WORTHING ARCHAEOLOGICAL SOCIETY

Newsletter

Summer 2001
2nd Volume Number 27

Con Ainsworth receiving his honorary MA degree
on 26th January 2001 at Sussex University

Contents Include

WORTHING ARCHAEOLOGICAL SOCIETY

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Life Member	£64.00
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Newsletter

All contribution to the newsletter are very welcome
Please send these to arrive with the editor
Roy Plummer by the following dates :
1st April for Summer Newsletters and
1st October for Winter Newletters

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W A S NEWSLETTER

2nd VOLUME No 27

SUMMER 2001

INDEX

Editorial

This is the second edition using a new layout. We have again tried to give a blend of articles to include some local items and those with a wider interest. We are still having problems printing photographs, so if you intend submitting any copy please try to include black and white sketches or photographs where possible.

John Mills has given us a quick list of some of the sites checked via his department. Many sites about to be developed are only checked by reference to known finds – a desktop survey. The biggest pitfall here is that some sites 'known' to be of archaeological interest were not officially reported and therefore cannot be included. The moral is to ensure that all sites and finds are reported. I am sure that the day is not far off when whether a site is noted, can be checked via the internet or through a local network.

In response to my question in the last newsletter about crosses other than market crosses, I received a small article about the Queen Eleanor crosses.

There is still some doubt as to whether our proposed projects are going ahead. We can only plan and hope. The recent new outbreak of foot and mouth in Yorkshire has caused a rethink about access to the countryside.

Nevertheless, as I write there are stalwart souls walking a field south of Shipley. An area called Palace Fields, why I do not know. Natural finds of winklestone, carstone (iron rich sandstone) and Horsham slab are mixed with some building material, medieval and later pottery and field drains. Some finds processing is being carried out literally 'in the field' to reduce the bulk of material to be handled.

By the time you read this I shall probably be on my way back from Canada so look out for a little foreign material in the next letter.

Small finds

Carisbrooke Castle

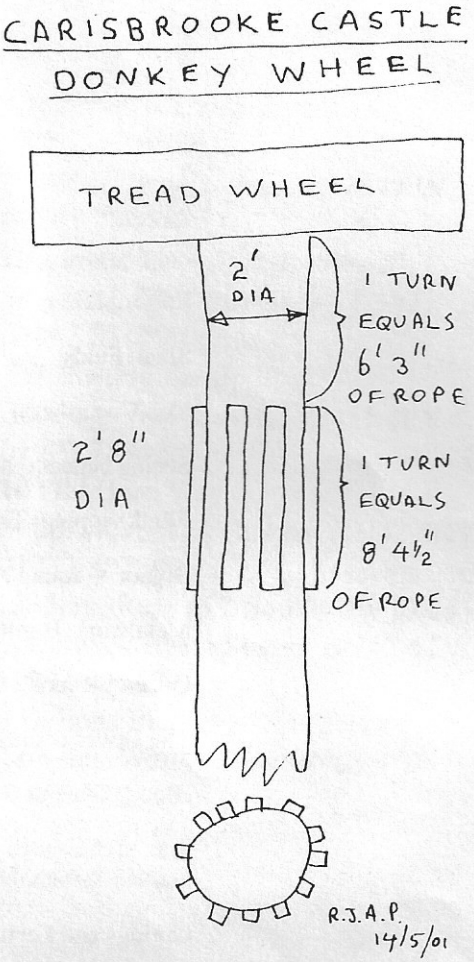
During the Society's recent visit to the Isle of Wight, we visited Carisbrooke Castle. Listening to the guides talking whilst the donkey demonstrated the art of lifting water, I noted that the horizontal windlass of the donkey wheel was made thicker along part of its length. The additional thickness was achieved by fixing what looked like 4" x 2" timbers to the shaft. I thought about the reason for this and came to the conclusion that it was a form of automatic gearing, so arranged that as the rope came out of the well the increased diameter would enable faster 'reeling in'. The rope would in the main be wound around the windlass so the weight being lifted would be decreased by the rope's weight.

However, having retrieved my guidebook, which I had left on the coach, I read that the idea was to permit air circulation around the latter (wet) end of the rope. I then wondered how many times an archaeological interpretation has been as widely wrong – or was it wrong? It still makes sense to me.

The other point that occurred to me was that the bucket when empty must sink when lowered into the water. – I saw no tipping device. This means that the bucket itself must weigh more than the water it displaces. Thus the poor donkey is probably lifting many times the weight of the water.

Does anyone know of a similar lifting arrangement where there is an auto tipping device or flap valve?

Mind you if you are using captured Napoleonic prisoners then the weight may well be irrelevant.



wt of rope tips it

Romano-British rural settlement

Rodney passed this to me from the Archaeology Review 1996 – 97. I understand that, at least some of the work was carried out by the London and Middlesex Archaeological Society. Is it an indication of what we may eventually find at Slindon?

Considerable evidence of Romano-British activity was identified at Sipson Lane, Harlington, including extensive farmstead features (enclosures, droveways, gravel quarries, a building platform, pits, postholes, a timber-lined well, and a midden), an inhumation burial (the first in West London), and three cremations. Provisional ceramic dating points to two broad occupation phases of the first to second and third to fourth centuries AD;

Stratigraphic evidence suggests continuous use of some key features. Other Romano-British field systems were recorded at Brentford, beside a Roman road on the edge of the roadside settlement. Occupation throughout the Roman period was identified by the presence of extensive spreads of Roman material at Stanmore (west of Watling Street and at the foot of the hill on B*rackley Hill / Stanmore* which the *Sulloniacis* Roman pottery *Road – Machining in* production site stands), although spreads of *Progress* limestone rubble foundations in one area, and a large water-hole in another, suggest a dispersed rural settlement rather than one concentrated at the roadside. The remarkably well-preserved remains of the main London to Colchester road were revealed by excavation at Lefevre Walk Estate, Old Ford. Successive construction phases spanned four centuries, and quarry pits to the south of the road dating from

the earliest years of the Roman occupation are probably contemporary with its primary construction. On either side of the road numerous boundary ditches indicate substantial agricultural activity. Roadside clay and timber buildings were also recorded, together with a small group of inhumations dating from the second half of the Roman occupation. A small sub-rectangular timber building, possibly from the third to fourth century was excavated in the context of widespread occupation evidence including pits, postholes, ditches, and wells, at Hunts Hill Farm, Upminster.

The site of St John's Vicarage, Old Malden revealed numerous pits and postholes of late Iron Age and Roman date, assumed to be part of a small enclosure. At Summerton Way, Thamesmead, excavation of a third-century rural settlement located on the alluvial floodplain immediately adjoining the Thames provided evidence of pottery production possible indicating an association with specialised craft production sites further along the estuary.

