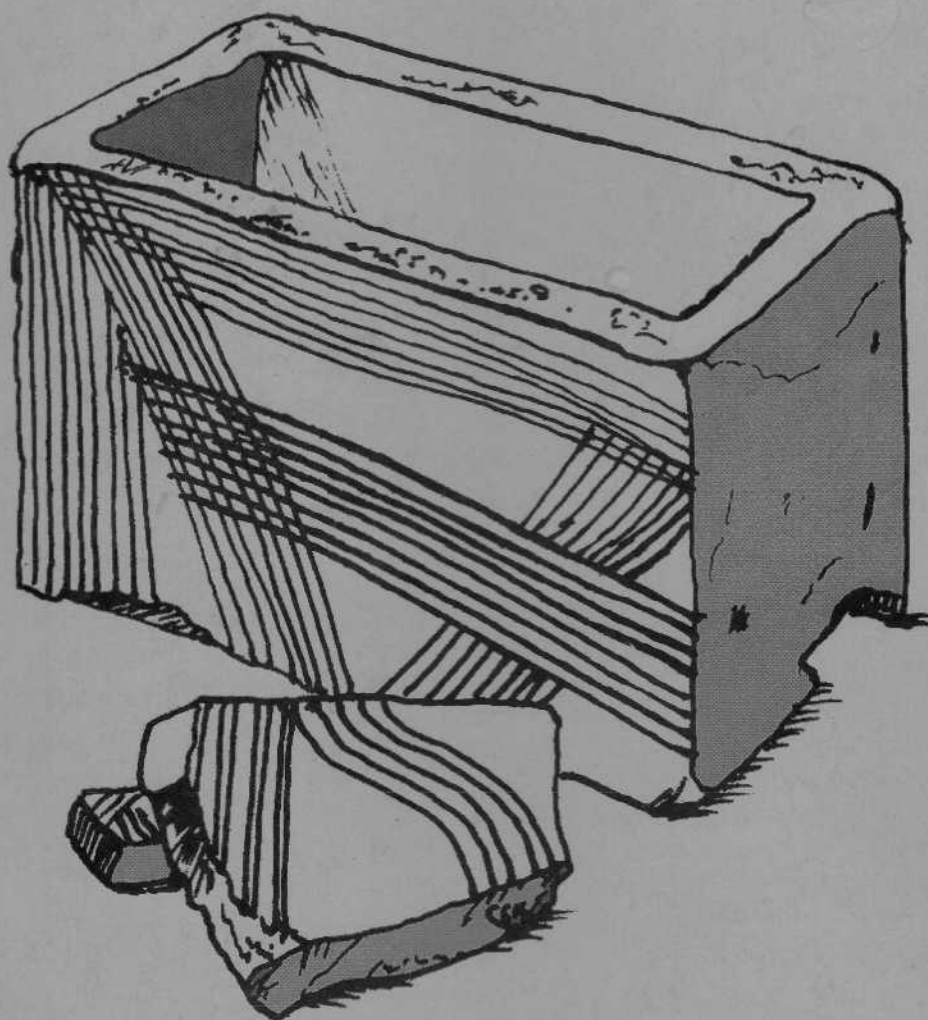


SOAG BULLETIN



South Oxfordshire Archæological Group

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Cover Illustration: Roman hypocaust flue

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Articles, book reviews and news items, if appropriate accompanied by illustrations, are invited for publication in the 2003 issue of SOAG Bulletin. Preference will be given to items relevant to South Oxfordshire, although others may be considered. Contributions, preferably in Microsoft Word or Rich Text Format (RTF), should be submitted to the Editor at the earliest opportunity by email or on disk or, alternatively, cleanly typed or, as a very minimum, clearly handwritten.

The Editor reserves the right to edit material prior to publication.

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PRESIDENT'S REPORT 2002

Cynthia Graham-Kerr

This year brought significant improvements in our administration side by the greater use of personal computers. The election of a new secretary, Ian Clarke, new treasurer, Pieter Vorster and a very lively Committee has resulted in a new-look Messenger, a Bulletin with better illustrations and much-needed improvements (still ongoing) to our membership database. The distribution arrangements for the Messenger have been overhauled and half our membership now receives the Messenger by email, helping to control postal costs. Our especial thanks to Ian, Pieter, Mike Fulton (Bulletin) and Martin Bowman (Programme and Information Leaflet), who have brought in this modernisation with their knowledge of PCs and software and harnessed it for our benefit. Thanks also to Edward Golton for his excellent efforts in organising the 2002-2003 Programme, together with the special help of Karen Snodin, and also to all those who key in copy for the Bulletin; we can always do with more volunteers for this to spread the workload.

A listing on the 'Oxfordshire County Council - Community Groups' Internet website has helped by bringing in new members, who also have computers of course. We are also listed on the 'Current Archaeology' website and in their 'Archaeology Handbook', in the 'Directory of British Archaeology', and on a number of other websites around the country. It all helps to spread the word.

The Dig is now better equipped and we have improved our archaeological record-keeping. We currently have a solid core team of diggers with about seven regulars to keep up standards and work output; in consequence the Dig has expanded tremendously and resulted in some exciting finds for us. Soags know it is not all digging and we have a group working in the winter months sorting and marking hundreds of finds, all stacked in boxes in my house. This gives our less active members a chance to partake of the dig work - and enjoy a pleasant afternoon.

The AGM was also updated. We held it in the newly-decorated Goring Community Centre, with cheerful furnishings and a good kitchen - a new venture we shall repeat. Mike Fulton took the Chair and guided us briskly through the business and elections. The guest speaker, Dr Boris Rankov, spoke eloquently on the Greek Trireme Project which he illustrated beautifully with slides and a video of the trireme *Olympias* in action. An excellent tea followed, organised by Margaret Westwood.

The Dig reopened on 21st March 2002 and from then we worked on 30 Sundays through to 11th November (when it rained heavily), and 11 extra half-days as well. Including our 7 core diggers we had 26 Soags overall working on site. These come as often as other commitments allow and are always welcome, especially as some have long journeys. We also have several trainee student diggers who are taking university degrees. It is nice to think we are helping to train future archaeologists.

Besides the Dig we had our summer outings when we went to the 'Weald & Downland Museum' on 15th June (report below) but not, as we had hoped, to Henley Brewery in August as, sadly, it had been closed down. With no forthcoming meetings we hastily arranged a visit to Abingdon Museum and ten of us had a most pleasant day in the Museum, enjoying a teatime rest and exploring the town. We were able to go onto the roof of the Museum and could see for miles, it being a clear day.

On 6th July we had our Annual Party at Lower Hitchen, Whitchurch Hill, again through the kindness of Ken & Joy Whitehead, and were lucky enough to be able to enjoy the garden as the weather was fine. Paul & Kathy Brewer organised the competition and Rachel Sharpe arranged the raffle. The attendance was higher this year with 40 of us present. It was so nice to have our friend and Honorary member Robin Cloke (who owns the Gatehampton Dig field) with us. Ian Clarke presented Eddy Hooper, our retiring treasurer, with a gift of wine and a card, and thanked him for the excellent work he has done for SOAG.

Once the Dig closed we restarted our working group to process the finds; but for several Sundays we worked with Tim Allen at Wittenham Clumps where a large project is visualised to explore the archaeological evidence there. The Northmoor Trust is run by a SOAG member, Dr Stephen Head, so we have offered to help when we can and it made a nice change to fieldwalk again as we have not done so for some years, having been busy with the Dig. It is good experience to work for other people now and then and we thank Stephen, and also Tim Allen (who is directing), for this opportunity to help and learn. There will be more opportunities to work there, as there is a two-year programme in hand (but we must not neglect our own Dig).

News of other SOAGS:

The Mottrams spent Xmas in Florida, the Vorsters in South Africa, the Forths in New Zealand and the Fultons visited Brazil, Uruguay and Chile. Marian Fallowfield and David Cox are now back in circulation from hospital. Simon Turner is now at Leicester University. Chris Rust has moved house to Cold Ash and Peter Gooch has moved to Dorset. We miss Peter very much at the Dig and his fund of knowledge about insects, etc, from which he drew for a talk for us. We had two casualties at the Dig when Hazel Williams sprained an ankle and Cyn fell off a wall.

Altogether another satisfactory year, so well done everybody and thank you for your hard work and support. We must continue to keep up our high standards and always encourage new Soags - what one puts into a thing one gets out

‘THE ATHENIAN TRIREME’, LECTURE, SOAG AGM 2002

Report by Ian Clarke

We were delighted to welcome Dr Boris Rankov, the Chairman of the Trireme Trust, to present the guest lecture, ‘The Athenian Trireme’, for the SOAG 2002 Annual General Meeting on 24th March. The trireme (Greek *trieres*) was the first oared warship to be rowed by oars at three levels. The Hellenic Navy ship *Olympias* is a 170 oared reconstruction of the classical Greek trireme. Described as ‘a floating hypothesis’, she was launched on 27th June 1987 and between 1987 and 1994 ‘The Trireme Trust’ conducted five experimental sea trials to learn how such a ship could be operated and determine her performance under sail and oar.

With a dazzling sequence of slide illustrations, Dr Rankov took us through the complete history of the reconstruction, beginning with a brief survey of the evolution and role of the classical trireme. The talk covered the pioneering research of the late John Morrison and the interpretation of the historical sources and archaeological evidence to support the concept of three levels of oars; the meticulous design contribution of John Coates, retired Chief Naval Architect for the Ministry of defence: the architectural outline, design details, materials, models, trial pieces and mock-ups; the beautiful construction by the Greek craftsmen, the

Tzakakos brothers of Kiratzini, a suburb of Piraeus; and finally the extensive sea trials (and tribulations) conducted by the Trireme Trust, under the watchful eye of the Hellenic Navy. The presentation concluded with a superb video of *Olympias* in action in the Aegean, with the extraordinary sights and sounds of 170 oars in unison again after an absence of two millennia.

The successful design, construction and testing of *Olympias* is a remarkable story of enthusiasm, dedication and perseverance by a group of people drawn from diverse disciplines and many walks of life: historians and archaeologists, naval architects and ship builders, rowers (almost 1000 of them), sailors and seamen, physicists and physiologists, and many others. Basil Greenhill from the University of Exeter, in his introduction to *The Trireme Project - Operational Experience*, Oxbow Monograph 31, 1993, notes: 'What distinguishes the trireme experiment is the simple fact that it has been carried out to rigorous standards, has been conducted with a multi-disciplinary approach and, above all, has been published fully and at every stage.' In the latter it is certainly a salutary example to all archaeologists.

That the Trireme Project succeeded, in such a spectacular way, is the greatest tribute to all who participated, but not least to the irrepressible, late John Morrison, who started the whole thing and who will be greatly missed. *Olympias*, the floating hypothesis, was his gift to the world and remains as a unique memorial to his life.

Boris Rankov is a Senior Lecturer in Ancient History and Head of the Department of Classics at Royal Holloway College, University of London. He is an Oxford University oarsman with the record distinction of winning six Boat Races in succession for Oxford (1978-83), and is now a Steward at Henley Royal Regatta. He was a rowing master on board *Olympias* for the sea trials and became responsible for devising the programme of training for the oar crews. He is also Chairman of the Trireme Trust.

The full story of the reconstruction and sea trials of *Olympias* is presented in the excellent book: *The Athenian Trireme*, 2nd Ed., by J.S. Morrison, J.F. Coates and N.B. Rankov, 2000, Cambridge.

HYPOZOMATA - AN ALTERNATIVE HYPOTHESIS

Ian Clarke

*I'll put a girdle round about the earth In forty minutes.: William Shakespeare -
'A Midsummer Night's Dream', Act 2, Sc 1*

Introduction

This hypothesis concerns the application of the *hypozomata* (under-girders), the ropes we assume were used to 'bind' the *trieres* (the Greek *trireme*) so as to reduce the bending stresses induced in the long hull as it spans the crests and troughs of the waves. In the reconstruction *Olympias* the *hypozomata* were to be applied as two natural (or man-made) fibre ropes stretched internally from strong points near to the stem and stern, and tensioned to apply compressive pre-stressing to the hull. The tension was to be obtained by twisting the ropes together as in a Spanish windlass, a 'tension tourniquet,' but in the event this did not prove practical and a steel cable was substituted, tensioned by a chain hoist. I can safely set aside comment on the substitution of steel cable for natural (or man-made) fibre rope, which I believe all involved agree was undesirable because of the inappropriately high stiffness of

steel cable. My argument rather is to consider whether, based purely on the historical and archaeological evidence presented in *The Athenian Trireme* (Morrison, Coates and Rankov, 2000), it was justifiable to locate the *hypozomata* entirely within the hull, tensioned between two points below the crossbeams (*zyga*). I will outline an alternative interpretation of the evidence that supports a quite different method of application of the *hypozomata*, but which could achieve the same desired result of reducing the extremes of bending stress in the hull.

It is quite possible that this alternative interpretation was considered by the 'Trireme Project' team in early discussions and rejected on some reasonable grounds, perhaps practical ones. However, only one interpretation of the evidence is offered in *The Athenian Trireme* (2000) and in Shaw's *The Trireme Project, Operational Experience 1987-90* (ed. 1993). If it was not considered then perhaps the matter should be subjected to further examination.

In the following I have not extended the argument into detailed considerations of the structural or architectural implications of the alternative hypothesis. Although much analysis and modelling could be done it would only be worthwhile if the 'Trireme Project' team felt the matter to be worth pursuing.

The Alternative Hypothesis

I hypothesize that the *hypozomata* may have been applied as follows.

First the two *hypozoma* were stretched along the outside of the hull, either side of the ship, probably below the waterline, and roughly equal lengths were taken in through the hull at the stem and close to the stern through smooth, strong points (hawse ports). An initial tension was applied to the external sections during this procedure by manpower. The two ends of each *hypozoma* were then brought to mid-ships, probably at about top wale level (and therefore above the gangway), either side of the ship's centreline, where the ends of each rope were linked together for tensioning. An initial tension was applied to the internal sections with manpower, increased by some means affording a mechanical advantage. Whatever tension was applied internally, friction at the hawse ports would result in a difference between internal and external tensions. However, if the external portions of the *hypozoma* are below the waterline, it is self evident that the final external tensioning would be achieved when the ship is in the water by the shrinkage of the natural fibre rope as it absorbs water. The tension would be adjusted internally as necessary to give the desired balance and to accommodate creep (relaxation under load) in service. We might consider it unlikely that the Greeks would not have taken advantage of the powerful and familiar phenomenon of the shrinkage of natural fibre rope when wet, to pull the hull timbers tight.

Practical considerations of access and beaching mean that externally the *hypozoma* are likely to have been located more toward the waterline rather than close to the keel, but still sufficiently low to reduce sagging stresses. Internally they are likely to have been stretched directly between the existing strong points of the *epotis* and *threnys* beams and therefore at about top wale level, putting them high up in the hull where they are needed to reduce hogging stresses. (Note that additional heavy bracing to locate them below the gangway is avoided.)

It is most likely that the hawse ports were simply smooth, with a generous radius and well greased; I can see no justification for pulleys or rollers in this scheme. It would clearly be advisable to tension the two ropes simultaneously to avoid distortion of the hull. If one team is used the tension would be increased progressively on each side.

Literary Evidence

1) Plato's *Republic*, Book X – 'The Myth of Er'

The interpretation in *The Athenian Trireme* 2nd ed. (Morrison, Coates and Rankov, 2000) (abbreviated to AT2), ch. 9, pp. 169-171, is that the 'straight light' stretched across the whole heaven and earth' is like the *hypozomata* stretched from end to end of the *trieres*. It is stated that 'seen from above the straight light stretches across the heaven and earth as *hypozomata* stretch from end to end of the *trieres* ... this straight light/*hypozoma* is what holds together the circumference [of the heavens and earth]/*trieres* hull.' The emphasis in AT2 is firmly with the straightness of the light 'like a pillar,' the reference 'but resembling most of all a rainbow' being explained away by the fact that a rainbow would appear straight when viewed from above, that is edge on. It is clear that the authors have accepted that *malista têi iridi prospherê* (but resembling most of all [that of] a rainbow) refers to the shape of the light/rainbow. Some translators have assumed it refers to the colour, for example Benjamin Jowett (1871) has 'in colour resembling the rainbow.' I believe the reference is clearly to the shape, as the word picture the narrator is needing to paint is of the light arching across the heavens, which would not be obvious to the listener from *euthu*, *hoion kiona* (straight, like a pillar). Reference to colour comes in *lamproteron de kai katharôteron* (but brighter and purer) as the narrator explains that, although in shape it is like a rainbow, it is not coloured like one. The light will appear straight when seen from above (or from below, which is where the souls actually appear to be), but in stretching around the heavens the souls can see that it is curved, like a rainbow; only the part below the (flat) earth can truly be straight. The narrator then explains that the purpose of the light is to hold together the whole circumference (*periphoran*) of the heavens and earth in the same way (*houto*, 'in like manner') that the *hypozomata* hold together the hull of the *trieres*.

Now 'in like manner' suggests it is possible that the bowed shape of the rainbow (and hence the 'D' shape of the complete light) is an essential part of Plato's analogy with the *hypozomata* and that we have in this a more precise description of the placing and 'shape' of the *hypozomata* when rigged. If so, then the above alternative hypothesis may be correct; the *hypozomata* may have stretched around the outside (the curved shape, or *periphoron*) of the hull, then passed inside the hull at the bow and stern through strong hawse ports, to be stretched straight from stem to stern. Wherever the rope was rigged outside the hull it would have been visible to an onlooker (e.g. Plato) before launching, and there would have been a viewpoint from the side, from beneath, or from the stern, where it would appear straight, like the light. The internal section would be hidden from an onlooker, just as the light stretched tight under the earth may be hidden.

