ERAS News

EAST RIDING ARCHAEOLOGICAL SOCIETY

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Acknowledgements

The editor would like to thank the following: Maureen Berlin for the cartoon, Kate Dennett, Susan Gibson and Pam Gardam for their written contributions, Peter Bartle for the Bainton sketch on page 15, Tees Archaeology for the photograph of the Neolithic fishtrap, and John Buglass for providing the boat drawings and photographs

cover photograph

18th century river vessel, possibly Billiboy
river bed, St Aiden's site

ERAS subscriptions

If you were at the AGM, or pay your subscription by standing order, you will already know that it was agreed by an overwhelming majority at the AGM to increase the annual subscription next year. The amount due on 1st Jan 2000 will be: Ordinary Members £15, Family Members £20, Students £5. The East Riding Archaeological Society had started spending more in a year than it received in income and, as Mr Micawber knew, this is not sustainable. The difficulty mainly is a result of a change in the availability of publication grants: they are now either small or non-existent. ERAS intends to continue publishing the East Riding Archaeologist, and to increase its frequency; indeed, as a society we have a duty to publish the results of local archaeological work.

It might seem rather a large rise in the fees, but it is many years since the subscription was last increased and it was felt that small but repeated increments would not be cost-effective. There is no increase for students, and new members will receive the most recent publication when they join, whether it was published in the current year or not. We do hope you will decide to remain a member and continue to support the East Riding Archaeological Society. The first lecture of the 1999/2000 season is the Reports Meeting on 15 September. You will receive more details of the lecture programme, together with the shorter newsletter, before the first lecture. Meanwhile, if you are interested in a visit to the Humber foreshore, read on.

Humber foreshore visit - 20th July

William Fletcher, from the Humber Wetlands Group, has offered to show interested ERAS members some of the sites on the Humber foreshore where erosion has revealed ancient wooden features. Surface visibility on the foreshore varies depending on the tides and wind, but if you like sticky, smelly mud, this is for you! Wellingtons are essential, some sort of waterproof/mudproof covering is helpful, and a stick can be useful if it is particularly slippery. Meet at the far end of Brickyard Lane (entrance near Melton traffic lights) at 6pm **Tuesday 20th July**. I apologize for the short notice and early start: I can blame the tide only for the latter. If you have any queries, ring me on 01482 858274.

Digs and digging

For their July meeting, the Field Study Group visited the Hayton excavation, which was nearing the end of the season's work. Many members have been digging at Hayton for whatever time they could spare and I have heard very favourable reports of the welcome they received and the tuition they were given in all aspects of the excavation work.

Diggers needed

Digging at Hayton might have finished, but Angus Smith is again digging at **Winestead** and would welcome assistance. I am told he has found what appears to be a cobbled track, alongside which are wooden uprights. The Winestead excavation is usually in operation during the week, I believe, but if you are interested, why not give Angus a ring on 01482 655546?

Lastly, I'm really beginning to think I need a regular 'Apologies and Errors' slot. Whilst wondering when the next ERAS News was going to arrive, you will have had ample time to work out that the large gap at the top of page 5 in ERAS News 47 should have held a title for the account of the Yorkshire Archaeological Research Framework Forum (YARFF). I must apologise both to you and to Kate Dennett, who wrote the article.

Crowds pour into Holme-on-Spalding Moor!

Congratulations to Peter Halkon and Professor Martin Millett for the sparkling success of the launch of their long awaited publication ***Rural Settlement and Industry: Studies in the Iron Age and Roman Archaeology of Lowland East Yorkshire***. The launch, combined with the unveiling of the attractive educational display boards sponsored by British Aerospace, packed the large Holme-on-Spalding Moor village hall to capacity and resulted in a brisk trade in both the new book and other ERAS publications.

Everybody who was anybody was there, including MP David Davis and British Aerospace PR man Doug Black, who announced that BAe was to enter the Holme project in a national award scheme for community projects (watch this space!). ERAS vice-chairman Helen Fenwick spoke, stressing the value of community archaeology and co-operation between the various organisations. Many local farmers came along, as well as others who had been involved in the work over a number of years. Excellent, high-tech presentations were given by Martin Millett and Peter Halkon. It was a good opportunity for an audience, slightly different from those who usually attend ERAS events, to hear about the project, see some of the finds from the area, talk to archaeologists and buy the various publications.

The book, price £25, can be ordered from the Yorkshire Archaeological Society. and I expect Peter Halkon would be able to supply an order form if necessary.

The display boards will be available for loan by schools or other organised groups and a schedule is now being drawn up, so if you are in education and would like more details, please contact Peter Halkon. Also sponsored by British Aerospace was a free, full colour, popular, illustrated booklet giving an overview of the 'Valley of the First Iron Masters'. Altogether, BAe have been most generous with their input, whilst wine, soft drinks and general help were provided by ERAS. Of course, a lot of work is always involved in organising events such as this and thanks go to all members who helped out on the night.

We are increasingly being asked to provide a presence at local events and don't like to keep on asking the same people to help, so you might possibly find yourself being asked to help on a stall or sell books some time soon. We have done the Driffield Show, the Wetlands Conference at York, the CBA Conference, the Holme book launch, the Burton Constable Country Fair, the BAe open day at Brough and the Family Archaeology Day at Hayton. Coming up shortly: Humber Archaeology Partnership's open day at Northumberland Ave, Hull (July 18th) and the Hull City Council Red Hot Fiesta in Queens Gardens (July 31st) HELP!

Kate Dennett

Digital Data

A REPORT FROM YORK ARCHAEOLOGICAL SOCIETY CONFERENCE JUNE 99

The York Society's one-day conference was a lively event, well attended, with a good participatory atmosphere prevailing. One of the four main themes, entitled 'Making the Past Accessible' dealt with presentation, education, accessibility and internet publishing. This was my main reason for attending the conference and I am sure it would have been of interest to many more people, particularly our professional members.

What is ADS?

A session presented by Damian Robinson of the Archaeological Data Service, (ADS) based at York University was very enlightening. ADS collects, describes, catalogues, preserves and provides user support for digital resources created during archaeological research. It is a branch of a much larger Arts and Humanities Data Service, funded (via the Joint Information Systems Committee) by the Higher Education Funding Council. So, whilst it is actually based in the higher education sector, it is striving to work with both national and local organisations such as English Heritage and local archaeological societies

A recent survey carried out by ADS showed that although many people are putting their archaeological data onto computer, either within an organisation or as individuals, there is an alarming lack of any standard system for storing and backing it up. Some people store it on the hard disk only, some on floppy disk only. Some have several back up copies on floppy disk kept in different 'safe' places, others have no back up system at all!

Many have not thought about to how to give wider access to their data or how to assimilate it or compare it with other data. Another problem which is being tackled by ADS is that of keeping up to date with software. Part of the work of ADS is to make sure that the data in their

archive is put onto the latest software, that it actually works, that it can be retrieved, updated as necessary and accessed by other users.

Lots of acronyms were being bandied about in this session - for example, DAPPER (Digital archiving pilot project for excavation records) and Damian has promised to send us a copy of the guide to these abbreviations. He has also said that ADS will come and talk to ERAS at some time in the future, so watch out for that, although it will not be in the forthcoming lecture series.