Marlipins Museum Update

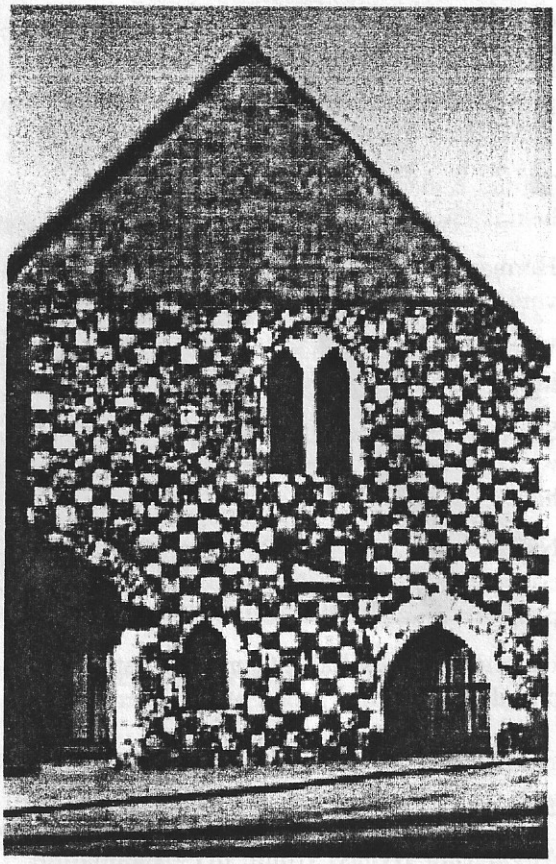
Marlipins Museum is housed in one of the oldest and most attractive lay buildings in Sussex. Its distinctive chequer board facade is well loved by artists and shows that cross Channel links are nothing new, as it blends Sussex flint with Norman Caen stone.

Inside, museum displays show the history of the area, from prehistoric burials to the dashing early aviators of Shoreham Airport. The old clock from St Mary's ticks away beside displays of Sussex pottery and wartime papers, or records of Charles II's escape from Shoreham to France after his defeat in 1651.

Upstairs, the maritime theme develops in more detail, with ship models, seascapes and mementoes of life at sea, which played such an important part in the life of the town. Visitors can become helmsmen at the wheel or watch for the lighthouse beam or admire the surviving oranges washed up from one of the many Channel wrecks. The sea is said to be in our blood, so a visit to the displays at Marlipins served to fire the imagination.

Attached to the Museum is the Annexe, which now hosts the permanent collection of pictures and plans, temporary exhibitions, coffee mornings and lunchtime talks, acting as a friendly local meeting place. The Coffee Mornings on Fridays are well worth a visit, as is the annual Christmas Fayre when the whole Museum becomes a smugglers' lair. On the walls can be seen an interesting selection of oils, watercolours, prints and maps of the local area.

The temporary exhibition programme expands this to bring together photographs and memorabilia of Shoreham subjects, from the Airport to Sport, as we focus on Leisure next year. The year 2000 provided the chance to show Shoreham Then and Now, where old photographs were shown alongside the same view today. This is not always to the credit of progress!



The Annexe is a 20th century building that we hope to replace next year, thanks in part to a generous Lottery grant of £255,000. The purpose-built galleries will allow us to continue our present work, but better. If you would like to help this project to become a reality, please contact Helen Poole, the Senior Museums Officer, at Marlipins on 01273 462994 or smomich@sussexpast.co.uk, or the Chief Executive of the Sussex Archaeological Society at Bull House, 92 High Street, Lewes, BN7 1XH on 01273 486260 or ceo@sussexpast.co.uk.

Main Archaeological projects in West Sussex, 2000-2001 with which WSCC has been directly involved

A few notes from John Mills. They are as he handed them to me and are printed almost verbatim to illustrate the wide range of sites being checked on your behalf. I have also asked him to include – next time - any sites visited, which produced nothing reportable. The object being to assure you that sites are checked and possibly that the one near you was covered.

2000

Transco- Betchworth-Rowhook Gas Pipeline: part of Romano-British settlement, 2 round houses, cremations - on Weald Clay

Sharpthorne Brickworks - medieval mine-pit earthworks, survey

Land r/o Arundel Road, Fontwell - Late Bronze Age ditches, no sign of Chichester-Arundel Roman road

Ropetackle, Shoreham, evaluation - 13th-14th century pits, ditches in centre of New Shoreham port, one 11th-12th century pit. Good evidence of flooding.

Tarrant Square, Arundel, evaluation - medieval pits behind High Street, good environmental evidence

Hormare Estate, Storrington - complex of enclosures, very little dating evidence, apparently Iron Age

Woolborough Road, Crawley - pits for ?clay extraction, iron slag - part of Crawley complex

St Mary's Bramber- recording by J Mills, medieval walls, floors in garden, pre-dating late 15th-century house

NALGO site and Greenfields, Elmer Road, Middleton- edge of inundated medieval settlement- Roman ditches, pits, med drainage ditches; single E-W burial

Horsemere Green Lane, Climping- Late Bronze Age pits, ditches- probably part of settlement

Binsted House- former manor house, in ruins, now demolished, building survey and excavation (also 1998)

Hammonds Mill, Burgess Hill- evaluation, and limited watching brief by MSFAT- palaeochannels of tributary of R Adur- layers of burnt flint, worked flint, some pottery; and Romano-British ditches

Dunford House, nr Midhurst- clearance and recording of water wheel by River Rother, built by Richard Cobden or his daughter

Westhampnett gravel site, nr Chichester – evaluation - Middle and Late Bronze Age features, inc. a collared urn in a pit. See 2001

Roundstone, Angmering- evaluation- Late Bronze Age and Roman features- see 2001

River Lavant Flood Relief Scheme, Chichester- rescue recording on sites at Shopwyke (complex of Mid and Late Iron Age and Roman ditches, pits, possible round house or 6-poster) and Merston (behind village- Saxo-Norman ditches and pits). (Ref James Kenny) Avenue de Chartres site, Chichester- medieval pottery kiln, remanent magnetic date of 1218-1262, pits for clay extraction. (Ref James Kenny) - site in South Pallant- floor of Romano-British hypocaust building

2001

Angmering Bypass (route of) - Evaluation- Late Bronze Age gullies, curving ditch containing earlier Saxon pottery

Westhampnett gravel site- excavation (part)- see 2000- group of Middle Bronze Age cremations, Late Bronze Age ?field system, two 2-post Saxon *grubenhauser*

Roundstone, Angmering- excavation (part)- substantial Late Bronze ditched enclosure, Middle Bronze Age cremations, Late Bronze Age pits, one containing a long copper alloy ?pin, Romano-British field system, Romano-British cremation, Romano-British post-hole buildings, possible gravel-floored building, possible beam-slot building