The analogy in the myth is still not perfect because the tensioning 'spindle of Necessity' of the light is on the bowed part, but the tensioning device of the *hypozomata* must have been on the straight part.

Note: The most likely candidate for the inspiration for Plato's band of light is of course the Milky Way, which is 'brighter and purer', that is to say of one bright, silvery colour rather than multicoloured. In the Myth of Er the tension in the band of light holds the heavens and earth together and in being wound tight around the outer 'whorl' (the 'starry firmament') moves with the latter as it revolves with the spindle, just as the Milky Way moves with the background stars. It is necessary to see the Milky Way as the ancients saw it, without the light pollution of the developed world, to fully appreciate the allusion. The mythical image of the 'spilt milk' of Lachesis gives some hint of the density of stars in the Milky Way when seen in true darkness.

2) Apollonius Rhodius – *Argonautica*, Book 1

The translation given in AT2 (ch. 9, p. 170) is as follows. ‘The first thing they [the Argonauts] did was to fit the girdle to the ship with might and main, using a well twisted rope within to put a tension on each extremity, so that with the dowels the planks should fit well together and withstand the opposing force of the sea’s surge.’ Apollonius’ ‘succinct explanation,’ it is said, shows that ‘the purpose of the girdle or loop was to pull bow and stern together and thus prevent hogging ... The girdle or loop must then have passed round strong points at each end of the ship and been pulled tight to hold the hull together in rough water.’ Now there are some aspects of this translation and interpretation that may be challenged.

Firstly the straightforward action *ezôsan* (they girded) has been rendered as ‘to fit the girdle.’ The effect of this is to appear to create an additional item of equipment, ‘the girdle,’ which is separate to the ‘well twisted rope within’ used to increase the tension. There would seem to be no justification for this when *ezôsan* is quite specifically an action. There may indeed have been separate ‘girdle’ and ‘binding’ ropes, as proposed in AT2 (ch. 9, p. 171), but I do not think we can deduce it from *Argonautica*. The verb *ezônnemi* (to gird) has clear associations with wrapping something around something else, familiarly ‘to gird round the loins,’ or ‘to gird on your sword,’ and in obvious connection with the latter it can be taken to mean ‘to prepare for battle.’ In the case of girding a warship in preparation for action this seems particularly apposite.

Secondly we are told that they fitted the girdle to the ship ‘with might and main,’ a poetic choice of phrase to illustrate that the *Argonauts* used considerable strength/effort. Now it is reasonable to assume they did use ‘might and main’ in the process, but the passage may also be taken to mean that the ship was to become ‘strongly girded’ (i.e. strengthened) by the actions of fitting the ropes and tensioning them. It is a small point, but an interesting one as it may be that *Apollonius* intended a double meaning.

Thirdly and most important, the adverb *hekaterthen* has been translated as ‘each extremity,’ which is then interpreted as meaning ‘each end of the ship.’ It could also mean each end of the rope, but more appropriately it would be translated as ‘on each side’ or ‘on either hand’. To render *hekaterthen* as ‘each extremity [of the ship]’ suggests over interpretation, unless there is strong precedent from other texts. There is a risk that a circular argument has occurred based on a prior assumption that the *hypozomata* would be stretched straight, inside the vessel. Pre-stressing of structures in ‘modern’ engineering invariably employs internal members in tension, but we cannot assume it would have been done that way in ancient Greece.

Seaton (1912) has what seems a closer (more literal) rendering of the passage as follows. ‘First of all, by the command of Argus, they strongly girded the ship with a rope well twisted within, stretching it tight on each side, in order that the planks might be well compacted...’. An additional comma might reasonably be inserted to further clarify the meaning: ‘they strongly girded the ship with a rope, well twisted within, stretching it tight on each side...’. Now this can very reasonably be taken to be a clear statement of the alternative hypothesis given above, wherein ropes (the *hypozomata*) are taken around the outside of the ship ‘on each side’ and tensioned within by ‘twisting.’ *Apollonius* may be referring here to a Spanish windlass; these could still have been in use on some single level oared ships of his time, or there may have been folk memory that such were used on archaic ships. Coates and Shaw correctly point out in *The Trireme Project, Operational Experience 1987-90* (Shaw, 1993)

(abbreviated to TPOE) that tensioning by twisting need not necessarily imply a Spanish windlass.

Greek Inscription (IG2² 1479 B49&58)

Coates and Shaw (TPOE, ch. 15) quote the weight given in this inscription for a single *hypozoma* at 117 kg. This weight allows a length to be calculated, which in AT2 (ch. 9, p. 169) is given as '280-340 ft (85-108 m), according to the type of rope chosen – twice the length of a *trieres*, with a good deal to spare.' If there is a 'good deal to spare' it follows that this would comfortably allow the rope to be passed around the outside of the hull. Coates and Shaw further discuss the size of rope and revise the size upward to 47 mm, but there would still appear to be enough length to spare if their proposed deadeye and lanyard tensioning method is used. Of course the size of rope that would be required for the alternative hypothesis is not yet determined, but one would not expect it to be any different since the same order of pre-stressing has to be achieved.

Possible Archaeological Evidence

One would not expect to find archaeological evidence for the rigging of *hypozomata* internally, but if they were rigged externally some evidence might be expected in reliefs, ceramic paintings, etc. There are two pieces of archaeological evidence presented in AT2 that might support the alternative hypothesis.

- 1) The Lindos relief (AT2, Plate 34) appears to show a representation of a rope, of *hypozoma* size, emerging through a hawse port, close to the port side steering oar attachment. The rope is shown wrapped tight to the hull, crossing a lower wale and disappearing beneath the hull. It appears to angle forwards beneath the hull, but the viewpoint of the camera does not allow us to confirm this. It might be interpreted as a girt rope (as in early Egyptian warships) but a single, large rope would hardly suffice for this purpose and there is no evidence presented for such being used in Greek ships. It might represent a mooring rope, or an anchor rope. The evidence presented for 'Mediterranean mooring' by Whitehead (TPOE, ch. 18) would suggest that a mooring rope is more likely, but if so it should stretch astern, towards the shore. Some support for it being a *hypozoma* comes from the hawse port being precisely where we would expect the strong point in the hull to be, at the *threnys* beam. In any case, we may validly ask why the sculptor has gone to considerable trouble to show a large rope at this point? He must have been copying something. This feature of the relief requires an explanation and a close examination might be revealing. The diameter of the rope on the relief could be measured and scaled, but obviously one should not read too much into the result!
- 2) The Coin of Cius (AT2, Plate 39) shows a linear/wavy feature along the lower part of the hull. This is probably a representation of waves on the water, but might be interpreted as a rope passing along the hull at the waterline and disappearing behind the ram. It is unusual in ship representations of the time for the keel to be shown if the water surface is shown; also where water is shown it is invariably shown passing along the side of the ram rather than disappearing behind it. The balance of probability is that the feature does represent waves on the surface of the water, but close examination of the detail might be worthwhile.

I can see no obvious evidence of *hypozomata* in any of the ceramics illustrated in AT2. Of course representations of ropes on ceramics consist only of narrow lines, so any line on the

hull might be interpreted as a hull feature. Also a rope below the waterline would be hidden except for a very short section at the stern and so might escape the painter's attention. The absence of any evidence does not rule out the alternative hypothesis, but it does give support to the *Olympias* method.

Linguistic Evidence

In AT2 (ch. 9, p. 171) the name *hypozomata* is taken to suggest that 'the loops were fitted low down in the ship as distinct from the Egyptian hogging truss mounted on crutches over the deck.' Do we have any evidence that such a hogging truss was ever referred to as an *epizomata*? Coates (TPOE, ch. 4) points out that 'the name *hypozomata*, undergirdings, indicates that they were under something' and that in *Olympias* they were 'placed immediately under the hull beams, ... to satisfy both linguistic and structural requirements.' We might more logically infer that the name derived from ropes that actually passed under the hull of the ship. If the ropes were rigged around the outside then the name gives support to them being run under the hull and therefore below the waterline. Of course, it is also possible that the term arose in archaic times when ropes did indeed pass under the ship, but continued to be applied in later times for ropes used for a similar purpose, but which were entirely internal, as in *Olympias*. The linguistic evidence is perhaps weak.

Note on the Method of Tensioning

In earlier long boats it is possible that the *hypozoma* were twisted together in a Spanish Windlass and if the ropes are above the gangway this might just be possible in a *triereis*. However, according to Jones (1995, pp. 53-56) this method of tensioning appears to have gone out of use in Egyptian ocean going warships as early as the New Kingdom, a thousand years before the time of the *trieres*. The Greeks are unlikely to have been behind the times with the *trieres* and they were probably well aware of the reduction in useful tension load with such heavily twisted cables. A winch, or deadeyes and lanyard tackle as proposed by Coates and Shaw (TPOE, ch. 15) are believable alternatives. The latter has good historical precedent, is relatively compact and would allow the *hypozoma* to be tensioned independently to take up inevitable variations in the stiffness and initial tensioning. Incidentally, the method of tensioning proposed by Jones (1995, p. 56) for the Hatshepsut boat, using two bracing ropes to apply a lateral deflection to the hogging truss rope, would not be effective for other than creep compensation. It is easily shown that, for realistic magnitudes of deflection, such a method would only change the tension by a few percent. Initial tensioning of the hogging truss for later Egyptian warships is therefore unexplained.

Conclusion

The literary and archaeological evidence for *hypozomata* presented in AT2 and TPOE does not lead the informed reader necessarily to make the same interpretations as the 'Trireme Project' team. I have sought to demonstrate that the evidence can be interpreted to suggest a stated 'alternative hypothesis', wherein the ropes are first passed around the outside of the hull, probably below the waterline and then tensioned internally, probably between the *threnys* and *epotis* beams. Most notably, the key texts from Plato and Apollonius can be argued to give clear support for this alternative method. In addition the external rope in the Lindos relief requires a rational explanation.

There are obvious practical disadvantages to this alternative method. The portions of the *hypozoma* below the waterline are exposed to damage when beaching or in action, submersion and fouling will reduce the rope life, and they will contribute to drag; those

portions above and either side of the gangway would impede crew access. Never the less the method would be effective in reducing bending stresses, utilising the powerful natural phenomenon of wet shrinkage of natural fibre rope to apply tension evenly around the outside of the hull. It may also offer advantages in ease of rigging and a reduction in the structural mass at bow and stern.

The method of applying the *hypozmata* chosen by the 'Trireme Project' for *Olympias* is fundamentally sound in principle in an engineering sense, although, as demonstrated and clearly outlined by Coates and Shaw, in need of further development. It places the ropes in a very inaccessible part of the hull, which gives problems with rigging and tensioning, but this has the operational advantage that they do not then impede access for the crew. It may indeed have been the method used in the ancient *trieres*. However, in view of the arguments presented in this paper it remains for the 'Trireme Project' team to consider and justify their particular interpretations of the historical and archaeological evidence. It may be that the arguments in favour of internal *hypozoma* are most strongly defended on practical and engineering grounds.

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Acknowledgment

Special thanks are due to Emma C. Clarke for her assistance with the Greek of Plato and Apollonius.

OUTING TO WEALD & DOWNLAND MUSEUM Christine Hogbin

On 15th June 2002 seventeen SOAGs met outside the entrance to the Open Air Museum at Singleton, near Chichester. Having paid our entrance fee we decided to split into smaller groups and make our separate ways around this wonderfully laid out village, set in 50 acres of beautiful Sussex countryside, depicting 44 different buildings of the five hundred years from the 13th to the 19th century.

The museum was founded over 30 years ago by the Sussex historian Dr. Roy Armstrong. Each building is a traditional home or workplace of village and countryside that has been rescued from destruction, dismantled and reerected on the museum site. We were all given a very good map to help find our way around. It was estimated to take three hours to complete the whole programme, and I must say it was quite exhausting.

A few of us first made our way to the water mill where stoneground flour was being produced. This proved very interesting and the walk beside the pond delightful. A notice giving the warning 'There may be mink', surprised us.



There were so many different aspects of old England to see - the old sawpit, a timber-framed farmhouse from Kent, a market hall from Hampshire, a small Victorian school, and many more. Some of the houses were 'furnished' for their period, the smoky fires creating an authentic atmosphere; and outside the gardens were planted with herbs, vegetables and flowers that would have sustained the household.

My companion and I did not see the Charcoal Camp in the woods, or complete the course to see the cattle, sheep and poultry. We were beginning to run out of steam. We were delighted, however, to see the lovely chestnut-coloured Tamworth pig and piglets, and a dear old working horse. Exhausted, but very elated, we arrived back at the refreshment room for a well-earned thirst quencher.



But not all are rescued buildings on this site. Outside the exit, up the hill, almost hidden amongst the trees, an ultra-modern version of the tithe barn - The Downland Gridshell - is being constructed. Just one of a handful of gridshell buildings in the World, made up of vast laths of unseasoned timber fixed together using techniques specially-developed for this project, to form a dramatic, curvaceous self-supporting frame, like a dinosaur's ribcage. Solar-heated water will power its underfloor heating system; collected rainwater will supply the toilets; and artificial lighting will never be necessary in daytime. Will it be the 2002 Stirling Prize Winner? This red cedar-clad building will open as the national centre for conservation and study of traditional timber-framed buildings. What a wonderful addition to an already interesting and enjoyable site.

SUMMER OUTING TO SUSSEX

John Westwood

Editor's note: We received two versions of this Outing, but as both authors took different points of view, we decided to print both.

On 15th June, seventeen Soags made the journey (with some stopping for a picnic at Frensham Pond on the way) to the Weald and Downland Museum at Singleton, a forty acre site in the hills near Chichester. Did we discern strip lynchets on the other side of the valley?

This open air museum is a contrived reassembly of old buildings from a wide area, which would otherwise have been destroyed and lost. To this writer, the overall plan and grouping did not quite ring true, but the laborious rescues and re-erection and upkeep are a most worthy achievement.

In an 18th century timber framed barn from Hambrook is set out an exhibition of traditional building technology: to see rat trap bond as well as the usual English and Flemish bond was a novelty. We walked on to see 'Bayleaf', a medieval Werlden house from Chiddingstone in Kent, with a wood fire burning in the open hall between jetted end chambers. The 16th century timber framed market hall from Titchfield, Hants, is impressive on a small scale.

In the timber Court Barn, 17th or 18th century, is an exhibition of plumbing technology, with the history of leadwork from Roman times illustrated with specimens; wood and earthenware

water 'mains' are also on show. In the 19th century smithy from Southwater, Sussex, we saw all the apparently crude tools of this skilled trade; in contrast, a plumber's workshop from Newick has a greater range of specialised tools and equipment, set out all ready for work. The watermill from Lurgashall was busy grinding corn. We viewed the works with vast gear wheels: the wooden teeth can easily be replaced if there is an accidental jamming of the waterwheel. Biscuits made from the flour were on sale. In one little house, a tiny 19th century schoolroom has been recreated, with details reminding this writer of his cane-threatened days in a Kent church school seventy four years ago.

Up in the woods, charcoal burners show how they work; and a mother pig, vastly fecund, guarded her ginger haired piglets. Finally, after tea in a barn, we noted a toll house notice board of 1854, listing the toll charges, including these specimens of the archaeology of English language and attitudes:

'For every Score of Oxen, Cows, or neat Cattle, the Sum of Ten-pence.'

'For every Horse, Mule, Ass, or other beast (except Dogs) drawing any Coach, Berlin, Landau, Barouche, Chariot, Chaise, Chair, Hearse, Gig, Carriole, Whiskey, Taxed Cart, Waggon, Wain, Timber-frame Cart, Dray (etc) Four-pence half-penny'

'For every Carriage moved or propelled by Steam or machinery or by any other power than Animal power the sum of One Shilling for each Wheel thereof.'

NATIONAL TRUST MONITORING GROUP AGM 2002

Cynthia Graham-Kerr

Nine Soags attended the National Trust AGM at Hughenden Manor on 14th September 2002. At 10.30 am Alistair Roach opened the Meeting. He explained the new organisational review and the region reshuffle. Gary Marshall (archaeologist) would work both at Hughenden and Stowe. Being Alistairs' retiring meeting, he was presented with a photo and books.

Questions were invited and the following issues were raised:

- 1 Information given when there is possible archaeology at a particular property.
- 2 Is there an archaeological website among the several which the Trust has? A straw poll was taken of members with email - about 50% - so Gary suggested that interested members should forward their email address to him at tstgsm@smtp.ntrust.org.uk.
- 3 Some wire fencing needed removing from Morven Park, and the damage caused by contractors needed remedying. Briefing notes to property managers would help.
- 4 Illicit metal-detecting was also discussed.

After the Meeting, a brief tour of the Manor was undertaken. Gary showed us some slides of Stowe, the sawmill, the dredging of ponds, sluices, paths cleared to the Temple and a building limewashed. Old doors were found after stripping pebbledash. A corndryer was discovered and the haha is being restored.