It is good to see that attempts are being made to encourage and rationalise the use of digital data. It seems that there is, at the moment, no charge for material from voluntary societies, so perhaps we should be taking advantage of this service. How to go about digital archiving? The forthcoming web publication of the ADS Guide to Good Practice on Excavation and Fieldwork Digital Archiving is the first serious attempt to address the issue. The guide also aims to encourage the setting up of a national computerised index of all archaeological archives, whether digital or not and to stimulate discussion towards the development of a national digital archiving policy.

There is much more to tell but time and space will not allow. However, for those interested to know more, ADS can be contacted on:
http://ads.ahds.ac.uk/

Publishing Field Archaeology on the Internet

This session by Alan Vince (Managing Editor of Internet Archaeology, an organisation based at York University) was another excellent presentation and it dealt with the problems as well as the advantages of publishing on the Internet. It seems that Internet publishing as an alternative to traditionally printed volumes has not taken off quite as quickly as might have been expected. The following possible reasons were put forward.

- **People were initially under the impression that publishing on the Internet would be much cheaper.** This is not necessarily true. A tremendous amount of tedious and sometimes quite technical work can be involved in putting in all the 'Hypertext links' which enable the reader to interrupt their reading of your document and to look up, for example, further information related to the particular topic.
- **There can be difficulty in deciding when a project is finished.** In traditional publishing, an interim report is often produced and the full report with specialists' indexes etc comes years later. However, with a web publication, do you wait for the full results, by which time the technology has probably moved on, or do you produce an interim report and let the incomplete story be accessed by the whole world?
- **Professionals have perhaps been doubtful in the past about the academic reputation of Internet published items.** This is not now an issue, and demand is high.
- **Information from the Internet has been seen as somewhat ephemeral.** Perhaps, if trying to access an item seen recently, you might find that it is no longer available. Alan Vince assured the audience that steps are being taken to ensure that if others remove items from their site, then a copy would be retained by Internet Archaeology.

Much of the material which Alan Vince refers to is what is known as 'grey' literature ie reports resulting from planning applications/PPG16 work. He says that most of these are neither designed for wider dissemination, nor are they capable of being easily transformed into a more readable format. He points out that as these are only rarely indexed or catalogued, it is likely that the only people who know the contents are the authors themselves. He asks whether it is possible to use the World Wide Web to make this resource more accessible, whether it would be worthwhile and if so, and who would pay?

The real advantage of publishing on the Internet, of course, is that it gives the world instant access to your publication and thus the potential for research is tremendous. It is hoped that the writing of reports will become much easier, when, for example, it becomes feasible simply to type in the ISBN and page numbers of the books for your bibliography and the system will do the rest. It is also hoped to have SMRs on line at some time in the future. Of course it depends on a large amount of money being put into the setting up of all these systems, but it must surely happen, as the potential is so great.

Other Sessions

Pat Excell, in a paper entitled 'Are We Prepared For Another Jewbury?' raised some interesting and topical questions on the treatment of human remains. In view of the Jewish burials which were not allowed to be examined by archaeologists, she asks are whether we have any strategy in place should further remains be uncovered which are claimed by an ethnic or religious group in Great Britain?

Tony Eddison demonstrated the use of photo VR in the computer visualisation of archaeological reconstructions and artefacts. The effects were absolutely wizard, but the talk could have been much better structured and it was, I felt, something of a wasted opportunity.

Steve Roskams, in a presentation entitled- **'No Stuart, THIS is what archaeology is really about'** (following

directly after that of Stuart Wilson of Monmouth Archaeological Society!), discussed the publication of urban archaeology. He made some forceful and very relevant points, thus:

- Publications must make an attempt to relate the different specialisms to each other and to the archaeology.
- Reports should never be seen as 'final' ie they must state the questions still to be answered and try to point the way forward.
- The reader must always be able to have access to the archive and site reports for further study
- Reports must state how conclusions have been reached.

Don Henson, CBA Education Office, in a session entitled **'The Past Is Too Important To Forget'** talked about making archaeology accessible to the younger generation and appealed for the use of good, plain, simple English in publications, talks and press-releases.

Tim Hedley Jones talked about heritage management conflicts in connection with Britain's 20th century military archaeology.

Martin Bartlett spoke about the Moss Street Depot Community Use Group in York. The group was formed in 1997 to promote the idea of developing the redundant depot as a community garden with diverse facilities and activities, including environmental education and archaeology. Martin can be contacted on 01904 613861 if anyone is interested in hearing more about this group.

Kate Dennett

Wetland Heritage of the Vale of York

Fourth Annual Conference of the Humber Wetlands Survey 27 March 1999

Most ERAS members will be familiar with the Humber Wetlands Project, which started in 1992, funded by English Heritage and based at the University of Hull. It has led to a region-by-region survey of seven areas making up the Humber Wetlands and is itself part of a large-scale project to examine the archaeology of wet landscapes in Britain.

Each year the results of the previous year's work by the Humber Wetlands team have been published and presented at a day conference. This year's conference, which took place at the College of Ripon and York St John in York, covered the 1997-1998 survey of the Vale of York. The morning session was chaired by Dr Stephen Ellis (Project Supervisor, University of Hull) and the afternoon session by Jon Ette from English Heritage.

The proceedings were introduced by Professor John Coles, chairman of the Humber Wetlands Management Committee, who presented Ted Wright with a copy of the main report, which was dedicated to Ted Wright 'pioneer of Humber Wetlands archaeology'. Ted reported that it was now possible to do AMS ^{14}C dating on the yew-stitching of the Ferriby boats. English Heritage is funding six 'new' ^{14}C dates, two from each boat, which may clarify the dating. The previously obtained date for Ferriby 3 is not considered reliable.

Physical background to the Vale of York

Dr Stephen Ellis

The Vale of York is a large low-lying area between the Yorkshire Wolds and the edge of the Pennines, approximately 60,000 ha, most of it below 10 m OD. The oldest rocks are to be found on the western margin and the youngest on the eastern edge, but it is the later, quaternary drift deposits which are more important.

The landscape of the Vale of York was shaped by a sequence of events. During the last ice age, the extension of two arms of ice from the ice sheet, which at that time covered much of northern Britain, caused a blockage in the natural flow of water eastwards. This caused water to pond up to the west of the Yorkshire Wolds and the Lincoln Edge, creating Lake Humber, and thereby resulting in the series of lacustrine clays, silts and sands which cover much of the floor of the Vale. After the ice retreated, Lake Humber gradually became silted up (by around 11,000 BP). Initially, braided drainage channels formed across the floor of the former lake and there was some formation of wind-blown sand at this time. The next phase was the development of the rivers which, with changes in sea level, gave rise to alluvial deposits along the lengths of their channels. At the margins of the ice sheet and Lake Humber glacial deposits formed, known as the York and Escrick Moraines. These can be seen as crescent-shaped ridges of gravel, sand and till across the Vale in a northeast-southwest direction.

Three main types of soil are to be found - gleys, brown soils and podzols. Gleys, with their poor drainage, are the most widely distributed, whereas the better-drained brown earths are associated with areas of artificial drainage improvement and warping. The other main type of soil in the Vale is the podzol, which is associated with sandy areas, mainly in the east and the north.