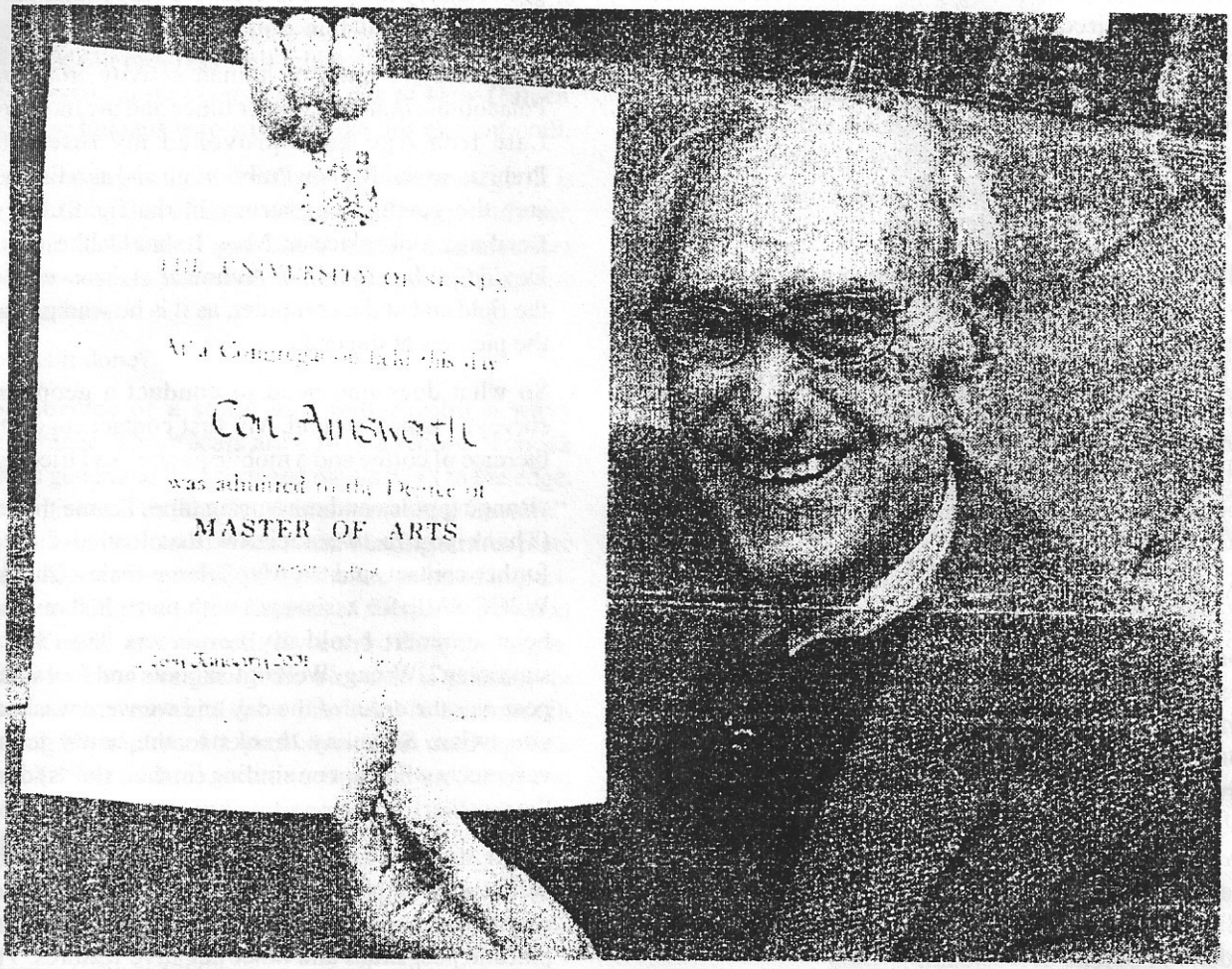
Centenary House, Durrington Lane, Worthing- parts of two(?) post-hole Late Bronze Age round houses, first known on coastal plain; a few LBA pits

Gatwick Airport - North West Zone- shallow gully containing two sherds of chaff-tempered Saxon pottery- rare find in High Weald

Drayton gravel pit, nr Chichester- Probable Iron Age features showing up in initial site strip and recording, probable Middle Bronze Age cremation burials, two rectangular post-hole structures, unknown date

Con Unearths An MA

We are indebted to the Worthing Herald for permission to print the following



CON AINSWORTH: Proudly holding his honorary Master of Arts

YEARS of dedicated archaeological work and lecturing have been rewarded for one Worthing man thanks to the presentation of an honorary Master of Arts

Con Ainsworth, 83, of Olive Avenue, Goring, received an honorary MA at the end of January In recognition of his 25 years as an archaeology lecturer at Sussex University.

Surrounded by his many friends and in his robes, he was presented with a scroll and a speech was given by the Rev John Lowerson, who reads history at the university.

Con, who retired only last year, started taking part in archaeological digs with his good friend the late John Pull, who was killed In the Lloyds Bank robbery In the early '6Os.

He has been actively involved in archaeology In Worthing ever since, discovering the Roman villa at the Northbrook College site in the late '80s, and taking part in the excavation.

Con said, 'It was a great surprise and I had no Idea. I lost my wife Ena, who was also presented with an MA at Sussex University many years ago, in November.

I told her I was going to accept it a couple of days before she died. It really made her day.'

Seeing beneath the Soil - at Nutbourne

Caroline Wells

A Sussex Archaeological Society project got underway in May with a party of volunteers assisting David Combes and Caroline Wells in a geophysical survey near Nutbourne, Pulborough, West Sussex.

High on the greensand ridge commanding spectacular views north over the Weald and towards the Downs in the other direction, stands a crenallated Victorian mansion called Beedings. Here in 1900 Dr John Harley the new owner discovered "early cremations" and "the rude arrowheads of primitive civilisations". Thus he described the two elements of his archaeological discoveries, which he exhibited in a room in his new house for many years.

The worked flints, far from being crude, were finely worked long blades, recognised for their true antiquity by Dr Roger Jacobi when researching in Barbican House Museum in the 1970's. Only 198 pieces have been kept out of an original total of 2300 pieces noted during excavation. A high proportion of these surviving items can be dated to the Early Upper Palaeolithic period, perhaps more than 30,000 years ago, according to Dr Jacobi.

At that time the climate was sufficiently cold and sea level sufficiently lowered for Britain to be linked as one landmass to Europe, with steppe tundra plains extending to northern Germany. One can imagine migrating herds of reindeer and other arctic animals only impeded by the seasonal floods of rivers such as the Rhine, Elbe and Thames in their ancient river channels still traceable on the floor of the North Sea. And after the herds the hunters followed, for Roger Jacobi identified the closest parallels to the Beedings flints as being similar uni - facially worked leaf points found in Poland at Kostenki.

The Beedings flints were found in 1900 in fissures or "gulls" in the Greensand bedrock on which the house now stands. At a higher level, in pits and other features not well recorded, various sherds and vessels of pottery, were found by the builders. Contemporaries suggested these were "British" or "Celtic", and perhaps some were Roman. The details are very hazy despite a published description, and the pottery has not been kept.

Before the building of a garage some twenty years ago, Con Ainsworth was able to undertake a small excavation. No worked flint identifiably Upper Palaeolithic was found, but a few sherds of pottery and most importantly, some sherds of amphorae were recovered. Now these amphorae, the wine vessels of the Roman world, were of a distinctive shape that David Williams of Southampton University could date to the First Century BC - in other words produced (and presumably imported here) before the Roman Conquest of Britain.

These elusive hints of human activity from Upper Palaeolithic hunter-gatherer times and the more recent Late Iron Age have provoked my research on Prehistoric and Roman Pulborough and as a first active step the geophysical survey in the field closest to Beedings took place in May. I should like to thank David Combes for all his technical assistance, both in the field and at the computer, as it is he who produced the pictures at the end.

So what does one need to conduct a geophysical survey? I asked around. My first contact suggested a thermos of coffee and a mobile phone - so I tried again.

"Ranging poles and measuring tapes" came the reply. (Thank you to two societies that loaned these). A further contact said "A Map" large scale - (thanks to WSCC SMR for assistance with that). It should have been summer; I told my volunteers "Sun hat and sunscreen". Wrong. Wellington boots and foul weather gear was the order of the day and we were washed off site twice. So many thanks to the hardy team of volunteers who kept on smiling (in their shorts) despite the weather!

What did we find? The first pictures seemed disappointing. No obvious low resistivity features as one might expect for a prehistoric site that might have pits and post-holes and other negative features. There was one high resistance area, but that was suspiciously close to a hedge with a building beyond it. The suspicion of relatively recent building rubble associated with the barn conversion made me uninterested in this mark. I think David Combes was hoping for a Roman villa but no buildings showed up. The most obvious features on the plot were a series of parallel, low-resistance, features running as diagonal stripes across the hilltop. They seemed to be at about 5m intervals. My interpretation is that these reflect the underlying geology, and that we have detected the fissures in the bedrock, the very features that might contain further Upper Palaeolithic flint or at the very least, palaeosols of Devensian date contemporary with the flint work. If this is so, then for me, whose archaeological motto is "the older the better", we may have traces of something very interesting indeed.