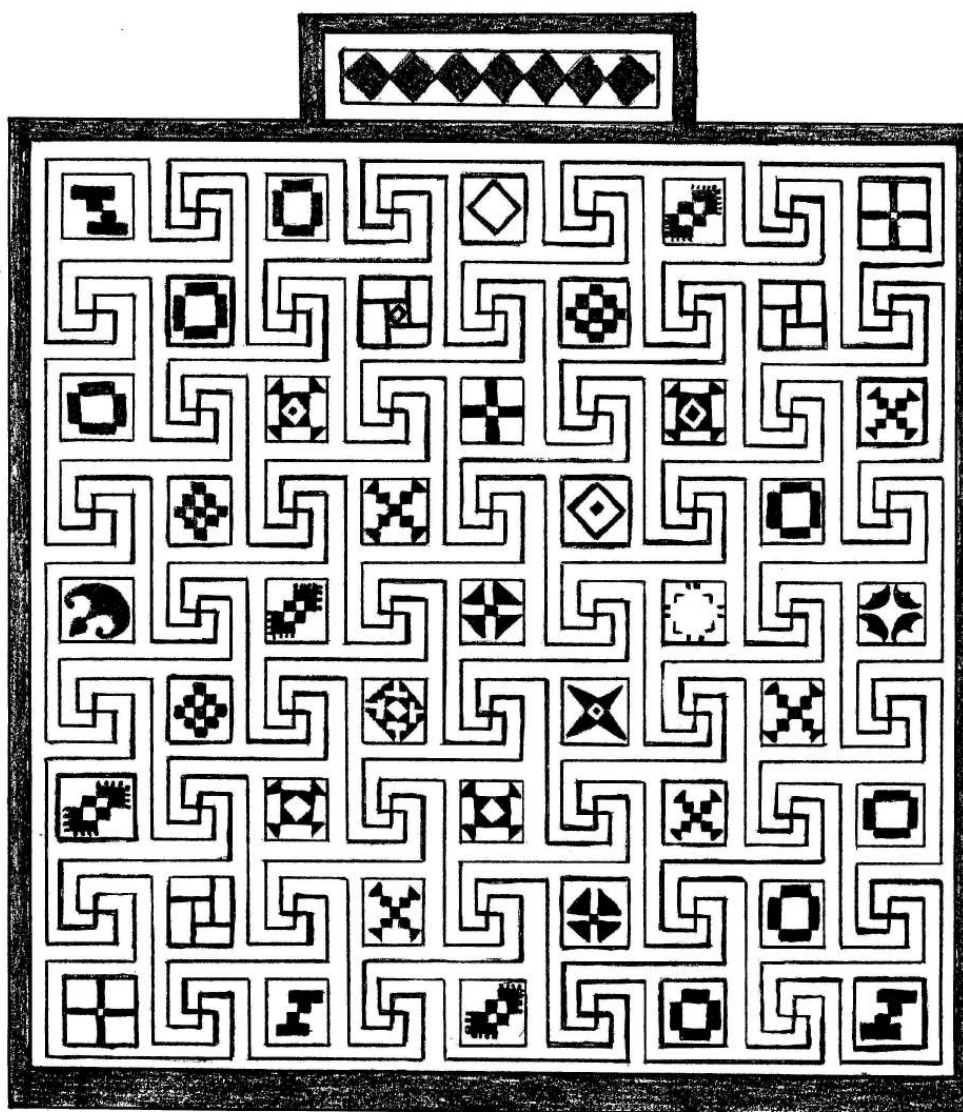
After an excellent sandwich lunch, we reassembled and drove to the Park. Gary took us round the Temples and explained how the paths were planned to give glimpses of temples to arouse interest. We saw the Chapel, the Quixote building, and the Temple of the winds and,

finally, the haha and the House of Friendship with its Gateway. This brought us back to our starting point. Gary then showed us plans of the grounds and we thanked him and dispersed.

A THOUGHT ON MOSAIC

Barbara East

This black and white mosaic from Silchester, the Roman town of Calleva Atrebatum, is on permanent display in Reading Museum. Measuring about 4.7 by 4.3 metres and thought to have been built in the mid-second century AD, it is one of four mosaics of similar size found in a large house west of the Forum, all in rooms in the east wing. You will notice that it has a solid border round it and we are wondering if the strip paving of red tesserae that we have uncovered at Gatehampton is perhaps something similar, or whether it is just part of a corridor. We hope to discover more of it next year when the excavation is extended on that side. Unfortunately past ploughing has destroyed some of it in strips and may well have broken up the rest, as there are a few loose tesserae about the area.



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FRILFORD: FROM AMPHITHEATRE TO SACRED POOL

Janet Sharpe

Currently in the middle of nowhere, about three miles west of Abingdon, a mile west of Marcham and about half a mile south of the little village of Frilford (grid ref. SU439962), there are the remains of a huge Romano-British religious complex. Activity at the site started in the Middle Bronze Age with a possible enclosure, occupation and burials. During the Iron Age, a small sub-circular enclosure and a stake-walled house have been interpreted as religious structures. These may have formed a tribal boundary sanctuary lying between the territories of the Dobunni and Atrebates, perhaps a traditional meeting place where alliances were made and, possibly, the Romans formally welcomed.

A Roman road (the A338) ran north-north-east from the Wantage direction through Frilford and on to cross the Thames at Oxford. The extent of the Roman complex at Frilford has been determined mainly by surface finds complemented by aerial photography, and covers a total area of about 30 ha. The major focus of this area was the temple complex itself which lies just to the north of the River Ock. A circular Romano-British temple was built immediately on top of its Iron Age predecessor. This was excavated in the 1930s and previous work in the 19th century had uncovered part of a late Romano-British and early Anglo-Saxon cemetery nearby. These areas are now scheduled, but the field immediately to the east of the temple, where aerial photographs and geophysical survey have suggested the presence of an amphitheatre, is now being excavated by Oxford University as part of the on-going Hillforts of the Ridgeway Project, directed by Gary Lock and Chris Gosden.

Targeted excavations in 2001 and 2002 have uncovered part of the east entrance and perimeter wall of the 47-metre diameter arena, the surrounding bank and an enigmatic, window- and doorless stone-built room embedded in the bank on the south side. However, certain features suggest that this 'amphitheatre' may in fact have been something rather different. Aerial photographs show it as a circular structure with well-marked entrances to the east and west, apparently associated with an ancient water channel which may have drained into the nearby River Ock. It is now positioned in a dry valley, which contains thick deposits of sandy loam not found elsewhere on the site. Material dug out to form the arena was piled up to create a bank which was 15 metres wide and contained at least one layer of stone and clay to stabilise it. Little now remains of the bank (0.2 metres maximum) but there is no evidence for seating in the form of post holes or timber slots. The arena wall was built of well-dressed blocks of Corallian limestone and stands about 1 metre high. The floor of the arena at the foot of this wall appears to be composed of hard-packed gravel but has not yet been investigated. The east entrance passage had a complex stratigraphy, indicating considerable activity within it. It slopes down to the arena floor and in 2002 a wide stone step was uncovered at its base which may have formed part of a staircase.

The room which was built into the bank on the south side is about 2.5 metres wide and 4.0 metres north to south. Sediments accumulated within this room, filling it to the height of the walls. Once this infill was completed, a rectangular structure of large limestone blocks was placed on top of it; numerous coins and a fibula have been found around this. Similar structures exist in the amphitheatres at Caerleon and Silchester: in all cases their function is unknown.

Why was an 'amphitheatre' with stairway access and apparently no seating built in a stream bed? Wild celery (*Apium graveolens*) has been found growing in the area and this was a

major medicinal plant in Roman times. It is also a salt-loving coastal plant that rarely occurs inland: to find it at Frilford is highly unusual and implies the presence of a saline spring. In 2002 it was suggested that the amphitheatre may have been a sacred pool that embraced this spring and in 2003 the excavations will concentrate on the centre of this structure where the presence of organic remains - not to mention an altar or two - could determine its original function.

Another trench at Frilford has partly uncovered the foundations of a late Roman cruciform public building aligned with the entrances of the amphitheatre and clearly forming part of the same complex. These foundations may have supported the sill beams of a large timber building. The site was visited by the well-to-do as attested by the find of ladies' finely-made bronze hairpins and the discovery of a high class building with painted wall plaster to the south of this public building. Perhaps here we have a major religious and healing complex centred on a unique saline spring? Although the buildings and layout are very different, Frilford may have been similar in size and function to the Abbey Meads site discovered north of Swindon in 1998, where a large complex of buildings was centred on a series of sacred springs.

Reference

Lock, G. *et al.*, 2002. The Hillforts of the Ridgeway Project: excavations at Marcham/Frilford 2001. *South Midlands Archaeology*, No. 32: 69-83. (Also available on: <http://athens.arch.ox.ac.uk/schoolarch/institute/projects/ridgeway/frilford.html>.)

PROGRESS

In Trench I we'd just begun,
In Trench II we found a clue,
But Trench III had lots to see.
On Trench IV we'll shut the door ...
Then Trench V was scarcely alive
And Trench VI was just a mix -
Tho' Trench VII is simply heaven ...
For Trench VIII we cannot wait!

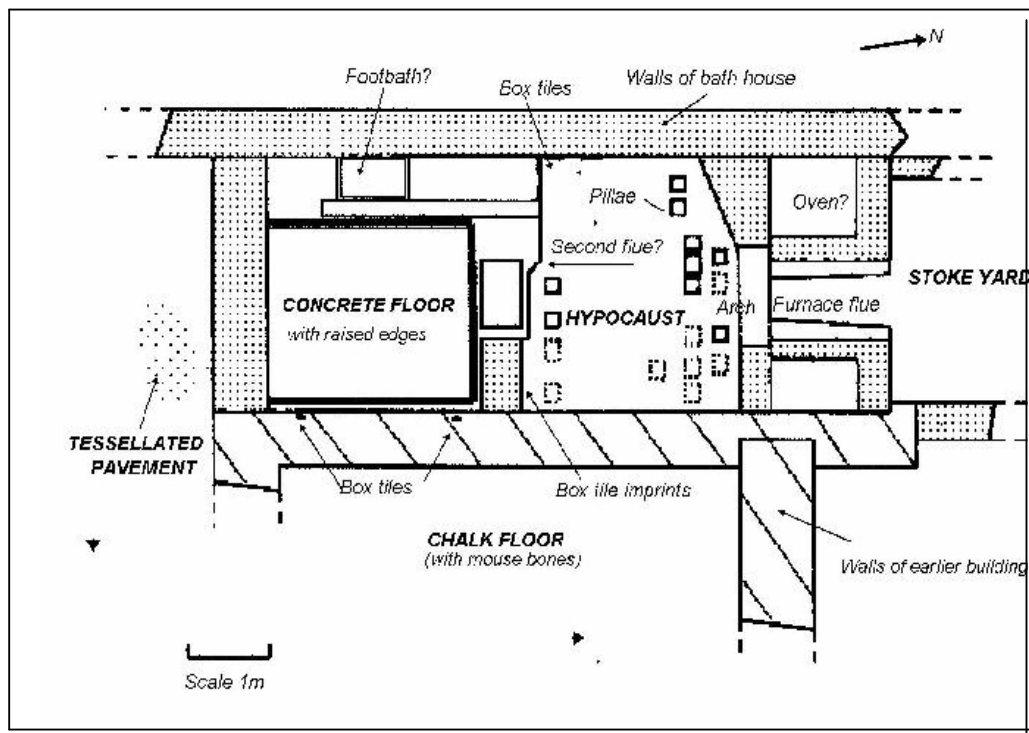
The Director

GATEHAMPTON FARM EXCAVATION INTERIM REPORT 2002

Hazel Williams

The 2002 season was another very successful one at Gatehampton Farm. In Trench VII we appear to have a small bath-house complex added on to an earlier building. It has one heated room, another probably much cooler one, plus a stoke yard and furnace on the northern side of the building. The highlight of the season however was the discovery of a tessellated pavement on the south side of the building.

The excavation of the hypocaust was completed and the trench extended by several metres on the north, east and south. This gives a clearer view of the layout of the bath-house and the earlier building phase. More of the stoke yard was revealed and to the south a concrete floor and a new feature, which is probably a footbath. A wall running east-west divides these from the tessellated pavement. Two walls also extend eastwards enclosing a chalk floor.



Trench VII: Plan Of Buildings

The stoke yard area is enclosed on two sides by walls extending north from the rear of the building, there may be another wall on the north side but the trench has not yet been extended that far. The area has a rough concrete surface that was covered in a layer of ash, charcoal and fragments of the tiles used to construct the lining of the furnace flue. The small square areas either side of the furnace flue may have been used to store fuel, but another suggestion is that this would be a good site for ovens.

A narrow section of the rubble fill on the northern side of the hypocaust was excavated in 2001 and had revealed the arch of the furnace flue, several pillae stacks up to three tiles high and the square concrete footprints of others. The rubble appears to be the result of deliberate infilling of the hypocaust when it went out of use, rather than gradual collapse of the building. Removal of most of the rubble on the south side of the room confirmed that the whole area had a regular pattern of pillae, with two more partial stacks found. This arrangement would have made it a very hot room that also had closely spaced box flue tiles running up the walls; there are four in the south-west corner. In the south-east corner a patches of opus signinum concrete used as wall rendering are still in place on both walls. These have a horizontal bottom edge approximately 75 cm above the base of the hypocaust and this may indicate the level of the original floor. It also has the imprint of two more closely spaced box tiles.

As before, the rubble fill of the hypocaust consisted of box tile fragments, painted wall plaster and lumps of opus signinum concrete. Some of this concrete is obviously wall rendering, showing the imprint of box tiles, or having some plaster layers still attached. Other fragments have curved profiles that may be window or door edges. We have not yet ruled out the possibility that some may be fragments of the floor surface as this material was very much an all-purpose one. There are also many fragments of the flat square tiles used for the pillae stacks and thicker tiles used to support the floor surface. Several more lumps of tufa were also found, this was used for bath-house ceilings because it was light, porous and

absorbed the steam. Beneath the rubble the base of the hypocaust was covered in a thick layer of charcoal, up to 40 cm deep at the corners with fragments of late second/early third century pottery.



View north showing concrete floor with raised edges, two box tiles (right), hypocaust and arch (top), corner of footbath (mid-left).

The area south of the hypocaust has several features that suggest the use of the building as a bath-house. A cooler room that has only two box tiles along the wall on the eastern side, its concrete floor has raised edges on at least three sides. A long narrow feature that may be the base of a wall or partition divides this floor area from the small rectangular footbath. This is approximately 1 metre long, 75 cm wide and 50 cm deep. It is lined with a layer of opus signinum cement up to 5 cm thick, curved where the base meets the walls. It was filled with fragments of wall plaster of a different design to that in the hypocaust.

The two heated rooms are divided by a small section of wall running west, then a rectangular feature made of layers of large floor tiles and cement that may simply have been a threshold or may have supported a heavy tank, beneath it is a substantial concrete support positioned in the centre between the two rooms. If the second room was heated there must be a second flue leading through to the space under the concrete floor. There is so far no sign of an arch on this side but there is a possible opening, at present still filled with rubble, just west of the centre. A careful investigation of this rubble next year may determine whether there is, as we hope, an intact hypocaust still under the floor or whether like the adjacent room it was filled in and covered over.

The tessellated pavement is on the south side of the building. The area is 1.5 metres long and up to 1 metre wide, with an undulating surface and a small section cut by a plough. It is made up of pieces of tile approx 3 cm square, cut from old roof tiles and varying in thickness. This is a form of heavy-duty flooring used in corridors, verandas and the edges of mosaics. At present it seems likely that this area is a veranda or corridor running along the front of the building, but a survey of the area is in progress to try to determine whether there is a range of rooms going southwards.



The tessellated pavement

As often happens in excavation, only a small part of this feature appeared at the very edge of the trench, at a time when survey work prevented us from extending any further. So it was with great excitement that the next two metres were eventually removed to reveal the tessellated area and everyone joined in.



Uncovering the tessellated pavement

Many of the same type of tesserae were found in Trench III, excavated earlier, 20 metres to the east. These were not laid as a pavement, but were found in one large heap of several

hundred and in scatters around the site. It may be significant that the heap was found on the south side of the building in a similar position to that of the pavement.

Features excavated on the eastern side of Trench VII may also relate to the earlier trench. The three well-built and substantial walls enclose a chalk floor very similar to those found in Trench III. Most interesting was the discovery of thousands of mouse bones on the surface of the chalk floor, some were still in pellets and seem to have been dropped by owls nesting in the rafters of what may have been a barn. The width of the floor is 6 metres, exactly the same as the centre section of the building in Trench III. That had a similar arrangement of wide central area and narrow rooms or corridors along the outside. There is some evidence in Trench VII of a corridor running along the north side of this building; patches of chalk floor and wall plaster. The alignment of the buildings in Trench VII and Trench III appear to be the same so this may be a rectangular building up to 30 metres long, but further survey and investigation will be needed to establish this conclusively.

This has been a very productive year due mainly to the efforts of a hardworking team of diggers, fifty people of all ages and experience dug at the site this year, with a core of a dozen regulars who also do the recording and surveying. Many also visited the site to see the work in progress. We were pleased to welcome Prof. Peter Salway for his valuable insights on Roman villas and their surroundings. Paul Smith, Oxfordshire County Archaeologist gave us useful advice and encouragement. We are particularly grateful to Tim Allen of the Oxford Unit for his continued interest and help, and for answering our frequent questions. Our greatest debt, of course, is to Robin Cloke, the landowner who has allowed us to dig on his land for many years and continues to take a keen interest in what we are doing.

DOWSING AT GATEHAMPTON **Janet Sharpe and Phil Carter**

Dowsing, as a technique for surveying archaeological sites, has received some bad publicity on television programmes such as 'Time Team' but nevertheless is recognised by some professional archaeologists as a viable tool. Philip Barker (1982) in his magisterial *Techniques of archaeological excavation* says: 'The use of divining rods should not be despised; on some sites remarkably consistent results have been obtained where other, more conventional methods have failed'. We have made several attempts to survey the Gatehampton villa site over the last few years using dowsing, and this is intended as a brief interim report.