The archaeology survey of the Vale of York

Helen Fenwick

For the purpose of the survey, the Vale of York was

defined as the low-lying area below the 10 m OD contour to the west of the Yorkshire Wolds and to the east of the Upper Magnesium Limestone. The southern limit is formed by the Rivers Aire and Humber, while the northern limit is formed by the A64 and A1079 roads. Some 20.000 ha of the survey area is made up of past or present wetlands. It includes the wetlands of the Aire, Ouse, Wharfe, Derwent and the former Foulness and the intertidal zone of the Humber between North Ferriby and Trent Falls. It also includes wetland deposits from Skipwith Common and Askham Bog, although the latter is just outside the area. The area around Holme-on-Spalding Moor and the upper Foulness valley, although situated within the Vale of York, was not included because it is covered by the work of the Holme Project.

The methodology of the wetland survey had been developed during the surveys of Holderness, the Humberhead Levels, and Ancholme and lower Trent valleys. It took the form of a preliminary survey followed by a detailed survey. The preliminary survey involved both a series of field visits and reference to the Humber Wetlands database and literature. This 'rapid survey' formed the basis for the selection of 13 'mapviews', each measuring 4 x 5 km, which were investigated in detail between July 1997 and June 1998.

The main technique employed in the archaeological survey was fieldwalking in transects at 30 m intervals, but geophysical surveys were also undertaken. The suitability of areas for fieldwalking varied: it was good in the Aire and Ouse valleys but poor upstream of Barmby Marsh where the floodplains of the Wharfe and Derwent are under pasture. In the lower reaches of the Aire and Ouse a widespread covering of warp and alluvium also restricted the opportunities for fieldwalking. The wet conditions prevailing in the past couple of seasons' fieldwalking have added to the difficulties, but some thousand fields a year have been covered. Information was also obtained from aerial photography, the Sites and Monuments Record and local museums.

Surprisingly few Mesolithic or early Neolithic finds were identified, but there is more evidence for late Neolithic and Bronze Age activity, generally associated with the edges of the Wolds and sandy areas within the Vale. The Bronze Age, however, is particularly well represented on the Humber foreshore, where the survey has added 17 prehistoric waterlogged sites between Brough and North Ferriby to the records. The Humber foreshore was already well-known for the three Ferriby boats investigated by Ted Wright and has also been the source of wooden hurdle-like structures previously investigated briefly by Hull Museums and ERAS members, and of two wooden paddles found by Peter Greenfield and later by Angela Gowland and colleagues.

Previous work in the Holme-on-Spalding Moor area has produced extensive evidence for Iron Age activity in the area but the wetland survey did not find this to be repeated in the rest of the Vale, although there is some evidence from aerial photography.

Roman period sites and material have previously been reported at Redcliff, Brough and Faxfleet. A fort at Stamford Bridge and a settlement at Kexby are also known from the margins of the Vale of York. The main Roman period discovery of the current survey is a ladder settlement at Sutton upon Derwent, sited on the north bank of the river at the confluence with Pocklington Beck. A small-scale excavation revealed pits and gulleys and a spread of cobbles. Two notable finds were a gold earring and a piece of glass from the neck of a jar. It was speculated that the settlement could have acted as a stopover for river traffic, or have arisen at a good crossing point of the Derwent and Pocklington Beck. No associated waterlogged deposits could be investigated due to a surfeit of water - the floodplain of the Derwent was well and truly flooded!

There was a surprising scarcity of finds from the Early Medieval period, despite the documentary and historical evidence and the continuing importance of York in the Early Medieval period. However, moated sites, characteristically with dates ranging from the late 12th to Post-Medieval, are very common in the Vale of York, with 114 identified. It had previously been argued, from the results of the Humberhead Levels survey, that moated sites tend to be associated with the heavy soils of the wetter areas which were less favoured by the earlier settlers. Within the Vale of York, the majority are closely associated with the river network, with the remainder found on the area of clays in the centre of the region between the Derwent and Foulness. As many moated sites as possible were visited, and three were chosen for GPS survey and coring. It was suggested that the moated site may have become a fashionable form of construction in the 13th century, in some cases replacing already existing buildings and structures.

Landscape development in the Vale of York

Malcolm Lillie

The palaeoenvironmental programme was carried out in conjunction with the archaeological survey, concentrating on the same 13 'mapviews'. Previously, only very limited work of this nature had been carried out in the region. The survey by the Humber Wetlands researchers was designed to locate and map the extent of the wetlands deposits in the Vale, to determine the state of preservation of the organic remains, and to establish a chronological framework for the development of the wetlands. The method used involved transect coring across the floodplains of the rivers, not an easy matter, particularly in winter, as was illustrated by a slide of a core being taken by two isolated figures in a flooded landscape. Cores were also taken at Askham Bog and Skipwith Common. Additional work continued the study

of 'warping' begun in the lower Trent valley and Humberhead levels.

The development of the wetlands of the Vale of York floodplain was a response to the rise in sea-level during the early Post-glacial period. The survey was primarily concerned with the timing of this development. Dating was by palynological (pollen) and radiocarbon analyses of the top and bottom of the peat to obtain the earliest and latest dates for peat development. A sequence of dates was obtained showing the progression of wetland up the river valleys as the sea-level rose.

Extensive areas of the southern part of the Vale of York have been masked by variable thicknesses of warp, resulting from deliberate flooding of fields in order to add fertile deposits and build up their height. This masking can have a considerable effect on the field survey of archaeological evidence, but it can also have a positive effect on the preservation of the deposits that it buries. Evidence for warping was looked for by visual inspection in drains, differences in field height and analysis of core samples. It proved much more difficult, compared with the Humberhead Levels, to measure the extent of warping. It was not always possible to distinguish between natural and man-induced flooding.

The overall conclusions from this necessarily complicated study include dates for wetland development from c.5500 cal BC in the rivers. This differs from the timing obtained for the Humberhead Levels region to the south of the rivers Aire and Ouse.

The earlier Holocene, or post-glacial (pre-5000 cal BC, c.6300 BP) stages of vegetational development remain poorly understood for the river valleys, although some information for this period in the wider environment was obtained from Askham Bog, as described by the following speaker. The pollen record for the recent Holocene is also poor. The recovery of the earlier and later segments of the palaeoenvironmental record remains a key factor in the understanding of landscape development in the Humber wetlands.

Aspects of the vegetational history of the Vale of York

Dr Benjamin Gearey

Dr Gearey's talk covered the results of pollen analysis of cores from two isolated wetland areas in the Vale of York where it was hoped to find a more complete sequence: Skipwith Common and Askham Bog. At Skipwith Common, however, only limited remnants of peat were found surviving from deeper deposits cut-over since at least the 14th century. The peats from Skipworth Common therefore hold no information of the human impact of vegetation in the Bronze and Iron Age periods.

The survival of peat deposits was better at Askham Bog - which is currently not a bog but an area of birch woodland and reed swamp - providing evidence for up to four phases of forest clearance, presumably representing the impact of man's activity on the environment. Unfortunately, problems with the high-resolution radiocarbon dating of the upper part of the sequence prevented absolute dates for these phases of clearance being obtained.

The estuarine survey of the Humber foreshore

William Fletcher

Early in the archaeological survey, the northern shore of the Human was identified as an area of good preservation of wooden archaeological material in the intertidal zone. William Fletcher emphasised that the work was only a survey, not a complete investigation, but over 30 new sites have been identified, with dates ranging from the mid Bronze Age to the Post-Medieval. These included a probable fish weir, fish traps and single, paired and groups of stakes, but most interest has been caused by the two wooden hurdle-like structures, Melton-25 and Melton-26, which were excavated. It is thought that the woven 'hurdles' were constructed on dry land in ponds and then anchored on site with rows of vertical stakes.(see also ERAS News 46 and 47). It is clear that local forests were being managed or selectively felled to produce the small size rods that were used in the making of the structures.

