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VOLUME 2 OF THE FIELD REPORTS FIELDWORK BEFORE 1983

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1. INTRODUCTION

This volume concerns discoveries and excavations which took place at Sutton Hoo before the beginning of the latest campaign in 1983, but only those for which records of some kind are available. These number seventeen interventions, of which one (Int 1) was made in 1860, four (Int 2-5) were made by Mrs Pretty in 1938-39, eleven (Int 6-16) were made during the British Museum campaign of 1965-71, and one (Int 17) was made in 1982 by Suffolk Archaeological Unit in response to an attempted robbing of Mound 11.

The majority of all the records relating to the interventions which took place in 1938-1971 can be found in R.L.S.Bruce-Mitford *The Sutton Hoo Ship Burial* Vols 1-3 (1975-1983), and in I Longworth and I Kinnes *Sutton Hoo Excavations 1966, 1968-70* (1980) both published by the British Museum, or in associated documentation held in archive at the British Museum (for an overview, see section 2).

The following additional information or studies are presented in this volume:

*The record of the 1860 excavation (3.1)

*Unpublished comment of the 1939 excavation by Guy Maynard (3.2)

*Unpublished comment on the 1939 excavations by Charles Phillips (3.3)

The volume also contains the results of a new study of Mound 1 by Martin Carver (7.1). New studies of Mound 2-4, Burials 13-14, and Burials 45, 50, 51 and 56 are published in *Sutton Hoo. A Seventh century Burial Ground and its context*.

List of Interventions before 1983

Int 1 1860: Survey of Mounds and later and separate excavation of a mound by Mr Barritt (landowner). Reported in Ipswich Journal for 24 Nov 1860 FR2/3.1.

Int 2 1938: Excavation of Mound 3 by Basil Brown for Mrs Pretty (Landowner). Bruce-Mitford 1975, 100

Int 3 1938: Excavation of Mound 2 by Basil Brown for Mrs Pretty (Landowner). Bruce-Mitford 1975, 100

Int 4 1938: Excavation of Mound 4 by Basil Brown, instigated by Mrs Pretty (landowner). Bruce-Mitford 1975, 100

Int 5 1939: Excavation of Mound 1 by (1) Basil Brown (2) Charles Phillips (3) Cdr. Hutchison, instigated by Mrs Pretty (landowner). Bruce-Mitford 1975

Int 6 1965-7: Re-excavation of Mound 1 by R L S Bruce-Mitford (British Museum) Bruce-Mitford 1975

Int 7 1967-70: Excavation of spoil heaps and Mound 1 by P Ashbee (for British Museum).1 Bruce-Mitford 1975

Int 8 1971: Excavation of a trench in the vicinity of Mound 1 by P Ashbee (for British Museum). Unpub.

Int 9 1971: Excavation of a trench in the vicinity of Mound 1 by P Ashbee for the British Museum. Unpub.

Int 10 1971: Excavation of a trench in the vicinity of Mound 1 by P Ashbee for the British Museum. Unpub.

Int 11 1966: Excavation of an area ('Area A') near Mound 17 by I Longworth and I Kinnes for the British Museum. Longworth & Kinnes 1980

Int 12 1970: Excavation of an Area ('Area C') over Mound 5 by I Longworth & I Kinnes for the British Museum. Longworth & Kinnes 1980

Int 13 1968-9: Excavation of a trench ('Area B') east of Int 12 by I Longworth & I Kinnes for the British Museum. Longworth & Kinnes 1980

Int 14 1968-9: Excavation of a trench ('Area B') east of Int 13 by I Longworth & I Kinnes for the British Museum. Longworth & Kinnes 1980

Int 15 1968-9: Excavation of a trench ('Area B') east of Int 14. Longworth & Kinnes 1980

Int 16 1968-9: Excavation of a trench ('Area B') east of Int 15 by I Longworth and I Kinnes for the British Museum. Longworth & Kinnes 1980

Int 17 1982: Recording by S West for Suffolk Archaeological Unit of a fresh robber pit made in centre of Mound 11 .

2. THE RECORDS and THE PUBLICATIONS

2.1 The records

2.1.1 Original Material generated by Basil Brown

211.1 ["BB Notebook 1" BBN1] Small black note book, 60 x 192mm, with dark red spine, entitled "Sutton Hoo Excavations". 42 numbered pages of mss and drawings. Concerns both 1938 and 1939 seasons. BB Notebook 1 shows a plan at p 0 of the tumuli with A [3], I [1], E [4] and D [2] crossed by a stroke.

211.2 ["BB Notebook 2" BBN2] Large Black Notebook, 195 x 320mm, with light red spine. Entitled (on front) "Sutton Hoo [Di]ary etc". 171 numbered pages of mss, drawings, photographs, paintings in watercolour and press-cuttings. Concerns 1938 and 1939 seasons.

211.3 Red Photograph Album, 60 x 221mm. Entitled "Photographs". Contains 45 mounted photographs. Concerns 1938 and 1939 seasons.

211.4 Black photograph album, 255 x 205mm. Embossed with face on front. Contains 154 photographs, numbered 45 to 158.

211.5 Roll of Plans

211.6 Charcoal sketches by W B Robins of ship, under excavation [INT 5, D 4-9]

211.7 Sketch by Basil Brown of large quarry-like disturbance on the NW side of Mound 1.

211.8 Plan and section of the excavation in Mound 3 [INT 2, D 2].

211.9 Plan and section of the excavation in Mound 4 [INT 4, D 1]

211.10 Plan and section of the excavation in Mound 2 [INT 3, D 1]

211.11 Finds plot in the ship, Mound 2, 1938 [INT 3, D3]

211.12 Section through the ship, Mound 2, 1938 [INT 3, D5]

211.13 Plans and sections through Tumuli A,D and E; indian ink on card; dated 1938. As retrieved by Peter Warner from the effects of Mrs Brown.

2.1.2 Material available to R Bruce-Mitford available in 1939 [see SHSB I, 139]

-the boxed finds from War storage

-Basil Brown's diary 8 may-11 jul and 17 jun-10 aug.

-Charles Phillips diary 10 jul-25 aug

- 6 plans by S Piggot at 2" to 1 foot [1:6] and Areas I-IV and A-D; drawn up into 4 plans by C Phillips.

-c 750 negatives by Crawford, Phillips, Lack, Wagstaff and others.

-8mm movie film by Lack and Wagstaff

-Oil paintings by W Robins and Duncan Grant

2.13 Records of excavations in 1965-71 made available by Paul Ashbee to the Research Project in 1984. See catalogue, assessment and plots by Mark Newman *Pre-Saxon Settlement at Sutton Hoo: an assessment of the evidence* (MA dissertation, University of Birmingham 1984). Plan of features under Mound 1 by Marianna Birkland 1984

2.2 *Publications of primary material relating to discoveries and investigations before 1983*

Phillips, C.W. et al 1940: 'The Sutton Hoo Ship Burial' *Antiquity* 53:6-87

[C.W.Phillips 'The Excavation': 6-27; T.D.Kendrick 'The gold ornaments':28-29; T.D.Kendrick 'The large hanging-bowl':30-33; T.D.Kendrick 'The archaeology of the jewelry':34-39; E.Kitzinger 'The silver':40-63; O.G.S. Crawford 'The coins: a summary':64-68; W F. Grimes 'The salvaging of the finds':

69-75; H.M.Chadwick 'Who was he?':76-87.]

Phillips C.W. 1940: 'The excavation of the Sutton Hoo Ship-Burial' *Antiquaries Journal* 20:149-202.

Phillips C.W. 1940: 'The Sutton Hoo burial-ship' *Mariners Mirror* 26: 345-355

Phillips C.W. 1956: 'The excavation of the Sutton Hoo ship-burial' in R.L.S.Bruce-Mitford (ed) *Recent Archaeological Excavations in Britain* (London): 145-166.

Bruce-Mitford, R.L.S 1947: *The Sutton Hoo Ship-Burial: a provisional guide* (British Museum)

Bruce-Mitford, R.L.S. 1964: 'Excavations at Sutton Hoo in 1938' *Proc. Suffolk Institute* 30:1-43

Bruce-Mitford, R.L.S. 1968: 'Sutton Hoo excavations, 1965-7' *Antiquity* 42: 38-9.

Vierck, H. 1972 'Redwalds Asche. Zum Grabbrauch in Sutton Hoo, Suffolk' *Offa* 29: 20-49.

Bruce-Mitford, R.L.S. 1972: 'The Sutton Hoo helmet: a new reconstruction' *British Museum Quarterly* 25:120-130

Bruce -Mitford, R.L.S. 1972: 'The dating of the Sutton Hoo coins: some comments' in E.T.Hall. and D.M.Metcalf (eds) *Methods of Chemical and Metallurgical Investigation of Ancient Coinage* (Royal Numismatic Soc. Special Publication no.8):108-9.

Bruce-Mitford, R.L.S. 1974: 'Basil Brown's Diary of the Excavations at Sutton Hoo in 1938-39' in *Aspects of Anglo-Saxon Archaeology* (London):141-169

Bruce-Mitford, R.L.S. et al 1975: *The Sutton Hoo Ship-Burial*, Vol I: Excavations, background, The Ship, dating and inventory (London: British Museum)

Bruce-Mitford, R.L.S 1976: 'Excavation at the Sutton Hoo site, England, 1969' *National Geographic Soc. Research Report: 1968 projects: 49-52*

Bruce-Mitford, R.L.S. et al 1978: *The Sutton Hoo Ship-Burial*, Vol II: Arms armour and regalia (London: British Museum)

Bruce-Mitford, R.L.S. 1979: *The Sutton Hoo Ship-Burial - a handbook* (3rd edition of the British Museum guide).

Evison V.I. 1979: 'The body in the ship at Sutton Hoo' *Anglo-Saxon Studies in Archaeology and History* 1:121-138

Evison V.I. 1980: 'The Sutton Hoo coffin' in Rahtz, P.A., Dickinson, T.D. and Watts, L.(eds) *Anglo-Saxon Cemeteries, 1979* (Oxford; BAR 82).

Longworth, I. and Kinnes, I. 1980: *Sutton Hoo Excavations 1966, 1968-70* (British Museum Occasional Paper 23)

Bruce-Mitford, R.L.S. et al 1983: *The Sutton Hoo Ship-Burial*, Vol III: Late Roman and Byzantine silver, hanging bowls, drinking vessels, cauldrons, and other containers, textiles, the lyre, pottery bottle and other items.

3. DESCRIPTIONS OF THE INVESTIGATIONS

3.1 *The excavations of 1860 [Ipswich Journal, 24 Nov 1860]*

“ROMAN MOUNDS or BARROWS. - It is not known by many that not less than five Roman Barrows, lying close to each other, may be seen on a farm occupied by Mr Barritt, at Sutton, about 500 yards from the banks of the Deben, immediately opposite Woodbridge. One of these mounds was recently opened, when a considerable number (nearly two bushels) of iron screw bolts were found, all of which were sent to the blacksmith to be converted into horse shoes! It is hoped, when leave is granted to open the others, some more important antiquities may be discovered. These barrows were laid down in the Admiralty surveys by Captain Stanley during the stay of the Blazer, when taking sounding of the above-named river some years since.”

3.2 *Transcript of a Letter from G Maynard to Miss Allen describing the 1938-39 campaign*

June 18th 1963

17 Neale Street
Ipswich

'Sutton Hoo' 1938-39

Dear Miss Allen

Your letter respecting the above has reached me and I now reply through the Ipswich Library.

Shortly after the discoveries the editor of the East Anglia Magazine invited me to provide an article on the affair, and this I did. If you can obtain access to this you will find most of what you need. A few points may be further developed as perhaps having the special interest you need.

Mrs Pretty, the owner of the estate, had long had a very natural curiosity as to what the mounds really were, and about 1936 asked me to inspect them. I told her they were grave mounds and in all probability of post Roman date. Subsequently (1938) she asked me if one could be opened, and of I would supervise the work. Agreeing to this, I transferred an excavator who worked for me to the work, which she financed. As stated in the 'East Anglian' account, I advised the opening of one of the smaller mounds, rather than the large one. Mr Basil Brown who, with the help of Mrs Pretty's gardeners, did the actual work, at first failed to discover any deposit or 'grave goods' in this first mound. There was, however, evidence that before the mound was raised, a wide bowl-shaped hollow had been dug down below the surface of the heathland [p. 2] and, on my instructions, the sand filling this was removed with the result that the grave deposit was found somewhat 'off the central area of the mound. [This is a risk liable to be encountered in such excavations, as the mound may not have been distorted subsequently by removal of material.]

Pottery from this grave showed that it was of Early Saxon - post Roman age.

Mrs Pretty decided to have other mounds opened, and two were dealt with.

A point which might be of special use for your particular purposes as to 'HOW' etc, concerns the layout or alignment of the graves.

The objects found in the first mound lay on, or beside a wooden object which may have been (a) the bottom of a 'dug-out' chest or (b) a domestic trough of some kind which was used as a symbolic boat. It was about 6ft long, rather narrow and not likely, I think, to have been a shield. It is important to realise that all that remained was a mere film of rotted wood fibres. Its real importance lay in the alignment or compass bearing. It was pointing towards the river, slightly off an East-West direction. Mr Brown therefore opened the second mound, also a small one, on *this same compass bearing*. The procedure being to start well outside the mound [p.3] and to approach it by a narrow trench, just wide enough to work in, and dug down through the loose surface sand and turf level to the undisturbed sand below. This trench carried on into the body of the mound soon revealed that a fairly deep pit had been dug

before the mound was heaped up. This pit was now filled with disturbed sand, containing fragments of decayed wood and ashes. Clearing this out, the shape or plan of a boat was revealed with, still stuck in the sides, a few of the great iron nails which had fastened the timbers together. We *now* realise that the peculiar shape of the boat (here again, all that remained was the 'shadow' in the sand made by the decayed wood) which was most unusual for craft of such antiquity (they were normally pointed *both* ends) was due to the boat having been cut in half - the missing part in all probability having been used as a roof or cover for the deposit in the bottom of the other half. There were traces of burning and no doubt a body had been cremated on the site. This grave had been almost completely robbed, however, and little was found but the gold-plated disc (probably from a shield boss) and glass fragments indicated its former rich character. The robbers had dug down from the top and thus destroyed the covering to the deposit.

A third mound opened was riddled with rabbit burrows and had been so completely robbed that no [p. 4] fresh evidence was secured.

Mrs Pretty, being now satisfied as to the character and age of the mounds, discontinued the work and Mr Brown returned to my employment.

On trying to assess the significance of the rather scanty evidence obtained [Mrs Pretty having presented the objects to the Ipswich Museum], I was struck by the character [marginal sketch] of the iron axe which, with the remains of its iron sheathed shaft and leather 'holster', lay beside the oak slab in the first grave. As far as I could gather information, this seemed to suggest a date in the 8th or 9th century, rather than the 6th or 7th, and that, therefore, some at least of the mounds *might* contain graves of Scandinavian invaders, perhaps inserted into the already existing early Saxon mounds. I therefore felt it desirable to secure further evidence if Mrs Pretty would agree to resume the work. In the early summer of 1939 I had an opportunity to approach Mrs Pretty on the question and, after some hesitation, she agreed - on my assurance that I did think there was a good chance that the large mound might still contain evidence of importance.

Here again, the compass bearing of the first grave was followed. The narrow pilot trench was started well *outside* the mound and almost immediately [p. 5] produced evidence which foreshadowed the importance of the discovery awaiting us.

Mr Brown came over to Ipswich to report to me that he had found *outside* the mound great iron nails - similar in type to those found in the boat in the second mound in the previous year, but so large as to indicate they must have come from a vessel of much greater dimensions - a ship, in fact.

The explanation of their presence where found is that the robbers who dug into the mound in the 16th? century must have cut into the remains of the ship's upper part, and have disturbed these nails which they threw away. The size of the mound itself seemed to justify this forecast, and I gave Brown precise instructions to proceed with great care - to take the pilot trench into the mound until the edge of the ship - which could be recognised by the sooty shadow in the sand, was reached - then to clear out the filling of the hull, being careful to stop as soon as either the shadow of decayed wood, or the rust from the nail heads, appeared so that the structure would be revealed. This he did with great success, so that eventually an accurate plan was made showing the timbering of the vessel. We were continually asked how it was that we knew the ship lay exactly where it was formed. The compass bearing clue was the secret: see additional notes.

In clearing out the hull, we worked forward section by section so as to preserve the character of the filling [p. 6] for recording purposes as long as possible. When the face had been carried back towards the central area of the vessel the disturbance caused by the grave robbers could be seen, thus the sand being mixed with surface soil and showing how it had been shovelled back into the hole.

We noticed, however, that the disturbance did not reach to the floor level of the hull, and it seemed possible that the robbers had not reached the deposit [p. 7]. We knew that in the ship burials in Norway

the grave deposits had been protected by a roof built over them in the middle of the ship.

Traces of such a structure were also seen but the roof had obviously decayed and collapsed under the weight of the sand above, the robbers' work completing its obliteration so that the only trace existed at the side (as above).

I felt that the responsibility for uncovering the deposit if it were to be still undisturbed was much more than we ought to carry, and told Mrs Pretty that the resources of the national museum should be drawn upon. She did not welcome the prospect of an indefinite extension of the work, and wanted us to continue, but neither Brown nor I were willing, and I at once reported the situation to the Dept of British Antiquities at the British Museum.

Eventually the services of Mr Phillips (now the Archaeology Officer of the Ordnance Survey) was secured to supervise and he assembled a number of experienced archaeologists so that the final stages of the uncovering of the deposit was carried out with great care and precision. The position of each object being carefully recorded and items protected as they were removed - the whole being taken to the British Museum for preservative treatment [p. 8]. While preparing for the final removal, and before Mr Phillips's team took over, two features were revealed which do not receive mention in the official accounts, but which are of interest.

In clearing the upper sand near, but I think not over, the grave chamber, a filled-in posthole was seen. [When a wooden post has decayed in the ground, and been replaced by silt carried in by saturation, you can trace its position and shape quite clearly]. This may have been the post which is described in the old Beowulf poem as erected on the grave mound of the hero to carry some emblem in his memory. Secondly, lower down, an area of smoothed clay was found - circular - like a large dish - this, no doubt, was the '*libation*' bowl or pan where offerings were placed, or poured, at the time of, and often after - by either opening the mound or using a 'pipe' arranged to lead down to the grave. This feature can just be detected on the photo at page 560 E. Anglian Magazine, under the rods erected over it for protection. It had of course to be removed to get down to the grave level. I have used the word *grave* but there is no evidence that a body was ever there. It may have been a cenotaph - a provision of equipment felt to be required in the case of some leader (or king?) lost in battle or at sea whose body was not recovered [p. 9], or a deliberate discarding of pagan regalia on the adoption of Christianity.