We located the north boundary ditch of the villa by dowsing in 1993 and this led to the opening of Trench III, which proved the existence of this massive ditch. However, subsequent attempts to define the plan of the villa buildings have not yielded consistent results. We have found evidence for an extremely complex multiperiod site but it has not yet been possible to unravel the intricate spatial and temporal relationships between the walls we have located. As we become more experienced and our techniques become more refined, we hope we will eventually be able to produce at least a partial site plan.

We began by tracing the lines of the walls that had been exposed in Trench III beyond the limits of the trench. This showed us the position of a few small rooms in this part of the villa and also indicated that some of the walls that run parallel to the boundary ditch extended for a considerable distance. There was also the suggestion that there might be a corridor or veranda (marked by the presence of some large disturbed tesserae at the southwest end of Trench III). Similarly, we traced the walls outside of Trench VII, and their existence and

position have been confirmed as this trench has increased in size. Attempts to link the walls exposed in both trenches have so far been unsuccessful, with the exception of the main north wall of the villa which runs between Trench III and Trench VII, where it is visible as a robbed-out wall in the northern 'ear' of the trench. The large boundary ditch to the north of this wall seen in Trench III also continues to Trench VII where it can be traced by dowsing.

The north wall and boundary ditch extend beyond these two trenches in both directions. A brief exploratory survey in the neighbouring field enabled us to locate the end of the north wall (and hence the northwest corner of the villa complex) and to trace the extent of a possible west wing. We have also located the northeast corner of the complex in the area between the hedge and the hard-standing of the carpark.

Our work at Gatehampton will need to be repeated and confirmed, but the results so far suggest the presence of an extremely large building, or series of buildings, representing a multiperiod villa. The main wall of the villa sheltered the complex from the north, whereas a corridor may have overlooked gardens on the south side with a wide vista towards the Thames.

DIVINE ARCHAEOLOGY

George Henwood

Intuition, mysticism, strange forces or whatever way-out activity you may care to mention, seldom if ever play their part in the field of archaeology, even though successful archaeology sometimes requires a gift for looking at a site and possibly having a feeling after conning an area that 'perhaps; those humps, maybe there is something there?'

In this the 21st century there seems little serious place for any mysterious art but I now want to put on record how I, who having spent a working life time in chemical engineering research, using all sorts of instruments employing umpteen known physical principles and processes, now find myself fascinated by a technique which employs nothing more elaborate than hazel twigs or a couple of pieces of bent wire. After all, archaeology, which ultimately depends upon some energetic young people being prepared to get themselves exhausted and like as not very muddy from digging holes in the ground, is real down-to-earth technology. So where do twigs, etc, fit into the scene?

Let me explain by harking back to a site visit by members of the Hadrianic Society, of which I am a member. The group visited Birdoswold Roman fort which is sited on the westerly stretch of Hadrian's Wall, rather out of the way and until quite recently used as a farm and yard, therefore seldom visited. Happily it is now in official hands and being properly investigated. Tony Wilmott is the resident archaeologist and he it was who gave us an account of the work in hand. As he is a professional it came as a surprise to hear that he is a practising diviner who uses his divining ability to pinpoint otherwise hidden features of interest, much to the astonishment of his student diggers. How he discovered his ability is another story.

For my part the experience made me think anew about a pair of metal divining rods which were given to me by my grandchildren. Being a typical know-all scientist sceptic I had received them with amusement and my tests of their capabilities were rather perfunctory. However, Tony Wilmott's faith made me think again. When I subsequently moved into the middle of Wallingford I made the acquaintance of Mr Moss who was the SODC gardens supervisor. Through him I received permission to use my rods in the Castle Park grounds in

the early morning when the air tends to be still and the park empty of people. Mr Moss was interested and assured me he knew the location of various underground water features in the Castle grounds. He of course did not enlighten me as to their whereabouts.

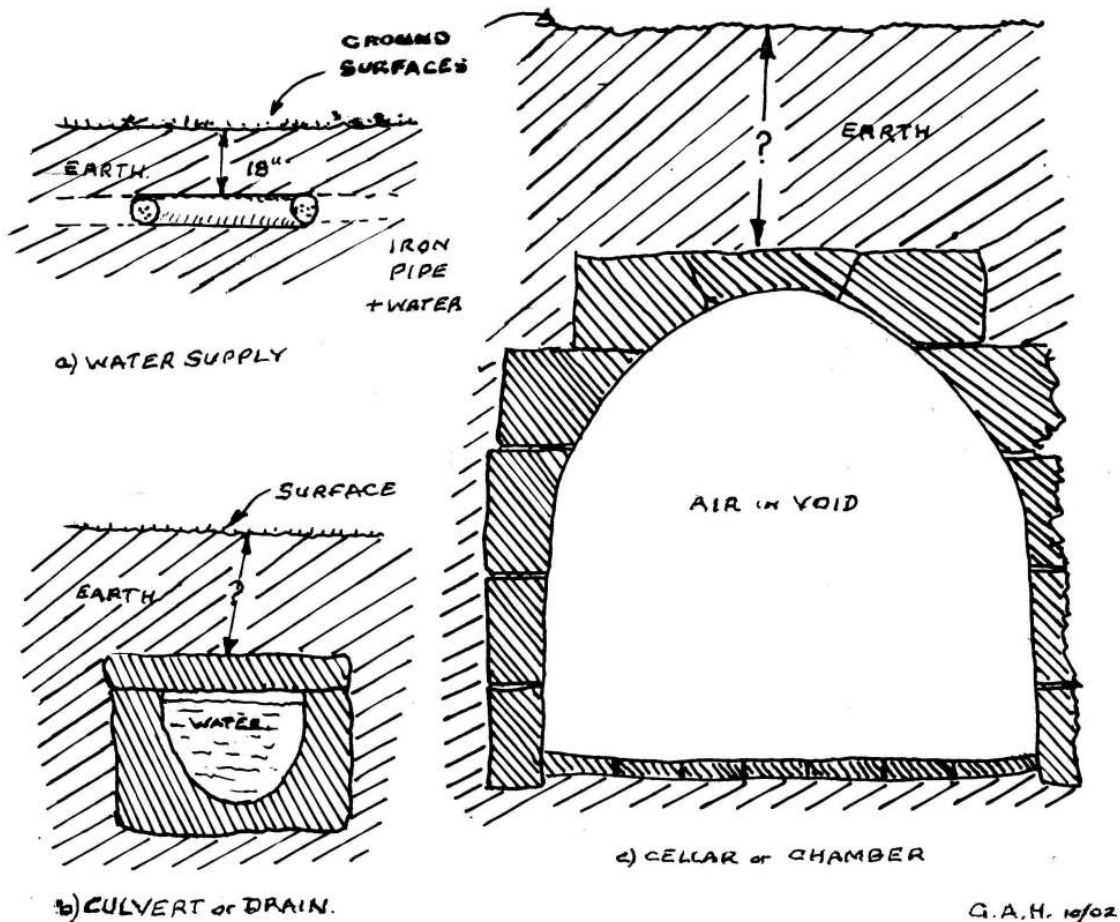
When conditions were suitable, i.e. no wind, I began my first test by familiarising myself with the tricky technique required to keep the rods steady and parallel. Then began a slow shuffle, crossing the large green in the Castle outer bailey. I was honestly not expecting any effect from my pivoted wire rods with their little solid spheres on each end, but to my astonishment as I slowly walked forward at one spot the rods showed a definite tendency to swing inwards until they crossed. I moved on and then did another traverse over a different area, with a similar result. After several such traverses the penny dropped; I realised I had found a line which led straight from one corner by the road to the little pond and its fountain. Obviously I had located the water supply pipe from the main to the pond, but absolutely nothing was visible on the surface. Oh, clever stuff! I was converted and hooked.

After some further exploration I found a definite response over to one side near the bank between the inner and outer bailey. I found a strong indication running alongside the bank. It really made my day when elsewhere in the grounds I found two more isolated spots where the rods crossed. When later I showed my notes and diagram to Mr Moss he was most impressed and confirmed my findings. The first discovery was indeed a water supply pipe and the strong signal by the bank came from a stone-covered medieval culvert, full of water, which was known from past investigations. The other two spots were wells, long covered over and not visible on the surface. A third well is in the same area but I had missed that. I really felt I had every cause to feel gratified by the results of my experiments, which justified further tests.

When conditions again were favourable I resumed searching with the rods inside the inner bailey where one would expect to find signs of a well that would have served buildings within the walls. Roughly in the centre of the area there was a large rose shrub that looked flourishing, possibly indicating a good water supply? But because the shrub was large and very thorny I could only circle around it and my rods gave nothing more exciting than erratic and confusing movements. I therefore decided to do a systematic survey of the bailey by consecutive parallel traverses, marked out by four rods which were paced out along the opposite sides. The first pair were two paces from the end bank and the next pair two paces further on. The area would be covered by traversing between the first two rods, then leapfrogging the rods and doing the next traverse and so on.

The first traverse was unexceptional, but a little way along the next traverse there was a most extraordinary response which at first I did not credit, but found to be repeatable over a definite area, where the rods instead of crossing, thus indicating water, in fact diverged to form a V. The remainder of the traverse showed nothing. The next parallel traverse started the same as before but further over, beyond the area of the anomaly, I found another spot which showed the same effect. I marked both anomalies with sticks and carried on with the series of traverses over part of the bailey until I ran out of time and the weather had deteriorated. A few days later I was able to take my rods over the ground again, in a mood of disbelief, but located the spots where again the rods showed the tendency to diverge. Very mysterious. At that stage my experiments ended because of my move from Wallingford and the usual demands upon time due to work upon the new house. However, the experience remained in my mind and I puzzled over those anomalies and did some reading into the dowsing phenomenon. I must confess that my reading was not exhaustive but I found the various theories mooted rather unconvincing, merely leaving me more puzzled than ever.

After further mulling over the problem I can put forward a theory which may be old-hat but at least is a talking point. First think in terms of known physical forces: magnetism, electrostatics, air pressure, acceleration, electronic radiation, gravity, etc. Of these only one force appears to me to be relevant, i.e. gravity. Gravity seemed apposite because it relates to the earth and all substances within and over it. Thus if a dowser is moving over an area of deep undisturbed soil with no subterranean features, it is quite certain that any rods (or suspended crystals) will show no response. But if a significant mass of material which has a density differing from the soil environment is present, then the gravitational field will be disturbed and the dowser's rods will respond according to the distortion of the gravity field. One would expect any such effect to be enhanced if the rods are carrying small masses at the extremities of the rods.



Would this theory explain the results of my experiments in Wallingford Castle grounds? I think so. Gravity is a positive force in that all matter in the universe is attracted to adjacent matter. Nowhere is there any evidence pointing to negative gravity. Therefore, coming back to my humble wire rods with their small lumps of matter at their free swinging ends, when they are taken into an area where the gravity field is distorted by variations in the density of the earth medium, the small masses will be attracted toward the greater concentration of matter. Some indication of the magnitude of such effect is indicated if one calculates the ratios of density between soil and water, air, rock and metal. (See table below.) For example, during my initial experiments the rods swung together in the vicinity of a galvanised iron pipe filled with water and similarly over a substantial stone culvert also carrying water. The two wells located probably have stone linings up close to the surface although not visible.

What of the inner bailey tests where the rods diverged? That effect is particularly interesting because in the heyday of the castle it would be where much of the activity was concentrated, which is why I expected to locate at least one well. Also there may have been underground chambers, cellars or even an oubliette in keeping with the castle's sometimes gruesome history? Did my errant rods diverge over the location of underground chambers where the gravity field is thin because of the voids and then concentrated by the stone structure around the voids, hence the divergence? I hope my experiments may be repeated using the modern, non-destructive survey devices now available to us and even better by a dig down to the medieval ground level, where it probably is still cobbled. The castle site is a scheduled monument so one cannot go digging at will, but we may hope for such activity one day.

Gravity Theory - Ratios of densities of typical materials

(Taking earth as a reference medium at 87 lb/ft³)

1)	EARTH to WATER	0.7
2)	EARTH to STONE	1.4
3)	EARTH to IRON	5.6
4)	EARTH to AIR	1130.0

Physical data from Hoyts Handbook - Imperial units

Item 5 is particularly noteworthy in view of the hypothecated subterranean chambers within the inner bailey.

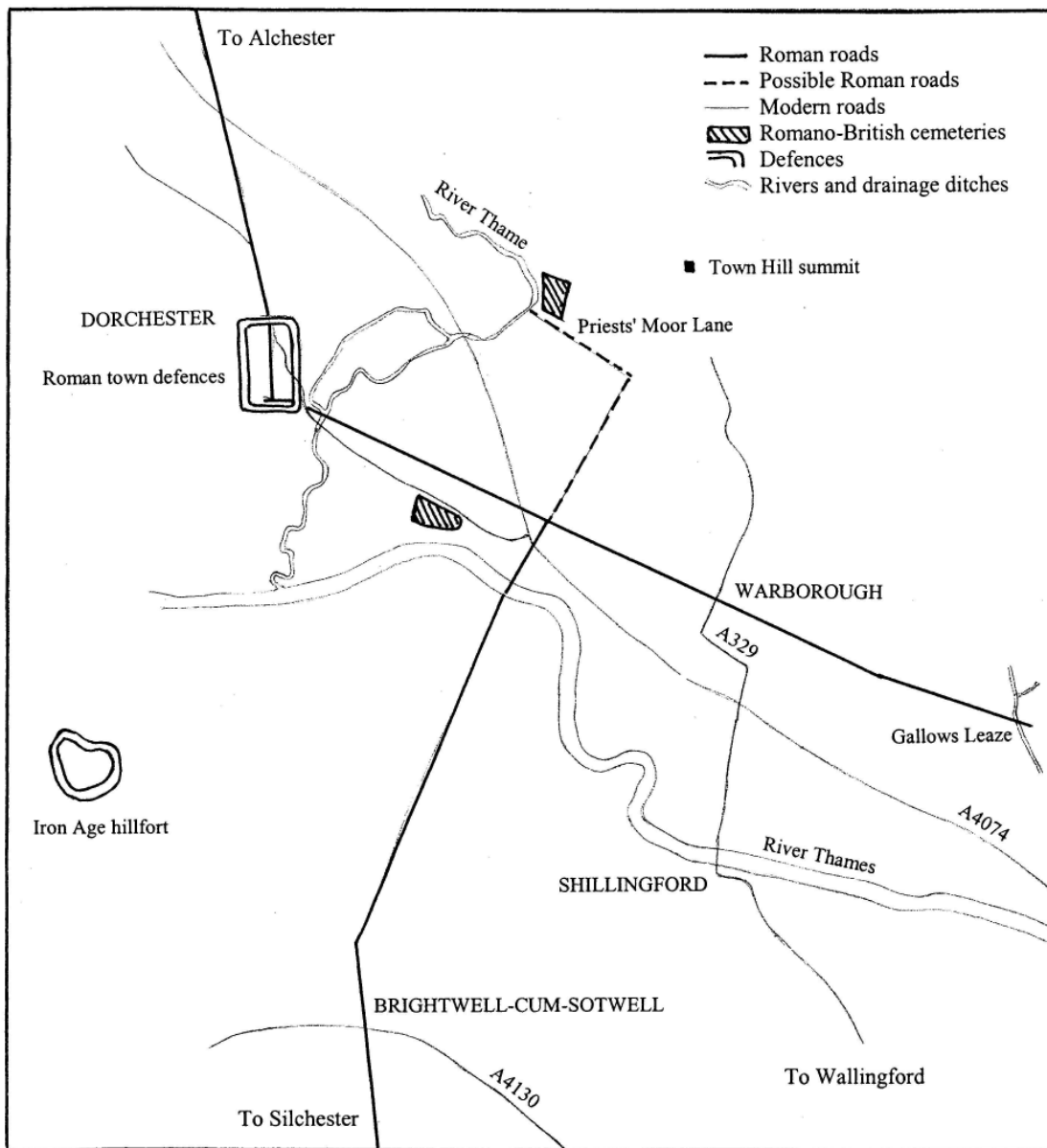
Editor's note: We have a number of SOAGs who can dowse, so delighted to add George to them. This article was completely unsolicited and spontaneous, and George did not know we have dowsers, hence his guarded approach. Our dowsers found much of our dig at Gatehampton.

THE DORCHESTER DOGLEG

Janet Sharpe and Phil Carter

It is a common misconception that Roman roads in Britain run as straight as a die between one fort or settlement to the next. A glance at the Ordnance Survey map of Roman Britain (1994) will show that this is not necessarily the case: the main road south of Calleva Atrebatum (Silchester) to Noviomagus (Chichester) is shown with at least four notable doglegs along its length in addition to two major changes in orientation. The same thing happens north of Calleva - at Dorchester. Why?

Edward Golton (2001) drew our attention to the Silchester to Dorchester Roman road, which, as he says, is clearly marked on Ordnance Survey maps at either end of its route. The 'Dorchester dogleg' is marked on the OS Explorer 170 (1999). The road runs north up Mackney Lane and through Brightwell-cum-Sotwell up onto the Sinodun Ridge along the route of a bridlepath. If you lay a ruler along this line on the map, the road is shown to continue along almost exactly the same alignment north of Dorchester on its way to Alchester. But on the crest of the Sinodun Ridge the road (and the bridlepath) deviates from its course by 30 degrees to the northeast, and from this point is apparently sighted on Town Hill, Warborough. This deviation was presumably to avoid the marshy confluence of the Thame and Thames and to find a suitable river crossing, and perhaps also to give the Iron Age fort at Wittenham Clumps a wide berth.