Flintknapping: The art of making stone tools

Of all the history of mankind, nine tenths of it is written in stone.

Able to make tools from flint cobbles, our fore-bearers gained an advantage over other predators. We not only rose to dominate our environment, but we went on to alter it, for the production and use of stone tools followed our progress well into the age of agriculture. Even today, in the remote highlands of New Guinea, there are humans who still practice this ancient craft.

Flint working is a universal part of our heritage. It is the one thing that all races of mankind, the world over, have in common. If you could trace your ancestors back far enough, you would certainly find flintknappers among them.

How is it done?

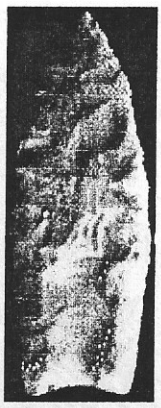
The surface of a stone tool will exhibit a wavy appearance. These scars are a frozen record of shock waves generated by a series of blows dealt to the edge. Geologists tell us that flint has a "concoidal fracture". This is best illustrated when a ball bearing strikes plate glass. A cone is removed opposite the point of impact. When striking the edge of a piece of flint, only a portion of that cone is removed. By controlling the angle, placement and weight of the blows it is possible to fracture this material in a predictable manner. In making his implements, prehistoric man used one or a combination of three techniques which are known as percussion flaking, indirect percussion, and pressure flaking.

Percussion flaking: Flakes are driven off the edge with a hammerstone or deer antler.

Pressure flaking: Flakes are pried off with a deer antler tine or copper pointed tool.

Indirect percussion: Flakes are removed by striking a punch placed on the edge.

What kind of tools do I need?



Hammerstones were the first and simplest flint knapping tools. They were just water worn pebbles that fit the hand well, used to break up nodules and blocks of flint into workable spalls, and to rough out blanks. Hammerstones are made of granite, quartzite or greenstone.

The antler billet is used to thin, shape and sharpen the flint tool. The ideal billet is made from the trunk of a moose antler. However, smaller antlers, such as those from the white tailed deer, can also be used.

Pressure flakers were made from the upper tine portion of the antler rack. Many people use copper pointed tools.

Punches used for indirect percussion can be made from antler, or antler tipped with copper.

Abraders are made from quartzite or sandstone. An excellent substitute can be a broken carborundum grinding wheel. These are one of the more important tools, necessary for grinding the edge to make striking platforms.

Last but not least important are protective gloves, safety goggles, and leather knee pads.

Bignor Young Archaeologists weekend

Date: July 21st – 22nd

Time: 10.30 to 4.30 Each Day

Place: Bignor Roman Villa

At the time of going to press our programme of activities for this years Young Archaeologists Weekend is going ahead despite the on going foot and mouth problems.
There will be a full programme each day to include excavating, surveying, finds processing and - new this year – wattle and daub which should provide some fun!

This year all children will be admitted free, so please do come, bring your children or grandchildren and have a fun day out.
If you would like to help on the weekend please phone Gill Turner on 01903 692522.

Metalwork, Burnt Mounds, and Settlement on the West Sussex Coastal Plain: A Contextual Study

Dave Dunkin, University of Reading

The burial of bronze artifacts during the Later Bronze Age in Britain is well known (Bradley 1990), but there has been little attempt to investigate the find spots by systematic field survey.

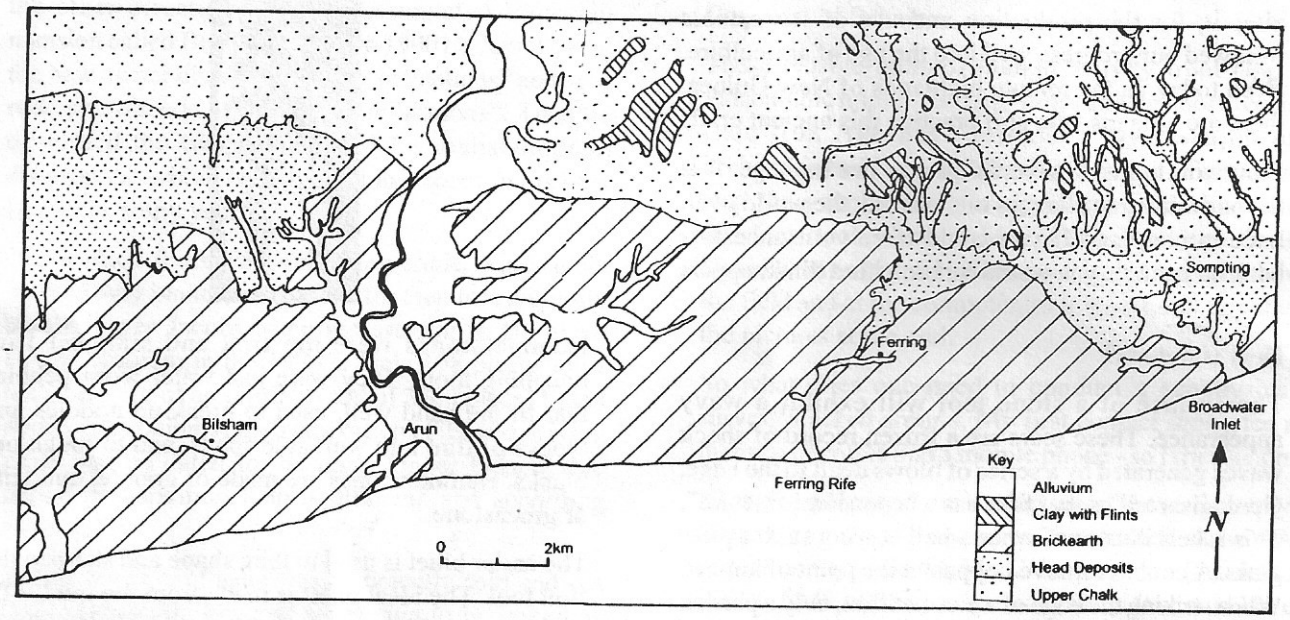


Figure 1 Site Locations and simple Geology

Recent fieldwork on the West Sussex Coastal Plain has revealed some preliminary results. The data has been obtained by investigating the positions of known metalwork sites by fieldwalking. The initial phase of this investigation has involved systematic work at three locations (fig. 1) where the areas were walked on a 20 metre grid. The evidence indicates that the burial of Later Bronze Age metalwork deposits (single finds and hoards) can be directly related to the locations of burnt mounds, watercourses and settlements.

The *West Sussex Coastal Plain* is a flat region (fig. 2) framed by the Chalk Downs and the sea. Much of the area is covered by fertile loess soils ('brickearth'). Large areas to the south of the *Plain* are characterised by former marsh areas and braided streams (the Rife system). The region would have had great potential for resource utilisation by past communities.

The sites for investigation were chosen because of their proximity to present day or former watercourses. At Bilsham the Ryebank Rife and its alluvial edge lie less than 50 metres to the south of the study area. The Ferring Rife borders the southern margin of the field containing the metalwork hoard site (fig. 3), and at Lyons Farm, Sompting the alluvial arm of the former 'Brodewater' inlet, lies less than 100 metres from the southern boundary of the study area. All three sites produced significant assemblages of late prehistoric flintwork. Subsequent analysis has shown that the major component of these assemblages may be assigned to the Later Bronze Age.