The text of the E. Anglian article gives a fair idea of the site, but at the time we were so plagued by questions as to where and how the ship was buried, that I had a landscape model made showing the Deben Estuary and the position of the mounds near it. Also a model showing the ship as seen when excavated. Both these are at the Ipswich Corporation Museum (Mr Norman Smedley is the present Curator). As to the 'burial' process, this must have run much as follows - The ship would be floated at high tide to the float of the high baulk. Then, lightened probably by the removal of thwarts, etc. it would be handled by men and ? oxen up the 'swale' leading to the site. There a trench was dug and the ship laid alongside it (A). It was then drawn out *over* the excavation on to cables strained to support it. When in the desired position (B) the ship was slowly let down into the trench by slashing off the cables .

This explanation was given me by a naval man who recorded the structure of the vessel, and no doubt is correct. [p. 10] I find that my daughter has a copy of the E. Anglian for Sept 1939, which you may borrow. The copyright is technically mine, but the Ipswich Museum Committee might claim rights but I should think any use you might wish to make of it - if any? - could be arranged.

Wishing you success in the project I remain yours faithfully

(Signed) Guy Maynard
Curator Ipswich Museums 1920 - 1952

PS It occurs to me that the importance of the case as touching the operation of *Treasure Trove* might perhaps come into your field? Sutton Hoo finds were *not* Treasure Trove because the objects were *not*

intended *ever* to be recovered by anyone. There was no ownership concept so far as ownership of the site - or of the agent - finder, were concerned. Mrs Pretty was *both* owner and *employer* of the findings. Hence she was awarded the objects.

In contrast, the great Mildenhall silver treasure *was* treasure trove - *was* intended to be recovered when danger? had passed. The descendants of the owners would be entitled to it if they could be traced. As they are unknown, the State assumes ownership and rewards the actual finders. As the owner of the site had made *no* stipulation for delivery of anything found, the reward went to the actual finder, the ploughman.

[p. 11] *Additional Notes*

In such excavation work, the recording of the position of objects removed, and their relation to each other, is of the greatest importance. The method followed is usually as follows:

The objects are first merely uncovered - not removed - if possible photographed in position.

A 'grid' or frame is made to *lay out* the objects - or part thereof if they are of large extent. This is divided into squares by rods or tapes. The objects are then sketched in on a drawing, made to a reduced scale, of the grid, each object is given a number and also carries the letter of the grid square to which it belongs.

In the case of a large group, as at Sutton Hoo, the grid would be moved several times to record the whole. Finally, the objects would be lifted, wrapped or boxed for transport, and given their appropriate letter numbers. In this way, if required, the whole group could be accurately reassembled after treatment for preservation.

[p. 12] The position of the Sutton Hoo grave deposits.

3.3 *Charles Phillips' reflections 'Sutton Hoo en pantoufles'*

Description: An account of the 1939 excavation of Mound 1 written by C W Phillips, dealing with the background and personalities involved. Pp. No figures.

Source: Received as a carbon typescript from the hand of C W Phillips at his house (57, Hampton Road, Teddington) on 27 May, 1983, by M O H Carver. The title was suggested verbally by CWP at the time.

Constraints: Copyright remaining with C W Phillips. It is *additionally protected* in that no reference or quotation may be made to or from the document without the express permission of the archive holder (M O H Carver).

Verbal Title: "Sutton Hoo en Pantoufles" - C W Phillips

A great deal has been written about the Sutton Hoo excavation in the forty years which have elapsed since the discovery of the famous royal ship-burial in 1939. An event of this kind which occurred in a time of increasing world crisis and in which a considerable number of persons and interests were involved must have many aspects which, for one reason or another, never appear in any of the official accounts. The reasons for this reticence may come from a fear of the law of libel or from a desire to respect the feelings and beliefs of people who were concerned, and are now dead. But with an affair of the importance of Sutton Hoo it is a duty to place all relevant facts on record while they are in living memory. The formal account of the work has long been available and now the following is a faithful attempt to give an account of other matters which affected the outcome.

The writer was the director of this excavation in the crucial months of July and August 1939, and was present at every stage. By a mere chance, he was also the immediate cause of its being put on an official

basis. Much of the time I was too closely occupied with the work in hand to do anything else but I had a number of experiences both before, during and after the excavation which have never been placed on record because they were no part of the technical work in hand.

My introduction to Sutton Hoo was a by-product of my Honorary Secretaryship of the Prehistoric Society. I had taken this post over from Guy Maynard, the Director of the Ipswich Museum, in 1935 shortly after the old Prehistoric Society of East Anglia had been raised to national status as the Prehistoric Society. For several years afterwards I was liable to pay occasional visits to Ipswich to confer with Maynard about the problems which arose in running the new Society.

So we came to 1939. I was then resident at Cambridge and no inkling had reached me about the work which had begun at Sutton Hoo in the previous year. My summer vacation programme for 1939 was intended to be entirely concerned with seeing the Little Woodbury Iron Age excavation at Salisbury through its second season and, with any luck, to its conclusion. The Society was once more bringing over Gerhard Bersu from Germany to direct the work and in the event neither he nor his wife were to return there till after the coming war was over.

During the early days of the Summer Term at Cambridge I paid occasional visits to the Downing Street Museum morning tea-breaks which were a regular place for the exchange of archaeological gossip and news. Once or twice I heard vague remarks which suggested that in Suffolk someone was engaged on work which had led them to make enquiry at the Manx Museum about the Viking boat burials known to exist in the Isle of Man. I wondered if someone had come across a boat burial in Suffolk, but had much else to think about and gave the matter no further attention.

Maynard was a pleasant, well-intentioned man but also a timid, indecisive character who had long been under the domination of the chairman of his Museum Committee, the formidable and overbearing J Reid Moir, the bespoke tailor of Ipswich, who had turned quatercentenary geologist and student of early man in East Anglia. It now appeared that the work at Sutton Hoo which was normally under the aegis of Ipswich Museum had run into difficulties because Basil Brown, the man in charge on the site, was engaged in the opening of the largest of the Sutton Hoo barrows for the owner of the site, Mrs Pretty, and had begun to reveal the presence of a large boat under the mound, obviously some sort of ship-burial. As the finds already made in the barrows opened there in 1938 had been manifestly pagan Saxon in date this must probably be of the same age and general type as the boat-burial found at Snape in 1861 [1862/3]. It was obvious that Maynard was at his wits' end about what to do. He was supposed to keep an eye on this work but he had just taken one of his annual holidays of several weeks in Cornwall with his friend Colonel O Pearce-Serrocold. Each year they made small excavations among the numerous hut-sites and other ancient features of the Lizard peninsula. Now he had returned to find that for some time past Brown had been revealing remarkable possibilities on the site.

An awkward feature of the whole of the work at Sutton Hoo down to my first visit in 1939 was that although Basil Brown had been recommended to Mrs Pretty by Ipswich Museum, and was in some sort an occasional employee of that Museum, he now was, for the purposes of Sutton Hoo, the paid employee of Mrs Pretty and, being a man of great independence of spirit, maintained this position with much firmness when any differences of opinion arose between him and the Ipswich Museum over the conduct of the Sutton Hoo work. In these differences Brown's view seems generally to have been the right one and the Museum authorities should have paid much closer attention at all stages to what was in progress at Sutton Hoo if they wished to retain any effective control. Maynard's absence on holiday at a critical time in Cornwall had not improved matters.

Maynard was stunned by the unexpected developments but he could not give me any clear account of them and I suggested that we should go and make an inspection there and then. We therefore drove the eight miles to Woodbridge and made our way up on to the heath to Mrs Pretty's house. After being introduced to this lady I was taken over to the site which was on the heathland overlooking the Deben about a quarter of a mile away.

As we drew near I noticed a large upcast of sand whose size suggested a large excavation, but I was not prepared for the astonishing sight which met me when I came round to the actual work. There I saw a very wide trench cut right down into the substance of the large oval mound on its longer axis to reveal what was clearly the gunwale outline of much of a large boat which was interred below the level of the old ground surface. At a quick estimate it could hardly be much less than one hundred feet long. The work had been done with care and as yet there had been little attempt to remove any of the sand which filled the vessel. I could not wonder that Maynard had been daunted by this apparition and had made the enquiries, rumours of which had reached Cambridge.

The great potential of what had been revealed was apparent. There was no obvious sign of any interference, and this would have been very difficult because the overlying mound was composed of turf stripped from the surrounding ground which in decay became a darker sand. In effect, the bottom of the boat could only have been reached by digging down from the summit of the mound through many feet of sand. There had in fact been an attempt to rob the mound in this way round about AD 1600 but this had been abandoned when the level of the old ground surface had been reached and the hole had been refilled. There seemed to be every possibility that any burial deposit was still lying undisturbed some feet further down. This would be a great discovery, but even if the boat was empty the boat itself was of the greatest importance and would have to be studied with the utmost care.

It was very fortunate that Brown had found a much smaller boat some eighteen feet long interred under one of the barrows opened in 1938 [mound 2]. This was a low mound and the boat had been easily robbed of almost all its contents at some past time. But it had given Brown the experience of dealing with the undisturbed remains of a clinker-built boat secured by iron clenched nails whose rusty relics still maintaining the pattern of the boat's construction since they were quite unable to move in the investing sand and when the planks they had secured rotted away.

It would plainly be rash to continue further without the best advice and technical help. I suggested that the British Museum and the Ancient Monuments Department of the Ministry of Works should at once be informed by telephone. This was done within the hour. At this time both the bodies were much preoccupied in working on the plans for the safeguarding of national treasures if war should break out. After making sure that these developments in Suffolk were known about in the right places, I drove Maynard back to Ipswich and myself returned to Cambridge.

There was an early reaction to my telephone calls and a few days later I was invited to meet the representatives of these official bodies on the site at Sutton Hoo. All the local persons who had been concerned were present and Christopher Hawkes represented the British Museum. The great importance of the find was at once recognised and it was agreed that all further work should be suspended until the next move had been considered in official circles. This decision certainly removed a weight from Maynard's mind but I am not so sure that Moir was happy about it. The expectation of a big scoop for Ipswich Museum was already in his mind; he knew very well that official intervention from London must now follow and put this in jeopardy. This disappointment certainly coloured his actions during the later work on the site.

So the Cambridge term ended and I had already been on the site at Little Woodbury for a week when I received a telephone call from the Ancient Monuments Department of the Ministry of Works. This asked me to take over and complete the excavation of the ship-burial site in Suffolk. It was a daunting proposition and I already had a prior commitment to the Prehistoric Society's excavation. No-one in Britain knew anything about the practical problems belonging to the excavation of a ship-burial and, even when called to do so by the highest archaeological authority in the land, it would be a matter of great delicacy to take over from local people in this way. But others could easily cope with the work at Little Woodbury and of no-one in Britain had any knowledge about how to tackle ship-burials then someone had better make a beginning. Any conscientious scruples I might have had about intervention in Sutton Hoo were salved by the fact that I knew Maynard's basic incompetence from personal experience and from what I had seen of Brown it was plain that I could expect him to be an effective assistant. I therefore accepted the call and was soon at Woodbridge where I made my headquarters at

the Bull Hotel in the market place.

In the early summer of 1939 most human affairs were overshadowed by the virtual certainty that the year could hardly end without the outbreak of another European war and, if this ran true to form, it would begin in the early autumn. The excavation would therefore have to be completed in eight weeks at most and we should have to act quickly. The site was completely exposed to the elements and the nature of the soil, sand interspersed with random rafts of clay, made it certain that wind and rain would both be very detrimental to clean and accurate work. Sand faces would collapse in rain and would also be easily eroded by wind. We had to take the chance of this and fortunately there was very little heavy rain or strong wind in the whole of this menacing summer.

My position at Woodbridge was not easy. I was the official agent of the Ministry of Works to see the job finished in good order but received no more than my out of pocket expenses [£40; pers comm. CWP] and was not in any strict sense an employee of the Ministry. But there was no time in which to boggle over details of this kind. Brown and the two other men working on the excavation were paid by Mrs Pretty, Brown specifically in connection with this work and the other two as regular members of her domestic garden staff. The Ministry left everything to my discretion and was not able to spare even one of its staff to make a day's inspection of what was going forward. On the side of practical help it could only arrange for some long poles to be sent over from some work it was doing at Framlingham Castle, in case they might be useful. In fact we scarcely made any use of them at all. There was also the problem of my relations with Ipswich Museum where I am sure that the authorities considered that they were being jockeyed out of their position at Sutton Hoo. The danger here did not arise from Maynard, who was a secondary figure, but from J Reid Moir who was a much more formidable personality and quite ruthless in his determination to make what credit he could for his Museum and himself out of the affair. In my relations with the Museum I made it clear from the start that, while I should be glad for them to visit the work at will, I was definitely in charge.

Inevitably Mrs Pretty, as the owner of the property and the initiator of the work, was a major factor to be considered in every stage of the events of 1939 at Sutton Hoo. The site itself had received no official recognition as an antiquity; the barrow group was not named as such on the Ordnance Survey maps; it was not a scheduled monument and so the Ministry could not impose any statutory control on what went on.

Mrs Pretty was a woman of very considerable wealth and a Justice of the Peace with a strong sense of public responsibility. She had married Colonel Pretty, also a leading citizen in those parts, comparatively late in life and in 1939 she had not long been a widow. One of the consequences of her bereavement had been that she was now a Spiritualist and relied a great deal on the guidance of a Spiritualist mentor in London who she visited weekly. This man was credited with keeping her in touch with her deceased husband and it was never possible to be certain of the degree of influence she might be under from that quarter. I say this with full respect for an admirable lady.

She disliked any kind of publicity and this remarkable discovery on her property was likely to provide plenty of this. Her health was obviously precarious. I was told that she had been a very vigorous and active person but an unusual occurrence had altered this. She had in fact borne a son when she was past her fiftieth year and the young Robert Pretty, then about seven years of age, was a frequent visitor to the work. I was also told that the reason why she began any work on these burial mounds was because she believed that she had seen shadowy figures moving round them in the dusk. This was only hearsay and I cannot vouch for its truth.

When all these complications are taken together it will be seen that much diplomacy was required to steer the course of this excavation through all these assorted and often intangible obstacles. But at all important times Mrs Pretty was a support and not a hindrance, though a good deal of thought had to be given to how she might be liable to take each of the successive developments of this memorable two months.

The only shelter we had on the site except for the inside of cars which might be present was a shepherd's hut on wheels which had been moved to the upper edge of the wood close by the site. This was a wood of conifers and ran down the slope to the Deben's high water line, and it has been felled in more recent years [presumably Top Hat Wood, still a good stand of timber in 1983]. It was a dampish wood because water oozed out of the slope in many places, probably turned out of the sand of the adjacent heath by the various clay rafts I have mentioned above. These conditions produced a luxuriant growth of moss which was very useful as a packing material when we later had to box and dispatch a variety of finds many of which had to be prevented from drying out. But the heath on which the barrow group stood was a typical piece of Sandlings country, flat, heavily covered with bracken and without any shelter from the wind and rain. Today the area has been completely broken up for cultivation and its former aspect is quite changed with the old conditions only surviving in an enclave which contains the barrow group.

The work went on rapidly and the trench revealing the boat developed into a great open cut 30 feet wide and rather more than 100 feet long. Its sides had to be stepped back to provide walkways on each side of the boat and also to reduce the danger of the remaining sides of the barrow slipping in. These steps were reinforced as far as possible by planks.

Today no-one would even consider an excavation of this kind without covering the whole with a marquee or plastic tent of the type used in Sweden for Vendel boat excavations and also, since 1966, at Sutton Hoo itself. By great good fortune there was only one dangerous time early in July when the burial chamber had been exposed. Thundery rain caused some channelling of exposed sand faces but the area was covered by a couple of tarpaulins and no harm resulted. Later when the boat itself had been cleared and the pattern of ship nails was being carefully exposed a combination of hot sun and fairly strong wind threatened to erode the sand and make some of the nails fall from their places, but once again our luck held. We managed to complete the excavation in the open without losing a single day.

The precedent of the famous ship-burials in Norway and elsewhere made it inevitable that the uninformed expected Sutton Hoo to be another example, before it was conclusively shown to belong to the period of the Heptarchy and so some four hundred years older. Until this was abundantly obvious I had some passing difficulty with Mrs Pretty on this subject. Brown had bought a copy of the report of the Oseberg ship excavation to the site and Mrs Pretty had read it. This was the burial of a queen of Viking times and Mrs Pretty persisted for some time in believing that ours would prove to be the same. I tried to disabuse her but was finally compelled to push on with the work and let the facts speak for themselves.

During July the revelation of the richness and importance of the burial deposit raised a whole crop of new problems. I had alerted a number of colleagues as soon as the untouched nature of the deposit was clear but before any detailed examination had begun. Expert help would be necessary both in studying and removing the various objects and also in making the fullest possible photographic record of every stage of the proceedings. It was fortunate that O G S Crawford was able to get leave from the Ordnance Survey to come to the site and bring his able assistant, W F Grimes, with him. Others who came to help at the crucial time were Mr and Mrs Stuart Piggott and Mr John Brailsford, while Dr and Mrs Grahame Clark were also witnesses on one important day. Grimes took charge of the actual disengagement and removal of the burial deposit and Crawford took a large series of excellent photographs of every stage of this work. At a later stage this photographic record was continued by the skilled work of two frequent visitors to the site, Miss Wagstaff and Miss Lack, particularly at the time of the disengagement of the boat. Another witness of the discovery of the main deposit was Mr J B Ward Perkins, then Director of the British School at Rome, who happened to be staying in the district. Under the conditions of the time it would have been difficult to have gathered a more valuable group of workers, witnesses and general advisers.

These events took place at the height of the holiday season and although every effort was made to keep our work and its results private, the sheer value of the objects which had to remain exposed for some time at the bottom of the excavation during the process of disengagement made it necessary to invoke

the aid of the police and a night guard was provided by the Chief Constable of East Suffolk. This prevented any loss or vandalism.