The Dorchester dog-leg. Crown copyright reserved.

The bridlepath ends at North Farm but the line of the road is continued by hedgerows to cross the Thames between Dorchester and Shillingford at Grid ref. SU587932, which is thought to be the site of 'tha Ealdan Stret Ford' referred to in a Saxon charter of AD 810 (Golton 2001). The line then continues as a parish boundary and then as another bridlepath towards Town Hill, just before which it joins Priests' Moor Lane at right angles. There is some evidence that this is also a Roman road since it leads to a late Roman cemetery on the east bank of the Thames (Henig and Booth 2000). However, if the line of this track is extended it rejoins the main Roman road to Alchester well to the north of Dorchester. Surely the main road from Silchester to Alchester would not have completely avoided the centre of what was a major walled Roman town.

Most recent studies of the course of Roman roads have been based on map work, joining up likely-looking bridlepaths, parish boundaries and hedgerows along the presumed route. Instead, we wondered if it would be possible to trace the line of the actual road using dowsing techniques. Dowsing, the 'poor man's resistivity meter', relies on a simple tool such

as an angle rod or pendulum to amplify subtle physical responses to local changes in the earth's electromagnetic field (possibly). These changes indicate the interfaces between wetter (such as buried ditches) and dryer (such as banks or walls) areas of soil.

Roman roads were constructed as a raised bank or agger, the top of which was usually metalled with broken stones and gravel, flanked with drainage ditches. There was then a berm on each side defined by two parallel boundary ditches. We put dowsing to the test by walking a transect across the bridlepath in the large field north of the A4130, where it leads up to the Sinodun Ridge. We quickly picked up what we later came to recognise as 'the Roman road signature', with the dowsing rods showing the interfaces marking the 'ditch-berm-agger-berm-ditch' construction of the road. This road did not lie directly beneath the bridlepath but a few metres out into the field; there is no longer a visible agger. We were able to trace the road by walking transects across it at several places in this field, and decided it was time to make a proper survey.

We started on the south bank of the Thames at the reputed crossing place. The road was found just to the east of the drainage ditch shown on the OS map; its total width between the outer edges of the two ditches was 18.82 m and the width of the central agger was 7.25 m. We made a total of fourteen road transects between the river bank and the southern edge of the large field at Highlands Farm, just north of the A4130. At the river end, the road lay just to the east of the hedgeline shown on the OS map but to the south of North Farm, at the northern boundary of the large field, the road swung from the east to the west side of the existing bridlepath and then followed the western edge of the path down to the bottom of the field. We were able to plot the position of the 30-degree turn on the crest of the Sinodun Ridge and found it just to the south but very close to the present bend in the bridlepath. At each transect point we recorded the total width of the road, and the width of the ditches, berms and agger. The road width was remarkably consistent over much of this stretch. The mean overall width (ditch to ditch) was 18.05 m and the mean agger width was 8.78 m. We also located the road further south, just to the east and overlapping the footpath passing through the centre of Brightwell-cum-Sotwell (Grid ref. SU58159090) although no measurements were taken at this point.

We then looked for the road on the north bank of the Thames and found it directly opposite the road on the south side. At this point the Oxford SMR (ref. 5051) refers to 'a low causeway on the north bank [that] cannot be classified as a Roman bridge due to insufficient information'. We were not convinced by this 'causeway'; instead, the road seems to coincide with a dip in the bank and we feel that the crossing is more likely to have been a ford (re 'tha Ealdan Stret Ford') than a bridge. The total width of the road here was 18.55 m with an agger of 8.28 m; this compares with 18.82 and 7.25 m, respectively, on the south bank. We traced the road again on both sides of the Dorchester bypass (A4074), more or less on the line of the parish boundary. There is a 7 degree change in orientation to the east north of the river to correct the alignment on Town Hill and the road widens: north of the bypass it is 20.47 m across with an impressive agger of 10.45 m.

We then had to consider the position of the dogleg. Although the OS map suggests that Priests' Moor Lane is a likely candidate, John Malpas (1987) traced the route of the Roman road from Henley to Dorchester by following bridlepaths and parish boundaries and the like, and postulated that this road cut through the northeast tip of Benson village. He refers to a clear section of Roman road cut by a drainage ditch at Gallows Leaze and followed the line of this road across the A329 at Warborough. He saw it continuing across the field north of the Dorchester bypass (at the south end of which we had traced the north-south road) as a raised bank, which is still visible where it approaches the field boundary north of the

junction of the bypass with the present Henley Road leading into Dorchester. Working blind, without a bridlepath or hedgeline to guide us, but walking immediately to the west of the alignment of the north-south road with the summit of Town Hill, we dowsed for its crossing with the Henley-Dorchester road. We found this east-west road further south than expected, and south of the raised bank which instead would appear to be a headland. The position of the crossroad was plotted from the south boundary of the field and was found to be wider than the north-south road: the total width was 24.29 m at this point, with an agger width of 11.49 m.

The crossing of these two roads forms the right angle of the Dorchester dogleg and would have directed the traffic coming up from Silchester into the town. We assume that the north-south road formed a true crossroads with the east-west road and continued northwards to Town Hill (and Priests' Moor Lane) as this line is marked by a parish boundary. This will be the subject of a later study; for the present we needed to determine the route of the east-west road into Dorchester to complete the dogleg and if possible to indicate where it may have crossed the Thame, as this has not yet been clearly demonstrated.

Assuming that this road now headed straight for Dorchester, we looked for it and found it along the eastern edge of the field which lies in the angle between the bypass and the present Henley Road, and also where it crosses the lane leading to Overy just southeast of Dorchester. In the field, we thought at first that we had located the road to the south of its actual position. This area between the Henley Road and the Roman road, which runs 96 m to the north of it, shows numerous features including an 'agger-like' courtyard and lots of ditches/pits about 2 m across. This area is very close to the group of houses known as 'Meadside' which marks the site of a Romano-British cemetery (Henig and Booth 2000). The Roman road became progressively wider and more impressive as it approached the town: at the three locations described, the total width was 24.29, 27.40 and 28.48 m, and the agger width was 11.49, 13.62 and 15.97 m, respectively. When these three locations were plotted on the map, they formed a straight line. When this line was extended towards Dorchester, it appeared to cross the Thame just to the north of the present bridge and just below the confluence of the two river channels (Grid ref. SU57959395). The exact position of the eastern defences of the walled town of Dorchester has not yet been determined, but the walls seem to have enclosed a rectangular area with a main north-south street and a street at right angles to this near the south wall, apparently leading to a gate in the southeast corner (Henig and Booth 2000). This would be the nearest point in the town walls to our proposed river crossing.

In order to confirm the alignment of the Henley-Dorchester road, we looked for it further east at Warborough. Malpas (1987) says that the road crosses the A329 at a large house called Oatlands; we found that the agger passes through a bungalow two properties to the south of this (Grid ref. SU59609315). The straight line of the road that we established at Dorchester runs right through this property when projected on the map.

We followed the bridlepath out from the southeast corner of The Green at Warborough and took the first footpath on the right, which runs alongside a drainage ditch about half a mile east of the Six Bells pub. We continued along this footpath until it crossed the second hedgerow south from the main bridlepath, where the ditch is joined by another at Gallows Leaze. We dowsed south from the ditch junction and found the Roman road signature just to the north of our projected line, and *exactly* where Malpas (1987) reported seeing metallurgy exposed in the ditch at Gallows Leaze (Grid ref. SU60989265). Although slightly smaller than the road in its final approach to Dorchester, it was still impressive: 23.53 m in total width with an agger of 10.00 m. The deviation of the line of the road between Warborough

and Gallows Leaze was 6 degrees to the north, and this change in orientation must have taken place somewhere in the large field to the west of Gallows Leaze.

Margary (1943, quoted in Davies 2002) gives the average width of the Silchester-Dorchester road between the outer ditches as 18.9 m. This is remarkably consistent with the mean 18.05 m we obtained for the stretch between the Thames and Brightwell. Davies gives the average width of metalling on Roman roads as 6.51 m, which is consistent with our mean agger width of 8.78 m for the Thames to Brightwell stretch of road, given that this marks the start of the rise of the agger on either side and metalling would not have extended across the entire agger width.

Interestingly, Margary (1943) referred to two main classes of Roman roads, with average widths of 18.9 and 25.6 m, respectively. Although disputed by Davies, who presents evidence for variable road width, it seems to be more than coincidence that the Henley-Dorchester road falls into Margary's class of wider 'A roads' and the Silchester-Dorchester road into the class of narrower 'B roads'. If the continuation of the Alchester road north of Dorchester falls into the larger size class, it is possible that the traffic from the Oxford potteries was channelled south to Dorchester (where the discovery of an inscribed altar in the 18th century suggests the presence of a local customs officer) and then east to London, perhaps via the Thames from Henley, and not south to Silchester and the south coast ports.

The ultimate proof of the existence of a Roman road lies in excavation. It may be possible to put our survey to the test in the future, as Transco plan to construct a new pipeline from Chalgrove to East Ilsley in 2003. This pipeline will cross the Thames near Benson, skirt the north of Wallingford and run down the east side of Didcot. It should therefore cut across the lines of both the Henley-Dorchester and Silchester-Dorchester Roman roads.

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CALLEVA ATREBATUM

John Westwood

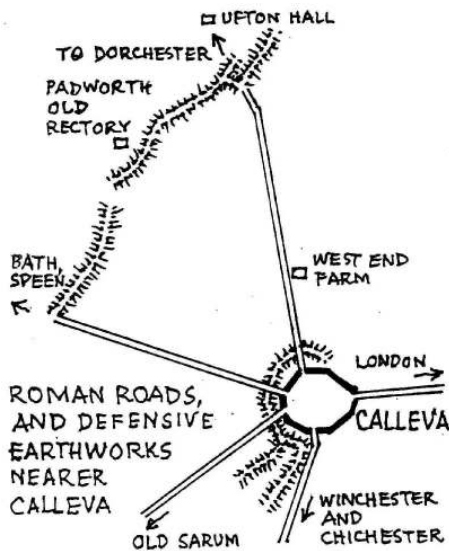
In his article in SOAG Bulletin 56, Edward Golton discusses the almost lost Roman road from Silchester to Dorchester on Thames. We follow with a short complementary study of the general background.

Silchester, the town of Calleva, which was at first the tribal centre of our former neighbours the warlike Atrebates, still has great walls enclosing a vast area. One might wonder whether the tribal name has significance in Old Welsh; or even whether the first three letters of the name, ATR in the Latinised form, refer to a mythical founder named Arthur, with legends in Britain and Gaul attached to an equally shadowy descendant bearing the same name in the later Dark Age. Calleva is 'the place in the wood': Celtic 'celli'.

Back to facts: various authorities tell us that this Belgic tribe, with Celtic and Teutonic ancestry, had at first accepted Julius Caesar's conquest of northern Gaul, but then revolted;

many fled in 50 BC with their king Commius to their friends in Britain, and successors at Calleva (Tincommius, Eppillus, and Verica) ruled parts of what is now Hampshire, Wiltshire, and Berkshire. Calleva prospered but the Atrebates there were in conflict with the powerful Catuvellauni.

The Roman legions landed: they took control. Cogidubnus was appointed ruler of a vast area in 43 AD. The Roman conquest must have reminded the Callevan, Welsh-speaking Britons, that they, in huts on low hills overlooking the Thames valley to the north-east and the Loddon to the east, would always be in danger of invasion by foreigners from those sides. As indeed the Saxons eventually came.



Under the Romans, the local administrators had to learn some Latin, and Roman methods. By the second century, Calleva had become a busy town; main roads radiated in all directions. This town, geographically so central, acted as a tax-gathering and policing centre, where Roman troops could assemble in emergency. All the roads had to be kept open and well surfaced at all times. The road to Dorchester on Thames, numbered 160c by Margary, led on to road junctions at Alchester and Towcester, and then on again to the north.

Was the road paved? Why has most of it vanished so completely? Only the first mile or so is marked on our maps. It stops at defensive earthworks near Padworth. Further north, it

shows more clearly from Cholsey to Dorchester on Thames.

There is a clue to the missing miles. That a paved section of the road still survived some centuries later is suggested by the village name of Streatley. At a crossroads there, the Ridgeway came down to the Thames; the river crossing was marked by an upright seven-foot sarsen stone, which can be seen today (moved north about ten yards from its proper place) in the garden of the Swan Hotel, but almost buried, alas.

Even if Pangbourne was on the route of the road, albeit liable to flooding from (significantly named) Tidmarsh, or if the hilly stretch via Bradfield was followed without much deviation, in either case the route came to the more level river bank near 'Grim's Ditch'. It could easily be barred there. When and why was this critical route through the Goring Gap barred by this prominent west-east earthwork bank, which can still be seen at grid point 598796 where it comes right down to the modern A329 road? Looked at on the ground, it seems to be admirably sited as a potential trap for whoever held the road to be able to ambush invaders from the north, using the dogleg Holies valley for hiding rearguard-attacking defenders.

Calleva had a court of justice, an office for the Imperial Post, an amphitheatre, basilica, baths, temples, market, shops, inns, stables, craftsmen; also possibly a barracks, and even a Christian church. Imports and exports of luxury goods were arranged by traders. (Dorchester on Thames was a similar but smaller centre, with only the one through road.)

For two centuries, during which stone buildings were erected in Calleva, the general turmoil in the Roman Empire weakened the imperial rule. As all Europe grew darker, in fear, the

great walls of Calleva were built. By 410 AD, when the legions finally left, the Romanised Britons, until then prosperous, became anxious. The walls seemed invincible. They lived, maybe with support from Saxon mercenaries, but with rapidly diminishing civilised standards. Less than a century later, they were threatened by further (unfriendly) Saxons coming up the Thames valley. One authority, who does not believe in Arthur, has pondered the possibility that Vortigern was involved; and that Ambrosius Aurelianus was a defender at Calleva. That name suggests that the last of the Celtic fighting spirit revived, with the Roman tradition as its inspiration. However, it seems to me likely that the Calleva (Silchester) defenders, in final desperation, may have completely destroyed and obliterated all the Roman roads beyond the first mile or so, in order to make the attack on their now very conspicuous town more difficult, by trying to conceal the approach to it. If so, their defensive destruction was complete, but it was ineffective. They failed to halt the Saxons. After all, English is now the local language, not Welsh or Latin local dialect. The final end of Calleva is a mystery.

The evidence of destruction by the Saxons within the walls may suggest that in the end the defenders fled to the west. Dorchester on Thames, the Roman town only 36 Roman miles to the north, also came under Saxon control. Some Britons stayed. While Saxon leaders pushed on westwards, it took them many years: we know that they met with more resistance as they attacked other Britons who had reassembled in the hill country. Probably between 500 and 518, they were defeated at 'Mons Badonicus', thought to be above Liddington, near Swindon.

After taking Calleva, the Saxons did not settle there. They preferred the more fertile and better-watered sites at Dorchester on Thames and Winchester. Calleva mouldered on, abandoned; the stones of the forum, baths, and other buildings were quietly stolen, leaving just a great empty shell.

Footnote

The crude C19 archaeological digs at Calleva obscured the field for more skilled later work, which still goes on. The recorded history of the six centuries concerned by Bede, Gildas and Roman writers is nebulous and scanty. The standard guidebook, *Calleva Atrebatum*, by Michael Fulford, Calleva Museum, summarises what is certain; an earlier similar booklet by George C. Boon, Reading Museum, adds a little. Reading Library was disappointing, but a recent archaeological report there gave me the dates 260 to 280 AD for the building of Calleva's walls.

Calleva is mentioned in some of these books: *Roman Britain*, Michael Todd, Fontana, 1981; *The Oxford History of England*, Vol. 1B, J.N.L. Myers, Oxford, 1998; and *Arthur's Britain*, Leslie Alcock, Pelican, 1978: this book carefully avoids guesswork.

A History of Berkshire, Judith Hunter, Phillimore, 1995, and *The Story of Britain*, Roy Strong, Pimlico, 1998, are in Goring Library. I also looked at earlier works by Ian Richmond and others. The least reliable was Geoffrey of Monmouth's very lively *History of the Kings of Britain*; he says that Constantine II was chosen King of Britain at Silchester, and was crowned there; likewise (later) King Arthur; and that Maugannius was made Bishop of Silchester by Arthur. But the arguologists query all that.

In the above article, I have oversimplified the story of Commius. The Atrebates may be forgotten here, but not (it seems) in France. My Larousse dictionary notes their origin in Gaul, saying that they gave their name to the town which is now called Arras. The province

was named Arteis, later Artois; the people are Artésiens. Artesian wells were first made there. And, in our local pub, maybe we can raise a glass of Stella Artois (Belgian) beer, the name of which seems to be a lingering memory of the prehistoric Atrebates tribe, many of whom came to Silchester from Gaul.

‘ROMAN MILESTONES’ NEAR STREATLEY?

Edward Golton

Whilst researching for the previous article about the Roman road from Silchester to Dorchester, I came across early references to Roman milestones between Streatley and Aldworth which aroused my curiosity. There have been numerous recordings of Roman finds in the area of course, including the Temple site at Lowbury Hill, and many coins and pottery at Streatley, whose name may well derive from Roman times. The Victoria County History for Berkshire, p214 under Streatley gives a valuable set of references, although some were hard to trace.