Characterisation of the flintwork was based on the earlier work of Ford *et al* (1984) and is confirmed by recent analysis by Dr Julie Gardiner of Wessex Archaeology (the Bilsham assemblage). The identification of dense concentrations of fire-cracked-flint on, or close to the alluvial edge of these water features, strongly suggests the presence of burnt mounds (fig. 4) which are also attributed to the Later Bronze Age.

The fieldwork shows that the burnt mound occupies an 'edge' location in the landscape, defined by the watercourse. The metalwork lays close by, separating the 'burnt' area from the associated settlement. The lithic scatters suggest that settlement or activity foci are located on adjacent rising ground. Fieldwork will now continue in West Sussex to concentrate on the immediate *environs* of other metalwork sites, where archaeological visibility of the ground surface is possible.

The East Anglian Fens provide another environment in which the approach outlined here might prove rewarding. The distribution of 'pot-boiler' sites and Later Bronze Age metalwork along the fen edge of the Wissey Embayment (Fenland Projects 1991 and

Fig 2 Near Bilsham
Looking towards the Downs.

Fig.3. Highdown,
Looking north-west.

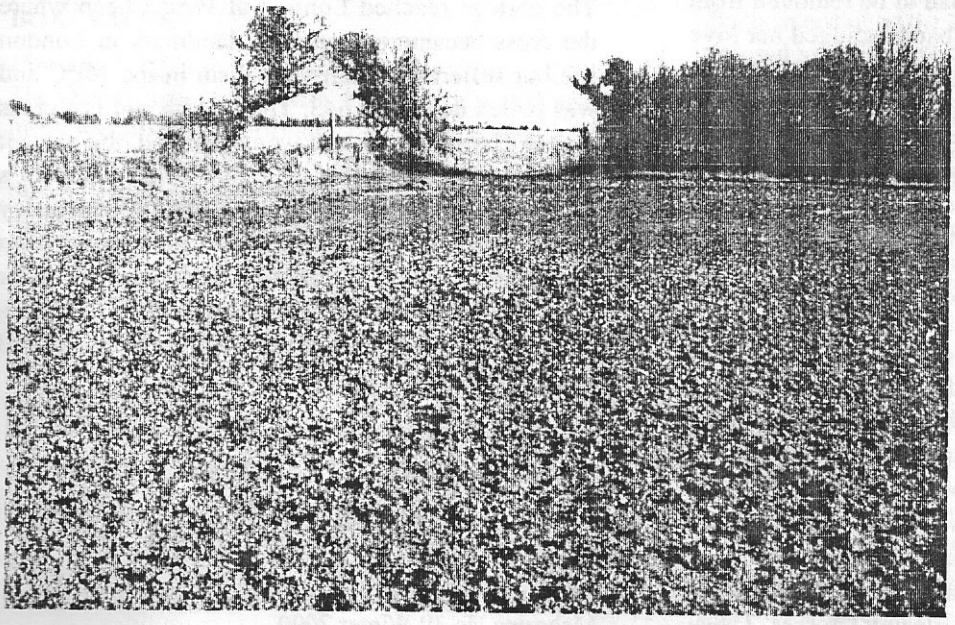


Fig 4 Bilsham
Burnt Mound.

1996) in Norfolk for example, suggests a similar configuration of activities. Furthermore, the locational context of the recently re-excavated site of the famous Isleham Hoard in Cambridgeshire (Malim *pers. comm)* also appears to have the same elements.

Fieldwork will continue at further hoard sites on the Sussex Coastal Plain in order to test out the integrity of these preliminary findings.

Acknowledgements

The author would like to thank Richard Bradley for his continued support to this project. Thanks must also go to Tim Malim of the Cambridge Archaeological Field Unit for providing information on the location of the Isleham Hoard. Finally, to Dave Yates and Dr Keith Watson thanks for their help with the fieldwork and to Dr Julie Gardiner for her valuable assistance in looking at a sample of the flintwork from the project.

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Queen Eleanor's Crosses

Anne Induni

Queen Eleanor had an adventurous life for a 13thC lady. Eleanor of Castille married Edward I in 1254, bore him 16 children and died at the age of 50 from malarial complications in 1290. She had traveled with him through England, France, Spain and the Holy Land, and was still traveling when she became ill and died in Sherwood on the 28th November. The only place that she did not accompany her husband appears to have been Scotland, a little unusual in the circumstances of Edward's obsession with subjugating the place. Nine of her children died at birth or in infancy, 6 survived to adult life. When in the Holy Land Edward was attacked by a Muslim with a poisoned knife, and the Queen and her ladies made such a commotion that they had to be removed from the Royal apartment. Her husband indulged her love of gardens, she made a garden at Caernavon and there is a record in 1283 of turf being shipped up river to the newly begun Castle of Conway, for the Queen's lawn. The garden plot was fenced round with staves from wine barrels, and an Esquire called Roger de Fykeys was paid 3 pence to water the newly planted garden.

It was, and still is, important for a variety of reasons that funerals of special people are given a very high public profile. In the middle ages a vast funeral procession was often the only means of conveying the fact of the death of an important person, and the corpse and/or coffin had to be shown to as many as possible. Edward was truly grief-stricken by the death of his beloved wife, and marked the 160 mile route of her body to its resting place in Westminster by what have come to be known as the Eleanor Crosses. These were erected at chosen locations on the highway, but the body rested overnight at a nearby religious establishment. They were probably all of varied design but all had a spire with three levels, the middle one holding statues of the Queen.

The original crosses were at Lincoln [destroyed 17thC], Grantham [destroyed like Lincoln] and Stamford where the cross survived up till 1645 but was gone by 1659. At Geddington the cross survives as does the one at Hardingstone, but Stony Stratford and Woburn disappeared in the 17thC. The site in Dunstable is now incorporated in St Peter's Church, and the last pieces of the St Alban's cross were cleared in 1702. The Waltham cross survives, but not on its original site. The cortege reached London at West Cheap where the cross became a prominent landmark in London life but suffered puritan vandalism in the 16t^{h}C and was pulled down in 1643. The twelfth and last cross was at Charing and it too was destroyed, the present one is a Victorian reconstruction. Queen Eleanor's tomb in Westminster Abbey is the first full size effigy to have been made in gilded bronze, gold florins from Lucca were specially imported and melted down for it. The tomb does not contain quite all of Eleanor - her intestines were buried in Lincoln Cathedral and her heart at Blackfriars.

Sources

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The Dover Bronze Age Boat

Following our recent enjoyable and informative lecture on the Dover Boat, we are planning a visit summer next year, here is a preview of what we hope to be able to see.

The world's oldest known seagoing boat.
The Dover Bronze Age Boat Gallery is now open at Dover Museum.

A major new gallery at Dover Museum explores the Dover Bronze Age Boat - an internationally important archaeological discovery. After seven years of research and conservation, the Dover Boat is back in Dover and on display at Dover Museum.

The Dover Bronze Age Boat Trust
The Bronze Age Boat project was achieved by the Dover Bronze Age Boat Trust, a charitable organisation set up to manage the conservation and exhibition of the boat. Due to the work of this organisation, the boat is to stay in Dover and be displayed in Dover Museum.