But it was impossible to keep the facts secret and I had to consider dealings with the local and national press. In one sense we were fortunate the increasingly dangerous development of world events had first claim on the attention of the press or we might have become a national nine days wonder. This did not occur but the situation was sufficiently delicate as it was. I therefore took an early opportunity to visit Mr Fairweather, the editor of the *Woodbridge Observer*, the local paper which also had the agency for the national press. I agreed to supply him with a full preliminary account of the find for publication in his own paper after which he could release the information generally to national papers. At the same time, it had been only proper to keep Ipswich Museum fully informed and I extracted a promise from Mr Reid Moir that he would keep silent until an agreed statement which I would supply could be sent for publication in the *East Anglian Times*, an Ipswich paper with wide eastern circulation. The Woodbridge editor kept to his agreement but my private fears were realised in the case of Reid Moir. In breach of his agreement with me, he made a premature release to the *East Anglian Times* and the fat was in the fire. We were at once exposed to the danger of being hampered and overrun by curious spectators who could not easily be excluded from the area of the work. Furthermore, although it was already clear that the find was of national importance and that in one way or another the finds would ultimately reach the National Collection, Moir also approached Lord Churchman, the local tobacco magnate, to induce him to put up the money for the construction of a special museum at Woodbridge to house the finds. Fortunately, this additional complication failed because Lord Churchman would not agree.

As a result of Moir's behaviour, the Woodbridge editor lost his scoop and the news broke nationally through the *East Anglian Times*. Our police protection was reinforced and this took care of any serious invasion by the public on the ground, but aeroplanes now began to fly over the site, presumably containing press photographers. Pressmen began to arrive in Woodbridge and made determined efforts to visit the site. They also pestered me in my lodgings. We were now very short-handed at the site for the group which had rallied to deal with the burial deposit had now dispersed. Although an accurate account of what had been found was circulated, the pressmen seldom made any attempt to make much use of it and some silly and erroneous copy was handed in in Fleet Street. Time was now running short, the press soon ceased from troubling us as the international situation was providing more vital matter and we were left to complete the excavation of the boat itself in comparative quiet.

Through all this time, Mrs Pretty did not visit the work very much and when she came down occasionally in the afternoon it was to show what was in progress to her luncheon guests. Apart from her young son, who was fairly often present with his nanny, another member of the family of whom we saw a great deal was a Miss Pretty who I believe was a sister-in-law. Her interest sharpened a great deal when the important jewellery came to light and I have reason to believe that later on when the disposal of the finds was in question she was one of the influences which pressed for their retention in the family.

I had no secretarial help at this time, and one of the most troublesome of my chores when away from the excavation was contacting by letter or telephone those who ought to visit the site. Chief among these was T D Kendrick, then Keeper of British and Medieval Antiquities at the British Museum, and he was particularly important because of his interest in the Anglo-Saxon period. I kept him regularly informed of our progress, but he was himself so much engaged in all the arrangements which were being made to safeguard to collections in the event of war that he was only able to make one or two visits, the most important being shortly after the major find of jewellery. I knew that he would be almost unable to believe his eyes when he saw what we had and I had tried to minimise the shock. When I met him at the station at Woodbridge, I brought with me one of the best of the simpler buckles from the belt-set carefully wrapped in cotton wool in a tobacco tin. Before we drove to Sutton Hoo I asked him to step into the waiting room for a moment because I had something to show him. When he saw the buckle, he was both astonished and elated because I was able to tell him that it was part of a much larger collection of pieces in the same style. Some years before, on the strength of a small number of kindred pieces in England and abroad, he has postulated another major school of Anglo-Saxon jewellery, possibly in Eastern England, and here was the confirmation.

Another notable visitor was the late Princess Marie Louise. She drove over from Sandringham, where she was staying with Queen Mary, and spent two hours at the site. She showed a very intelligent interest in what was being revealed and when she left avowed her intention of trying to induce the Queen to come also. This did not occur and it was as well because time was running short and it would certainly have cost us the greater part of a day's work. The Princess was very informal and comfortable, but it might not have been the same with the Queen.

When the boat had been fully exposed in all possible detail, I was particularly anxious that it should be seen by Professor H M Chadwick, the great Anglo-Saxon scholar, now ageing and retired. But the problem was how to find him and get him to Suffolk. When the vacation came round he would leave Cambridge and withdraw to a remote part of Herefordshire, the identity of which was a well-kept secret. I did not know what to do, but then it occurred to me that the Clare College porters must have been entrusted with this secret because of the need to forward mail. I therefore represented the case to them and was able to get into touch with him. He did not require any urging to come but his travel was not to be undertaken lightly because he was always driven in a car by his wife, and insisted that the speed should never exceed twenty miles an hour. This slow progress to Suffolk was duly accomplished and I had the satisfaction of showing him this remarkable relic.

Our period of work at Sutton Hoo happened to coincide with a practical outdoor course for artists which was organised by Mr W P Robins. He took much interest in what we were doing and recorded the general scene in an etching and a number of sketches which are interesting mementoes of the work. Duncan Grant, the well-known artist, had come to Suffolk with Robins, for a reason unconnected with his art. At this time, Grant had a bad drink problem and Robins was doing his best to get this under control. Grant was also interested in what we were doing and Robins asked me if I minded Grant being present at the site at least until midday. He also begged me to do all I could to discourage him from leaving before that time. Thus he would get through at least half of the day without drinking. I was very glad to co-operate and Grant was a regular morning feature of the scene, perched on the top of a mound of spoil but the approach of midday usually saw him on his way back to the hotel where it was now opening time and of course I would no longer detain him. I have no knowledge of the later history of all this but it is obvious that from his later career that Grant improved.

When once the burial deposit had been cleared and all had been removed under police escort for temporary housing at the British Museum, preparations had to be made for a Treasure Trove inquest to determine the ownership of the objects made of gold and silver. This sole concern with the precious metals highlighted the unsatisfactory attitude of the law to 'treasure'. Splendid though the jewellery found at Sutton Hoo was, it had no more than equal rank at best to other objects made of baser materials found in the deposit which were of unique historical importance. Among these were the great whetstone, unquestionably a symbol of royal authority, and the enigmatic iron object which has been variously interpreted, but seems most likely to be the surviving part of some kind of battle standard. But these were not 'treasure' in the legal sense, although it was obviously desirable that the whole assemblage should be kept together.

It was desirable that the inquest should be held with a minimum of delay. The East Suffolk Coroner would normally have presided, but he was a relation by marriage of Mrs Pretty and, in the interest of complete impartiality, he declined to act. His place was taken by his colleague from North Suffolk, Mr L H Vulliamy. This was to be no ordinary inquest. Finds of treasure trove are not infrequent. The most common are finds of coins, often those of the later Roman Empire with a minimal silver content, but in this case the normal limits were far overpassed. The total gold and silver content of the Sutton Hoo jewellery was not great but here there was a combination of historical importance, superb artistry and technical accomplishment which made it difficult to have to think of these objects in monetary terms, but if ever they should have come to the sale room, the sum involved must be enormous.

The day of the inquest came on Monday, August 14th. The objects were brought down from the British Museum under escort and laid out on tables in the little village hall of Sutton. I was present with Stuart Piggott as witnesses to the circumstances of the discovery. T D Kendrick represented the British

Museum and Mrs Pretty was also present. Pressmen and photographers swarmed around the building. After the unusually large number of fourteen local men had been sworn, the Coroner defined the law of treasure trove and we gave our evidence on oath. The matter to be decided was whether the objects had been casually lost or deposited with obvious intent to recover. Had they, on the other hand, been deposited by persons who had no such intent, but were formally divesting themselves of ownership in devoting them to the use of a dead man? If the first could be proved, the whole would revert to the Crown, with the obligation to pay the full value to the finder, in this case constructively Mrs Pretty: if the second view held, the whole passed to the owner of the soil, once again the same lady. There could be no suggestion that this was any casual loss or hidden loot, and Piggott testified to the public and deliberate circumstances under which the treasure must have been placed in the grave as the continuing property of the commemorated dead man. Since those who deposited the objects had no intention to recover, and divested themselves of any property they might have had in them, the position was clear. The Coroner put the matter to the jury, who returned a verdict in favour of Mrs Pretty as the owner because she was the proprietor of the soil.

The Crown had failed to establish its claim to these objects, which were plainly of national importance, and representative regalia of one of King George VI's remote predecessors as ruler in East Anglia. What was to happen now? Would the Treasury be prepared to pay the full price to Mrs Pretty and secure them for the nation? The treasure was repacked and returned once more under escort to the British Museum. I knew nothing of what went on behind the scenes in London at this time, but it is now known that the Crown was not prepared to acknowledge defeat and was prepared to challenge the jury's verdict in the High Court by quoting pre-Blackstone precedents on the law of treasure trove.

It was now that Mrs Pretty became a central figure in the next stage of this affair. She was a wealthy woman and, in fact, a millionairess, so that she was not under the pressure of any financial need. There were almost certainly those about her who counselled that she should retain the treasure, either for the local interest of Ipswich Museum, or to swell her son's inheritance. She was rather an enigmatic figure with an indecisive air which could be deceptive for, in my experience of her, she was well able to make up her mind when a decision had to be made. At this moment she sought the aid of her spiritualist counsellor and he was soon spending a night at her house. We continued our work of clearing up the ship without any break and on the evening of the counsellor's visit he was brought out to see the site and I went for a stroll with him on the heath. I do not even recall his name, but we discussed the situation which had arisen from the inquest; I had learned unofficially that the Treasury was in no hurry to put up the purchase price even if one could be agreed. Mrs Pretty had not discussed the future of the finds with me in any way. My companion seemed to be a sensible and responsible man and I suggested to him that a presentation of the whole of the finds to the nation would be a splendid gesture and I assumed that he knew that it was one that Mrs Pretty could well afford. In due course we said goodnight and he went back to the house. I did not see him again and his visit was closely followed by the announcement that Mrs Pretty had presented the whole of the finds to the nation. So all ended well without further complication. I am quite sure that Mrs Pretty was entirely capable of making this generous decision without any prompting and will leave the matter there. It was the most splendid gift ever made to the British Museum in the lifetime of a donor and Mrs Pretty was later offered the honour of Dame of the British Empire, which she declined.

While all this was going on in the first three weeks of August we had been pressing on with the fullest possible examination of the boat that circumstances would allow. The splendour of its burial furniture had tended to overshadow the importance of the boat as a remarkable survival of an early form, and it was unfortunate that as soon as the burial chamber had been cleared up our helpers melted away. They had plenty of excuse, for the world situation had worsened and everyone had to consider his or her own affairs in relation to this fact. People with official positions like Crawford and Grimes had to go back to their posts, but two who remained were Miss Wagstaff and Miss Lack, who continued to take an invaluable series of fine photographs to the end.

It had always been intended that the study of the boat would be the function of the Science Museum through the agency of Lt. Commander Hutchinson, the curator of ship models there. He had already

made two visits to the site, the first on July 11th and second on August 3rd, when he was accompanied by Dr H J Plenderleith in charge of conservation work at the British Museum. He finally joined me on August 8th, bringing with him two assistants who were to survey the boat when it was completely revealed.

We were already well aware of the practical problems which would have to be solved in revealing the interior aspect of the boat in its entirety. We knew that it was most improbable that any actual wood belonging to the boat would have survived. When the burial had been completed, the whole of the boat fore and aft of the wooden burial chamber constructed amidships had been filled with sand which had been excavated in making the trench for the boat's reception and it was the same with the spaces left between the outside of the hull and the sides of the burial trench. Incidentally, I am still rather puzzled about how this was done so completely, because the sides of the trench were still vertical whenever we could test them and showed the marks of the diggers' tools. The rest of the mound covering the whole of the burial to a considerable height above the old ground surface had been made of turves. When at last the roof of the burial chamber caved in, the infilling which covered the burial deposit was almost all this darker barrow material except for some of the clean sand which came in at either end of the chamber.

The tightness of the involvement of the fore and aft sections of the boat meant that as it decayed all the clench nails holding the strakes together remained strictly in their relative positions. It was only in the burial area where the chamber had long preserved an open space that the run of the clench-nails was somewhat distorted. As the form of the boat swept upwards in a curve from the keel-line to the gunwales, the gradient steepened till it was vertical at the gunwale line. Would the clench nails remain in position through the whole of the curve when the sand supporting them on the inside was taken away? We were working in the open air and it was plain that a period of dry, still weather was required to have much hope of this clench-nail pattern remaining in position for any length of time.

Fortune favoured us. I worked in the stern section while Hutchinson and Brown busied themselves in clearing the bow end. We worked steadily outwards and upwards from the keel-line on both sides using small fine brushes of the pastry type and penknives, taking out the spoil by dustpan and brush. The ribs had not been removed from the boat at the time of its burial and we found that they were still represented by a more or less rectangular sectioned hollow running through the sand from gunwale to gunwale a slight distance above the bottom of the boat. As far as possible, we left transverse blocks of sand containing these hollows and were able to detect all the ribs in the bow and stern sections. Each clench nail gave a warning of its presence by the rust-staining of the adjacent sand and one simply brushed on very carefully till this indication was noted, after which each was fully revealed by work with a penknife. In this way a very remarkable result was achieved and the photographs of the cleared boat are testimony to this. No wood was found except some traces preserved by rust-substitution round the shank of the nail, but it was possible to see the imprint which the grain of the outer side of each strake had made on the sand which had been pressed against it. In the same way it was apparent that the gunwales had been built up of several pieces of wood and that there had been a series of tholes along the top of the gunwales which were made by fixing on carefully chosen pieces of wood with the stumps of branches projecting from them. These were strongly secured by groups of iron spikes driven through each end of the built-up gunwale and the projecting piece of branch in the middle had been trimmed down to the required shape and size. The impressions of a number of these tholes could be seen along the gunwale line in several places but it was too much to expect each one to be visible, although the regular occurrence of the groups of attaching spikes made it clear that the system of tholes for the rowers ran continuously down both sides of the boat and showed provision for at least forty rowers. Everything was carefully photographed. In the stern the special arrangement of heavier ribs with the clear implication of the use of a large steering oar over the starboard side was very apparent. No trace was found of any oars, nor was there any sign of floorboards or other wooden fittings. Apparently, everything had been removed from the boat except the ribs.

In due course, the ship was surveyed by the Science Museum staff and its lines were committed to paper. Traces of the massive keel-plank were found and it was apparent that its underside had two parallel

projecting ridges left when it was shaped, presumably to act as runners when the boat was beached.

During the course of the post-war studies of the Sutton Hoo excavation it became necessary to have the notes about the boat made by Hutchinson. At this point, it must be explained that upon the outbreak of war he returned to naval duties and not many months elapsed before he was taken ill and died of kidney trouble. I am not quite positive about the nature of his illness but this is what I have been told. His early death may throw some light upon the impression I formed during my association with him, that he was far from well. He never complained of illness but he often seemed lethargic and my memory is that his complexion had a dull, leaden look. I am not suggesting that he failed to attend to the business in hand but it sometimes seemed to cost him effort and I have no recollection of his taking any notes of the observations he made while I was with him and discussing various points on the spot. I was not officially in charge of the boat excavation and I assumed that he was writing up a record of the work in the evenings. No notes were found later at the Science Museum after his death and his widow has since been unable to find any among his papers.

In the second half of August the Danzig crisis had reached boiling point and was between Nazi Germany and Poland was imminent. The work was ended on August 25th, leaving only nine days before the outbreak of general war on September 3rd. It was quite impossible for us to attempt to refill the boat and we had to content ourselves by a final removal of a number of carefully labelled and located specimens of clench-nails and gunwale-spikes. The site was left open to the sky. In the last stage of the work there had been various speculations between us about the feasibility of taking some form of cast of the interior of the boat, but the use of fibreglass was in the future and any attempt of any kind at the time would have been long, labourious and very expensive. We had done our best to secure a good photographic and survey record of all that had been revealed and we could do no more. I returned to Cambridge.

There was one last incident before we all put Sutton Hoo behind us and settled down to live through the war in our various ways till 1945. After Mrs Pretty had announced her gift of the treasure to the nation nothing further was heard from J Reid Moir, but an incident later in the autumn of 1939 showed that there was still some uncertainty in some quarters about Moir's degree of involvement with Sutton Hoo. His personal experience in the early days of the war had been unlucky because the first bomb which was dropped very much as a venture on Ipswich fell close to his house in Henley Road and did some damage. I heard of this with regret for in spite of his behaviour during the excavation I did not bear him any ill-will. Some time after the bomb incident I had a letter from him announcing that he had been invited by the National Geographic Society of America to contribute an article on the excavation to its periodical. It was obvious that he was under stress partly from ill health and partly from the shock of his recent experience. After some consideration, I replied and suggested that, as I did not think a collaboration in writing the article appropriate, I would write it myself and we would divide the proceeds. He agreed, and so I soon dealt with the matter and divided with him the £74 which I received for the work. Soon after this he moved into the Mill House at Flatford and I heard no more from him. He died later in the war period. So far as I can recall, this money was the only sum which came to me from any source as a result of my involvement with Sutton Hoo.

By this time I had handed all my records of the work to the British Museum along with all photographic negatives and after my publication of the first report on the work in the April 1940 number of the *Antiquaries' Journal*, I was clear of the whole matter. Mrs Pretty herself died in the course of 1942 and after a while the ownership of the site passed to Commander and Mrs Barton.

Any further action on the site now became the responsibility of the British Museum, and on his return from military service the further study of the finds and the site was handed over to Mr Rupert Bruce-Mitford of the Museum staff. As I write this in March 1978, the first volume of the definitive report on the whole of the Sutton Hoo complex has recently appeared and a second volume is nearing publication. Much of this remarkable site still awaits examination.

3.3.1 *Letters from Charles Phillips to Martin Carver*

331.1 Letter dated 6 March 1983

57 Hampton Road
Teddington
Middx TW11 OLA

Dear Mr Carver

I have just seen from my recent copy of 'Antiquity' that you have been appointed to direct the forthcoming Sutton Hoo project.

I must congratulate you on this piece of good fortune and hope that it will not turn out to be quite as hot a seat as it did for me nearly half a century ago in 1939.

At least you will have every resource at your command. We had to improvise terribly and all the Office of Works could do for us in those days was to send over some scaffold poles from work then in progress at Framlingham Castle in case they might be useful!

I also notice that there is actually a salary attached to the post. The Office of Works met my hotel bill of £44 at the Bull in Woodbridge, but I was well out of pocket over the whole operation.