The earliest tale is by Thomas Hearn of Oxford¹, a famous antiquarian of the time, in 1716. It was printed in ‘Hearn’s edition of Roper’s Life of More’ (Sir Thomas), p247, as ‘Occasional Remarks’ at the beginning of an article about painted glass in Fairford Church. I found the volume in the Stenton Reference Library at Reading University. I can do no better than reproduce his words. Following a description of the ‘Giants’ in Aldworth church and speculating on Aldworth’s former importance, he says:

‘For it was then so publick that a Branch of the Ikenild way passed through it, and it was therefore one of the resting Places of the Roman Souldiers in their passage from one Garrison to another. It came from Goring by a bridge over the Water at Stretely; and from Stretely, so called from this Way, to Aldworth, as I have plainly discovered by two of the Mercuriall or Mile Stones, fix’d a great many Yards in the Ground, that are now to be seen between Stretely and Aldworth, one of which lyes a Mile from Stretely. These Stones are much admir’d by the country people, who think that they could be fix’d there by none but such Heroical Persons (which they call Gyants) as lye in Aldworth Church.’

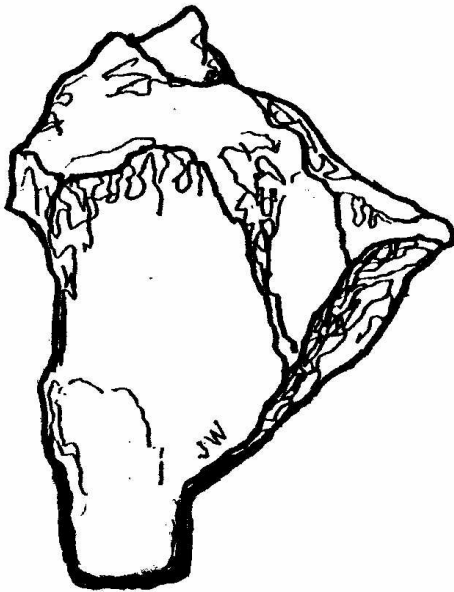
The next useful commentary was by Hewett whose ‘History and Antiquities of the Hundred of Compton’ was published in 1844. An Addendum on p152 reads:

‘With respect to the milliaria between Aldworth and Streatley, I have lately been informed that one of these stones of gigantic size was formerly to be seen in the middle of a field near Kiddington, about a mile west of Streatley. The occupier of the farm removed this immense stone, with a team of eight horses, to a more convenient spot about a quarter of a mile distant, where to this day it still remains. The story that it was thrown hither by one of the giants is still told, and as implicitly believed by the common people; who say, further, that the print of the giant’s hand, made when he grasped the stone, may yet be distinctly seen! A very ancient road (the Icniel Street) extending near this milestone, directly from Westridge to Streatley, was destroyed at the time of the inclosure.’

On 15th July 2002 the author went on a field walk with John and Margaret Westwood and Ian Clarke in search of any huge stones. John Westwood had told us the story of how he rescued a huge sarsen stone when the access to the Swan hotel by Streatley bridge was being realigned in 1987. It was moved from near the river bank and the highway men intended to demolish it, but fortunately John persuaded them to put it aside, where he made a detailed sketch (see Fig. 1). Later, it was moved and now only shows its head above ground in the

flower bed to the right of the drive. In fact, the stone is about 7 feet tall. Surely, this must have been one of the 'milestones'? There are of course a number of sarsens in the area, large by ordinary standards, such as the one at Streatley cross roads on the corner of Elm Lodge, and the one in the corner of the bend in the lane outside Streatley Church, but we were looking for something much bigger.

We then went along Rectory Road to near Thurlle Grange. Here, hidden in nettles on the



7 ft Sarsen by The Swan, rescued & drawn by John Westwood

wide verge nearly opposite the garden gate is another large sarsen stone. I had spotted it earlier on a walk when there was not so much vegetation. We probed down several feet with an iron rod without finding its bottom. So could this be the one Hewett says was moved? The site is about a mile from Streatley and a point $\frac{1}{4}$ mile away would certainly place it in the fields around what was Kiddington Farm, now called Cottage. On separate walks in the area no trace of any other very large stones has been found. Just past the nearby stables and farm, a footpath branches off at right angles to the road, then directs past Kiddington Cottage and on uphill eventually to Westridge. Possibly this is the route mentioned by Hewett? Certainly its line, extended the other way, would carry on under the ridge towards the golf course buildings and Streatley. Perhaps that was the line that vanished with inclosure?

Thus we have two candidate sarsen stones, but were they really Roman milestones? A recent article in *Independent Archaeology*, Newsletter 44, shows a cylindrical cut Roman milestone found recently in north Yorkshire (also described in *Current Archaeology* Issue 182 p49, 'The Ackworth Milestone' by Eric Houlder), which has abbreviated inscriptions for emperor and distance. Apparently that was something of a standard design, of which some 116 have come to light to date. They were placed at intervals of 1620 yds, the Roman mile. Our stones, being so huge, are unlikely to have been moved any distance by the Romans. Since glacial times, huge slab-shaped sarsen stones have lain flat on the Downs, as we still see a large group of them (known locally as the 'wethers' after their resemblance to a flock of sheep) so strikingly in a field near Ashdown House above Lambourn. Possibly our sarsens were just set upright by the Romans, or in even earlier times, to become convenient markers in the landscape. Our early writers, on expeditions to the remote countryside may have let their imaginations run free, but we must surely be grateful for all they recorded for us².

Footnotes:

- ¹ Hearn's passing is recorded in the *Gentlemen's Magazine* of June 1735, p333, viz: 'Mr Thomas Hearn MA of Edmund Hall, Oxford. He was a famous antiquarian, having many years made Collections of English Antiquities, and printed them by subscription. He left his fortune among his poor relations, and his MSS, which are very curious, to Dr W'm Bedford, Physician in London. 1500L was found in his study.' *Bibliotheca Typographica Britannica* XVI p3 says Hearn was born in White Waltham, and that his enquiry letters were printed in the *Monthly Miscellany* Nov 1708.
- ² N.B. Since writing this, a new book 'Roman Roads in Britain' by Hugh Davies has appeared: Tempus Publishing Ltd 2002, ISBN 07524-2503X.

JOURNEYING THE ICKNIELD WAY FROM GORING TO WALLINGFORD

Mary Kift

According to Dr Paul Hindle in his recent book 'Roads and Tracks for Historians' (Phillimore & Co. Ltd., 2001) this ancient track was originally probably very wide in places, possibly almost a mile in the Goring-Wallingford area. It did not begin as the ancient route we recognise today. '... Icknield was then ... an inter-twining of many paths ...' (G. R. Crosher, 'Along the Chiltern Ways', 1973). Now these tracks have become metalled roads in places and, in some cases, two, three or maybe four parallel lines of communication, though sometimes only a boundary or hedge line defines this ancient route. Interestingly, in this area Icknield was not taken over by the Romans in spite of their important local settlement at Dorchester, though this is not in the section under discussion.

We begin our journey at Goring. The Goring Charters (BI L i) quotes Hearne, the eighteenth century Antiquarian '... This church [Goring] hath pretty well escaped, being situated in a by-place, tho' formerly on a very great road, namely the Ikenild or Ikney Way.'

Having crossed the Thames at Goring, the track follows the line of the metalled road to Cleeve and through there up on to the high ground passing Grove House and farm on the left. There are cross ways. To the left a made up road runs down to the Thames Valley, while on the right is an ancient track once known as Green Lane and leading towards Woodcote, where it becomes Beech Lane. The hedge date on the Green Lane stretch gives an average count of 6.5 species, including spindle. The Eynsham Cartulary Bk 2, p.122, mentions that in 1366 the Icknield crossed Green Lane near the Medieval Manor of 'Appelhangr', now Beech Farm. Hereabouts, on the same side, lies an interestingly named hill called Catsbrain. The same cartulary says, 'Ickeneld' crossed a field called 'Catesbrayn'. Also nearby is a group of Medieval fields called 'Childes Londes'. These belonged to an ancient family called 'Passelewes' certainly in 1220 if not before. They were woodwards and of some standing locally.

Journeying onward, the Icknield passes Icknield farm and then a dwelling called Kaffirs. Here the track leaves the road and crosses open hillside descending to the A4074, once another ancient line of communication called the Portway in some places and Red Lane in others. Crossing this, and still in open country, it soon reaches a thicket beside Layend Pond. Among the trees and bushes can be found a nineteenth century memorial to a member of the Reade family, who were lords of Ipsden Manor. Here it crosses a minor road to Ipsden and goes along a bridle path going behind Larkstoke Stud and farm. There is a short stretch of hedge here with an average hedge count of 4 species.

Soon another road to Ipsden church is crossed. It is known by various names in different places, Clay Way, Church Way and Urquharts Lane. Once across this, the Icknield becomes very narrow and follows the line of the Trunk Ditch at Drinken Bottom along the edge of Cobblers Hill. Here another stretch of hedgerow gives an average count of 5 species. The Road from Hailey (Ipsden) to Crowmarsh is crossed to pass cottages at Forest Row alongside a very old and minor road, this now becoming the Icknield Way. Soon Grim's Ditch is crossed at Cart Gap. In this region hedges line the way on both sides, giving an average count of 5+ species on each side, including spindle. On past Blenheim Farm and Riding Centre, the Icknield shortly reaches the old Wallingford to Henley road and here we leave it as it heads for Swyncombe Downs.

BRIGHTWELL BALDWIN - LATER MEDIEVAL HISTORY

Edited and presented by Ian Clarke

The History of Brightwell Baldwin is a collection of writings and papers researched and collated by the late A.C. (Tony) Fraser of Brightwell. The 'Early' and 'Norman' Histories were presented in SOAG Bulletins Nos. 55 and 56. This extract concludes the medieval history, through the 15th and into the early 16th Centuries, by reference to the changing fortunes of the families who held the manor through the turbulent years of the Wars of the Roses and those of the early Tudors. It is reproduced by kind permission of Peter Kent of Brightwell, the custodian of the papers.

The Parkes

We have seen in the 'Norman' History of Brightwell Baldwin (Bulletin No 56) that the de Parco, or Parke family held the chief manor of Brightwell from about the middle of the C13, which manor became known thereafter as Parc Brightwell, or the Manor of Park(e), the name now preserved as Brightwell Park. The fabric of the largely C14 Parish Church of St Bartholomew unquestionably owes much to the patronage of the Parkes. The advowson of the church (the right of presentation of the benefice) remained with the Parke family from the C13 through to the early C15, with just one exception.

In 1384 John Parke presented William Dalton who remained rector until 1419. The appointment of William Dalton's successor illustrates the arguments and litigation which frequently occurred over the right to present to the church. John Soulby was presented by Henry Soulby, donzel (page or esquire) and John Eseyby, clerk. Following this presentation a commission, dated 18th October, 1419, was issued to Master Thomas Southam, the Bishop's sequestrator and commissary general in the archdeaconries of Oxfordshire and Buckinghamshire, to enquire concerning the vacancy, the right of presentation and the person presented. An enquiry was made by the rectors and vicars of the deanery of Aston who reported that 'the church became vacant on 16th September, 1419, by the death of Sir William Dalton, the last rector; that Henry Soulby, donzel and Sir John Easby, chaplain, were the true patrons this turn because they received at Farm (leased) from William Modyrby and Joan, his late wife, then true patrons of the church, one part of his manor at Brightwell called Welhows, with one close annexed to the same house and three acres of land lying in the croft of the same manor, together with the next advowson of the church, if it should happen within forty years, beginning with the first year of King Henry V; that John Parkes last presented to the same the said William Dalton, and that John Soulby was a man of good life and honest conversation and in priestly orders and prebendary of the collegiate church at Ripon'. By his letters patent, dated 23rd October 1419, Southam stated that he had admitted and instituted Soulby. No doubt John Soulby was a relation of Henry's. The Modyrbys, from whom Henry Soulby and his chaplain leased Welhows, were themselves tenants of the Parke family.

It is not recorded when John Soulby ceased to be rector, but his successor, John Crosby, was presented by Johanna Parke, the last of her name to hold the advowson. We know that John Crosby was rector by 1432, for in that year a papal letter addressed to John Crosby rector of Brightwell, recapitulated Pope Martin V's mandate to the Bishop of Carlisle 'to rehabilitate and dispense him on account of his having mortally wounded a glover, in execution of which Bishop Marmaduke duly dispensed and rehabilitated him, after which he obtained the above church - that the said letter and the said proceedings hold good - notwithstanding that he did

not mention his illegitimacy as the son of a priest and an unmarried woman, on account of which he had been otherwise dispensed by papal authority’.

Three years later, John Crosby was ‘moved by a scruple of conscience’ as to whether he could lawfully retain the church seeing that he immediately succeeded John Soulby who, he had discovered, was his father. The Pope decreed that ‘if there be no canonical impediment he may retain the said church, value not exceeding forty marks, sterling’.

At that time ordained priests were not all renowned for their behaviour and an earlier Archbishop of Canterbury had found it necessary to rule that priests’ children should not succeed to their fathers’ benefices. John Crosby, who was a Bachelor of Common Law, ‘having studied cannon and civil law for five or six years at a university’, continued to hold the living. He also became prebendary of Thornegate from 1448 until 1471 and then of Crackpole Saint Mary until 1477. During these years he was also treasurer of Lincoln Cathedral.

The Stonors

When John Crosby, the last rector presented by a member of the Parke family, died in 1445, his successor, Robert More, was presented by William Stonor and his tenants, who included Sir John Boteller, husband of John Barentine’s widow. How William Stonor acquired the advowson was explained at an enquiry held in 1502 when Sir John Cottesmore was claiming the right to present a later rector.

At the enquiry it was stated that Johanna Parke was lately tenant of the Manor of Parke to which the advowson belonged, and she presented John Crosby in Henry VII’s time. She died and was succeeded by three daughters: Johanna, who married John Soulby, Elizabeth, who married John Blackhall and Amise, who married John Barwell. The Soulbys and Blackhalls granted their two thirds of the manor to Thomas Stonor and the Barwells granted their third to Edmund Rede and others. Thomas Stonor died and was succeeded by his son William who thus acquired the right of presentation.

Thomas Stonor had already inherited over thirty manors from his father when he acquired his share of Brightwell. Speaker of the House of Commons and Sheriff of both Oxfordshire and Berkshire, he was married to Jeanne (or Jane), the ‘illegitimate’ daughter of William de la Pole, Duke of Suffolk, by the Countess of Hainault.

Leland’s itinerary has two entries (ii 19 & v 233) as follows:

‘Barentine’s graundfather (Thomas Stonor) now lyving married the Countes of Henault’s daughter begotten on her by Guillim Duke of Suffolke that first married her and after facto divortis to Chaucers heire.’

‘William Pole Duke of Suffolk married the Countes of Henaude secretly and got a daughter by her that was after married to Syr William Barentine’s graundfather now being; but Chaucers daughter and heir¹ was after solmny married to William Duke of Suffolk by whom he had very fair landes, and she provid Barentine’s wife, daughter to the Countess of Aenault, to be but a bastarde.’

When Sir Thomas Stonor died he was buried with great pomp at Pyrton.

His son, William, had an adventurous career being prominent in court circles. He was created a Knight of the Bath, Knight of the Body, and a Knight Banneret. A Member of Parliament, he also held the positions of Sheriff of Oxfordshire, Berkshire and Devonshire,

and he was also Steward of Oxford University. He was one of the four knights who, in full armour, carried the canopy over Edward IV's body on its way to Westminster Abbey and later escorted it to Windsor. He was present at Richard III's coronation, but after the princes were murdered in the Tower he enrolled under the Duke of Buckingham to overthrow Richard in favour of Henry Tudor. The plot failed and Sir William fled to France with his wife and son. Under the Act of Attainder his estates were divided among Richard's supporters.

Two years later Sir William returned to this country with Henry Tudor and fought with him at Bosworth. When Henry was crowned as Henry VII, William's estates and knighthood were restored to him and he was appointed Constable of Wallingford Castle.

Sir William was godfather to his nephew William, Mary Barentine's son, as 'ye ar a trewe Goddes knyth and the Kyngges'. His sister, Joan, had married John Cottesmore, grandson of the Chief Justice, and ward of their father Thomas and Sir Richard Harcourt. Before the wedding, Richard Harcourt wrote to Thomas Stonor - 'I send Cottesmore to London to have his array made there after your desire, a long gown of crimson cloth and another long gown of blue cloth'. He gave eleven shillings to Cottesmore 'and that is enough for a young man, as me seemeth'.

By his three marriages William added greatly to the Stonor wealth. The family of his first wife, Elizabeth, widow of Thomas Ryche, had many City connections. Four months after her death he married Agnes, widow of John Wydeslade of Tregarrick, acquiring with her manors in Devon and Cornwall. She died scarcely a year after the wedding. His third wife was Anne Neville, most of whose male relatives had been killed or murdered in the Wars of the Roses and other struggles for power. Lady Anne, daughter and co-heiress of John Neville, Marquess of Montague, was closely related to Edward IV.²

William and Anne Stonor had a son, John, and a daughter, Anne, both of whom were minors when their father died, aged forty-five, in 1494. Sir John Fortescue was appointed guardian to the two children, and when Robert More, the rector, died in 1476, it was Sir John who presented his successor, 'pro corpore domini Regis militem'. A brass memorial to Robert More and his mother can be seen in the chancel of the church. 'Orate pro anima magistry Roberte More quandam Rectoris istius ecclesiae ac pro anima Alicie More matris ejus.'