Sample timbers from the various foreshore sites have been removed for species identification, dating, preservation and study of tool marks. Many of the stakes have been bent or twisted when they were put in place.

The overall picture of the Humber foreshore is of long-term use and adaptation to a dynamic environment.

The talks that I have summarised constituted less than a half the day's proceedings. Other sessions included **Aerial archaeology of the Vale of York**, given by Henry Chapman, **Wetland conservation in practice**, by Ian Carstairs of the Carstairs Countryside Trust, and **Archaeology of Holme-on-Spalding Moor**, by Peter Halkon. During the lunch break there were 'hands-on' displays, including aerial photography, wood species identification, GPS, pottery and pollen identification. All in all, it was a very informative and enjoyable day. The conference next year will cover the Hull valley, so don't miss it. The final year of the fieldwork programme is 1999-2000, the survey of the Lincolnshire Marsh.

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ERAS lecture summary: Underwater Archaeology

John Buglass

The speaker is co-ordinator for the Nautical Archaeology Society, northeastern section. He has worked on at least twelve vessels, including the Mary Rose. He started his talk by explaining that he intended to show that marine archaeology is only one aspect of underwater archaeology. The difference between underwater archaeology and the usual kind is that in the underwater variety you **always** get wet.

When the public think of underwater archaeology they probably think of wrecks and treasure - or of the Mary Rose, a very large excavation which cost £4m from excavation to dry dock, but there is more to underwater archaeology than wrecks. Techniques have developed a little since the days when in order to recover amphorae from the sea, the seal would be broken and the vessel filled with compressed air to send it to the surface. Many just exploded. Today an air lift would be used (no barrowing required here) and, of course, there is no need to walk on the underwater ground surface while excavating.

While there is more to underwater archaeology than shipwrecks they can still, however, be a useful source of artefacts such as Greek bronzes: the wreck 'saved' them from a recycling system would have involved melting down and recasting when their particular style was no longer in fashion.

The Vassa, from Stockholm harbour, was one of the first semi-archaeological excavations, but was carried out not by archaeologists but by the navy in the 1960s, so it was still partly a salvage operation. Nothing was recorded in situ, and animal bones were not retained. Admittedly, the diving equipment in the 60s was not as easy to use as that today.

The next big excavation was the Mary Rose, which was found by sports divers who then contacted the archaeologists. It was a difficult site - near shipping lanes and subject to a big tidal surge. It was excavated in the manner of a terrestrial excavation - but under water. By the time the work was finished, more than 2,000 Tudor arrows had been collected. At the height of the excavation in 1982, some 2,000 items a day were being retrieved. Only 13 out of some 200 domestic vessels were ceramic. A complete set of carpenters tools was found, still in the cabin.

It is possible to do three-dimensional surveying if the visibility is suitable. Even in poor visibility a travelling rack can be set up and the site recorded. Investigations in deeper water can be carried out with aid of a Remote Operated Vehicle, which can have a grab to collect objects. Sonar was used to locate the Hamilton, preserved in virtually pristine condition since 1812. Preservation is not always so good, however: in the Barrier Reef area off Australia, temperature and biological activity can result in almost nothing surviving of a wreck.

Completely different temperature conditions at Red Bay in Canada, under ice for six months of the year, have led to good preservation of a 15th or early 16th century whaler, thought to be the San Juan. Survival of bone has been good, both human skeletons and butchered whale bones, but the important point emphasised by John Bugloss was that here was underwater archaeology starting to look at a whole area and putting the finds into a wider context, in the manner of modern terrestrial archaeology.

The inter-tidal zone is a good place to look at wrecks since most wrecks happen when boat meets land, so here marine and terrestrial archaeology also meet.

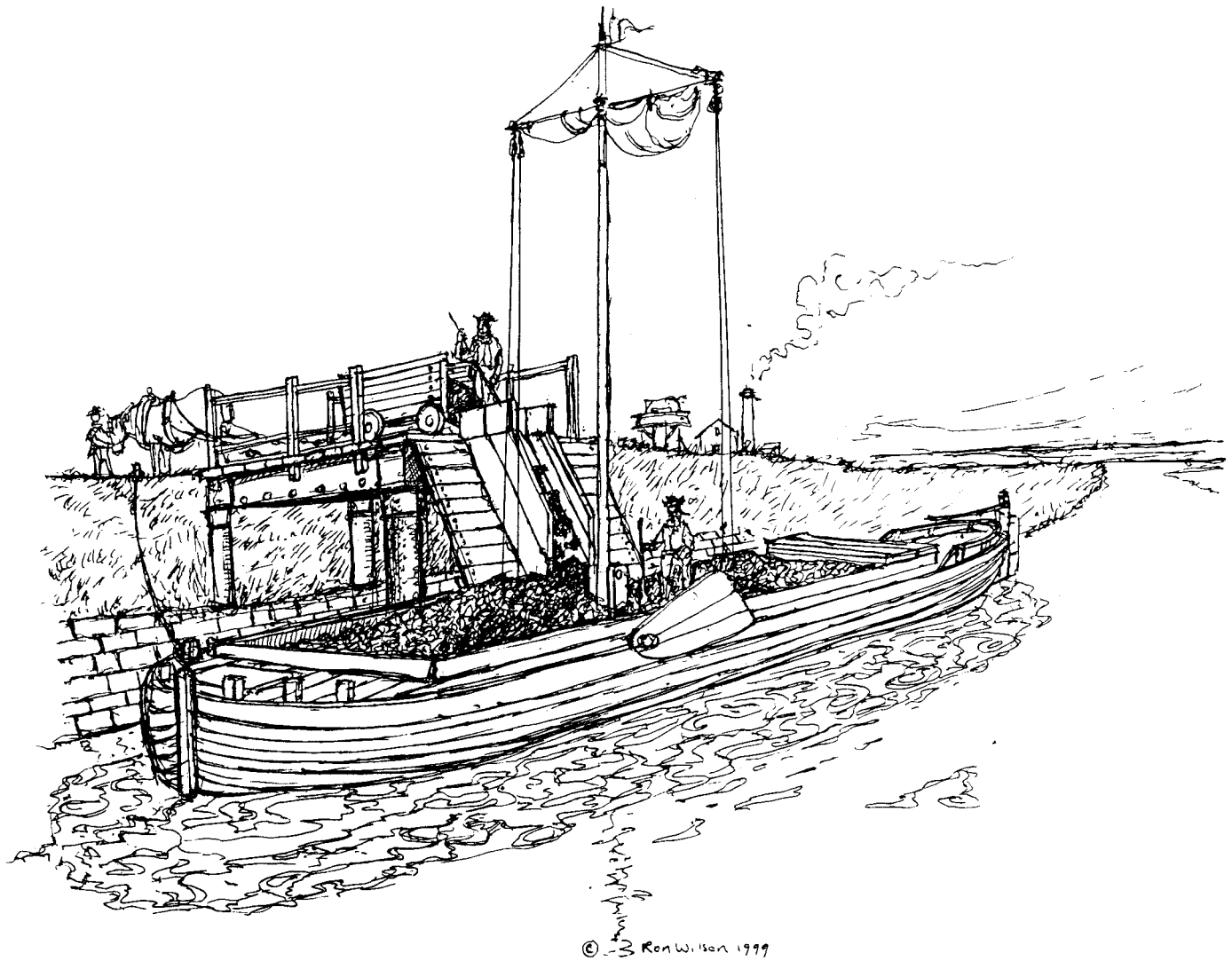
the **Magor Pill**, a 13th century merchantman wrecked in the Severn estuary