The extent of my knowledge of ancient boats was that I had visited the ship museum at Oslo, had also looked in on the Ladby boat in Fyn, and had also inspected the Nydam boat in the Museum at Schleswig. I also once spent an afternoon with Haakon Shetelig in his home near Bergen.

As this enquiry will throw its net much wider than the Sutton Hoo cemetery, as one long familiar with the East Anglian dykes I do hope that one day there will be a serious study of the Devil's Dyke on Newmarket Heath. It is a fantastic piece of work and the organising and carrying through of its construction must have been a job very similar in its way to making the great Tring cutting at the time of the building of the London to Birmingham railway. It is only about two miles long but the Dyke covers nearly four times the length. The power of the East Anglian kingdom must have been considerable.

I am now verging on 82 and can only wish you well.

Yours sincerely

(signed) C W Phillips

331.2 Letter dated 17 March 1983

57 Hampton Road
Teddington
Middlesex TW11 OLA

Dear Mr Carver

It is very kind of you to send me the plan of the Sutton Hoo project and to wish for any comment from me.

First I must dispose of the question of an early meeting which I should welcome, but there are snags.

I am on the verge of 82 but, thank God, still reasonably sound in the head at least I have had no complaints! But in October of 1981 I had a fall and broke my right hip. This was given a replacement operation but the recovery of mobility at my age is not quick and the repaired limb has to be re-educated.

At the New Year I was getting on well, walking with one stick, when I developed an ulcer on my 'good' left leg which meant resting it on a stool while the ulcer healed. This it has now done but I also have a kidney complication which will make it very difficult for me to get to Woodbridge for the Museum opening so very reluctantly I must forego this.

But my wife, who is lecturing in Birmingham University as I write, and I will be very glad to see you here in Teddington and we can put you up if necessary. Teddington is easily accessible by train from Waterloo.

Now for some comments.

The proposals in this scheme are a measure of the progress archaeology has made in the last forty years. In 1939 the job was overshadowed by the need for haste because no-one who did not live through that year can easily realise the doom laden atmosphere in which we were living.

Providence gave us an almost rainless time during the excavation; without this we could never have hoped to demonstrate the boat as we did even if it would have been possible to carry out little better than a pillage of the burial deposit.

The only shelter we had on the site other than the interior of our car was a shepherd's hut on wheels which was drawn up at the edge of the wood in your Zone B.

We had an inkling of the earlier Bronze Age life on the ship burial site and I think it must be worth mentioning that in 1939 there were some quite definite springs breaking out a few yards down the slope in the wood on the way down to the Deben. When first cleared the inner side of the bottom of the boat was very damp and this was almost certainly the water which was seeping out in the wood. Could its presence have influenced the prehistoric occupation of the site?

I am in no position to comment on techniques of excavation when I have never even heard of them. My career as an excavator, such as it was, ended at Sutton Hoo and when I came out of the RAF in 1946 I went almost straight into the Ordnance Survey to succeed O G S Crawford as Archaeology Officer and face the problems of dealing with archaeology on the maps during the general large scale revision which is only just now being completed over the whole of Great Britain.

In the years which followed the return of peace I often wondered when the British Museum would get round to publishing its formal report of the Sutton Hoo treasure and I wrote more than once to point out that a large part of half a century had elapsed since 1946 and that a start should be made.

The choice of R L S Bruce-Mitford was the best they could do but when he got to work I suffered much at his hands, nagging me about inconsistencies in my Diary of the events of 1939. I did the best I could and got a report which contained errors of interpretation of some of the objects found in the Antiquaries' Journal for April 1940 but had to leave it at that. I think I have a good memory but he at least gave me the impression that he did not believe me and I felt tempted to tell him that he was lucky to have any Diary at all.

There was a terrible lot to pack into each day of that excavation and after the treasure had been lifted the experts who had been quickly gathered together like W F Grimes had perforce to return to their other duties leaving a very small team to deal with the boat. This terminal period of the excavation was not made any easier by the state of Lt. Commander Hutchinson sent down by the ship section of the Science Museum to study the boat. He did not seem to be very well but did not complain and we had to hurry up and finish. Not long after the war broke out he was recalled to duty by the Admiralty and before the war was out he was dead from kidney trouble. No one has since been able to find either at South Kensington or his home any notes that he may have made about the technical aspects of the boat. I fear that he probably never made any.

I went to look at Bruce-Mitford's excavations which he made on the site some years after the war and they were some of the most over cautious, time and money wasting affairs that I have ever seen. I may sound very bitter and perhaps not a little indiscreet but I think it is better to tell the truth when a big enterprise of this kind is being undertaken.

I have already said something in my first letter about the Devil's Ditch on Newmarket Heath which will no doubt be the concern of the Suffolk Archaeological Unit. It is a truly prodigious work and since it can hardly be prehistoric or Roman it may be a feature of East Anglian defence against the Mercian power and possibly the Fleam Dyke further to the south-west may belong to the same category.

Whoever built it there must have been large temporary settlements for the workers at points along the home side of the line. I cannot believe that modern methods will not reveal where these are and so the people who built them.

But I must stop teaching my grandmother to suck eggs!

Yours sincerely

(signed) C W Phillips

3.4 *Note on Basil Brown by Richard Dumbreck*

Basil Brown

It is difficult at this stage to write objectively about Basil Brown and his excavating methods; the years have blurred and confused the memory and he should be assessed by the standards of this period rather than by the much more rigorous standards of to-day.

Coming down from Cambridge in 1936 with a degree in archaeology, then an esoteric subject - there were only seven of us on the course - I was full of theory and avid for practical 'dirt archaeology', so de Navarro introduced me to Abbot Horne's excavations at Camerton. There I first met Bill Wedlake and started an association that has lasted ever since. He initiated me in the methods of Wheeler. While continuing over the years to dig at Camerton, I thought to augment that with something on my doorstep, so presented myself to Guy Maynard, the Curator of the Ipswich Museum. He was then digging a Roman villa at Stanton Chare, near Ixworth in West Suffolk and for the next two years I dug there and it was there that I came to know Basil Brown. Though Guy Maynard was in overall control of the dig, he had other commitments and Basil was the man on the spot. I have some snapshots of that dig of 1937 which are somewhat horrific to modern eyes: cutting faces are sloping and irregular and topped immediately with spoil heaps, while the 'cleared' area is littered with potholes, patches of loose earth, stick and bric-a-brac, but from all that the foundations of the villa emerge clearly.

Basil Brown was a 'character': his pointed features gave him the, not inappropriate, appearance of a ferret and were invariably topped with a rather disreputable trilby hat, while a somewhat moist and bubbling pipe protruded dead ahead from his mouth. He had, I believe, in his time, been an unsuccessful farmer, a rent collector and a bailiff and had gravitated to archaeology without any real training thanks to a quite remarkable flair for sniffing out antiquities. He was a human metal detector, though with a wider scope; he could have made his fortune in France in the truffle trade. When I first met him he had already made a name for himself locally by the discovery and excavation of the Roman pottery complex at Wattisfield, near where he lived. One of the kilns from there is, or was in the Ipswich Museum.

I cannot remember when, but it may have been just after the War, I dug alone with Basil on a Roman site at Whitton, on the outskirts of Ipswich just off the A45, now engulfed in the urban spread. It was there that I became fully acquainted with Basil's methods, after which, I am afraid, I decided to confine myself to the Wheeler/Wedlake approach.

He had only the scantiest ideas of surveying and I cannot recall his laying out a trench. He had a plan of the villa, but that was largely his conjecture of what it should be and his digging was geared to proving his theories. The extraordinary thing was that as often as not he was right. His method was to locate a feature and then pursue wherever it led, in doing so becoming just like a terrier after a rat. He would trowel furiously, scraping the spoil between his legs and at intervals he would stand back to view progress and tread in what he had just loosened. I soon decided that my one job was to follow close behind him trying to tidy up before he could trample the spoil solid. I never quite succeeded in my efforts.

I have a vivid memory of once suggesting that we might pause and record what we had done. He agreed and, holding a measure up against a wall footing, announced, "Fourteen inches."

"Fourteen inches from where to where?" I asked.

"From the top of the wall to the bottom of the measure, of course." The bottom of the measure was on one of his puddled patches.

I do not think he was much concerned with stratigraphy or the relationship of one feature to another, nor with the inferences to be gleaned from what he found; his concern was finding.

The emergence of the Sutton Hoo Treasure and the subsequent descent upon Ipswich first of the top brass of archaeology and then of the world press were traumatic experiences for both Guy Maynard and Basil Brown from which they never recovered. From then on excavation became a cloak and dagger business to be conducted in the most rigorous secrecy. To the best of my knowledge neither Stanton Chare nor Whitton have ever been published, though they may subsequently have been written up by others and have escaped me.

The sad thing about Basil is that with training he might have been a brilliant archaeologist. As it was he would have been more at home among the early antiquarians, where his uncanny perception would have been much valued. Was it Mrs Pretty's decision or was it partly Basil's almost psychic 'nose' that produced the Sutton Hoo Treasure from only the second of all the barrows to be dug and so turned on him a limelight that was too harsh for him? He was wholly committed to the unravelling of the past and contributed much to the archaeology of East Anglia.

3.5 Note on Mrs Edith Pretty by Mary Hopkirk (Mrs Pretty's niece and aunt of Robin Carver, of Hole Farm, Hempstead Holt, Norfolk)

In 1922 she was invited to stand for Parliament for Northwich (a most unusual honour for a woman in those days,) and she was so well known and liked locally that she would have got elected: but she declined because of her widowed father who needed her, and Lord Colum Crichton-Stuart got the seat instead. She was one of the first women magistrates; and in this connection had a funny experience: when she was about 42 and looking much younger, she was staying at the Piccadilly Hotel in London and was returning from the theatre on foot in full evening dress, when she was accosted by a middle-aged man who clearly thought she was plying for hire. To his utter confusion she turned on him, saying "I am a magistrate, and if you don't clear off I shall give you in charge."

She did not marry until her father died, when she was forty-three. Her husband, Frank Pretty, had proposed to her annually on her birthday, beginning when she was eighteen. He was a steady, kind, reliable man, very much liked in East Suffolk where he did much welfare work for the 4th battalion of the Suffolk Regiment, in which he had served throughout the war and eventually commanded. He adored Edith, and it was sad that she kept him waiting for so long. Anne and I were bridesmaids - very disgruntled because our dresses were so hideous. When she married she broke the lease of Vale Royal and bought Sutton Hoo near Woodbridge. She was 47 when Robert was born, and developed typhoid in the middle of her confinement, from which she never really recovered. Four years later Frank Pretty died, and she suddenly became old and tired, dropped all her public work and social life, took to Spiritualism and became almost a recluse.

Sutton Hoo, a 400-acre estate, comprised a modern house built about 1913 on a hilltop overlooking the

Deben, together with an original, much older, farmhouse, Little Sutton, lying in a more sheltered situation below it. A considerable proportion of the property consisted of sandy, windy heath-land, the habitat of millions of rabbits. On the edge of this barren wasteland stood a group of ten burial mounds, none

In 1938 Edith decided to open the barrows. Old Pettit, who had lived and worked on the estate all his life, and whose folk memory proved strikingly accurate in other respects, had always assured her that a fabulous treasure (he specified, gold) lay under the tumuli. My brother, Russell, who was a metal diviner, was living in the village in the mid-1930s as an agricultural student, and repeatedly diagnosed the presence of gold and silver there - indicating the largest barrow as the source of radiation. The work was carried out at Aunt Edith's expense under the remote supervision of the Ipswich Museum. They couldn't keep a permanent official on the site, yet couldn't entrust the dig entirely to labourers (Jacobs and Spooner), so asked her to find somebody local with some intelligence who would stand there while digging was in progress and telephone the Museum should anything appear. She suggested Mr. Basil J.W. Brown, a retired schoolteacher living nearby, whose hobby was archeology and who had repeatedly asked her to open the mounds.

They began in 1938 on the second largest barrow, and nothing was found. It had apparently been rifled. In May 1939 work started on the largest one. On the strength of Russell's assurances Edith had always been confident that this was the one in which the treasure lay: she had chosen the other in 1938 for a trial run.

Throughout the summer of 1939 the little band of estate workers laboured steadily on the site, greatly hampered by the continual wind, which blew the sand - and later, the gold leaf - in their faces, until, in July, the great hoard was first seen by Mr. Brown (d. 1977), who in the discovery of the world famous and unique Sutton Hoo treasure. The find co-incided with the threat of war; and professional archeologists now took over, working feverishly against time in order to complete the dig before everyone and everything should be consigned to oblivion. But there was still a month's grace before the hoard was finally taken from the site under the eye of the local constabulary (for whose services Edith had to pay) and spent its first night...for 1,300 years under her bed - it being too bulky to go in her safe. Next day it was removed to London, so I didn't see it when I went over there to lunch two days later; but Lyons, her chauffeur, who had seen it lifted out of the barrow, told me that the silver plates were bright and clean, just like new ones straight out of a shop - only the top one of the pile being tarnished and corroded. Owing to the outbreak of the war, the find received very little publicity - and this was fortunate, for within a few months an Italian (sic) bomber was brought down in the vicinity and the heath became a tank-training ground. It was considered inadvisable to draw the attention of amateur treasure hunters to remaining unexcavated mounds by asking for the site to be put out of bounds, so it was purposely left unmarked and unprotected throughout the war, at the mercy of the tanks and rabbits - and the treasure itself lay snugly in the Aldwych tube.

An inquest was necessary in order to decide whether or not the hoard was treasure trove, and was held on August 14 1939. As Edith had not yet announced her intention to give it to the nation, the British Museum officials, determined to get it awarded to the Crown, sent experts to persuade the jury to do the proper thing. (I was told recently by Peter, who got it from the Norwegian government, offering her a quarter of a million for it - but whether this is true or not I don't know. I knew nothing of it at the time.)

The award depended on whether the deceased owner intended to return and collect it, in which case it was treasure trove, or to take it with him into another life. This was a complicated theological problem. Nobody then knew who the deceased owner *was* - let alone what his religion was! The Coroner's jury of 14 local men comprised the blacksmith, the publican of the Plough Inn, the postmaster, schoolmaster, haulage contractor, grocer, land agent, golf club secretary, banker, retired General and four farmers. They met on August 14th, 1939, in the old wooden army hut which served as the Sutton village hall. The Coroner for the Northern division of Suffolk, Mr. Vulliamy, sat on the billiard table with a ping pong table on top of it. His opposite number for the Southern division of Suffolk, Bernard Pretty, couldn't officiate as he was a relative, so he acted as Edith's legal adviser. Samples of the treasure were sent

down from London and exhibited in a glass case. Even these samples were of great intrinsic value and were guarded by local police and plain clothes detectives. Unversed in comparative religion, but well aware of the value of gold and silver, the patient jurymen listened politely for some time to the arguments put forward by the British Museum. They then retired into the gents - the only other room on the premises - for twenty-five minutes to consider the religious beliefs of the deceased; they then returned, little the wiser, to award the treasure to the owner of the land, on the ground that what is found in the parish ought to stay in the parish. Edith then gave it to the Nation. She did not live to see it restored to its former beauty in its place of honour in the British Museum, for she died in 1943. Her executors found a letter in her desk from the Prime Minister's secretary offering her an honour, which she had declined. She died in Richmond when staying with Mr. And Mrs. Parrish, the Spirit healers. My mother was sent for from Duntisbourne and had to wait for a post mortem as it had been so sudden and unexpected, and then for the cremation. Undertakers were not allowed to transport ashes long distances in 1943, so, to her great confusion, my poor mother had them handed to her to take to Sutton Hoo herself. I joined her train at Chelmsford and found her in a carriage full of officers, clasping to her bosom a large and mysterious parcel, which, once we were safely in the car at Woodbridge, she explained to me were the ashes.

Another instance of Pettit's folk memory occurred in 1940. There were on the estate several fields, stony and barren, none of which had been cultivated within living memory, the soil being too poor to make it worthwhile. Edith was asked by the War Agricultural Committee to try and crop one of them - though they agreed with her that none was likely to produce much. She consulted old Pettit who said that his great-grandfather had told Pettit's father that, during a war with 'them Frenchies', one of these fields had produced a magnificent crop of barley. The field he indicated was the least promising of the lot, and the officials were very doubtful when she announced that that was the one she proposed to plough up. As 'them Frenchies' must refer to Napoleon at the latest, it was a risk, but she was rewarded with one of the finest crops of barley ever harvested in the area.

A relation 'by adoption' was Florence Sayce, Edith's lifelong friend. Her father was an Irish Protestant, her mother, an American R.C. When they married, the R.C. Church was less intransigent than it subsequently became, and it was agreed, as was customary then in some countries, that the sons should be brought up R.C. and the daughters, Protestant. Mr. Sayce had wanted it this way because he had a phobia against convents. The elder child, Herbert, was duly baptised a Catholic and sent to an R.C. school, his father loyally, though reluctantly, abiding by the promise he had made. (Later, Herbert married a Baptist and became one himself.) Florence was duly baptised a Protestant; but, when she was about eight, a priest frightened her mother into having her re-baptised secretly and make her first communion in the R.C. Church - thus presenting her father with a faint accompli. He never forgave his wife for this deception and became a disagreeable, cantankerous old man. He was a brother of Professor Sayce, the Assyriologist, who alienated his relations by selling several Romney family portraits in order to enrich his collection of pottery from excavations, without consulting them. Florence was beloved by everybody. She had innumerable followers. I remember a particularly nice Irishman, a Mr. Routley. Although they loved each other, they never became engaged because he wouldn't have his children brought up R.C.s, and she wouldn't marry him except in a Roman church, out of loyalty to her faith and to her mother's memory. When she was about forty, she married a delightful American R.C., Victor McQuade, and went to live in America. She died in 1973.

3.6 Forty Years with Sutton Hoo

by Dr. Rupert L S Bruce-Milford

The discovery and excavation of the Sutton Hoo ship-burial took place near Woodbridge, Suffolk, in 1939. The excavation ended nine days before the outbreak of World War II. All the finds and records were presented to the British Museum. They had hardly arrived in the building before they had to be packed up again for evacuation. Only first-line conservation was possible. The Sutton Hoo treasure went into wartime storage in a disused arm of the London Underground Railway system, along with the Elgin Marbles, the famous Greek sculptures of the fifth century BC from the Parthenon and other

especially valuable treasures from the British Museum, including one with which I was to become associated - the Lindisfarne Gospels, a marvellously preserved, richly decorated Codex made in England around 700 AD.