John Porter was appointed as his successor.

The Fortescues

Sir John Fortescue was married to Alice Boleyn, a cousin of the future Queen. He was an Esquire of the Body of Edward IV who in 1471 sent him to Cornwall as Sheriff. Ten years later he became Sheriff of both Hertfordshire and Essex, and in 1482 was appointed 'Maister-porter of the town of Calais'. On the death of Edward he at first supported the new king but later joined Henry Tudor, as a result of which he lost his estates. He fought at the Battle of Bosworth and when Henry VII was crowned he was rewarded by being appointed to lucrative posts which included that of the Chief Butler of England. He was created a Knight Banneret and given several manors. In 1500 he escorted the King and Queen to Calais to avoid the plague, of which 30,000 inhabitants of London died that year.

Sir John and his wife had five children, two of whom he married to his Stonor wards, his son Adrian to Anne Stonor and his daughter Mary to John Stonor, thus ensuring for them part of the Stonor wealth. John Stonor died, aged seventeen, leaving no children and his widow,

Mary, married Anthony Fettyplace. The Stonor estates were claimed by his sister Anne Fortescue, a claim which was disputed by her uncle, Thomas Stonor, and which led to a law suit between the Fortescues and the Stonors which lasted for thirty-four years.

When John Porter, the rector, died in 1502, Sir Adrian Fortescue and his wife presented Nicholas Bradbridge. 'Nichus Bradbrige in artibz mayr presantus per probem virum Adrianum Ffortescu at Annam uxor ejus filiam et heredem Wlm Stonor militis defuncti ad ecclesiam parochiailm Brightwell Bawdewyn per mortem deni Johns Porter ultimi rectoris ejusdem.' This presentation was the cause of the dispute already referred to between the Fortescues and John Cottesmore.

Adrian was a courtier and soldier who was knighted and appointed Gentleman of the King's Privy Chamber. When Henry VIII took an army to France, Adrian and his brother John raised a hundred men from their estates, fifty of them archers, and no doubt Brightwell must have contributed its share. In 1481, Fencible men from the half hundred of Ewelme³ serving in the Duke of Gloucester's army against the Scots were described as 'good men with axes, bows, bills, and staves'. Sir Adrian was one of the Queen's escorts at the 'Field of the Cloth of Gold' in 1520.

Adrian and Anne Fortescue had two daughters, Margaret, who married Sir Thomas Wentworth, and Frances, who married Thomas FitzGerald, heir to the ninth Earl of Kildare. Frances left her husband when he rebelled against the King and he was only twenty-four when he was hung drawn and quartered at Tyburn with four of his uncles.

When Anne Fortescue died in 1518 she was buried with great ceremony at Pyrton but seven years later, with equally great ceremony, her remains were taken to Bisham Priory where an elaborate marble tomb had been prepared for her amongst those of her Montague and Neville ancestors. At the time of the Reformation, fearing that the Priory would be destroyed, Sir Adrian had her remains taken on 11th August 1538, 'to Britwell Baldwin, the Parish Church of Shirburn Castle, where he then lived and buried near the High Alter'. This account taken from *Stonor* by R.J. Stonor, is confirmed by Thomas, Lord Clermont in *The History of the Family of Fortescue* in which he writes 'her remains were taken back to the neighbourhood of Stonor, although not to Pirton, and were finally deposited at Brightwell Baldwin church, two or three miles distant from it. Brightwell was in the gift of Sir Adrian'. No record or memorial of the burial can now be found. Sir Adrian had probably intended to erect a monument, but as he was beheaded shortly after the reburial he may not have had the opportunity. His second wife, thirty years his junior, may not have been very interested in her predecessor who had after all been dead for over twenty years.

In 1530 Sir Adrian married Anne, the daughter of Sir William Rede of Boarstall and they had five children.

In 1533 Nicholas Bradbridge, who had been rector since 1502, died. It is unlikely that the parish had seen much of him as he held other positions. He became prebendary of Welton Rivall near Lincoln in 1508, giving it up for Liddington in the same year. Four years later he exchanged Liddington with William Atwater, later Bishop of Lincoln, for the Chancellorship of Lincoln.

At the visitation of the Bishop of Lincoln's Commissioners to Brightwell in 1518 it was recorded that he had a resident curate, Robert Turner. In their report they noted that John Cottesmore was lord of the manor and that John Rose and Richard Aley were churchwardens. Concerning the fabric of the church they reported: 'Cancellus ecclesie

patitur defectum in cooperamento videlicet in the sylyng super altare'. In 1523 it is recorded that the rector was taxed at Lincoln for the Church Subsidy Tax on Clergy and that his curate Alex Shapter paid a fifteenth on his income £5.8.6. Three years later the rector paid 19/s from his income of £13.6.8.

Nicholas Bradbridge was buried in Lincoln Cathedral where a brass bearing his portrait and an inscription was set in a marble slab. This, like all the other Cathedral's brasses, was lost during the Civil War. His death led to another enquiry as to who had the right of presentation. It was decided that Sir Adrian Fortescue, who had last presented in the right of his first wife, should now be entitled to do so in his own right. He presented John Cottesford STP (Sacrae Theologiae Professor). Like his predecessor he held many other appointments and must have had a resident curate. He became a Fellow of Lincoln College in 1509, bursar in 1513, and sub-rector three years later. In March 1519 he became the College's eighth rector a position which he resigned twenty years later when he was offered a residentiary canonry with a prebendal stall at All Saints, Hungate, with a view to becoming Chancellor of Lincoln Cathedral. He entered residence and was assigned a house opposite Burghersh Chantry, still called Cottesford Place, but he died before the end of 1540.

When Henry VIII asked the authorities of Oxford University for their opinion regarding the validity of his marriage to Catherine of Aragon they set up a committee headed by the Bishop of Lincoln, which included John Cottisford among its members. When they decided as the King wanted, Cottisford was rewarded by being appointed a Canon of Christ Church. He subscribed to the oath of supremacy in July 1534, an act which must have upset Sir Adrian Fortescue who was later beheaded for refusing to do so. Although living at Lincoln when he died, Cottisford was still rector of Brightwell and also held the livings of both Lainton and Petsoe.

Sir Adrian's law suite with the Stonors was finally settled in 1536 and the estates were divided by an Act of Parliament. Sir Adrian's share was to pass to his daughters by his first wife and so after his death it went to the Wentworths, as the Kildares had no family. In 1539 for refusing to acknowledge Henry VIII as head of the church, Sir Adrian, then living at Shirburn Castle was arrested and taken to Marshalsea Prison, and on 10th July he was beheaded. His widow married Thomas (later Sir Thomas) Ap-Harry (or Parry) by whom she had three children.

When John Cottisford, the rector, died, his successor, William Gefferye, was presented by Thomas Parry and the Lady Anne Fortescue. Before his death, Sir Adrian must have acquired part of the manor in his own right as otherwise any part previously owned by the Stonors would have passed to the Wentworths, who would then have had the right of presentation. Lady Anne died in 1585 and is buried at Welford near Newbury.

The Cottesmores

The Parrys' right to present William Gefferye was unsuccessfully challenged by John Cottesmore whose family had acquired part of the Brightwell manor early in the C15. The first of the family to be associated with the parish was John who was succeeded by his son Sir John. The latter was appointed a Justice of the Bench of Common Pleas in 1429. He married Amice, daughter of William Bruley of Waterstock. He died in 1439, the year in which he had been promoted to Chief Justice.

Sir John is buried in Brightwell church, where he and his family are commemorated by two brasses in the chancel. Gawthorp in 'The Brasses of our Homeland Churches', describes

them; 'on the floor is a fine brass with double canopy under which are effigies of Chief Justice Cottesmore and his wife Amice. The lady's headdress is raised at the sides, the waist is rather high and the sleeves of the mantel are cut clear away at the waist. The Justice wears a fur cap and a fur lined gown buttoned on the right shoulder, having a fur hood under which is a tunic with rather long sleeves. Below is a numerous family, of sons with close-cropped hair and daughters with a headdress which appears to be similar to the mother's, but without veil.

There is no inscription, but on the north wall of the chancel there is a second brass containing a long Latin verse inscription divided up by lines, leaves, and quatrefoils. Above this are two small effigies of the Justice and his wife, kneeling, with prayers on labels addressed to the Holy Trinity which, now lost, was represented upon a central pedestal. Being in profile these kneeling figures give an interesting side view of the habits. It is strange that the effigies on the floor stand upon mounds of earth and are not recumbant as might be expected, whilst those on the wall are kneeling. Above both brasses appear the Cottesmore and Bruley arms.'

The following is Rawlinson's translation of the verses:

'Stay, read and learn - a man worthy of the flowery song of praise fate has laid low in the tomb for John Cottesmore decays into ashes. Formerly Chief Justice of the Common Bench he followed justice. In all ways he was impartial, above all, he favoured the rights of the Holy Church weighing with wondrous dignity the cases of the law. A man whom neither wealth, nor love, fear, nor hatred swayed, or the entreaties of the great. His will was never unjust. Therefore he will ever enjoy the sunny realms of Heaven. O, with what floods of tears, what lamentations does England celebrate his death. High Heavens resound with the cry. Now the King, the Lords, the common folk curseth sad fate when the world is reft of so just a judge.

Now too the Church groans that her friend has fallen. But more than all these deplore the blow so full of trouble, his wife Amice left with her eighteen children - whom death at last has carried off, and she accompanies her dear husband buried in this present tomb, whose union blessed by a happy lot, who doubts, from which flowed the fairest offspring - eighteen - with children they love. In the year 1439 - the third day before the first of September - carried him off, therefore O Paul embrace the aforesaid John and by thy prayers to God may he triumph above the stars forever.'

Sir John's eldest son, also called John, was a minor when his father died and Thomas Stonor and Sir Richard Harcourt were appointed to be his guardians. As has already been seen in the Fortescues' family history, it was a great advantage to be guardian of a minor. A guardian could offer his ward in marriage when he or she became fourteen. If a male ward refused he had to pay his guardian twice the offered amount. If a female refused he kept her estates until she was twenty-one. John Cottesmore married Joan Stonor and one of his sisters married Sir Edmund Rede, a landowner whose possessions included the Headington quarries.

On John's death his son, yet another John, succeeded to the manor. He married Margaret Somersby. In his will, dated 21st February 1509, he asked to be buried 'in the chapell of Seynte Anne in the church of Brightwell Baldwin'. The chapel of Saint Anne was added to the north of the chancel during C15 and was later divided into the Stone Chapel and the vestry. There is a piscina at the east end of the vestry. The Cottesmore floor brass has been moved and relaid more than once, but was perhaps originally in this chapel where there is probably a family vault.

John Cottesmore left £3.6.8 to the Prioress and Convent of Littlemore, 'to the entent that they and their successours shall especially pray for my soule under this forme that foloweth that ys to wete that they and their successours shall yerely in perpetuall the day of my decesse in their church and monastery of Saint Nicholas of Litellmore aforesaid kepe myne anniversary evyn Placebo and Dirige, eupon the morowe masse, commemoracions and other devoute collettes and other prayers to the same mooste necessary and requysite'.

An equal sum with the same request for prayers was left to the Abbot and Convent of Our Lady at Dorchestree; the Abbot and Convent of our Lady at Myssenden; and the Abbot and Convent of our Lady at Tame.

He left money to his daughters to be paid on their marriages: £100 to Mary and a hundred marcs each to Kateryne, Sibil, and Johne. Ten marcs was left to his sister, Elizabeth Unton, and two girls, possibly his wards, were left small legacies to be paid when they married, 'provided always that if the said maydens be married by the advice of myne executours that this money aforesaid be paid ellis not'. The residue of his estate was left to his son William.

In his will, dated 25th June 1519 Sir William asked to be buried in the grave of his great grandfather, Sir John, which suggests that there must be a Cottesmore vault. He left 6/8d to Lincoln Cathedral, 10/s to Brightwell Church to which he also left 'my black velvet gown, without the fur'. He also left 12d to every householder in the parish.

After Sir William's death his widow, Alice, married Thomas Doily of Hambledon. She was obviously a woman of strong character 'the only local Lollard of gentle blood'. We can read about her in Vol. 4 of the *Acts and Monuments of John Foxe*, edited by Cattley, which lists many accusations and depositions against Alice Doily made when Bishop Longland was active in encouraging priests to 'molest and trouble' Lollards. For example she was accused 'for saying that when women go to offer to images or saints, they do it to show off their new gear; that images were but carpenter's chips; and that folks go on pilgrimage more for the green way, than any devotion'. It was also deposed that when at Sir William Barentine's place and seeing there in a closet images of the saints newly gilded, she said, 'Look, here be my Lady Barentine's gods ... Ye should not worship the thing that hath ears and cannot hear, and hath eyes and cannot see, and hath mouth and cannot speak, and hath hands and cannot feel'. John Foxe comments, 'Note here good reader...what good matter here was to accuse and molest good women'.

The Cottesmores also held the manor of Britwell Salome. In the Bishop's Commissioners' report in 1518 they note that 'the rector of Britwell does not sleep in the parish but at the house of Lady Cottesmore; it is not known why'. It is charitable to assume that it was due to the state of the rectory which was reported to be in disrepair. At Brightwell Baldwin they reported that 'the chancel is out of repair, the glass windows of the chancel have not yet been made and the rectory is out of repair'. At Pyrton it was reported that the rector was non-resident, the nave was out of repair, and that Adrian Fortescue owed the church 6/8d for the burial of his servant.

Mistress Doily's son John, who inherited the manors at Brightwell Baldwin and Britwell Salome, sold them early in the C16 to the Carleton family, beginning a family lordship that was to last, with one break, for over four hundred years. The self-absorbed dynastic struggles for power in the C15 that led to the bloodsoaked field of Bosworth, together with the first divisions of the Reformation in the early C16, illustrated here in the rural microcosm of Brightwell, did not bring an abrupt end to the Medieval way of life. But by the end of this period England was poised upon the threshold of the modern world.

Footnotes:

- ¹ William de la Pole, 1st Duke of Suffolk's second wife was Alice Chaucer, widow of Thomas Montacute, Earl of Salisbury and daughter and heir to Thomas Chaucer of Ewelme, the son of Geoffrey Chaucer the poet. The Chaucers were related to the Beauforts by Geoffrey's marriage to Philippa Roet, the sister of Catherine Swynford, third wife of John of Gaunt. It is William and Alice who built the Almshouse at Ewelme under a foundation licence from Henry VI, dated 3rd July 1437. Alice and John Chaucer are buried in magnificent tombs in Ewelme Church.
- ² Anne Neville, daughter of John Neville, was first cousin to the perhaps more famous Anne Neville, the daughter of John's elder brother Richard Earl of Warwick, 'the kingmaker'. Her cousin Anne was married in 1471 to Richard Duke of York (later Richard III), brother to King Edward IV, shortly after the murder at Tewksbury of her first husband, the Lancastrian Edward Prince of Wales.
- ³ Brightwell Baldwin was part of the Half Hundred of Ewelme.

SOME LOCAL KILNS

Pat Preece

Until recently there were numerous small brick and tile kilns scattered round the countryside. It is possible that wherever there was a good patch of suitable clay so a kiln was set up. The other essentials in the days of poor transport were woodlands for firewood and ponds for water.

The earliest references found are to the 15th century although it is believed that Nettlebed was producing kilnware earlier than this. All who pass through Nettlebed must notice the last surviving kiln preserved by the roadside. On the outskirts of Nettlebed numerous clay pits are to be found. In 1456 there is reference to six men listed at Nettlebed, '4 for a tylhous and two for a pothous', so tiles and pots were being produced¹. It seems likely that beech firewood was being sold from some of the Stonor woodlands for these kilns. In 1482 in a wood account taken at 'Dedmans Lane' (still marked on the map south of Nettlebed) there is mention of wood sold to tilers, presumably local. In the same account 10 loads of wood were sold for 3s 4d from 'Bronnesdden', now Bromsden about half a mile south of Bix². Dr Plot in 1705, in his book on Oxfordshire³, says that at Nettlebed 'they make a sort of brick that whereas at most other places they (bricks) are unloaded by hand, I have seen these shot out of the cart ... and yet none of them broken' - obviously at that time the bricks produced were very hard.

Tiles were being produced in Goring Heath in 1487 by John Marten, a tiler who worked in Eastfield Lane and whose rent was to include 1000 tiles to be set down at a place called Woodcote Chapelle⁴. Was this to roof St Leonards church? This area must have continued as a kiln because almost three centuries later, at some point before 1725 William Hedges was buying 1480 kiln bavins (a form of faggot) cut in Hawhill wood by the Allnutt Charity. Some time after 1725 William died and his wife took over the business, because then Mary Hedges, described as widow, owned a house and brick kiln in Eastfield Lane. In 1728 money was paid to 'Mrs Hedges for kilnware' for the Allnutt Charity, presumably for the almshouses. Later in 1729 Mrs Hedges bought 2800 kiln bavins and a stack of roots for firing the kiln. Tree roots were often used in the past as firewood as they were dense and burnt slowly. Behind the cottages on the corner of Eastfield Lane, may have been the spot where the kiln stood. In the banks along the lane bits of brick and tile can be found.