The daily running costs of the gallery are being met by Dover District Council, which owns and operates the Museum Service. In six years (1993-1999) the Dover Bronze Age Boat Trust raised £1.6million to fund the preservation and display of the boat. The principal donors were :

The Heritage Lottery Fund ,English Heritage, The European Regional Development Fund (KONVER Programme) and The Wolfson Foundation

A Major International Archaeological Discovery
In September 1992, archaeologists from the Canterbury Archaeological Trust working alongside contractors on a new road link between Dover and Folkestone discovered the remains of a large wooden prehistoric boat thought to be some 3,000 years old, belonging to a period known to archaeologists as the Bronze Age.

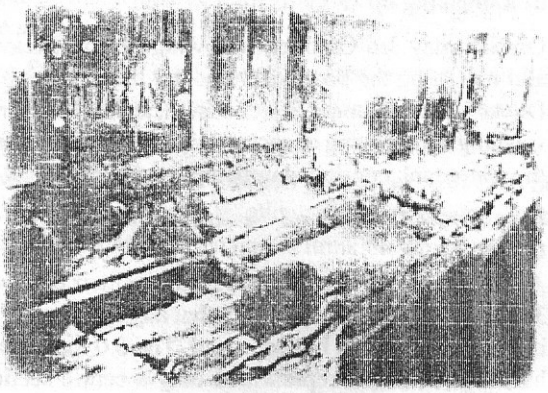
It was a find of both national and international significance which will shed new light on early seafaring and woodworking skills in Northern Europe.

BOAT FACTS

How Old Is It?
The Dover Boat is of Bronze Age date, a period when metal was first used in Britain. The boat is around 3,550 years old (from radiocarbon dating some of the boat timber). Bronze Age sites are rare, but include one of the world's most spectacular monuments - Stonehenge.

How Big Is It?
A total of 9.5 metres of the boat has been recovered. This represents at least half, but possibly as much as two thirds of the original. It is 2.4 metres wide. Upper planks and part of the end were removed, perhaps for re-use, in the Bronze Age, when the boat was abandoned.

What Was It Used For?
A boat of this size would have been capable of crossing the channel, carrying a substantial cargo of supplies, livestock and passengers. It was probably propelled by at least 18 paddlers.



How Was It Made?
The boat was made up of at least six oak timbers lashed together with yew wood, with all the joints reinforced with a thin lath of oak, covering moss pushed into the joint. The two central planks are joined by the use of wedges pushed through a central rail and a series of cleats.

How Important Is It?
The Dover Bronze Age boat is one of the most important prehistoric discoveries to be made in this century. Similar boats and parts of boats found at North Ferriby, in East Yorkshire, before and after the war, have not been well preserved. The discovery of the boat in Dover strongly suggests early cross channel trade. The quality of the workmanship suggests a high degree of skill, specialisation and organisation. Much research work remains to be done but the boat is certainly of international significance.

Excavation of the Dover Bronze Age Boat Part One : The First Section, 28th September - 3rd October 1992
By the morning of the 29th, enough of the boat had been exposed to confirm that C.A.T. had discovered the mid-section of a 'sewn' plank boat in a remarkable state of preservation, made of oak timbers joined by 'stitches' of twisted yew. The timbers stretched for a length of six metres, disappearing at both ends into the sides of the pit.

Following urgent phone calls and meetings the Department of Transport agreed to a six day break in road construction to allow the excavation and recovery of the boat. English Heritage agreed to fund the excavation. The Department of transport compensated contractors for the delay. Mott MacDonald and Norwest Holst gave much practical help and advice. Dover Harbour Board offered not only emergency storage in a custom-made water tank, but the use of a crane, lorry and their skilled labour force. Dover Museum helped tocoordinate fast growing media interest and organise supplies. Staff from the British Museum and the National Maritime Museum came to view the find and offer advice.

It soon became clear that the boat would have to be completely excavated, as for technical reasons the proposed pump could not be moved. Dr. Ted Wright, who had discovered similar boats in North Ferriby before and after the war, strongly recommended that the boat be cut up before removal from the ground, due to the likelihood of it breaking up under its own weight.

On Saturday 3rd October, following careful excavation and recording the boat was removed in ten sections to a Dover Harbour Board warehouse near the harbour. The washing and packing of each section before lowering into the water tank continued until almost midnight.

Part Two : the Second Section, 9th October - 23rd October

As the exhausted boat team returned to their beds on the 3rd October it seemed unlikely that any more of the boat, if it survived, could be recovered. The 6.0 metres which had been salvaged represented only a centre section of the vessel. Further recovery would involve the cost of excavation, compensation for road delays, and the overcoming of some major technical problems. Some believed that the southern end of the boat might have been scoured by the sea, and that little would remian to record.

Excavation of the northen end was likely to cause unacceptable risk to an adjacent building. Nevertheless, the importance of the boat, the likely deterioration with time, of any timber after the recent disturbance of the ground and water table, coupled with the possibility that more of the boat, especially an end, might be recovered, overcame all arguments against further excavation.

A further 8 days were granted to carry out excavation and the work recommenced. A second large coffer dam was dug adjacent to the first. By the end of October 12th the top of the boat was discovered. It was, almost miraculously, to stretch across the length of the pit, its unique swallow end terminating less than a metre from the edge.

The original team was joined by Valerie Fenwick, one of Britain's leading nautical archaeologists, and a team of English Heritage conservators.

A further 3.5 metres of boat were recovered and lifted in pouring rain on Monday 19th October and removed to the second tank.

The possibility of recovering the final part of the boat, although discussed at great length, was reluctantly abandoned due to cost and the proximity of buildings to the north of the first section.

Preservation and Conservation of the Boat

The boat was preserved in the ground by permanent waterlogging and by a covering of silt which excluded bacteria which would have destroyed it. Since removal from the ground it was kept in a waterlogged state for recording and a detailed study.

The boat was conserved at the laboratories of the Mary Rose Trust at Portsmouth, under the direction of English Heritage, who funded this part of the project.

The timbers were first strengthened by soaking in a soluble wax solution for just over a year before being freeze-dried in three batches. This process allows the boat to be displayed as a dry exhibit, and is a quicker and cheaper process than the alternative method which involves spraying the boat for up to ten years. After this freeze-drying was completed, the boat timbers were returned to Dover Museum, where the boat has been re-assembled under strict environmental conditions. The boat has been sealed inside its display case and is constantly monitored for the temperature and moisture content of its environmant.

Research Programme

A team of around 30 experts and specialists from all over Britain have been studying the boat since its discovery, directed by Peter Clark of the Canterbury Archaeological Trust. By careful detective work, they hope to learn as much as possible about this remarkable discovery, both in terms of the place of the boat in the history of water transport and the people who built and used the vessel over 3,500 years ago.

Analysis of the timbers will allow us to understand what the boat looked like originally, though we must theorise about the missing elements of the vessel removed in antiquity. We can then calculate the capabilities of the boat - what cargoes could it carry, what seas could it ply and what crew would it need. We shall speculate on the way in which the boat was built and how its unique method of construction fits in with the history of boatbuilding.

At the same time, we shall study evidence for the environment in which the boat was abandoned; seeds, pollen, insects and molluscs recovered from soil samples taken during the excavation. This shall tell us about the nature of the landscape in which the boat was used : the position of the sea at Dover 3,000 years ago; was the boat abandoned in an unpopulated landscape or near to a contemporary settlement; were the raw materials for boat building available locally, or was the boat originally built elsewhere.

This detailed scientific work has already taught us a great deal, and the work will continue before the full story of the boat and the people who use it will become clear.

Building a reconstruction of the Dover Boat

In 1996, a reconstruction of a cross section of the Dover Bronze Age Boat was carried out to demonstrate how the boat would have originally been built.