My connection with Sutton Hoo began in 1946 when I returned to the British Museum from a five-year absence in the army. A letter, received in 1940 in my army camp from the Keeper of British and Medieval Antiquities in the Museum, the distinguished scholar Sir Thomas Kendrick, later Director of the Museum, notified me that, on completion of the prescribed probationary period, my appointment had been confirmed. When I should eventually return, Kendrick told me, I was to be responsible for the Museum's collection of Anglo-Saxon antiquities and also for the Germanic collections of Europe and the late Celtic collections of the British Isles. The period covered by all these is roughly AD 400-1100. "You will also", continued the letter, "be responsible for Sutton Hoo. Brace yourself for this task."

In 1944 the Museum's great collections, the National Library as well as Antiquities, were brought back from wartime evacuation to a building in which only one antiquities gallery was fit to use. On their return to the Museum the Sutton Hoo finds and records, including remains representing 305 items, went straight into the British Museum Research Laboratory for unpacking and attention. The Trustees, on Kendrick's recommendation, appointed a full-time worker, Herbert Maryon, a retired Professor of Sculpture and a Metallurgist, to assist in carrying out conservation and restoration. Many of the boxes of material from the excavations had not yet been opened. The Research Laboratory, under Dr. H J Plenderleith, led the world at this time in the study and conservation of antiquities and material from the field. There followed great days for Sutton Hoo when new, often dramatic, discoveries were being made in the workshops all the time. Built from fragments, astonishing artefacts - helmet, shield, drinking horns, and so on - were recreated. Herbert Maryon had been appointed in November 1944, I returned to the Museum a year later.

While getting to know the collection for which I had been made responsible, I studied in detail the background against which the 7th century finds Sutton Hoo must be seen and understood, and acquired knowledge and expertise in fields new to me. I knew my responsibilities well enough: but, after helping Kendrick to arrange the first public display of the better-preserved pieces - chiefly gold, silver and bronze - I received no direction or advice of any kind. I was left to get on with it. Kendrick's once-infectious interest in Anglo-Saxon matters had evaporated. I was the only person in the British Museum with knowledge of, or responsibility for, the antiquities of the Germanic and Celtic fields, and so able to touch the Sutton Hoo requirement.

The Sutton Hoo excavators, who had taken on the excavation in emergency, were all experts in other fields and, handing over their field records, gave up all responsibility for the publication or study of their discoveries. For some years, we were in the hands of the Research Laboratory. They had the material and records; but I kept in constant touch, spending many hours with the craftsmen in the workshops, to which I was given free access, watching evidence emerge and getting to know the fragmentary material, and all that Maryon and the craftsmen were doing, in detail at first hand. I was Curator, however, for the whole range of the collections in my allotted fields, all of which needed conservation, display and service to students and the public.

It seemed the Museum's duty to put out, as soon as possible, an official publication providing colleagues and the public with an account of the discovery and the latest information about Sutton Hoo. At Kendrick's suggestion, I wrote in 1947 The Sutton Hoo Ship-Burial - a Provisional Guide which, with few and minor changes, was to run through ten reprints and sell over 50,000 copies.

The work was commonly referred to as the Sutton Hoo Catalogue. The pre-eminent series of British Museum Catalogues, of high academic repute, have been relatively simple affairs. They described and illustrated objects already on the Museum shelves and all of one type, with the descriptive entries and illustrations supported by a learned introduction. The Sutton Hoo publication bore no resemblance to these. On the one hand it was the excavation report of a unique excavation carried out by professionals experienced in other fields who, apart from Phillips' preliminary account, did not write up their work.

The treasure, under a mound, was contained in a ship, a quite special form of artefact, of key importance in the history of shipbuilding in Northern Europe; the burial deposit was a mass of crushed grave goods, including perishables, needing complex conservation and definition. They contained artefacts of a wide diversity of types, some not hitherto encountered. Clarification and study involved extensive programmes of photography and recording; of radiography, a tool of primary importance; of metal analysis; of drawings and technical and decorative detail; study of wood, textiles and leather, and a great deal of comparative research over a wide field, from Celtic West to Byzantine East. The gold coins alone, dealt with by the Department of Coins and Metals, represented a specialist opportunity and challenge, of revising the whole approach to Merovingian coinage. Dozens of reports had to be obtained from outside specialists. Microscopic examination of hairs showed that the king had worn a cap of otter skin and kept his lyre in a beaver skin bag; drinking cups were shown to have been made from the burr wood of a walnut tree, and so on. By the time the publication was completed in 1983, ninety-six individuals had played a part, large or small, in the work.

A further point must be remembered. The excavation in 1939 was unfinished, and it had to be completed before a definitive account of the discovery could be given. I began a programme of excavation at Sutton Hoo, with the Trustees' backing, which continued for six seasons, from 1965-1970, primarily uncovering and recording the ship's remains, but also to check doubtful points and gather more information. At the same time fresh field surveys and contour plans were made of the site and areas around it, the background covered and a platform created for future work on the site. This work is contained in Volume I of the Sutton Hoo ship-burial. The ship-burial, of course, was not an isolated phenomenon. There are perhaps sixteen other burial mounds, large and smaller, around it, and with graves of more ordinary type in the flat ground around them; all this lying on top of a much earlier prehistoric settlement. With this context, Sutton Hoo clearly has a future as well as a past.

As the work on the finds progressed on a broad front, involving much work by the photographic studio and massive scientific contributions obtained from the Research Laboratory, results began to flow. I produced a new publication to keep scholars and the public informed, the Sutton Hoo Handbook. This ran into three editions, each revised and enlarged to keep abreast of our deepening knowledge. Finally, the three volumes of the definitive publication appeared. The first, entitled The Sutton Hoo Ship-Burial: Excavations, the Background, the Ship, Dating and Inventory in 1968. The second, Arms, Armour and Regalia in 1972; the third, in two parts, Late Roman and Byzantine Silver, Hanging Bowls, Drinking Vessels, Cauldrons and Other Containers, Textiles, the Lyre, Pottery Bottle and other items edited and seen through the press by one of my Research Assistants, Angela Evans, in 1983.

It will be easily understood that the ordering, sifting and preparation of this great mass of scientific, artistic and historical and topographic materials for the printer was, in itself, a formidable and costly task. Many people and specialists made it possible. But from the beginning the initiative had to be, and remained, entirely mine, and the standards set and demanded were those I deemed necessary.

Another factor gives Sutton Hoo special scientific significance: the burial can be very closely dated, probably within two years, and it is set in an historical context, slender but precise. It is understandable that great interest was shown throughout by archaeologists and historians, and by those concerned with kingship, with Early English Society and its literature and art, from all over the world where such studies were pursued. My correspondence was very large and the numerous offprints sent to me by colleagues working in the field to help me or in exchange for mine, give a unique conspectus of and insight into the subject.

In 1950 Herbert Maryon, advanced in his seventies and sighted only in one eye, gave up his important work, having dealt with the major Sutton Hoo pieces. Dr. Plenderleith decided that the Research Laboratory had done all it then could. The space taken up by Sutton Hoo was urgently needed. It was time for the archaeologist and Departmental resources to take over. All the material was accordingly transferred to the Department. Here, with four galleries still closed to the public, and the large European ceramic collections transferred from the Ceramics and Ethnology Department on the formation of the new Department of Oriental Antiquities, there was no space for its deployment; it could

only be stacked in labelled boxes in cupboards, with the records. The Department had no conservation facilities of its own and no staff assistance was available, other than that of one or two carefully selected part-time volunteers.

On 28 May 1949, ten years after the discovery, I set out in detail, in an historically important document, the position with regard to Sutton Hoo and its publication. It makes very interesting reading. It was sent to higher authority, but no action followed. In it I warned "I cannot see any real prospect of getting the catalogue out the way things are at present".

In the years from 1947, when the first Provisional Guide was published, the 1952, while the Research Laboratory was still working on restoration work, I did what I could to build up my qualifications, and to investigate and clarify matters of importance in the background at Sutton Hoo. I took a course in Anglo-Saxon language and another in Swedish, the later to the level of publishing in Antiquity 1948 a translation of a paper entitled Sutton Hoo och Beowulf by Professor Lindqvist of Uppsala. His paper showed clearly the international interest in Sutton Hoo and international realisation of its potential relevance to our only Anglo-Saxon epic poem, Beowulf. Lindqvist was the initiator of the excavation of the rich boat-graves at Valsgarde, north of Stockholm, the richest of which are contemporary with the Sutton Hoo burial. To gain relevant experience, I excavated a boat-grave with him there, under his instruction, in 1947. In 1948 I published Saxon Rendlesham, a collection and analysis of all the data I could find about the royal town or manor situated on the River Deben a few miles north of Sutton Hoo. This study was based both on documentary sources and on extensive field work in the parish. Its aim was to locate the palace which had been one of the residence of the royalty buried at Sutton Hoo. Bede makes it clear in his Ecclesiastical History that this royal residence was flourishing at the precise period of the ship burial. In 1949 I published a major paper, of over seventy pages, entitled The Sutton Hoo Ship-Burial - Recent Theories and Comments on General Interpretation exploring some of the international implications of the discovery. A long Appendix dealing solely with the Sutton Hoo burial was added to the third edition of R H Hodgkin's well-known History of the Anglo-Saxons, 1949. The Snape Boat Grave appeared in 1952, putting together all the information I could gather about this earlier East Anglian ship-burial, found in 1862. These are the only two ship-burials recorded for the pre-Viking Age in Britain. A searching investigation was also undertaken, leading to lectures and publications, including a paper by Harold Barker of the Research Laboratory in the leading scientific journal Nature into the evidence for the original presence or absence of a body in the burial ship. No trace of one was seen by the excavators. This involved going in detail through all the residues and debris collected from the burial with an elaborate series of tests on the grave goods for phosphate. The relevance of Sutton Hoo to Beowulf was explored in a chapter specially commissioned for the new edition of Ritchie Girvan's Beowulf and the Seventh Century, 1956.

Much work was also done, with volunteer help, on the stringed musical instrument in the burial, leading to its first reconstruction as a small six-stringed harp. It involved close scrutiny and where possible the joining of many hundreds of small fragments of maplewood and oak, and a great deal of research into the early musical instruments of Europe and the British Isles.

In 1954, I was appointed Keeper of British and Medieval Antiquities, as the Department was then inappropriately designated. It covered an enormous cultural range, including the world palaeolithic and mesolithic, the prehistoric archaeology of Europe outside the Graeco-Roman world; the Romans in Britain, and then European applied art and archaeology from post-Roman times, including Byzantine, down to the 20th century. In 1950 I took over from Kendrick in the office of Secretary of the Society of Antiquaries, which brought me into the centre of things, and in the same year became involved as Director in a major Saxon period excavation of a 10th and 11th century village in Cornwall - Mawgan Porth.

My first concern as Keeper was to build up the prehistoric and Roman-British sides so that they might become a separate Department with its own offices, workshops, Keeper and staff. This goal was not finally achieved until 1969, though a Sub-Department was created in our existing offices to foster these matters under my responsibility. In 1955 I appointed a new Assistant Keeper to take over

the Celtic and Anglo-Saxon, Viking and Continental Germanic collections from me, but I remained responsible for Sutton Hoo. It was at this time that I agreed, with the Trustees' and Kendrick's approval, to take part in a new publication of one of the Museum's and the Nation's greatest treasures, the Lindisfarne Gospels. Manuscripts and their decoration had been a special interest of mine, and I had studied the Lindisfarne Gospels as an undergraduate at Oxford. It is not far in date from the Sutton Hoo treasure and represents the same field of art in the British Isles. The resultant publication, for which the Trustees of the British Museum gave me some special leave for foreign study, and the use of the Museum's senior illustrator, appeared as Codex Lindisfarnensis, the Swiss colour-facsimile edition, published in Lausanne, 1956 and the Commentary Volume in 1960. My concern was with the art of the Codex and its historical context; others dealt fully with other aspects - the scripts, the 10th century inter-linear Anglo-Saxon translation of the Latin text; the text itself, the properties of the Codex, its binding and the manuscript's inks and pigmentation. A copy of this rare work, now out of print, is included in my library. My publications on the Codex Amiatinus, the Gospels of St Chad and other topics involving manuscripts, were related to this major work on the Lindisfarne Gospels and its art.

These ten years, 1950-60, saw no progress with my publication on Sutton Hoo. My general responsibilities left me no time for work of the exacting and continuous kind needed: the subject could not be handled in small packages, but required a revolutionary change in the provision of staff. As said earlier, there was not even a room in the Department to deploy the residues of the site for proper study. Service to the public and scholars to do with Sutton Hoo, as always, was scrupulously kept up, and I managed also to keep abreast with the ever-increasing international European and American specialised literature about Sutton Hoo and related subjects. Progress with the publication, however, was not possible until 1960, although much had been done in the matter of photography and drawings. In 1960 the Director, Sir Thomas Kendrick who, as its former Keeper, was aware of the Department's needs, was at last able to provide us with a house in Montague Street adjacent to our offices. Into this I at once moved the whole of Sutton Hoo and set about a programme for the production of the major publication expected of us by the archaeological world. Two floors of the building were set aside and equipped for Sutton Hoo work. This included constructing a workshop solely for the examination, conservation and restoration of the Sutton Hoo finds. In 1962 for the first time, some help towards the production of the publication was provided, and a Research Assistant was appointed to help me. Pressure both from myself, inside the Museum, and from the archaeological world outside it, had at last persuaded the Trustees and the new Director, Sir Frank Francis, to take the Museum's responsibility for the Sutton Hoo publication, and my representations on the subject, very seriously. As far as practicable, all that I asked for was now by degrees provided. In the new building I began to establish a Sutton Hoo unit, in which before long at its maximum extent thirteen people were to work. These consisted of myself, three Research Assistants, two to three Conservation Officers, two illustrators, a typist-secretary, a clerk and two part-time special assistants. Such was the nature and scale of the requirement. Administrative help in the Department enabled me to maintain a desk and working space for my own use in the new house, and to supervise the conservation and restoration process, and all aspects of the work, as well as writing most of the text for publication. In the final stages, I was given full-time secondment by the Trustees; Lord Eccles, the Chairman, deserves much of the credit for these improvements.

The nature and quantity of work required for the publication of such a discovery as this, occurring perhaps once in five hundred years, was not generally understood. That the royal burial should have come to light at a time when science and technology could be brought into play at a new and advanced level; that the burial had not been robbed; that it was dug and recorded more or less at leisure by professional archaeologists, and that it could, through the coins in the purse, be precisely dated within two years, very greatly enhanced the importance of the discovery beyond that of any previous discovery of its kind. The responsibility for faultless and complete publication resting on us was all the greater, all the more exigent and exacting.

The rest of the grave-field remains to be excavated: and the massive publication with all its implications to be digested. Having seen Volume III to the stage of virtual completion, I retired from the service of the British Museum in 1977. My final contribution to the cause of Sutton Hoo has been to stress the urgent requirement, now and not at some unspecified time in the future, for more information - indeed

all the information that it holds - from the rest of the burial ground and the site itself. This is essential if the great discovery is to be seen in true perspective, and its depths plumbed. I accordingly initiated a new drive for the excavation of the whole site which has led in due course to the current programme of excavation and field research under Professor Martin Carver. This means that Sutton Hoo, half a century after the discovery of the ship-burial, is still entirely topical. Even without this future, and what it may or may not produce from the site, the Sutton Hoo ship-burial, so fortunately preserved and recorded, will remain throughout the centuries an outstanding document of human history. My collection of offprints and books, and my archive of personal correspondence, reflects my close association with the ship-burial over a period of nearly forty years.

4-6 UNUSED

7. SELECTED STUDIES : the EARLY MEDIEVAL PERIOD

7.1 Mound 1 A new study by Martin Carver, October 1995

7.1.0 *Naming the parts*

7.1.1. *Description of the investigation*

7.1.2 *The ship-trench and the ship*

7.1.3 *The chamber*

7.1.4 *Furnishing the chamber*

7.1.5 *The assemblage*

7.1.6 *Construction of the mound*

7.1.7 *Model of the Burial rite enacted at Mound 1*

7.1.8 *Aftermath*

7.1.9 *Environmental evidence*

7.1.0 *Naming the parts*

(Numbering by MOHC)

F 1 (1000, 1001) Mound surface in 1939

F 2 (1007) ship trench

F 3 ship impression

F 4 Robber pit

F 5 Clay pan

F 6 chamber

F 7: coffin

F 8: body

F 9: E wall of chamber

F 10: S roof of chamber

F 11: W wall of chamber

F 12 : 1939 spoil heaps

1000: 1939 turf and topsoil, buried beneath 1939 spoil heaps

1001: make-up of mound 1

1002: yellow sand upcast from ship-trench on old ground surface.

1003-5: buried soils

1006: 'bronze age hearths'

1007: fill of ship-trench beneath ship.

7.1.1. *Description of the investigation*

711.1 [A Summary of entries in diaries of Basil Brown (1938 and 8 May - 11 July 1939) and Charles Phillips (12 July- 25 Aug 1939), relating to Mound 1.

20 Jun 1938: A trial of mound 1 (Tumulus I) was made by Basil Brown on the order of Mrs Pretty using a 'long probing iron' devised by herself. The 'prodding iron' was pushed down from the top of the tumulus and 'reached a hard substance'. "A small excavation was then made to determine this to a depth of 6 feet and it was found to be a stone of no particular significance".

1939

8 May: Basil Brown starts work on Mound 1, assisted by John Jacobs (gardener) and William Spooner (gamekeeper), on behalf of Mrs Pretty. Trench is 6 feet wide and laid out on a compass bearing E-W, and driven into the mound at ground level westwards from the E side of the mound.

11 May: First ship-rivet found. Brown becomes aware of prehistoric occupation citing a "Bronze Age hill-top village".

19 May: The ship begins to appear. Maynard (Ipswich Museum) visits and agrees that the site is unique in this country.

30 May: Brown escapes collapse of his trench. The 'Treasure-Seekers pit', with sherds of pottery in it, is found. Maynard had seen this in section.

End of May; During coffee-break at the Department of Archaeology and Anthropology, C W Phillips hears that someone is making inquiries of the Isle of Man Museum about Viking ships, having apparently found one in Suffolk.