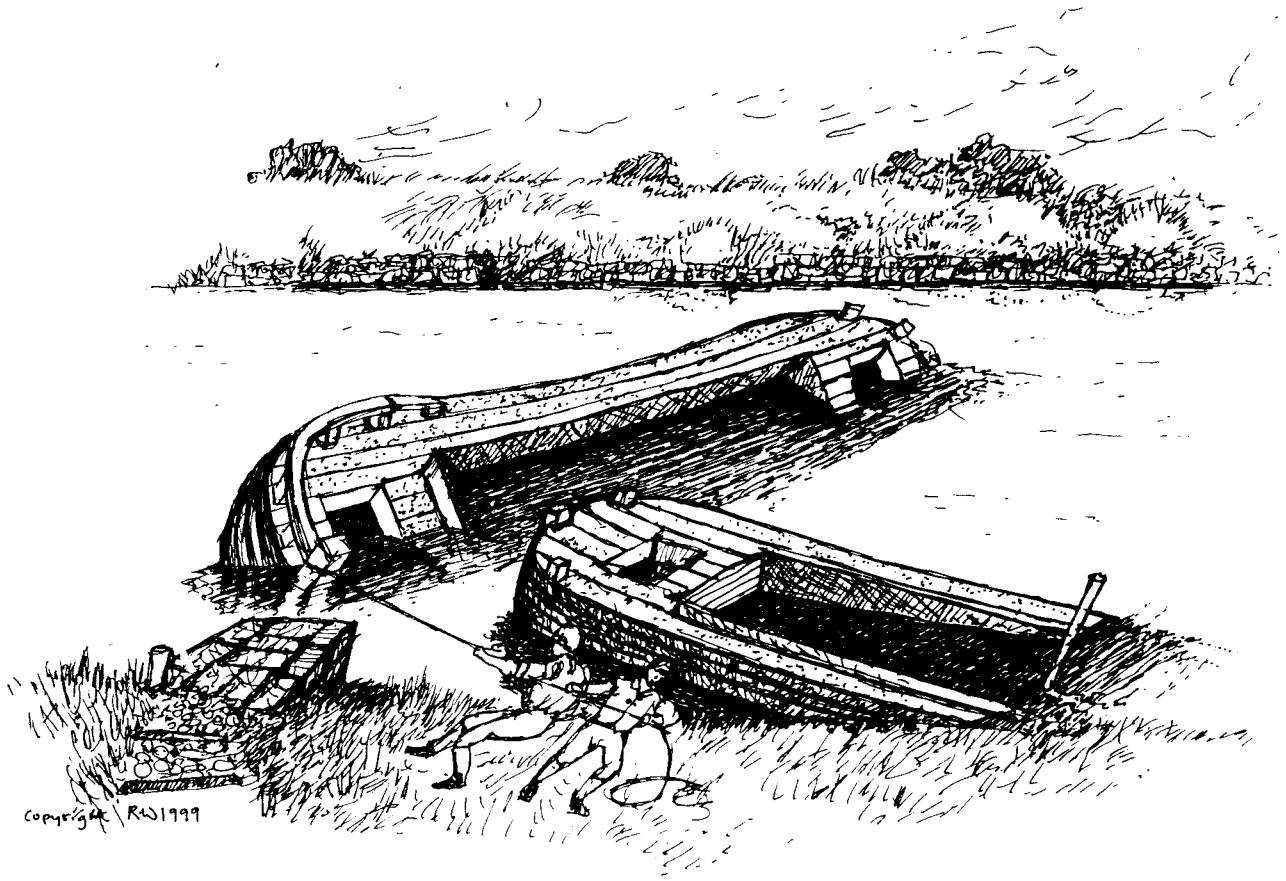
Wrecks of boats on beaches may be the best source of information on some of the small boats that were considered so common that no one thought of preserving them. Shipwrecks are found in deep water, shallow water, in the intertidal zone, in rivers, even on land (Sutton Hoo). It could even be said that a boat was found in a coal mine! This came about at the St Aiden's site in an area of open-cast mining near Castleford. An old meander in the River Aire had previously been backfilled to straighten the course, but the river had broken through, flooding the mine, and a new section of canal had to be built.

A rescue excavation was mounted and the first vessel, an 18th century wooden boat, was excavated over the space of two weekends in December 1997. After this hurried start, the river and canal were investigated in a more systematic manner, including fieldwalking the river bed. Eventually, eight river boats, a ferry crossing point, a 17th century lock, a water mill and a dry dock were found.

The lock had been built to provide a bypass to a water mill. Before the lock was constructed, the only way to pass the mill was to persuade the mill owner to open the gate in the dam and let out the accumulated water in the mill pond. This was understandably not a popular action with the mill operators, but at that time the River Aire provided the only water transport between Leeds and the open sea at Hull. The problem was solved in 1698, when an Act of Parliament ordered the construction of 12 masonry locks with timber floors, one of which was the lock excavated at Methley.

All the boats excavated were clinker built and similar to Humber Keels, but narrower and with more pointed bows, possibly Billyboys, though the existence of Billyboys is questioned in some quarters. They date to the 18th or late 17th century. Though not very old, they are interesting because few river craft are known from this date.





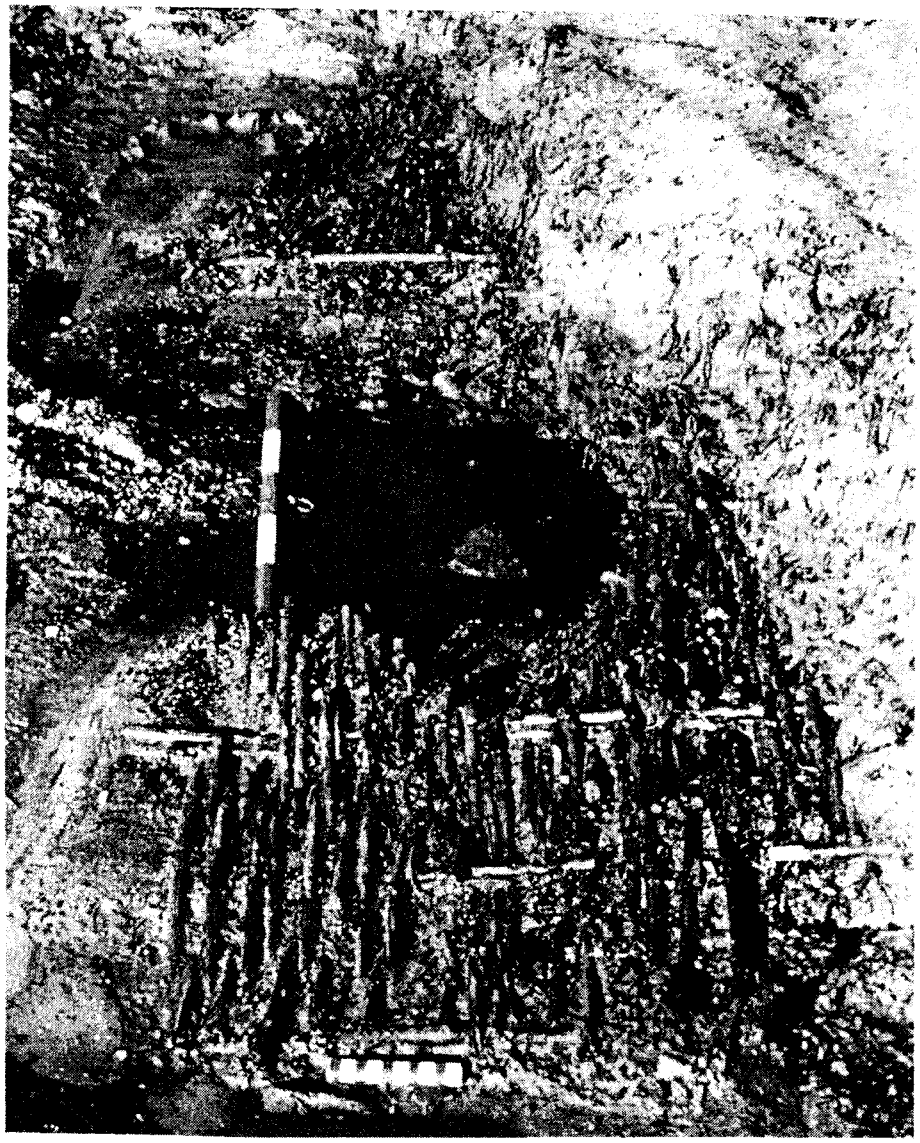
St Aiden's site river boats: in use, and abandoned
reconstruction drawings by Ron Wilson