The team worked with replica bronze tools, wooden wedges and mauls. All the work was recorded to give information which can be used to study how the boat would have been built : the time it took each section of work to be done, the effectiveness of the bronze and wooden tools.

The reconstruction boat was built from halved tree-trunks, with the shape of the boat being formed by either splitting off large sections of wood with wooden wedges or by cutting off wood with bronze axes.

In comparison to the original boat, the marks left by the bronze axes on the reconstruction show a smoother finish, suggesting that the original boat was built quickly, with little consideration of fine finish.

The section of the boat is in four parts : two forming the bottom of the boat, and two curved pieces to form the beginnings of the side of the boat.

To hold the bottom planks together transverse timbers are put through the cleats in the planks. The joins are packed with moss to form a good seal.

In July 1998, the first elements of the incredible case specially designed for the Boat arrived at the museum. The large metal components of the case were lifted above the museum's carpark and brought into the building through the gallery window. The case elements were then fitted together in the gallery. The custom-built cradle was partially assembled inside the case.

Since the arrival of the pieces of the boat in Dover in the summer of 1998 a team of archaeologists worked on reassembling the boat onto its exhibition cradle.

Slowly the individual pieces were offered up to the 'jigsaw', still on their individual custom supports. Measurements were taken for the final cradle elements, crafted to exactly match the shape of the boat pieces they are supporting.

The flat bottom section was the first section to be lifted off its temporary supports and placed on the permanent exhibition cradle.

It was a complex and difficult procedure with each new piece creating a new challenge. This meant the team putting it together often had to think on their feet!

Blood, Wine & Gold

Vicious Warriors of Ukraine Fancied Delicate, Gold Treasures

Ekaterina Chekova

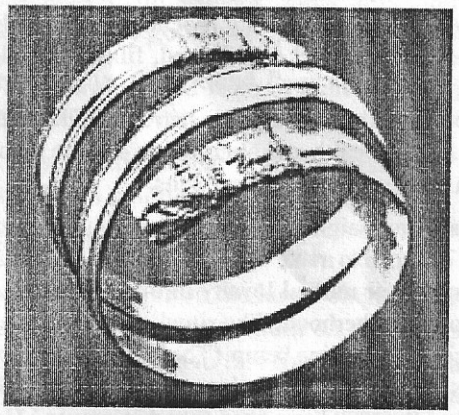
The Scythians, their arrows tucked into quivers made of human skin, spread terror from the Danube River eastward across Ukraine and into southern Russia from the fifth to the third centuries B.C.

Their brutality is as legendary as their courage, yet their legacy is a gold treasure of breathtaking beauty: swords and armor, bowls and bracelets, even gold amulets for their horses.

The two sides of the Scythian psyche - mugs made of skulls alongside delicate and lovely gold jewelry - remain an unexplained paradox. They built no cities and had no written word. Many of their graves have been looted, and their gold melted down. Precious little about the Scythians is known with certainty, but their once-fierce presence echoes across the plains.

Raised as warriors, horsemen, and herdsmen, the Scythians roamed the boundless steppes north of the Black Sea coast with vast herds of cattle and horses. They likely were traders as well as raiders, shuttling between the Greeks to the south and the tribes of what is now Russia. With their vast wealth, they commissioned treasures of gold jewelry and ornaments.

Greek writers, Herodotus in particular, described the ferocious horsemen who buried their nobles with fabulous fortunes of gold and precious stones - plus sacrificed servants, concubines, and horses - under great dirt mounds called kurgans. Recent archaeological excavations add new data to the incomplete Scythian story told by the ancient Greeks.



ca. 350-300 B.C. Gold, bronze, enamel. Part of the "Gold of the Nomads: Scythian Treasures from Ancient Ukraine" touring exhibition.

But Ukrainian peasants discovered centuries ago what lay in the chambers within the kurgans, which rise like hills from the flat steppes. A tomb looted in 1763 reportedly produced a treasure of gold artifacts that were melted into ingots and sold to foreign merchants. Many since then have sought their fortune by digging in the Ukraine, and few tombs are found intact.

An unlooted tomb was discovered in 1990 at Bratolubovsky, in the Gornostai region near the Ukrainian town of Herson. The kurgan was 5.5 meters (18 feet) high and extended eight meters (27 feet) underground. A

typically complex maze of deep entrance shafts and long passages led to the burial chambers One grave produced marvelous gold artifacts from the fifth century B.C.: a bowl, a necklace, horse ornaments, and more. Two items - an unusual and richly decorated gold bowl and a gold ornament that apparently was part of a horse's harness - are of particular interest, as they illustrate Scythian legends recorded by the Greeks.

Blood and Wine

The bowl, probably used in rituals involving a mixed drink of blood and wine, indicates the grave belonged to a Scythian king. Its external surfaces are entirely covered with reliefs depicting lions, winged griffins, and deer engaged in fierce combat.

A unique feature inside the bowl is a disk with a ring attached to the bottom. The ritual bowl is 18 centimeters (seven inches) high, 18.5 centimeters (7.3 inches) across, and weighs 625 grams (13.8 pounds) - too large and awkward for easy handling. A chain attached to the center ring might have simplified storage, especially in a horseback culture.

A golden bowl is the centerpiece of a Scythian origin myth, as reported by Greeks. The bowl, brimming with wine and blood, fell from the sky before three nomads. Flames erupted each time one of the nomads tried to drink from the bowl. Only the youngest of them could tolerate the fire and drink the sacred mixture. He became the first Scythian king and united the nomads into the Great Kingdom. The young king proclaimed the gold bowl to be the sacred vessel of life, and, filled with blood and wine, it was central to most Scythian rituals. The bowl symbolized the power of a patron goddess; the wine represented wealth and abundance; and the blood meant death to enemies of the Scythians.

Military campaigns typically began with a brotherhood ritual intended to make warriors invincible. Unrelated men affirmed their mutual loyalty through a solemn contract of blood-brotherhood. The ritual apparently began with participants smoking hemp. (The hallucinogenic plant that yields marijuana was popular enough among the Scythians that bundles of it have been found in graves.) Hemp was packed in the empty gold bowl and set afire to drive away wicked spirits. Then the Scythians slashed their fingers with a knife. They squeezed their blood into a bowl filled with wine and plunged a sword, a spear, a pole-ax, and arrows into the bowl and made many solemn prayers. Finally, they drank the mixture and proclaimed themselves brothers. Such a brotherhood apparently was limited to three men because a fraternity shared by many couldn't be strong.

Scalped and Flayed

After a successful campaign, the rituals became brutal. Warriors killed prisoners and drank warm blood and wine from the sacred bowl. Then the slain enemy was scalped, and the chieftain parceled out the booty according to the courage shown in the battle and the number of enemy heads brought back as trophies. The most vicious punishment was reserved for mortal enemies. The skin was peeled from their right arms, tanned as leather and used as arrow cases to pour the enemy's strength into Scythian weapons. The rest of the enemy's body was probably flayed as well. The skulls were made into bowls and plated with gold. An unusually large - 223 grams (4.9 pounds) - and highly decorated ornament for a horse's harness was found in the Bratolubovsky tomb. It dramatically illustrates the role horses played in Scythian society. They were central to warfare, but also provided meat, milk, and leather.

And horses also cantered into the Scythian afterlife. Funerals of Scythian kings always included the sacrifice of horses. A burial mound at Ulsky in Kuban contained a herd of 360 horses, suggesting the big kurgan was an important, sacred place in the Scythian Kingdom.