6 June: Phillips, in his capacity of secretary to the Prehistoric Society, visits Maynard (its Treasurer). A preoccupied Maynard reveals the source of his anxiety; together they visit Sutton Hoo, finding the bow of the ship uncovered. Phillips advises caution and makes telephone calls to the British Museum and the Ministry of Public Building and Works.

9 Jun: Site meeting, attended by Christopher Hawkes (for BM), Baille Reynolds (for MPBW), J Reid Moir (for Ipswich Museum) and C W Phillips. They decide on a suspension until a [more expert] team can be assembled.

Brown, however, working for Mrs Pretty, and not on a scheduled monument, continued to dig almost uninterrupted until the arrival of Phillips.

End of Jun: Phillips, engaged in helping Bersu at Little Woodbury, is invited by MPBW to take over Sutton Hoo.

By 29 Jun: Brown had reached and defined the W end of the ship.

3 Jul: Brown 'cleared the clay deposit amidships exactly above the place where I expect the chief lies'; note 'cleared' not 'cleaned' "as I want to get on".

7 Jul: Phillips still not arrived and is said to have hurt his thumb.

8 Jul: Phillips arrives. By this time, Brown has exposed the entire length of the ship and exposed the first grave-goods [eg the cauldron chain].

11 Jul: Work recommenced under Phillips' direction. Maynard and Ipswich Museum asked not to interfere. 12 scaffold poles and a tarpaulin arrive from MPBW.

13 Jul: Excavation of the Chamber begins. The 'clay-pan' [presumably the bottom part of the clay deposit removed by Brown on 3 July] is sectioned. The line of the burial chamber wall is located.

c 17 Jul: M B Cookson, on a visit, photographed the cleaned, unexcavated, burial chamber. Excavation began at the E end.

19 Jul: S Piggot and M Guido, then Piggot] arrive following invitation from Phillips. Phillips' self-denying ordinance keeps him out of chamber [his weight].

BUCKET 2 is uncovered in the centre.

21 Jul: First jewellery found [**SWORD PYRAMID**]. **WOOD** over drinking horns uncovered. **TEXTILE** exposed.

22 Jul: **HANGING-BOWL** and **COPTIC BOWL** located to W. **PURSE, BUCKLE, GOLD PIECES** showing through wood, photographed by Peggy Guido and excavated. **LAMP** encountered. J B Ward-Perkins present.

23 Jul: **SCEPTRE** exposed and removed; **SHIELD RIM** located under **STAG**. **COPTIC BOWL** lifted. **IRON STANDARD** and **BUCKET 3** located.

24 Jul: **GREAT SILVER DISH** (thought to be a shield) defined. Arrival of O G S Crawford and W F Grimes.

25 Jul: Grimes takes over excavation. Photographic record restarts under Crawford. Piggot draws plans. Excavation of **GREAT SILVER DISH** commenced. **POTTERY BOTTLE** removed.

26 Jul: The pile under the GS DISH commenced. **LAMP** exposed. **STAG** and **BUCKET 3** exposed.

27 Jul: **STANDARD** lifted; **BUCKET 3** lifted; **SHOULDER CLASPS, SWORD, GOLD JEWELLERY, PIECE of SHIELD, SILVER BOWL stack** exposed and/or lifted. Dr and Mrs G Clarke present.

28 Jul: More of **SHIELD** and **SHIELD-BOSS** exposed. **HELMET** located.

29 Jul: **DRINKING HORN complex** lifted. Pile under the **GS DISH** completed with **MAIL-COAT** and **AXE-HAMMER**. **CAULDRONS** lifted.

30 Jul: Day off. Grimes, Crawford and the Piggots departed.

31 Jul: The finds sent off to the British Museum. **IRON-BOUND TUB** lifted. One more **COIN** turns up from cleaning up and sieving.

1 Aug: More fragments of **HELMET** and **MAILCOAT** from sieving. Two more **BRONZE VESSELS** exposed.

3 Aug: Rain

8 Aug: Commander Hutchinson arrives from Greenwich to take over recording of ship. Mercie Lack and Barbara Wagstaff, photographers, arrive and include 8mm movie film in their coverage.

14 Aug: Treasure Trove inquest at Sutton Parish Hall. The North Suffolk Coroner, L.H.Vulliamy, (deputising for the East Suffolk Coroner) finds for the owner. Mrs Pretty's Spiritualist visits and consults with C.W.Phillips. A few days later, Mrs Pretty announces her gift of the entire find to the British Museum.

19 Aug: More of the **SHIELD** found during the recording of the ship.

c.20 Aug: H M Chadwick visits.

25 Aug: The excavation deemed complete. The ship-trench is filled with bracken and excavators and recorders depart.

3 Sep: War declared.

711.2 The principal players and their responsibilities

Mrs Edith Pretty was the owner of the land, the instigator of the excavation and was found by inquest to be the owner of the finds. The excavation was initiated and remained under her control. She considered Ipswich Museum, the British Museum and the Ministry of Public Buildings and Works to be in an advisory capacity only. The site was not a scheduled monument and had no official status or protection. It was (and has remained until 1994) private property. Mrs Pretty retained by deed of covenant the sole rights of excavation and the ownership of all finds in the area defined by the visible burial mounds. This deed was registered and passed to her son Robert on her death. Before his death these rights were made over to the Sutton Hoo Research Trust.

Basil Brown carried out the initial exploratory work requested by Mrs Pretty in 1938 and directed the excavation on her behalf in 1939. He was paid by Mrs Pretty and considered himself her employee, according the same status to archaeological officials as Mrs Pretty did. Brown was assisted by *John Jacobs* (Mrs Pretty's gardener) and *William Spooner* (Mrs Pretty's gamekeeper). These two assistants were under Brown's direct control [SHSB I, 158].

There is some confusion in published sources as to the extent of Brown's excavation. All agree that he began the trench, defined the ship and made contact with the burial chamber. Bruce-Mitford believed he left it at that. After the site meeting on 6 June, a halt was wisely called: "Brown leaving the burial deposit strictly alone had carried on to the west end of the ship and by 29 Jun had established the ship's length." However Brown's own records show that he carried on excavating in and out of the burial chamber until Phillip's arrival on 11 July.

On 10 Jun he showed no sign of acknowledging any embargo: "the Office of Works Commission wanted Mrs Pretty to wait...[but] I am glad to say that this matter was satisfactorily adjusted and there will be no interference". On 11 Jun "Mrs Pretty asked me if I could reach the burial as her sister was coming next week. I have replied that I would do my best..."

On 14 Jun he wrote "no signs yet of the burial", but after tea "came the first find, a large iron ring [cauldron chain, 167] and what appeared to be a smaller one close by and with my hands I carefully cleared away the sand above using a soft brush which Mrs Pretty had sent done some days before. Then green of bronze bands...showed up and what was undoubtedly wood which gave out a hollow sound." A letter dated 15 Jun shows that he did not stop there "there was small hole in the corner of the box or timber and I pushed my finger into a cavity. This may of course only contain bones but I shall see very soon now." [The wood in question represents either the remains of the tub [116] or bucket 1 [117] or rib 11 or more probably the blanket of wood of the roof of the chamber].

On 19 Jun Brown "heard that further excavation is to be suspended until a shed is up over the part we have done already....The British Museum is arranging this instead of Ipswich Museum. As far as I can find out I shall continue and there is a lot of work at the present time cutting back ready for the proposed shed which is to have a glass roof..."

Brown continued to excavate until 1 July when Bushe-Fox told him "for goodness sake don't go far down inside the ship once the western half is established. Let Phillips and Co. take the onus and play for safety". Brown took just as little notice of this as of any of the other attempts to halt him. On the

following Monday, 3 July, "work continued and cleared the clay deposit amidships exactly above the place where I expect the chief lies. Covered this with hessian etc but we want to get on".

Brown was therefore responsible for the excavation of all of the Sutton Hoo Ship burial except for the chamber contents, a part of the clay-pan which was left for Phillips, the ship remains later recorded by Hutchinson, and the mound and ship-trench which were excavated by the British Museum team under Bruce-Mitford in 1966-70. Brown made no archaeological records, took no levels, made no drawings and took no photographs. The sole record of his massive excavation is in his diary and letters.

Charles Phillips was appointed to direct the excavation by MPBW apparently with Mrs Pretty's acquiescence, with effect from 11 July. In general he did not excavate, confining himself to the edge as a self-denying ordinance (due to his weight). Phillip's effective recording was limited (like Brown's) to his diary and he made no archaeological (ie measured) records. He made one sketch (of the section across the chamber roof where it met the gunwale), took 97 photographs and mentions (Diary 18 July) that "some levels were taken".

Stuart Piggott was present on site from 19-30 July. He was the principal excavator of the objects at the west end and in the centre. He produced the only measured drawings, which are the basis for the known size, shape and layout of the burial chamber.

W F Grimes, Crawford's assistant at the Ordnance Survey, was present on site from 24- 30 July. He was responsible for the excavation for the Anastasius dish complex and the cauldron group. He is not credited with making any records.

O G S Crawford, Ordnance Survey Office, was present on site from 24 -30 July. He did not excavate but took 64 photographs [virtually the only photographic record made during the excavation of the chamber].

Mercie Lack was present on site 8-25 Aug, that is after the burial chamber excavation was complete. She took 297 photographs and made an 8mm movie film of the ship.

Barbara Wagstaff was present on site 8-25 Aug. She took 150 photographs of the ship and another 45 colour transparencies (with Lack).

A S Crossley was cited by Bruce-Mitford as the leader of a team from the Science Museum who carried out a survey of the ship impression between 30 July and 25 Aug. The person who appears to figure as the active recorder in this project was *Commander Hutchinson*, but no records have survived from this operation. Phillips wrote (3.3) 'I have no recollection of his taking any notes of the observations he made while I was with him and discussing various points on the spot. I was not officially in charge of the boat investigation and I assumed he was writing up a record of the work in the evenings. No notes were found later at the Science Museum after his death and his widow has since been unable to find any among his papers'.

John Brailsford was a visitor who 'came to help', but the help was unspecified (Phillips, 3.3). *Dr and Mrs Grahame Clark* and *John Ward-Perkins* were visitors who came to watch. *H.M.Chadwick* arrived from his Herefordshire hideaway when the excavation of the chamber was complete.

711.3 The excavation methods.

In digging his trench and cutting back Brown and his assistants can be seen using shovels [eg fig 310]. His method was to follow a predicted level, namely the old ground surface, and he was confident that he could recognise this and guide others to it: "the workmen were particularly instructed to keep to the exact ground surface and do no levelling. If there was a slight rise or ridge it was left; if a slight depression it was carefully cleared out" [SHSB I, 158].

The rivets were seen as red patches and the timber of the strakes as black powder. He located ribs but does not say how. He left 'plenty of surrounding sand for safety' over these features once they were located [SHSB I, 161-2]. Later they could be brushed up by him or others. Brown himself does not seem to have had a soft brush until 15 Jun [see above] so his leaving plenty of sand might have been a necessary virtue. There is no indication that he had the use of a trowel.

When Phillips took over the excavation, he appears to have taken over Brown's methods. "The ideal tool for defining the burial chamber was found to be a stout coal-shovel at the end of a long ash handle." [Diary 18 July]. This presumably entailed the planum method of lowering by spits, but using the action of a shovel-scraper. Trowels appear to be visible on the clay pan in fig 109, but fig 110 suggests that they are garden trowels rather than painters' trowels.

Piggot and Grimes used soft brushes, knives, bellows (SHSB, I, fig 132; and PLATES 2-8). When the ship was being examined, Phillips (3.3) mentions using 'small fine brushes of the pastry type and penknives', 'taking out the spoil by dustpan and brush.' Several objects and complexes were lifted en bloc [PLATES 2-8]. Moss [from Top Hat Wood] was used for packing objects in tobacco tins

Phillips reported that 'the firmness of the unmoved sand was remarkable and nothing but the heaviest rain, of which there was plenty in the latter part of July, made it run in' [SHSB I, 164]. He also reported that "bracken roots followed the timber lines" (1956, 163) and it is clear that bracken had penetrated right into the chamber, where it could be mistaken for wood or other organic traces [SHSB I, 214]. It "appeared that the bottom of the boat may have been strewn with bracken" says Phillips describing traces of decayed vegetation [Phillips 1940, 13].

In 1940 he remembered the strata he encountered as "all sand. Wood traces were manifested as thin layers of discoloured sand, associated with bands of more or less the same material leached white by the action of the acids liberated by the decay of the wood". But "none but the vaguest ideas could be formed of the size and shape of the wood whose decay had produced them". He also observed that "the whole of the ship and the burial deposit had always been wet"[1940,9-10].

In the 1980's, Phillips reflected once more on the definition of the features of the ship ['Sutton en Pantoufles', VOL 1.4]. "Each clenched nail gave a warning of its presence by the rust-staining of the adjacent sand, and one simply brushed very carefully until this indication was noted, after which each was carefully revealed by work with a pen-knife". "No wood was found, except for some traces preserved by rust-substitution round the shank of the nail, but it was possible to see the imprint which the grain of the outer side of each strake had made on the sand which had been pressed against it." The ribs occurred as hollows "a slight distance above the bottom of the boat". "As far as possible we left transverse blocks of sand containing these hollows and were able to detect all the ribs in the bow and stern sections".

7.1.2 *The ship-trench and the ship*

712.1 The Ship. The size and shape of the ship is known from the dimensions recorded by Brown and Phillips, from c. 500 photographs taken by Lack and Wagstaff, from a drawing produced by the Science Museum in 1939 and from the re-excavation of the (damaged) ship impression in 1966-70. The definitive account of the structure of the ship is provided by Angela Evans' contributions to Chapter V 'The Ship' in SHSB, I, 345-425. In general, the locus of the ship and its architecture were determined from the black dust deposited at the exterior surface of the hull planking, the hard crusty voids left by the ribs, the vertical stains of the tholes seen in section, and c 1560 iron pieces which included rivets (the majority), with the larger rib-bolts and thole pins. The impression that the ship had left in the sand was that of a symmetrical clinker-built vessel tapering to a point at both ends.

The **keel**, which was inadequately recorded (p 375) was reconstructed as consisting of a heavy plank, c 46 ft [13.8 m] long, scarf-jointed to rising stem and stern posts (fig 325). The keel-plank was

rectangular in cross-section, with flanges either side to which the garboard strakes were fastened. The keel-plank varied in cross-section; amidships it was rectangular, projecting downwards 2 ins from the hull, and 4.5 ins across (Fig 290). In the 1980's Phillips (3.3) remembered the underside of the keel as having two parallel projecting ridges, "presumably to act as runners when the boat was being beached".

The **stem and stern posts** were reconstructed from impressions (fig 290). They had a more pronounced cut-water as they rose higher. The cut-water "could have projected as much as 12 ins [305 mm] at its maximum" (p 390). The stem and stern posts are conjectured to have risen 12 ft [3.6m] above the level of the keel (p 353).

The **hull** was 89 ft [27.15m] long (p 353) and 15 ft [4.5 m] wide amidships. It had a depth amidships of 4 ft 6ins [1.35 m] (p 351). It was composed of 9 strakes each side. Strakes 8 and 9 were largely missing by the time full recording took place in 1967, but could be implied from photographs. Each strake was constructed of 5-6 planks laid end to end and scarf-joined with 3 x 1" rivets in a row. The width of the planks varied from 10.5 ins [262 mm] amidships to 2.5 ins [62 mm] or less where the planks entered the stem or stern posts.

The strakes were joined to each other with rivets slightly under 2ins long, implying that the planks themselves were 1 in thick. The higher plank lay outside the lower (fig 296), and the rivet head was outside, the rivet rove inside the hull. [The garboard strake, therefore, must have been attached to the keel while it was upside down or supported on tressels.] The rivets which joined the strakes appear to have been a uniform 6 ins [150mm] apart (SHSB I, card 1-8). At each end the strakes were rabbetted (ie attached to flanges on) the stem and stern posts by a single rivet. These rivets show an increasingly acute angle between rove and shank, supposedly reflecting a change of angle between the flange on the stem post and the approaching end of the strake (p 390). The rivets were positioned on the stem and stern post flanges, so that they were staggered, ie lay offset from each in the timber grain (fig 290;p 358).

There was no direct evidence for **caulking** or luting, but finds of Stockholm tar (INV 250, 251) suggested the use of this material and animal hair, as in the Graveney boat (p 373).

The hull had been **repaired** in at least two places (p 412). Between strakes 5 and 6 on the port side, there had been a reinforcement of extra rivets running for 18 ft between ribs 15 and 21. This implies a collision which had weakened the hull at this point. There was a patch indicated two rows of five rivets on the starboard side at strake 1 (the garboard strake), between ribs 20 and 21. The additional rivets are 2 in in length, implying an external patch of wood 1 in thick rivetted to an existing strake.

There was evidence (mainly photographic) for 26 **ribs** (p 365). Of these, ribs 3 - 23 were evenly spaced at about 3 ft intervals (fig 325), while ribs 1 and 2 lay in the bow and ribs 24-26 in the stern at a point expected to carry the steering gear. Where measurable in the body of the ship the ribs were c 5 in [127 mm] across in section (p 367). The ribs were secured to the hull with a single, substantial rivet (or rib-bolt), with a shank up to 7 in [175 mm] long, and an angled rove, through the gunwale strake (no 9), (p 371,367).

A foundation for a **steering gear** was implied by the closely-spaced ribs 24 and 25. Rib 24 carried a set of 5 rivets in a quincunx on the starboard side, which probably allowed a wooden boss or leather or rope knot to be fastened to the outside of the hull (pp 407-8).

There was evidence for **tholes**, that is wooden blocks against which to pull oars, which took the form of vertical iron spikes up to 7 ins [175 mm] long set at intervals along the top of the gunwale, and thorn-shaped shadows in the sand above the gunwale, suggesting a timber piece (p 405-6). The pairs of spikes were set 3 ft [900mm] apart and occupied the corresponding space between the ribs (fig 325). The thole was 4-5 ins high. This suggested a thole base, 3 ft long pinned to the gunwale by two pairs of spikes, carrying a thole which was thorn-shaped against which the oar was pulled.

The total **number of tholes**, implying a total number of oars was computed by various means and was determined by R.L.S. Bruce-Mitford to be 20 pairs (pp 413-414, 419-420). Tholes were recorded between ribs 17/18, 18/19, 20/21 and 21/22 on the starboard side, and between ribs 5-10, and ribs 19-21 on the port side, a total of 11 tholes, 4 on the starboard gunwale and 7 on the port gunwale. Using the assumption that these tholes occurred in pairs, there was thus evidence for 10 pairs of oars, 5 between rib 5 and rib 10 and 5 between rib 17 and rib 22.