Apart from boats, other remains may be found in the intertidal region, such as the fish traps found in the Severn estuary and a Neolithic fishing trap from Hartlepool bay. Outside Staithes harbour, square rock-cut holes (Hollies) have been found where fish were unloaded and stored.

Where does underwater archaeology stop and start? Coastlines and water levels change. The Sutton Hoo boat was a sea-going vessel but found on land, whereas the village of Dunwich is now under the sea. Water levels may be altered by man, as at Malham Tarn, where the water rose by 4m after a dam was erected.

Crannogs are settlements on man-made islands, so are included in terrestrial archaeology - except that the Crannog dwellers threw their rubbish into the water, so the study becomes cross-disciplinary. The 'bog bodies were originally in water, but ended up on land. John Bugloss used these points to explain that there is only one archaeology, whether on a hill or under water, not two completely separate disciplines. Everything you get on land, you can get underwater, with the added benefit of better organic preservation. Excavation has to be more meticulous below water because of the safety requirements in a potentially lethal environment.

There are certainly difficulties involved in excavation under water. Radiocarbon dating is not very accurate near sewage outfalls. There is no legislation to protect sites underwater, except shipwrecks, so the rest only gets 1960s-style knee-jerk rescue reaction. Underwater excavation is very expensive. There is no underwater SMR and nobody has yet commissioned aerial



Neolithic fish trap, Hartlepool Bay
photo copyright Tees Archaeology Unit

photography survey of the inter-tidal zone yet this would be possible in the clear, shallow water of the Mediterranean. It is possible to do fieldwalking underwater. Survey by sonar is feasible, but it is a very expensive method: since the equipment costs about £1m it is costly to hire. The advantage of good quality organic preservation - skin, silk, leather, even fat can survive - further adds to the expense, because conservation is expensive. The Mary Rose costs £1m a year to maintain.

At the moment, there are only 12-15 HSE-qualified divers in the country and most of the work is done by sports divers. John Bugloss concluded with the opinion that the situation for underwater archaeology will only improve when legislation catches up with that for land development and developers are forced to pay.

Archaeology as escape: a visit to Bournemouth and Christchurch

Not having visited the south (apart from an ERAS trip to Avebury and its environs a few years ago), attending a work-related conference in Bournemouth in early June gave me the ideal opportunity of another chance of seeing a bit more of these 'foreign' climes.

A visit to Corfe Castle was first on the agenda. The first view of the castle is impressive, even in its ruined state, standing high on a naturally steep-sided hill in a commanding position above the village of Corfe. The hill is part of the main chalk ridge through the Isle of Purbeck, and the great mound is separated from the ridge by valleys which carry the main traffic into Purbeck. The village is named after this gap or 'corfe'. Separated from the village by a deep ditch cut by miners in the 12th century, probably during the reign of King John, the siting of the castle in such a strong position gave it superb defensive capabilities, and it shared with Pevensey the rare distinction of never having been taken by assault.

Most of the castle standing today dates to the late 14th and 15th century, although there are some remains dating to the 11th and 12th century. Particularly impressive is the fine ashlar masonry of the east wall of the 'La Gloriette' Tower which dates to the mid-14th century. Excavations under the 'Old Hall' have revealed buildings of an even earlier, Saxon, date. If legend is to be believed, the murder in 978 of the Saxon King Edward 'the Martyr' (allegedly at the instigation of his stepmother Elfrida in order to put his half-brother Ethelred 'the Unready' on the throne), took place at Corfe. The reputed scene of the crime is commemorated by a massive twin-

towered gateway known as The Martyr's Gate.

Corfe's finest accomplishment was the withstanding by Lady Bankes of a Parliamentary siege during the Civil War. When the siege began Corfe was the only remaining stronghold between London and Exeter and remained so from August 1644 to February 1646, a period of some 18 months. Corfe actually fell due to treachery after a fifth column had been slipped inside the walls during negotiations. Within the week Parliament had ordered Corfe's destruction, and this was carried out so ruthlessly that one can now only guess at the layout of the keep.

Lying 300m to the southwest of the castle are the earthwork remains of a Ring and Bailey castle, likely to have been the remains of a siegework built in 1139 by Stephen, when the castle was unsuccessfully besieged. The site was probably also used as a gun battery during the Civil War. The earthworks occupy a strategic position overlooking the town on the same level as the castle and consist of a substantial bank forming a circular enclosure with an external ditch. A terraced platform is immediately inside the ditch and performed the same function as a rampart wall. A narrow entrance in the south gave access to the bailey.

A short distance along the coast from Bournemouth is the historic town of Christchurch, which dates back to around 900 AD. Originally the settlement was known as Twynham - meaning 'between the waters' - as it was situated between the Rivers Avon and Stour, but it later became so well known for its church that it took the name of Christ's Church or Christchurch.

The town has an excellent 'historic trail' and I was able to visit some of its attractions: Place Mill, an Anglo-Saxon watermill, the 'Constables' or 'Norman' House and Christchurch Priory. All these are within easy walking distance of each other.

Place Mill was built around 1100 AD and is mentioned in the Domesday Book. The mill ground flour until 1539, when the Canons of Christchurch had it converted into a fulling mill for the preparation of woollen cloth. Later still it was converted back into a flour mill until 1908 when the building became dangerous due to excessive vibrations and had to be closed. Until the 1980s the building was rented out as a boatstore until the council decided to restore the mill and open it to the public. The restoration process has been as sympathetic to the original construction as possible, even to the extent of replacing the decayed wooden roof pegs with pegs carved from a piece of holm oak which had fallen from a tree close by the mill, in the same way that the miller would have done in the past.

The Saxon stonework of the original mill lies at ground floor level, the first floor is of Tudor brick construction, and above this the brickwork of the gable dates to the Victorian period. The building was divided into distinct areas for the processing of grain: the Stone Floor (first floor), the Hopper Floor (second floor) and the Machinery Floor (ground floor) consisting of the waterwheel, the machinery to run the grindstones hoists etc, and a workshop.

