worked on the land since the 1950s) the previous week to discuss suitable locations. William rears birds on the site and we didn't want to disturb them during our time there. Our initial plan had been to look for evidence of some of the larger hangers and some of the accommodation blocks but this all changed when Mike asked 'Do you know about the mortuary building?'. Leading us into the woods Mike and William showed us not only what is believed locally to be a mortuary building, but also an air-raid shelter. We knew then that these two buildings would be the focus for our course. Nearby, behind a long one storey building that is marked on the modern day OS map, they also showed us an area that is believed to have been a WWI rubbish dump. Whole bottles and jars could clearly be seen lying on the surface so we decided to make this another key focus for the week.

Mike was also able to tell us that the villagers used to come over to the Aerodrome to watch films at the cinema, probably the first moving pictures that any of the locals had seen. This sort

of local knowledge can be key in modern conflict archaeology and we hope at some point to talk to Mike further about other stories he'd heard from people he used to work with.

After a hard day of scrub clearance to prepare the chosen areas (thanks to all those supervisors and volunteers who helped out for a day in the rain) we were ready to start work. Splitting the students into teams of three they were each assigned a particular feature to investigate. Team A looked at the mortuary building, Team B a presumed area of domestic accommodation and the rubbish dump and Team C investigated the air raid shelter.

Hidden from view

Team A initially spent some time studying how the mortuary building was constructed to see if they could gather any information that would support the theory of its use. As part of the desk-based research that was undertaken the team discovered that a mortuary was listed in the advert for the sale of the aerodrome in 1921. The building, which consisted of two rooms, had a double width doorway into one of the rooms; easy access for stretchers perhaps? This room had four round air vents set in its walls and a cement skim around the walls that forms a curve from the walls into the floor, which would allow for easy washing of the room. The team noted that all of the windows in the building were at the top of the walls, thereby allowing light in but not providing a view from the outside. The position of the building, in an area that was woodland during WWI, means that it is hidden from general view, and a large building positioned at the edge of the wood has no windows on the wall facing the mortuary. It certainly seems to be a building that is trying to conceal its contents!

On closer inspection, Team A discovered that although the building was built with fairly crude materials (concrete, coarse bricks, flue-type blocks and slate) there are some interesting architectural features that suggest some thought was put into its design above and beyond a purely utilitarian nature. At each corner there is a brick column to support the walls, these were capped at the top with two layers of clay tile and diagonal bricks, providing a simple decorative affect. The remains of a louvered wooden frame on the roof clearly shows that there was a vented superstructure in the centre of the roof, a feature seen on other period architecture. These two architectural elements do give the impression of “chapelesque” architecture.

The team concluded that this building was indeed the aerodrome mortuary. Although it was built from basic materials, on marginal land and away from the main site area out of casual view, the building's more careful design immediately defines it as something special.

Bottles, bottles and more bottles

Team B spent the first morning putting in a trench to try and uncover evidence of the wooden huts believed to have been used as accommodation blocks. Sited next to a jumbled pile of large concrete blocks this trench turned out to be virtually sterile. Although not surprised by this (as they believed these concrete blocks to be the foundations upon which the wooden huts had sat) the team were surprised not to find any material culture associated with the huts. Upon further research back at the OVH the team discovered that although a 1918 aerial photograph showed the elusive huts, they were absent in a 1945 photograph. It is not clear how long the huts were there for, and it may be that they were part of the planned expansion of the airfield that was halted

(left) mortuary building. (right) air raid shelter.



due to the end of hostilities in 1918. It is therefore possible that the huts saw little use before being dismantled and so the team concluded that this is why no associated material culture was found at the site.

Closing off this area Team B moved onto the rubbish dump where a 1m by 8m trench (Trench 1) had been opened up which, over the next couple of days, provided us with a large assemblage of material culture. The artifacts collected from Trench 1 were all either picked up from the surface or found within, or just below, the topsoil. Although the students didn't have to dig deep to recover items they found that the area of deposition was large. Once it became clear that the bulk of the finds were located in the East end, dumped around the base of a tree, they expanded the trench in this area.

Finds included glass bottles and jars, pieces of domestic china, leather boots, a couple of rubber bicycle pedals and a single .303 blank cartridge case (dated to WWI). Among the many complete bottles and jars we found examples that were marked *Colgate*, *Dettol*, *Heinz 10* (they hadn't reached 57 then), *Horlicks* and *L'Oreal* as well as several that probably held medicine as evidenced by the measuring marks up the sides. This large assemblage provides us with the opportunity to do plenty of post-excavation research work that will help us to understand how long the site was in use for.

Initial research undertaken on a small selection of items by the team during their course show that the artifacts span at least a 40 year period. They identified a local bottle from Heacham that was dated 1909 and a jar marked 'TYNE BRAND PRODUCTS, NORTH SHIELDS ENGLAND' which is a company that was set up in 1901 but did not change its name to Tyne Brand Products until 1942. Although this span indicates that the aerodrome site was in use through both WWI and WWII the fact that all of the finds were jumbled up together within the area investigated leads us to conclude that it was not a purpose made dump area during the wars themselves. It is clear from both documentary, verbal and material cultural evidence that the aerodrome site, including some of the buildings, was put to alternative use post-WWII, both for accommodation and agricultural. Our conclusion is that the investigated 'rubbish dump' area is likely to be as a result of building and area clearance associated with these post WWII uses.

Sheltering in the woods

While Team B were busy collecting bottles, Team C were investigating and recording the air raid shelter. On top of, around the outside, down the steps and inside the main room they recorded every measurement possible. These, along with the drawings of the four external elevations, provide us with an excellent record of this partially buried building. Believed to date from the First World War it is constructed of house bricks with

Recording the inside of the air raid shelter.



an internal corrugated iron ceiling overlaid with a thick slab of concrete (likely to have been poured in situ as evidenced by the trowel marks on its surface).

A wooden door at the bottom of the steps led into the one-room shelter. Short brick piers were found spaced along both walls, presumably supports for wooden benches that could have sat up to 12-16 people. A window, crudely hacked out of the south wall, sits at the external ground level. This is believed to have been created at a later date possibly when the shelter was used as a store building, judging by the accumulation of rubbish inside.

Above ground what appears to be a finishing course of brickwork around the stairwell suggests that the brick courses above this were a later addition to the structure. A wooden door post at the entrance to the stairwell suggests that an outer door was added at the same time. When and for what purpose these later alterations were made is still a mystery. Were they made during the site's life as a military installation or are they associated with the site's later life as part of a farm estate?

Future plans

A mortuary building, an air-raid shelter, and a large material cultural assemblage, not bad for the first season of the project. So what's next? Modern conflict archaeology is a growing area and Sedgeford Aerodrome has the potential to provide this new discipline with a wealth of interesting information. We shall be back early in 2010 to conduct some more fieldwork around various areas of the aerodrome site. The information gained from this will then help us to decide on our objectives for the 2010 summer season.

Entrance down into air raid shelter.





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