Later in the 18th century there was still a brick kiln in Goring Heath, whether in the same place or further over on Long Toll is not known. In 1746 there is mention of a brick kiln near to 'Grimmer Hill' (Greenmoor)⁶. In 1759 there is a lease for a Bristol Apothecary of a brick kiln, kiln house and outhouses, stock working frames and stands and a cottage in Goring Heath. As there was other property involved and the kiln, etc, was 'in possession of John Wilson Cheyney and were late of John Cox', this must have been an investment for the apothecary. In 1727 the Allnutt charity was selling 50 'beach' faggots and 3/4 stack (firewood) to John Cox⁷ and later Vanderstegan was paying 'Chayney kiln man' £24 in 1757⁸. As the first sale was at the same time as those to Mrs Hedges, it seems probable that there was a kiln by Long Toll at that period. The Long Toll brick kiln continued until the 20th century. In 1834 in the Goring Heath parish register there is in this area a Foster who had a brick kiln, and on the 1878 6-inch OS map there is a brick kiln marked on this site. Later still Mary Kiff's grandfather owned a kiln there. The claypits can still be seen in the woods at the beginning of Pot Kiln lane.

Caversham was another place with a long history of brick and tile kilns. The earliest reference found is in 1552, in a survey of the manor for the Knollys who took over the ownership in that year. It mentions a John Attwell who had a virgate (a land area roughly 30 acres in extent) called Tyllehouse and he also tenanted a close called 'Cleyfelde' amongst other lands⁹. Clayfield copse in Emmer Green has various pits from which clay was obtained. Dr Plot in 1705 states that 'at Caversham near the Rt Worshipful Sir Anthony Craven's they make a sort of brick 22 inches long and above 6 ins broad, which some call lath bricks, by reason they are put in the place of the laths or spars (supported by pillars) in oasts for drying malt which is the only use of them'¹⁰. This is probably the kiln near Clayfield - which is also near Caversham Park, the home of the Cravens. In 1759 a Francis Dormer had this kiln, and in a Field Book is listed 'The brick kiln house, kiln, sheds, brickyard and garden belonging to him'. The Vanderstegans of Cane End were buying bricks from him 'To Dormer bricklayers in Caversham £1.2.6d'. They were also supplying him with quantities of faggots/bavins from the 1750s to the end of the 60s. After the Dormers, in 1844 the kiln was owned by a family of Leaches until 1884 and then was in several hands until 1931 when it is believed to have closed down. Mary Kiff did research into the brickworks and interviewed a very elderly man who had started work there in 1906. He said that they made 1000 bricks a day and also some tiles were produced. On site there was also a potter who made ornamental flower pots and finials for roofs. Charles Paddick remembered buying bricks there before the war. It was situated on the corner between the Peppard road and Kiln road where there are now some flats.

Another kiln in the Caversham area was in Surley Row near Springfield St Lukes. In 1689 a will of Thomas Wells 'yeoman', the description of his property lists '1 messuage, barns, stables, outhouses, 3/4 yard land (a yard of land is the same as a virgate) and brick kiln with liberty to take all sorts of brick earth, tyle clay and chalk out of the pits and places where it has usually been digged ... a close Lower Dole whereon the kiln standeth ... and all other kiln ware ...'. There is a pit known as Dolos Pit in the Surley Row area. The Vanderstegans also purchased lime and bricks from Wells 'for 2s 8d' in 1757 and supplied him with faggots so presumably the kiln continued in the same family.

Many of the big estates in the area such as Wyfold had their own kilns where there was clay available, but no information is found. The above, however, are a few of the local kilns which must have supplied many of the bricks and tiles from which the local houses and barns were built. They also must have employed many men to dig the clay, mould the brick and tiles and fire the kilns. Local industries have died completely, with most of the 'kiln ware' coming from far afield.

References

- 1) Public record office, SC 6/1097/4
- 2) Ibid, C/47/37/5
- 3) Dr Plot Facsimile, *Oxfordshire a Natural History 1705*, Paul P.B. Minet, 1972, p 256.
- 4) T.R. Gambier-Parry, *Goring Charters*, Oxfordshire Record Society, 1932, p.228
- 5) Oxfordshire Record Office, PL E1/9/3D/1
- 6) Ibid, PLE/9/7D/11
- 7) Oxfordshire Record Office, Allnutt VII/
- 8) Vanderstegan Private papers
- 9) Public Record Office, LR 2/189
- 10) Dr Plot Ibid
- 11) Berkshire Record Office , D/EE, E4/1&2

ISAMBARD KINGDOM BRUNEL - A RECOLLECTION

Molly Casey

In October we had an excellent lecture by Gordon Stevenson on the great Victorian Civil Engineer, Isambard Kingdom Brunel. It reminded me of exciting journeys to Cornwall as a child. I come from a railway family - GWR of course, which we considered the finest of them all. One of my earliest memories is of a portrait of IKB hanging in the sitting room, not the famous full length one of him standing in front of the chains of the Great Eastern launch, but a head and shoulders. I felt rather awed by his serious expression, but I knew he was a person of importance, to be respected and admired. Being a railway family we travelled on holiday to far-flung places, by rail of course (air travel being in its infancy) and St Ives in Cornwall was a favourite destination. Usually we took the night train, but however fast asleep we were, as we approached the Devon Cornwall border, my father would wake us to announce 'We are about to go over the Saltash Bridge'. We never minded mind being woken up, because crossing the magnificent bridge was always a great thrill and on the other side was Cornwall. Porters calling out in the early morning mist the magical names of the railway stations, palm trees on the platforms, so different to the Thames Valley. And then the wonderful Cornish coastline, with sandy beaches, rock pools and cliffs, all waiting to be explored. The food was different too: mackerel straight from the sea, landed that morning, pilchards kept in deep earthenware urns, pasties, saffron cake and Cornish splits with clotted cream - sheer bliss. And at the end of a fortnight we returned, sad at the thought, but as we approached the Saltash Bridge once more came the thrill of crossing this great work of a great Engineer on God's Wonderful Railway.

BARGE BUILDING AT CAVERSHAM

Mary Kift

Until around 1920 there was a thriving barge building industry here beside the Thames. R. Talbot & Sons had their business on the Reading bank at Caversham Bridge Wharf, where you now find Salters Steamers moored. Messrs. Lewis had their barge building sheds on de Montfort Island.

These barges were made of seasoned oak by skilled craftsmen, who had worked up, to seven years as apprentices to the industry. The timbers of the stern and bows were bend by hand with the aid of a steam kiln. At lease four craftsmen worked on a barge, each with his own assistant who was, in most cases, almost certainly serving his apprenticeship. When a barge was finally launched there was always a celebration for all those who had taken part in the construction. No doubt a crowd of locals, who had watched the boats completion with interest stood on the banks and bridge to see yet another barge begin it's first journey to the

capital, for these craft were based on the Pool of London Their cargo was loaded onto them from sea-going ships which could proceed no further up the Thames. Coal, timber and other commodities were taken on board to be transported to Reading. Barges going further upstream to Oxford and beyond were smaller in size as the locks became narrow. Often barge owners of London based vessels came to Talbots to request the building of a new boat. It was between Reading and London that the giants plied their trade.



For several hundred years there had been great movement by barge along the Thames. In the early C18 when Defoe made a tour of the country, he kept a diary. Of Reading he wrote: 'they send from hence to London, by barges, very great quantities of malt, timber and meal. Some barges are so large that I was told they bring 1,000 or 1,200 quarts of malt at a time. from 100 to 120 tons dead weight.'

Returning from London the cargo included coal, salt, tobacco, oil and groceries. In fact around 1800 some large barges had up to 140 tons capacity. The cost of transporting goods by them at that time was £1 a ton, for there were the wages for a crew of around six men and the hire of the towing horses. Of course there was always the temptation to over-load a barge by the barge masters to increase their profits. The average draft permitted was about 3 ft 8 in, but it is clear that the maximum was often exceeded from the numerous references to be found about over-loaded barges being sunk or grounded.

In 1812 Messrs. Deane & Freebody of Caversham each had one trading barge on the Thames, a good investment, for by 1835 the traffic in waterborne goods totalled 50 000 tons, whilst cartage by road accounted for a mere 100 tons. However, with the coming of the railway, transport by river began to decline rapidly.

Passengers also availed themselves of this form of conveyance and forty-three emigrants bound for America boarded a barge at Caversham in the C19 on the first stage of their journey by river and canal to Liverpool.

The odd barge was still to be seen on the Thames at Caversham in the 1920s and near the Caversham Bridge Hotel, on the towpath, can still be found the great iron bollard used by countless barges. It stands as a memorial to an age when transport by water took precedence over transport by road.

An extract from 'Life in Old Caversham' by Mary Kift, 1990.

THE BUILDING OF THE NEW READING WORKHOUSE

Pat Preece

In the 1970s I was working at Battle Hospital and researched its past as a workhouse. Luckily there were still some people, retired and otherwise, who could remember it. The buildings were all still there then, although they have been demolished recently.

The New Poor Law Act was passed in 1834, largely as a result of poverty due to the after effects of the Napoleonic wars and a recession in agriculture. The Old Poor Law had been inherited from the time of Elizabeth I and the responsibility for the relief of poverty lay with the parish overseers of the poor, but the local taxes were proving a great burden on the farmers and landowners and pressure was applied to relieve this. The New Poor Law created a central body, the Poor Law Commission for England and Wales, who were to set up local Boards of Guardians. One of the first tasks of the Guardians was to set up workhouses.

Reading at first had two workhouses, St. Lawrences and St. Marys and these used old buildings. In other parts of the country new workhouses had been built and in the 1860s the Poor Law Inspectors thought that the two workhouses in Reading were insufficient and a new building should be provided.

In 1865 a committee was formed to negotiate for the purchase of some land in Oxford Road belonging to a Mr. Jones. The land was stated to extend to 8.5 acres and £5000 was asked for the site. In October of 1865 the Guardians applied to the Poor Law Board to borrow £11 700, upon the security of the Rates, to purchase the site and pay for the new buildings. The Workhouse was to house 250 people. In January 1866 a Mr. Woodman's plans were chosen from those submitted by seven architects. The estimate of cost by Mr. Woodman was £7000 and the accommodation was planned as may be seen in the table on the facing page.

The Board was of the opinion that infirm men and women should have day rooms as well as their wards. There were other criticisms of the plans; the Infirmary in particular coming under fire as they thought it was ill adapted for the accommodation of the sick. There was great emphasis at this time on fresh air in the treatment of patients, so the Board recommended that there should be windows on both sides of the rooms. They also recommended that the Infirmary should be a single building, two or three stories high, with the men's and women's wards separated by nurses' rooms. The nurses of that period very often slept on the wards. The nurses' rooms should consist of a kitchen 12 x 10 feet and a bedroom each for the male and female nurse with a fireplace in each. In the fever wards a nurse's bedroom and kitchen should be between the two wards and a small kitchen range provided. The bathrooms, surgeons' rooms and staircases were to be in the centre.

Another alteration suggested was that the lighting of the padded room should be increased and it was proposed that the floors should be wooden, as tiling would be too cold. These rooms were also called 'refractory' rooms! Some of the retired staff at Battle Hospital

recalled that two padded rooms still existed in their time, with walls padded with buttoned leather, barred windows and a door with a viewing aperture.

Accommodation Planned:

Main Building

	<u>Males</u>	<u>Females</u>
Aged and infirm	51	51
Able-bodied single	20	20
Able-bodied married	23	13
Nursery	7	6
Imbeciles and Epileptics	5	5
	<hr/> 106	<hr/> 95

Infirmary Building

Sick Wards	13	13	
Itch (sic) Wards	4	3	
Four dirty cases rooms	2	2	
Lying-in cases		3	women and
		3	infants
	<hr/> 19	<hr/> 24	

<u>Detached Fever Wards</u>	<hr/> 3	<hr/> 3
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(The 'itch' was probably impetigo, a very infectious skin disease. The lack of mention of children in the numbers was because the children were boarded at a Poor Law School at Wargrave.)

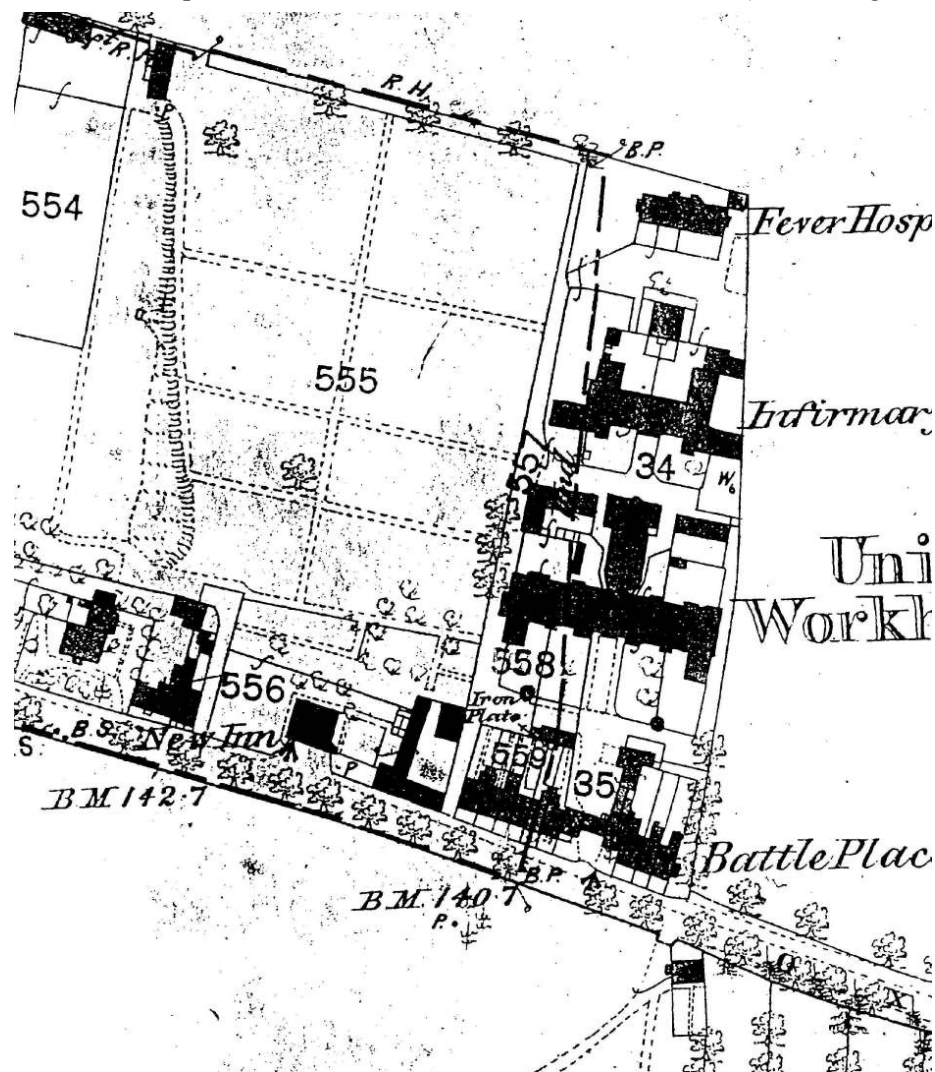
In the main building it was proposed that the day rooms would be 31.5 x 21 feet, narrowing to 16 feet and should have two fireplaces, one being insufficient to warm them. I worked in one of these rooms and measured it and there were two blocked fireplaces still present.

Various other proposals were made. Wooden troughs were to be provided for washing, being less liable to damage. The windows were to be metal framed and some of these windows existed when I was there, although most had been replaced by wooden ones. They were eight paned windows with opening panes in the centre and the glass was the original with ripples in it. The window sills were all sharply sloping and I was told that this was because the inmates were not allowed any possessions and therefore there should be nowhere to put them down.

The Poor Law Board in Whitehall agreed the plans, with the alterations and suggested also that ventilators be fixed into the walls to draw air from outside into the rooms. These were still in existence in part of the building, with hand shaped handles and they still worked after over a century. Another feature that may seem strange to us is the 'airing courts' which were areas in which the inmates could exercise at set times during the day. Very similar to a prison!

Of course the building was to cost more than estimated and the extra money was raised. The building started in April and by 17th May the foundations were completed and the brickwork of the main building was up two courses and damp proofed with a coat of gas tar (sic). At this point 20,000 bricks were delivered by horse and cart in three days! Seventeen bricklayers were working but on 5th July a strike of bricklayers took place and eleven left, accompanied by six labourers. Later the work continued with only twelve bricklayers besides the foreman.

Reading Workhouse: Reproduction from 2.5 in to 1 mile OS 1st Series (Not to original scale)



The Infirmary was enlarged with an extra floor as they realised that the space would not meet new requirements. Under the Poor Law Act of 1867 the space required was as follows:

Patients in infirmaries	850 cubic feet with beds 3 feet apart
Offensive cases (sic)	1200 cubic feet with beds 3 feet apart
Fever cases	2000 cubic feet with beds 3 feet apart

The workhouse was finished and the first people were admitted on 15th August 1868. However, there were problems with the water closets. The architect said that they might give trouble as 'they are used by parties who have never been accustomed to them..' The other

problem was that the cesspits proved inadequate and were overflowing. In the end earth closets were installed with a large shed for drying earth. Eventually there were complaints from the neighbourhood of the smell, as the contents of the earth closets were spread on the grounds!

Much more could be written about the equipping of the workhouse and the day to day progress as the building was established. Workhouses, starting with Dickens, have had a bad name. If you must have workhouses a certain amount of humanity is required and, on the whole, apart from the division of the sexes, this is evident in the Minutes of the Board of Guardians at Reading.

The source for this article is the Minutes of the Board of Guardians, Berkshire Record Office.

**SOUTH OXFORDSHIRE ARCHAEOLOGICAL GROUP
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