Grain would have been delivered to the Stone Floor from where the grain sacks were hoisted up through a trapdoor to the Hopper Floor in the eaves, from where the miller emptied them into the hoppers. There are two sets of grindstones on the Stone Floor, one for flour for human consumption and another coarser grindstone for animal feed production. I was interested to learn that grindstones were dressed in specific designs. The ones at Place Mill were dressed in a design known as Ten Harp which provided the maximum number of sharp cutting edges on the bedstone to act in a scissor motion against the turning runner stone. After grinding, the flour was collected in a horizontal trough and fed into sacks just below the Stone Floor which were then raised back up to the floor via a sack hoist to await collection.

The workshop is now open to the waterwheel, but it would originally have been completely covered. A small forge would have been here for use by the miller to carry out the repairs necessary to keep a busy mill working. During restoration it was found that the undersides of the stair treads had been turned upside down, thus doubling their life, a necessary economy in earlier times.

The machinery powered by the waterwheel is housed on the Machinery Floor. It is interesting to note that all the wheels worked metal to wood, rather than metal to metal, which would have been much noisier. In addition

to the noise factor, the wooden teeth would have worn out much faster, and it would have been much easier for the miller to make replacement wooden teeth on the wheels than to cast them in metal. The adjustment between the grindstones - known as 'tentering' - was critical for the efficient production of flour and was performed by use of a thumbscrew which moved two lever arms which in turn adjusted the runner stone. This might seem a very crude arrangement but it was in fact very sensitive: one quarter turn of the thumbscrew moved the runner stone 1/150th of an inch (0.16mm).

The Mill Stream is approximately 1 km long and has an average fall of less than 1 in 5000. It is this stream which provided the head of water necessary to turn the waterwheel. The water supply was taken from the River Avon and discharged into the River Stour, making Place Mill probably unique in this respect, and both ends of the stream are affected by the tide. Beautifully dressed stonework, which was laid to a high degree of accuracy, was found on the bed of the millrace and a double board weir arrangement allowed the mill to operate at almost all states of the tide.

As an interesting aside, the Mill played an important role in smuggling. Apparently, the miller used to hide kegs, lace, etc in the deep grain hoppers in the eaves! He must have been an man of considerable influence in the town: most people would have had to use his skills in one way or another, either to have their grain ground by him or to buy his flour, and no doubt his skills in hiding illicit goods would have added to his importance!

Christchurch Castle was originally a motte-and-bailey castle, sited to command the lower reaches of the Avon. The keep is a rare example of a square stone keep and although extensively ruined, the 12th century walls survive. Although I didn't see the Castle, I did have time to see the Constable's House which was actually the Castle Hall, built in the grounds of the castle bailey at the same time as the keep. The enormously thick walls indicate that it was built as a mini-keep and as part of the defences of the castle and not just as living quarters. The hall was actually on the first floor and the original windows still survive. The Constable's House has a round chimney - one of the earliest chimneys built in this country. It was also equipped with the most modern of conveniences: a garderobe, which jutted out over the Mill Stream.

Building work on Christchurch Priory began in the 11th century, and it is an event said to have occurred during the building process which gave Christchurch its name. The story is that an exceptionally skilled carpenter, employed to work on the massive timbers in the church roof, disappeared without trace after a beam, which was found to have been cut a foot too short, was later found to be up in its right place spanning the walls with a foot to spare. All agreed that 'He must have been the Christ, the Carpenter of Nazareth'. The 'Miraculous Beam' subsequently attracted many pilgrims who took away splinters from it. In order to protect it, the beam was subsequently placed high up in the church. Originally over the nave, it can be seen today high above the ambulatory, near the Draper Chantry.

I did not have time to go inside the Priory, but instead was able to look at the outside of the church, and I particularly liked the fine Norman stonework and interlaced arches on the north turret.

Unfortunately, this was all I could fit in during my short visit. Had there been time, I would have liked to visit Badbury Rings hill fort which was nearby. However, ERAS members Angela Gowland and Pam Gardam did manage a visit whilst holidaying in Dorset in June, and thoroughly enjoyed it. The hill fort has two main banks and ditches encircled by a smaller, possibly later, bank and ditch with entrances on the east and west sides. The fort stands in a commanding position, and the interior covers some 18 acres of fairly wooded land which has never been excavated. The interior of the fort probably had Roman occupation within the Iron Age defences and it was ideally situated to be a sighting point in the Roman road system as two main roads cross each other just to the northeast of the fort.

I note as I check the references to Badbury Rings that I also missed lots of prehistoric sites, such as the great promontory hillfort of Hengistbury Head which rises on the south side of Christchurch harbour. I read of Mesolithic flints being found, and the Bronze Age seven bowl-barrows erected on the Head itself and more on lower ground to the north west. Later still it was used as a stronghold in the Iron Age, and I see mention of the double bank of earthworks across the neck of the headland covering about a square mile. If I hadn't gone to the conference I would have had time for a visit... personal memo for next conference: register for the conference, collect handouts, and then slip quietly away.... no-one would know ... and then head for all of those hillforts and prehistoric sites... (If anyone from work is reading this, I don't mean it really, honestly, as if I would ... of course I was at this year's conference, ask anybody....)

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Susan Gibson

Bainton: a botanical survey

During 1998 Pam Gardam and Angela Gowland carried out a botanical survey of the Hilly Fields site at the west end of Bainton village. The survey is not quite complete as last year a hay crop was taken from the raised, level areas at the southern end of the site before the plant cover could be recorded. This remaining part of the site will be surveyed this year.

At a field meeting in the early spring of 1998, reference was made to 'conservation grasses' by a member of the fieldwork team who lives in the village. Undisturbed pasture can produce less common grassland species, and we were interested to see if this was the case at the Hilly Fields site. A survey of the trees and the various hedge species was undertaken at the same time.

Grasses

The dominant cover consists of three tougher pasture grasses, particularly on the raised level areas:

Meadow Foxtail
Cocksfoot
Rough Meadow grass

Along the drier margins of these raised areas, and along the top edges of the ditches, are six species of finer grasses:

Yellow Oats
Sweet Vernal grass
Crested Dogstail
Red Fescue
Yorkshire Fog
Rye Grass

None of these grass species is unusual on chalk grassland/pasture.
Sadly, the variety of flowering plants is extremely limited and suggests the site has been regularly improved for sheep and cattle grazing. Moreover, quite large areas have been invaded by stinging nettle and creeping thistle, with some spear thistle.