The horses' internal organs were removed and the cavities filled with a mixture of aromatic galingale, frankincense, and seeds of parsley and anise. The embalmed body of the king and the dead horses, coated with wax, were carried throughout the countryside for 40 days before the king was laid upon a mattress in the grave, along with a sizable fortune in gold accoutrements. Spears were fixed in the ground on either side of the burial chamber, beams were stretched across them, and the chamber roofed with twigs.

Besides his horses, the king typically took with him his wife, guards, domestic servants, a cup-bearer, and concubines - all killed in his honor. Then the Scythians set to work raising an earthwork as high as possible above the grave.

The Magic of Horses

Scythians believed images of horses held the power to ward off disasters. The harness ornament from the tomb depicts six strong, swift horses. Six was the magic number capable of transferring the six qualities of strength, speed, dexterity, sharp eyesight, good hearing, and an acute sense of smell from the image to the warrior, his mount, and his weapon. Without such an amulet, the horse would be defenseless.

Like nearly all Scythian ornaments, such gold pieces were designed to maximize various magical powers and to signify the owner's importance relative to his fellow tribesmen.

In a nomadic and warring culture, such wealth and imagery had to be portable, so it was converted into richly decorated armor and ornaments for horses and riders. Clothing, tack, and weapons of the wealthy were drenched in looted gold. Priceless gold artifacts illuminate Scythian legends and hint at the warrior lifestyle, but they leave many mysteries lingering on the steppes, where descendants of the Scythians still wander the flatlands.

EKATERINA CHEKOVA is a research associate in the Development Department of the State Hermitage Museum in St.Petersburg, Russia.

The Archbishops Palace, West Tarring

Eric Anderson

Introduction

In medieval days the Archbishop of Canterbury owned several small manors which were used for periodic accommodation. One of those still surviving with a remarkable history is the parish hall of West Tarring.

West Tarring was one of a string of land holdings across Sussex and the manor or estate was given to the Archbishop of Canterbury by Athelstan king of Wessex before he died in 941.

Early archbishops were often as much statesmen as clerks and spent much of their time journeying around the country on administrative tours, Visiting dioceses, as well as checking on chief tenants and carrying out estate management.

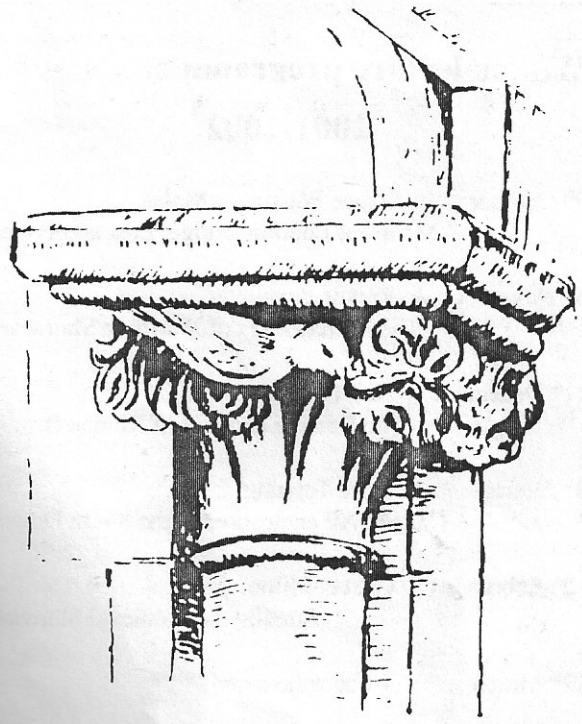
These tours of duty and business could involve a retinue of up to 80 people all of which would be mounted. Church records indicate that on several occasions in the 13th century Tarring was used as a 24 hour stopover.

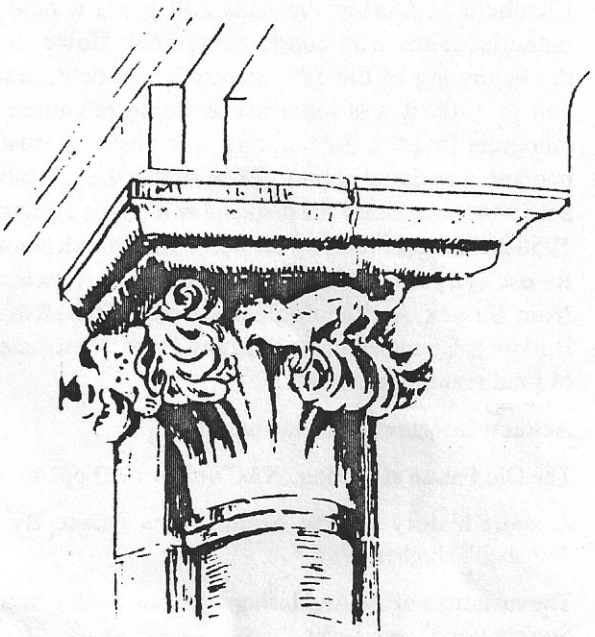
Tarring Palace Building

The main building phases are three distinct parts. The first of which dates from early in the 13th century.

The first phase of building

This consisted of a rectangular hall built at first floor level over an undercroft. This hall was almost certainly entered from an external staircase and possibly had a hearth on the east wall.





Contemporary details inside show side shafts and capitals, which are good examples of the period.

It is thought that the ground floor contained storage and shelter for animals.

NB it was to this house that the first visit by an archbishop was made in 1230.

The second phase of the building

Somewhere around 1300 the larger single storey hall, which became the solar was built on the west side of the earlier hall. Access to this from the new hall was gained through an additional staircase in the southern angle between the building and this area has retained the door cases from the hall, one coming from the solar as well as lancets lighting the stair.

The exterior is of flint and the slopes of the roof retain their Horsham slabs.

The third phase of building

During the 15th century the hall appears to have been widened with moulded doorways having been inserted at the west end at the same time the lancets were replaced by the large single mullion windows with cinquefoil tracery which still exists. Additionally in general the fabric of the building has remained substantially unchanged. Although archbishops no longer stayed at Tarring they made sure the manor remained profitable by granting in the 1440's licences for markets to be held in the locality.

History

The building was originally maintained by the chief tenant, but by the middle ages it was frequently leased out and it eventually became a rectory at the reformation and passed into the ownership of Elizabeth I.. During the next 200 years it held its manorial status with courts being held. However by the beginning of the 19th century it had deteriorated and in 1805 it was recorded as being inhabited by labourers In 1872 the building was given on trust to become a national school. Then under the education act 1944 it was listed for disposal and on the 30th April 1958 it was purchased by the parochial church council for use as a parish hall. Generous grants were received from Sussex Archaeological society, The Historic Buildings Council and the Pilgrims Trust. These helped to fund restoration

Acknowledgements for the article :-

The Old Palace at Tarring. SAC vol 64 1923 pp140-179

A short history of The Archbishops Palace By Dr Annabelle Hughes 1987

The custurnals of the Archbishop's Manor. Sussex Record Society vol 57 pp21- 30

Ps

We have hired this historic building for our 80th anniversary social on Saturday November 20th Join us there. Details follow.

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2001-2002

9th October — Bruce Watsin — Molas, Medieval London Bridge, Lost and Found

6th November — Trevor Povey — The Archaeology of Maritime Shoreham

11th December — Neil Faulkner — The Decline and Fall of Roman Britain

8th January — Peter Topping — Causwayed enclosures of the South Downs

12th February — Gustav Milne — Smallhythe Medieval Shipyard

12th March — To be announced

9th April — To be announced