Additional indications from photographs implies a thole between rib 3/4 and another between 22/23 (p 415). If accepted this would imply 12 pairs of oars.

Two arguments from symmetry are advanced to increase this number. There being no obvious reasons for gaps between ribs 4/5 or 16/17, two more pairs of oars can be proposed here, bringing the number up to 14 pairs.

There was no evidence for expected tholes between rib 10 and 16, this being the area occupied by the burial chamber. Large nails were noticed in this area horizontal to the gunwale, and these were interpreted as having fastened the burial chamber to the gunwale (p 419). Bruce-Mitford states that 'the evidence suggests that the thole bases were completely removed' in the area of the burial chamber (p 413). However no evidence is produced beyond the idea that the absence of thole pins in this area must mean they had been removed.

The evidence is thus strongest for 10 pairs of oars, to which can be added evidence for 2 more from symmetry, and 2 more from additional observations from photographs, and 6 more from the assumption that the burial chamber area had once had tholes.

The number of oarsmen is therefore, from most likely to least likely, either 20, 24, 28, 32, 38 or 40.

There was no evidence for a **mast**, or fittings for shrouds or stays (pp 420-424), but Arne-Emile Christensen called it nevertheless the oldest ship of Scandinavian type sufficiently developed to carry rigging (p 422).

Interpretation. Angela Evans had no doubt that the ship was capable of sailing, and belonged to the North Sea tradition. She calls the Sutton Hoo ship 'the first northern ship to have a hull sufficiently developed for sailing and a fixed steering position. It shows the established Germanic or Scandinavian type of vessel in Britain, unmodified by Romano-British or other external influences, exemplifying again the tradition of the light elastic shell with widely-spaced ribs first seen at Hjortspring and maintained through Nydam to Kvalsund and the warships of the Viking period'. (p 434-5)

712.2 The Ship-Trench. The exact size of the ship-trench and the question of how the ship fitted into it have been presented as interdependent hypotheses, and the matter is reported in a number of statements which are often contradictory.

The ship was aligned E-W with its stern towards the river and its prow inland or ("more remotely") towards the sea [SHSB I, 154]. The bottom of the ship amidships was between 8ft 6in and 10 ft below the uneven 7th century OGS, as defined by the layer of spilt upcast [1002]. This is equivalent to 97-98ft 6in AOD. [SHSB I, 154]. It was assumed by most commentators that the ship approached from the west (the river side) and was lowered by rollers, or ropes and bollards or a ramp.

Phillips reported that both ends of the ship were a tight fit in its trench; but also that the bow at the east end was 6ft clear of the trench end [SHSB I,167]. Bruce-Mitford says the 'correct' position is given in fig 230, but this does not actually show the ends of the ship trench. Fenwick is stated to have studied the relationship between the ship and the trench and to have found it a tighter fit at the bow than Phillips' 6ft gap. But the revised relationship between the ship ends and the trench implied by this study is not shown in fig 213; neither are any new records offered.

Instead, the argument appears to depend on a Phillips photograph [fig 210, or the better fig 106] which shows the ship resting on trench fill and the bow rising well clear of the (then) end of the trench. The construction put on the photograph by Fenwick is incomprehensible " Fig 210 should be interpreted as showing an area of undisturbed yellow sand into which the ship was carefully fitted".

The most that can be said is that the extent of the trench is only knowable from this photograph at a level which is irrelevant to the question of tightness of fit or whether there was a ramp. The tightness of fit would apply to the length of the ship at its highest point not its lowest point. A ramp would require to carry the ship from ground level to the base of the trench, and would not need to cut through the natural at the level shown in fig 210. The trajectory of a ramp would therefore not show here and cannot be inferred one way or the other. The situation is still clearer in fig 310, where the whole bow rests on a block of sand or earth which is clearly redeposited. This might, or might not, derive from a ramp.

There appears to be no comparable picture of the stern [west] end, which is unfortunate, since [pace Phillips, I, 743] this is the more likely end to have had a ramp if there was one. Fig 168a shows Phillips' interpretation: a tight fit at this end against undisturbed buried soil. If correct, this might imply an absence of ramp as Phillips says. However the buried soil was certainly not undisturbed here; both buried soil and indeed ship, had been ploughed at a later date as Brown had already observed: " The end comes quite to the surface outside the mound and a furrow had been ploughed right over the end of the ship; one loose rivet was found near it" [Brown Diary 29 Jun]. The situation at the west end is at best uncertain.

Clearly the relationship between the trench and the ship at the lowest level, however intimate, does not prove whether there was a ramp or not. At higher levels, the strata at the E end were apparently 6ft clear allowing a ramp to be possible; at the W end the strata had already been scrambled and eroded in antiquity. The absence of a ramp can therefore hardly be insisted on, and the question must remain open.

Phillips' suggestion of how the ship was placed in the trench is however far more practical than any ramp, although it would not require bollards. The rollers would have to be at least 22ft long, 16ft spanning the chamber and 3ft either side on the OGS. There would be 12ft of space between the ends of the rollers and the nearest spoil heaps [see below].

The floor of the trench was uneven and the back of the ship had broken in at least one place [SHSB I, 169]. The ship had a list to starboard of between 5-10 degrees to the horizontal. The trench beneath the ship contained a plank or oar (fig 319; fig 196, p 272). The fill was derived from upcast and included a 'sorted clay pan' found in 1966 at the stern on the N side, which needed a pick to break it'. This suggested to Bruce-Mitford that it had formed in a void in situ (SHSB I, 164), rather than being redeposited concreted subsoil; the latter would be strongly implied by fig 176, which shows the lump lying on ship-trench back-fill outside the gunwale. However the character of the fill beneath the ship impression, removed by the BM team in 1966-70 is still uncertain. The bottom of the ship-trench itself seems not to have been recorded (fig 183), although it was excavated following the removal of the rivet sets in moulds; the remains of two timber beams were then observed running across beneath the keel, near the prow and the stern (p 275). The fills are drawn as tips of banded sand, soil and gravel, which is endorsed by the photographs (fig 183, 190, 192, 197). The fill beneath the hull at rib 21 was noticeably pebbly (fig 180,181) suggesting an arrested stone-roll at a point that the stern-post began to rise from the keel.

7.1.3 *The chamber*

In spite of the poverty of the records, there is little doubt that the chamber was a substantial structure whose existence was very evident: The remains of the burial chamber "could easily be seen" [Phillips 1940, 12].

In his evidence to the Inquest Piggott says "On removing the sand with the normal caution of archaeological excavation, we found that a mass of decayed wood, clearly not belonging to the actual structure of the ship, lay in such a way as to form a low irregular heap along the centre line of the vessel, and [on Scandinavian analogy] we interpreted this as the remains of a collapsed timber chamber erected in the centre part of the ship for the purpose of the funeral - an interpretation later confirmed by other evidence found earlier in the excavation. It was therefore evident that the burial deposit would lie below this tumbled-in planking" [SHSB I, 723].

In correspondence Piggott described the huge amount of decayed wood as lying over the burial deposit 'like a blanket' [SHSB I, 180].

The form of the chamber, from publications to date, is uncertain. The excavators and B-M have only been confident in its E and W walls. The N and S sides, the roof and the floor (if present) have remained equivocal.

713.1 The E and W walls [F 9,11]

The E and W walls were seen in plan as thin dark lines.

"Brown had noticed some faint signs of a possible division across the ship on the E side of the bronze and wooden objects seen on its bottom...Now traces of a similar division were seen in the sand as it was shaved down west of the middle of the ship, and both appearances proved to be the last vestiges of the two ends of a timber burial chamber" [SHSB I, 171].

The line W wall [F 11] was drawn by Piggott on his plan 3; it had bulged inwards [eastwards] 'a minimum distance of about 14" [SHSB I, 485]; according to Phillips it was 9 inches (I, 178). B-M (fig 112) opts for 12 inches.

Phillips was sure that the end wall was made up of *horizontal* planking: 'The partition was seen to have consisted of planks laid horizontally edge to edge one above the other to make a vertical wall. This would seem to imply uprights, but but no sign of one was observed. Naturally the two lowest planks only were observed, and these had been pressed over into the burial chamber to a depth of nine inches eastwards. A right-angle iron clamp, probably connected with the securing of the base of this wooden wall to the bottom of the boat, was near the centre of the bulge at the central axis of the whole burial' {Diary, 23 July 1939}. [The angle-iron is here attributed to the support of the ridge pole, see roof, below]. Horizontally planked walls do make the best sense if the hull itself is to function as the N and S wall; the variable width of the hull in the vertical plane can be crossed by variable lengths of planking. Horizontal planking also accounts more satisfactorily for the curvilinear locus of the decayed wall; the vertical planks seen in Mound 2 and mound 14 chambers were discontinuous dark slots.

B-M calculated that the chamber walls had originally stood outside rib 10 and rib 16, giving a length of 18' 3" (5.57m) rather than the 17' 6" (5.33m) shown by Phillips [SHSB I, 485].

A number of iron objects were considered as being possibly in association with the chamber construction. The iron spikes which occurred elsewhere along the gunwale were absent in the area of the chamber, suggesting to Bruce-Mitford that the tholes themselves had been removed [p 485; see 712.1 above]. However there was no evidence that they had ever been there (see tholes, below).

Phillips describes "A few vertically set iron spikes occurred along the bases of the walls" [Phillips 1940,13]. These would in a position to nail the base of the wall to the floor.

A 'large iron bolt' was seen near the base of the presumed W end of the chamber among the completely decayed wood there. [SHSB I, 178]. Bruce-Mitford points out that the 'bolt' was discovered at a very early stage in the excavation, but was sceptical about its significance and about the existence of this and other pieces of iron which have not survived (I, 177-8). Phillips himself pronounced that there was no

door (I, 176). But if this *was* a real bolt, it is prima facie evidence for a door.

7131.1 A door ?

Also at the W end, " a right-angled iron clamp, probably connected with the securing of the base of this wooden wall [F 11] to the bottom of the boat, was near the centre of the bulge at the central axis of the whole burial" [SHSB I 178]. B-M dismisses this, saying that Phillips could not have then known where the central axis was and again the object has not survived. It seems unlikely that Phillips did not know where was the central axis of the whole burial, since it is perfectly obvious in the photographs taken by Cookson before excavation started; or that he invented an iron clamp, although it could have been an early siting of the standard, or a reference to the iron object 210, or have belonged to the coffin [see below] or have been a fitting attached to the chamber wall from which, for example, the hanging bowl 22 was suspended [see below].

However, Bruce-Mitford is sure that the bolt and the angle iron were the same piece of metal seen on 14 July and covered up and then seen again on 27 July as that part of the grave deposit was being uncovered. On balance, it seems likely that there was no bolt, but there was an angle-iron and its relatively high position suggests a role in the suspension of the roof.

Decisive for the absence of a door, at least in the west wall, is that the wall line was traces as a continuous stain. The east wall was marked by a stain which was discontinuous and has a gap symmetrically disposed to the keel line. A central door would be possible here. However, central doors at both ends would seem to be excluded by the proposed supporting posts for the roof.

If there was no door, then the chamber must have been loaded with at least one wall missing, or through the roof. Since both walls have evidence for use to support cloth hangings and the suspension of artefacts, the chamber must have been loaded through the roof. This is an additional argument for the chamber having been constructed after the ship was placed in its trench.

713.2 The roof [F 10]

An irregular line of discoloured sand, similar to those attributed to the E and W walls, was observed running along the S side of the excavation well within the ship. It was found to run "downwards and outwards towards the presumed position of the gunwale". The relationship between this line and the gunwale was also seen in section in the block of soil amidships on the S side [facing CWP in fig 109]. Phillips supposed that "the eaves of the roof rested on the upper part of the gunwale in the same way as in the Oseberg ship" [p 176].

In fact the chamber in the Oseberg ship was a free-standing pre-fabricated transportable building constructed from large timbers based on a rectangular ring beam of double thickness and leaning on to a ridge. Its one piece of iron-work is an angle piece nailing the ridge pole to an upright end post

On the basis of his observations (I, fig 113) Phillips assumed a gabled roof line with its footings on or oversailing the gunwale and founded on the sand of the ship trench; from the angle observed, he estimated its ridge at about 12 ft above the keel. Maynard seems to have made a similar observation on the other side of the ship (see Maynard, 3.2, fig 4). The heads of horizontal iron spikes or rivets were noted by Angela Evans in a photograph of the gunwale at rib 17 (I, 405) which may have been used to secure the lower ends of the rafters to the gunwale. These apparently occurred only in the burial chamber area (I, fig 287) and are claimed to have been seen 'throughout the [burial chamber] area' (I, 405).

If these horizontal spikes were rivets, both sides of the gunwale/rafter would need to be accessible to install them. If they were spikes and the head was outside the ship, the foot of the rafter would have had to be nailed down before the ship was put in its trench, since the gunwale amidships lies below ground level; that is the burial chamber would have to be constructed first. If the head is inside, then the

spikes would have to be hammered from within the chamber, after the roof was on. If the roof was the only point of access after loading, then the carpenters would have needed to leave a point of exit. Such a point distinguishable only by having no nails, could of course easily escape detection at this remove.

Nevertheless it should be pointed out that it would be very easier to construct the roof after the ship was in its trench and to hammer spikes vertically through the join of rafter and gunwale; and easier still to place the roof planking against the sides of the ship trench - they would need to be cut to size in any case. If so, another explanation is required for the horizontal spikes/rivets, for example, the addition of a wash-strake or of a special ring-beam, as at Oseberg.

The planks of the roof seem to comprise two layers at right angles to each other, although their relationship as recorded was not consistent. E-W planks ['purlins'] overlay N-S ['rafters'] between ribs 10 and 11 [fig 112, nos 26,27]. At rib 13, a N-S plank overlay the area of rotted wood with an E-W grain (Fig 112, no 17, 5). Bruce-Mitford, however states (p 179) that there was only one place where the relationship was recorded by Phillips, that is over rib 10/11. This implies that the correct reading is that the load-bearing part of the roof consisted of rafters running up to a ridge pole, on which E-W planks were afterwards laid. [The planking at no 5 is more plausibly a floor or the lid of a coffin (see below 714.1)].

On top of this Phillips visualised a roof of turf, implied by the filling which was encountered during the lowering of the sand towards the chamber. He described this as 'rotted turf', perhaps 'a special layer of turf placed over the roof of the chamber' [p 171]. It is not necessary of course to ascribe this turf to a roof, rather than to the first turfs thrown in when the mound was being raised.

Assuming the end walls were constructed of horizontal planks and that there were no side walls; and assuming that the roof consisted of N-S planks supporting E-W planks, the roof would have required a ridge pole and at least two uprights. The horizontally planked E and W walls could only have acted as supporting gables if the E-W planks had been underneath the N-S planks of the roof, ie acting as purlins.

On the analogy with the Oseberg chamber, five essential elements are missing: two upright posts, one ridge pole and two angle-irons. Even if one angle iron at least can be agreed to have existed, the ridge pole could have been tenoned at either or both ends. The ridge pole would have collapsed on top and therefore would have been among the first of the wood remains to have been removed. Phillips recorded and preserved a piece of oak from a timber, probably unworked, at least 14 inches in radius (ie 2 ft 4 ins, 700 mm in diameter), and representing at least 75 years' growth (I, 176, 680). This is a substantial timber by any standards and quite large enough to support a ridge pole. It is indeed quite large enough to have been a mast, although its position in that case would have been well aft of centre. A chamber could have used the mast as one support and an upright as another, only the mast requiring an angle-iron. Such uprights are likely to have stayed upright during the collapse sequence, and therefore would be visible only as circles of wood-stain against the wood-stain of the hull.

713.3 The Floor.

B-M believed that the chamber 'must have had a floor' [SHSB I, 179] although he does not attempt to reconstruct one. Common sense suggests that a floor would have been essential: if Vol I, fig 111 is at all accurate, silver bowls, the sword and the pottery bottles would have to have balanced, impracticably, on ribs. Wood, not associated with rivets, lay under the spear and angon shafts and under the sword and helmet. This should represent a floor; if so it was of double thickness. In the former location, the wood was seen as two planks crossing at right angles, the N-S plank (across the ship) supporting the E-W (along the ship) as in the roof [fig 112, 6 and 7; p 180].

The existence and position of a floor can, however, be inferred from information that we have on the locus of the walls.

At the level of the interior of the ship's bottom, no trace of the wall lines remained at either end [SHSB I, 485]. The W wall [F 11] was planned by Piggott as being over the sceptre and standard and probably over bucket 3. It was otherwise continuous. There are glimpses of linear stains which might relate to the W wall in the various photographs reproduced as figs 114, 116-118, but none are clear enough to determine its lowest point. Phillips angle-iron, described by him as being at the foot of the western wall, was found early in the excavation sequence, and was thus presumably relatively high up, and recovered before the main group of finds at the west end were uncovered (I, 176-8).

Using these pieces of circumstantial information and assuming that the base of the wall cleared the remains of the standard and bucket 3, but was not seen lower down, the lowest level of the W wall must have been higher than the hull; it may be estimated to equate very approximately to the 3rd row of rivets down from the gunwale ie strake 6. A model in which a floor is suspended, and the end walls rise, from about strake 6 is therefore consistent with such records as were made.

The excavation of the shield boss appeared to show that the boss and the two long ornamental grip extensions from the back of the shield 'had sunk into a cavity'... 'these came to rest at a lower depth than the shield board and its rim. Furthermore, the inward bulge of the end [W] wall of the chamber had led to an inward movement of the bronze edged rim of the shield board, so that it had flattened into a straight line on the west side. It gave the impression of something rectangular rather than circular.' [SHSB I, 191]. Here is an indication that there was a hollow space beneath the finds.

The position of Bucket 2 is also relevant for the argument for a floor. It was found to have stood at the 5th strake and B-M remarks that may have been suspended " since it seems unlikely to have stood unsupported on the slope of the side of the ship at the fifth strake level." [SHSB I, 484]. The position of the bucket 2 is satisfactorily explained if it was standing on a floor. It would then be standing almost at the edge of the floored area.

All these anomalies can be explained by supposing that there was a floor of planks, E-W laid over N-S at the level of strake 6. The end walls stood on this floor and may have been nailed to it.