Trees

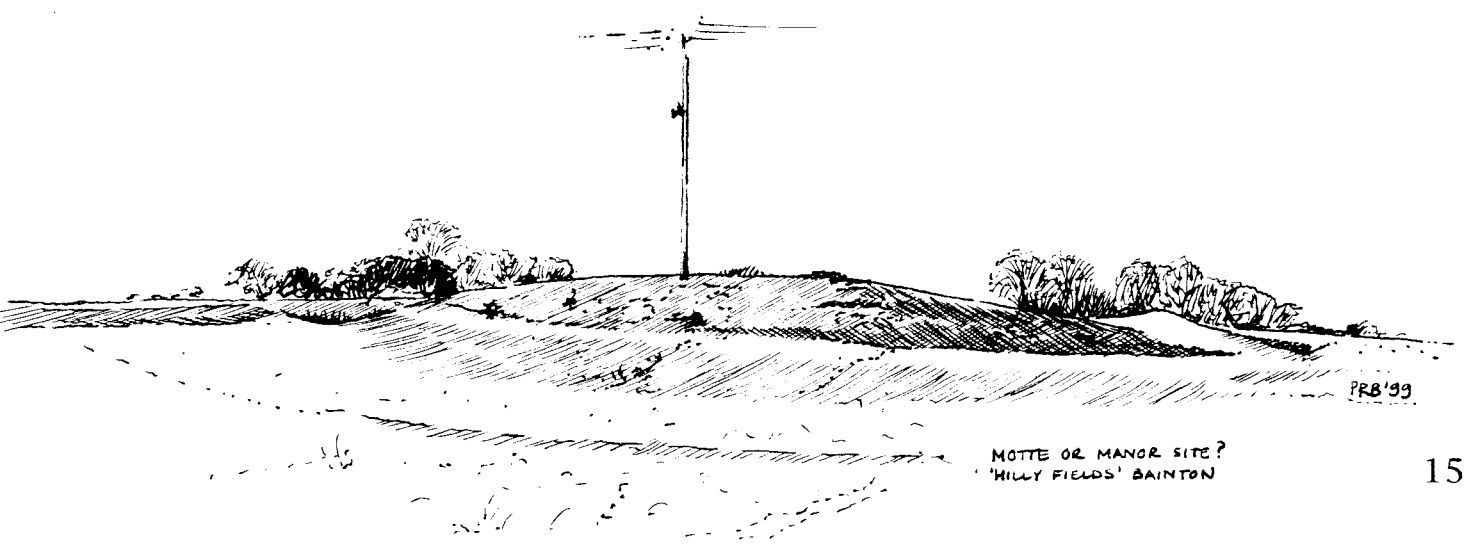
Within the site a double line of trees just to the south of the public footpath, and extending westwards from the wetland, consists of mature Hawthorn and Ash. The remaining trees grow along the boundary of the site, with a greater frequency on the southern and eastern side. Alongside Ross lane, from the stile to the southwest corner, species include:

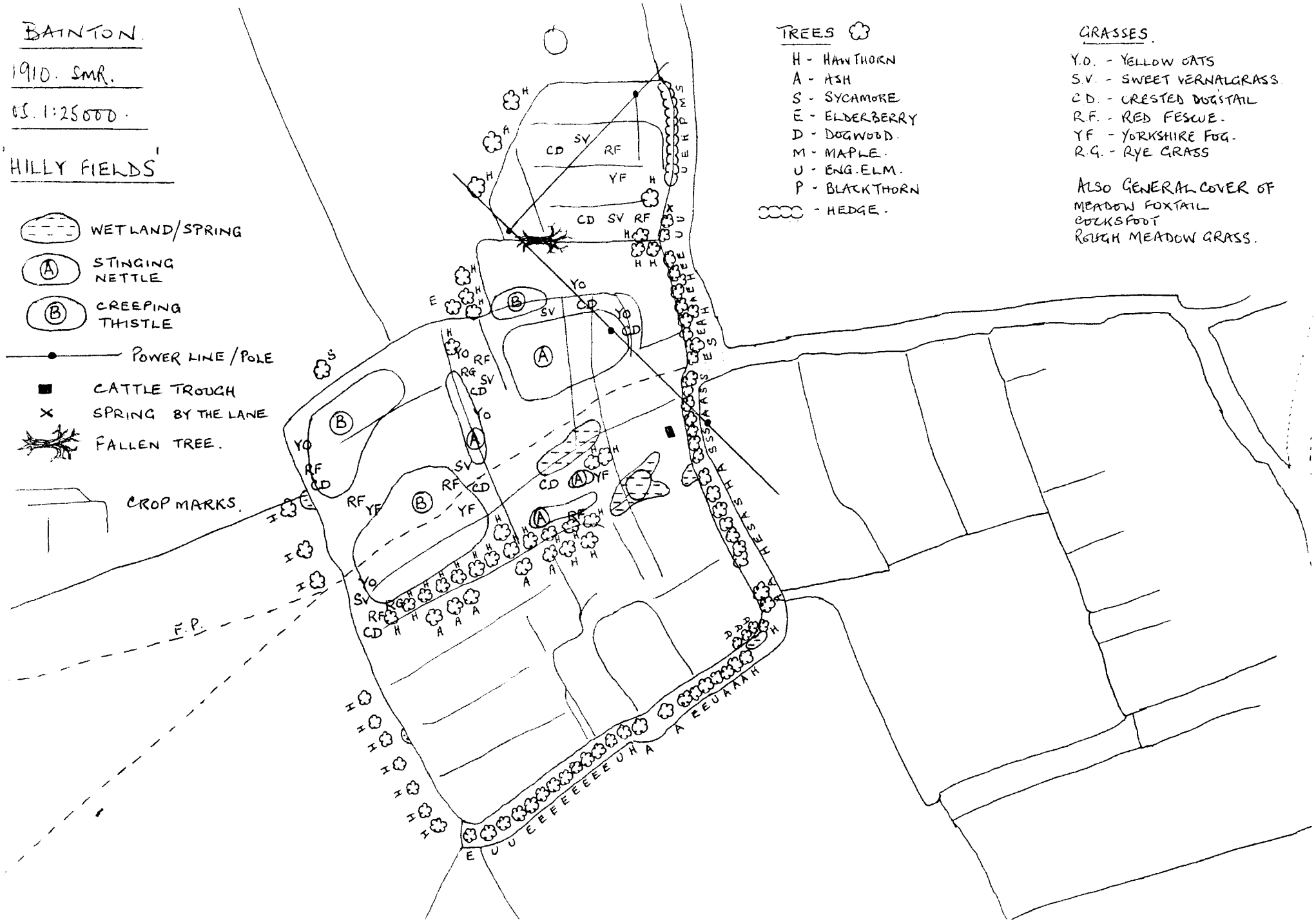
Elderberry
English Elm
Ash
Sycamore
Hawthorn

It was pleasing to see a short length of Dogwood hedge persisting beside the spring/sheepwash in the southeast corner. The short length of hedge <2m in height at the northeast corner beyond the lane-side spring has a mix of ten species:

English Elm (dominant)
Prunus species
Elderberry
Hawthorn
Maple
Sycamore (coppiced)
Bramble
Dog Rose
Gooseberry
Ivy

Pam Gardam




BAINTON.
1910. SMR.
OS. 1:25000.
HILLY FIELDS
WETLAND/SPRING
STINGING NETTLE
CREEPING THISTLE
POWER LINE/POLE
CATTLE TROUGH
SPRING BY THE LANE
FALLEN TREE.
CROP MARKS.
F.P.
TREES
H - HAWTHORN
A - ASH
S - SYCAMORE
E - ELDERBERRY
D - DOGWOOD.
M - MAPLE.
U - ENG. ELM.
P - BLACKTHORN
- HEDGE.
GRASSES.
Y.O. - YELLOW OATS
S.V. - SWEET VERNALGRASS
C.D. - CRESTED DOGSTAIL
R.F. - RED FESCUE.
Y.F. - YORKSHIRE FOG.
R.G. - RYE GRASS
ALSO GENERAL COVER OF
MEADOW FOXTAIL
COCKSFOOT
ROUGH MEADOW GRASS.