In practice, and on analogy with Viking ships, the Sutton Hoo ship could have had a deck, the oarsmen sitting on boxes, rather than thwarts. The use of thwarts would not require a deck, but the oarsmen would need legs at different angles (or legs of different lengths). If there had been a deck, it would have been compressed on to the hull by the weight of soil, and therefore could have escaped detection outside the chamber. The uprights supposed to have supported the roof would have to have been let through the decking, unless one of them was the mast.

During the collapse sequence, the roof may have collapsed first, pressing certain objects through a rotten floor. The W wall was then free to bulge in over the descended grave-goods. Alternatively, the W wall may have bulged in over the floor, which subsequently collapsed with the weight of incoming soil.

713.4 The Structure of the Burial chamber.

The reconstruction of the burial chamber requires the following specification:

The ship was decked at strake 5, or there was a floor at this level at least in the area of the burial chamber. The floor consisted of N-S planks of variable length laid across the hull, with E-W planks above them along the line of the ship.

The end walls were constructed of horizontal planking of variable length, which would have been in position before the chamber was furnished (since they were used for suspending cloth and artefacts). They had no doors.

The roof was constructed of rafters of variable length, their lower ends seated on the gunwale/wash strake and rammed into the side of the ship trench, and their upper ends supported on a ridge pole.

The ridge pole was supported by two upright posts let through the decking onto the keel. One at least used an angle iron to attach the ridge pole to the upright.

Bearing in mind the conspicuous lack of iron fastenings in appropriate positions, this structure is difficult to conceive.

Since the Oseberg ship-burial is the one ship-burial which had preserved timber and was systematically excavated and recorded, it would be easy to abuse it and apply to Anglo-Saxon Sutton Hoo the specification of a Viking burial chamber at least 200 years later. But it is also important to notice that the Oseberg chamber was a very simple construction in comparison to the ship, and that it meets virtually all the requirements of the specification demanded by the fragmentary evidence from Sutton Hoo.

The ship was decked and the chamber stood on the deck. The foundation of the chamber consisted of pairs of horizontal planks rising for two courses. These horizontals were pegged or morticed to each other at the four corners to form a ring-beam. The slots formed between the horizontal pairs of the short sides were used to contain uprights. The ridge pole was supported by angle-irons carried by two uprights, and the roof consisted of rafters, their lower ends supported on the ring beam, which simply leant against the ridge pole. The only nails required were those securing the angle irons. It would be possible to enter and re-enter by either wall or by the roof, simply by removing the appropriate number of timbers. The upright posts, one of which was the mast could be circumnavigated by a cart or coffin, or avoided by using the roof and loading by manhandling from the side. Alternatively, the roof support could be added against the mast when burial chamber had been charged.

For maximum access, combined with maximum dignity, it would be possible to erect the ring-beam and roof tree, and add both wall ends and the rafters after the obsequies had been concluded.

If such a structure decayed in an acid sand, it would be expected to create a mass of rotted timber on top of four rectilinear wall-lines which would be read as horizontal planking. The wall-lines nearest the gunwale might be difficult to read owing to their confusion with the roof; while those at the ends should show more clearly in the backfill above the level of the floor and the collapsed roof timbers. The massive timbers of the uprights could be expected to stay vertical but detectable where clad in contrasting backfills. The end result would be two end walls with circular patches beyond them and a mass of tangled timber inside.

The variations which might be ascribed to Sutton Hoo are that, in general planks rather than unworked timbers seem to have been seen by the excavators. The chamber might have been more finished, but the principles could have been similar. The main anomaly lies in the idea that the Sutton Hoo chamber was founded on the gunwale rather than being free standing. Even if there was no special beam as in Oseberg, it would make better sense to found the rafters on the floor against the hull. As it stands there is also nothing to support the horizontal planking of the end walls while they rise to the level of the gunwale, other than pegging them to rib 10 and 16 - for which the evidence is not very supportive. There is a great deal of cutting required in the Sutton Hoo layout, since the end walls and the floor joists and the rafters are each comprised of sets of planks of different lengths. A rafter which fails to seat properly on the gunwale will immediately fall off the ridge pole and inside the ship; but the excavators and researchers argue for a robust chamber which stood under a considerable tonnage of oil. A construction at least as robust as Oseberg, and not a carpentered box would be necessary.

Given the lack of evidence for a double ring-beam, the only construction which the evidence allows and would also be strong enough requires massive uprights and a ridge pole, with rafters founded either on the deck against the hull at strake 5, or above the gunwale against the ship trench.

7.1.4 *Furnishing the chamber*

714.1 Was there a coffin [F 7]?

The presence of a coffin in the chamber was not apparently suggested until Evison 1979, although Phillips seems to have been aware of a tray or bier (see below). The possibility of a coffin or bier, citing parallels, is finally acknowledged as a possibility in VOL III, p 923; but in general B-M preferred to remain inconclusive: "The function of the iron cleats is difficult to explain. Even allowing for some degree of displacement, they are not sited at rib positions, and so could not have held a floor fixed to the ribs by nails. Some seem flat, but others, particularly 219a and b, are slightly convex, the convex side carrying the heads of nails, the points of which emerged from the concave face. They must have been connected with some constructions in the burial chamber"[SHSB I, 486].

The case that there was a coffin has now been greatly strengthened, firstly by the excavation of a coffin in Mound 17 and secondly by the stratigraphic analysis done here. The difficulty of observing the locus of a wooden coffin, surrounded as it was on all six sides by the wood of the chamber, and on three sides by the wood of the ship, is evident. Nevertheless, the circumstantial evidence is good, and the presence of a coffin helps to explain virtually all the anomalies in the disposition of the grave goods.

714.1.1 The cleats or clamps and other pieces of metal which could have derived from a coffin.

Phillips reported the cleats as follows: "A system of cleats occurred, disposed on each side of the main [burial] deposit through the greater part of the length of the chamber and was not found outside it" [1940,13]. In another paper [1940, 175] he sees them "more less regularly disposed along the north and south sides of the keel line. Their badly rusted state makes it difficult to be sure of their exact form until they have been treated, but in general they appear to be strong pieces of iron which had been bent to accommodate themselves to the curve of the bottom of the ship."

Unfortunately their disposition in the ground (ie whether point up or point down) was not recorded and remains equivocal. The fact that Phillips supposed them to have been bent against the curve of the hull means that some at least were probably found point up. However, this is contradicted by the (uncredited) author of the account of the cleats in Vol III, 913-923: 'It is clear from the appearance of sand concretions and confirmed by the evidence of 1939 excavation photographs that all the cleats lay with their convex sides uppermost and the nails pointing downwards'. The source for this statement is not given, but Vol I, fig 112 mentions only two as having a photographic source (there 'B' and 'C'). It is not explained how, even in these cases, it can be known from a photograph whether the head or point of a nail in a rusty clamp is being observed. At the least, such an emphatic statement as 'all the cleats lay with their convex sides uppermost' requires rather more detailed evidence, not least because some of them are clearly flat.

The cleats (219 a-m) are described in the inventory (p. 453) as 'Cleats, iron, remains of at least nine out of some thirteen recorded by the excavators, consisting mainly of heavily encrusted flat or slightly curved strips originally fixed by large nails at either end. Only one nail is present. Found in burial chamber irregularly [sic] spaced along the part of the deposit laid out along the keel-line; presumably connected with the construction of the burial chamber or with some fitment within it'. Dimensions are recorded as averaging 6.5in x 1.75 in [165 x 44 mm], actually the average width of the clamps reported in vol III is a steady 32 mm. They were reconstructed as having one nail at each end (p. 220).

Wood was recorded on the lower (concave) surface of cleat 219a 'with its grain at right angles to the long axis of the cleat' (III, 915). It was identified as the most westerly cleat on the north side on Phillips' plan, lying close to rib 14: 'the convex surface was uppermost'. Traces of weft threads of textile SH 18 were identified on the upper surface of cleat 219f, which also had its nail embedded in wood with its grain at right angles to the long axis of the cleat. In summary, of 20 possible cleats, only three are specifically located on the plan and the attitude of only two was known, one at each end of the supposed coffin. 12 had wood remains associated with the nail points; in every case the grain ran across the axis of the clamp. 7 or 8 had wood associated with the nail heads; in every case the grain ran along the axis of the clamp.

These observations are still consistent with the cleats having served to clamp a coffin (across the grain) while the backs of the cleats came into contact with the roof (along the grain, that is N-S) after the coffin had collapsed. This in turn endorses the notion that the cleats were found nail point down: the top layer of the floor ran E-W, which would have marked the back of the clamps at right angles to their long axis; while the lower layer of roof ran N-S, parallel to the clamps' long axis.

(TABLE).

The assertion that the clamps were found point down therefore is supported by the evidence of the wood grain.

No	Position	c/f	outer	inner	l	w
219a	most NW	c	up;SH18	wood x	163	31
219b	most SE	c	?up;wood =	wood x	115	31
219c	S	f		wood ob.	120	41
219d	-	-	SH18		150	33
219e	-	f	wood=	wood x	103	35
219f	-		SH18	wood x	[60]	34
219g	-	c	SH2 wood ob.	wood x	172	32
219h	-	-	-	-	[54]	37
219i	-	f	wood =	wood x	139	36
219j	-	c	wood =?	wood x	116	31
219k	-	-	-	-	[65]	37
219l			wood =	wood x	[68]	33
219m	ring and rod					
219.9	iron strip				[63]	39
219.10			wood =	wood x	119	30
219.11			wood =	wood x	95	29
219.17	Like 219m					
219.24					67	34
219.25		f			56	29
219.26				wood x	35	31
219.27			wood =	wood x	42	35

TABLE: Iron pieces associated with the cleats. Source: III, 915-921.

The curve in the shape of several cleats was attributed to the pressure of the material which had collapsed on them; they "had been bent to accommodate themselves to the curve of the bottom of the boat" [SHSB I,220]. Such a process - iron bent against by a weight of sand is very improbable. The curved shape however resembles closely that of the clamps found in Mound 17, which most certainly derive from a coffin, in this case with a chamfered roof and ends [see VOL 6.7].

The position of the mound 1 clamps with the long axis N-S is consistent with their having served to clamp a coffin which had burst open. Of a number of pieces of iron recorded under the inventory number 219, 19 are attributed to cleats or cleat fragments. 12 cleats are shown on Philips' original plan and 4 more were seen on photographs (SHSB, III, 915). On fig 112, there were eight clamps on the S side; only 6 are recorded on the N side and one 'cleat T' lies in the centre. They run generally along a N-S axis except on the S side between rib 13 and 15, where there appears to have been a major burst affecting possibly 5 cleats. If this interpretation is correct, there would have been up to 9 clamps a side, at intervals of about 1 ft.

Their locations suggest that a coffin originally extended from about rib 15 to rib 12, a total length of about 3m [9ft]. The clamps in the mound 17 coffin served to join the lid to the case; the same function can be attributed to the mound 1 clamps. As situated the clamps indicate a coffin about 1.5m wide; it does not have to have been much narrower than this given its overall massive proportions. A reasonably proportional maximum width nearer to 1m than 1.5m [3 ft rather than 4 ft] is suggested.

The fact that some of the clamps at least ended up point down poses a problem at first for a coffin which is thought to have burst outwards into empty space. However, the problem is solved if the coffin was similar to that proposed for Mound 17, namely a 'mansard' type construction. The role of the clamps here is to secure a composite lid which has walls that slope inwards, to a base which has walls which slope outwards or are vertical. In mound 17 the weak point appears to have been the joinery which connected the flat top to the lid walls. If the flat top parted from the rest of lid and descended suddenly but the clamps held, the predominately vertical walls of the coffin would fold inwards, leaving all the clamps point down.

The SW corner may well have experienced an earlier fracture.

Finds 226 (a nail) and 220 (a ring through an iron loop, III, 910) may also belong to the coffin. The position of the ring 220 was 'lying loose against the side of the ship on strake 4 port between frames 14 and 15'. This is at the north edge of the putative coffin. Find 211 (no 11 on fig 112, and see fig 398) was found in a similar position during the 1967 re-excavation.

7141.2 Traces of wood which may have derived from a coffin.

Apparently against a coffin is the lack of reported wood underneath the relevant grave-goods. However, it may be assumed that wood layers, whether derived from the roof of the chamber, or the floor or the coffin, or indeed the ship, were systematically removed unless and until a hard object was encountered. Pads or islands of wood layers are visible under the sword (I, 199 [but this is cited as a square wooden box]; II, fig 207) and form a 'nest' for the shoulder-clasps (ibid), which is arguably derived from a smoother wood than the E-W grain apparently lying stratigraphically beneath it (I, fig 126). If the cross-section of this smoother wood forming the 'nest' seen in I, fig 127 is not an illusion, the wood layer is of some thickness - roughly the same as the lower guard of the sword (10mm, following II, fig 218), The photograph taken by M.Guido (II, fig 355) shows a dark soil background to the gold buckle and purse, offering a contrast to the sand S of the sword in II, fig 207 or the E-W grainy wood of the floor seen under the shield in II, fig 2. On Piggott's plans the large area of rotted wood which overlay the deposit 'like a blanket' (no 5 in I, fig 112) conforms rather well to the position of a coffin. If this is the layer seen in I, fig 115, the Anastasius dish lies over it; and there is general rectangular swelling parallel to the 3 metre [?] scale in Cookson's photograph which can have little other simple cause than that it indicates a collapsed coffin. In his diary, Phillips refers to the 'hump of wood amidstships'(I, 740),

by which Bruce-Mitford assumed he meant the drinking horn complex; but this complex, although woody was not itself a hump. More specifically, writing of the Anastasius heap on 29 July, Phillips says 'Faint traces of the wooden tray or bier (?) which had underlain the eastern end of the burial complex were again observed here' (I, 742). It is not clear where the comparable traces at the east end had been observed, but there is least an indication here that Phillips was aware of a marked increase in wood deposit within the supposed area of the coffin. Elsewhere the wood beneath the Anastasius heap is described as a "large round [or oval] wooden trough or platter of rough workmanship" [227, fragments have not survived]. Phillips also described it as being "carved from the trunk of a tree" [SHSB I,213; Phillips 1940, 19].

The fact that very few of the ship-rivets remained in the chamber area in 1965 (SHSB I, 144) shows that the chamber-excavators generally continued to excavate until they hit clean sand.

7141.3 Circumstantial evidence from the grave goods.

Additional support for the existence of a coffin can be gathered from the position of certain grave goods, described below, pre-empted where relevant here.

The Anastasius dish lay above another dish, itself heaped with many objects, which lay in turn above a pile of shoes and clothing. As found the whole pile was compressed into a shallow pad; but now that we know what they are [SHSB II,III], it can be seen that the pile of the original objects could not have stood up without support. A mechanically viable model, which explains the dynamics of this heap, puts the Anastasius dish on the coffin lid, with the remaining heap inside and supported by the E end of the coffin. Assuming there was a body about 6 feet long, there remains nearly a metre to accommodate such a heap.

If there were a coffin, objects might have been arranged along its lid. Such a scheme is endorsed by the long thin layout [the bar of Bruce-Mitford's "H"], and the tumbled positions and condition of certain objects which are best explained as having fallen off something. The puzzling disposition of the baldrick and purse with their upside-down fittings [SHSB I, 484, II, fig 424], requires them to have fallen into a void. This is argued as implying that the baldrick was suspended from the roof of the chamber; but at the same time it is argued that the baldrick fell while still connected by its leather straps (II, 579). This is contradictory, in that it is also argued that the chamber stood some time allowing the helmet to become brittle; leather would be expected to disappear early in such a decay trajectory, at least scattering the coins. A site on a coffin lid would mean that a collapse would cause relatively little dispersal of material already at rest on a flat surface. The silver bowls [78-87] were found upside down with the spoons beneath them; a more logical tableau would start them the right way up, with the spoons in them, on the coffin lid. The helmet, which had become brittle before it fractured [SHSB II, 138], may have fallen too, as may the fractured sword [SHSB II, 273] with its scattered pyramids. Bruce-Mitford, convincingly in my view, argues from records made in 1939 and 1967 that the gaming pieces were "scattered between the sceptre and the helmet" [SHSB I, 330, 336, 541, 577]. He would put their original position as "near the shield", but the scattering can be easily anticipated if a starting position can be found for them on the coffin lid.

It should be noted that textile SH 18 was found adhering to three of the cleats "on the curved surface of the cleat where the nail heads show" [SHSB I, 476]. The position of this textile would make little sense if the nail heads were part of the chamber construction, in which they would presumably have been hammered from the outside; a cloth *over* the chamber seems very unlikely. However the position makes good sense as the instances where the clamps of the collapsed coffin wall lay on the floor covers or a cloth had been placed over the coffin.

7141.3 The Form of the Coffin

Drawing this material together, a reconstruction of the coffin can be attempted (see RR). The curved

clamps are here crucial for the assignation of a "mansard" construction. It gives the maximum dimensions as 3 x 3 ft by 9ft long and offers a useful space on the lid of 3 x 9 ft or 27 square feet.

To account for the positions of the clamps as found, points down and in a row, it is supposed that the joints of the coffin nearest the floor were the first to weaken with damp and fungi. The coffin was then hit a major blow at its SW corner fracturing the coffin and displacing clear R (13 on fig 112). A subsequent blow was received at the highest point of the coffin, its flat roof along its length. The flat top of the lid parted from the walls which splayed out into space from the base, the clamps still holding the upper and lower walls together.

The resulting tableau then began its decay trajectory, presumably under timber and earth with some voids.

As an alternative to this sequence, one major collapse event may be held to account for the displacement of the SW corner and the splaying of the walls at one and the same time.

714.2 Was there a body?

The arguments for a body are thoroughly and convincingly rehearsed by Bruce-Mitford on the basis of the evidence available in 1975 (Ch VIII, fig 384).

Piggot, who was probably the most experienced excavator put the matter succinctly in his evidence to the inquest: "A minutely careful removal of the wood remains [of the chamber roof] enabled us to lay bare in situ the personal trappings and belongings of the individual who had evidently, from the position of the objects, had been buried at full length, lying on the bottom planks of the vessel, his head to the west. Owing to the acid nature of the sand however no visible trace of the skeleton remained - a condition which is however familiar to excavators in such soils".[SHSB I, 723].

Bruce-Mitford ingeniously took phosphate measurements on the objects with a view to demonstrating that the phosphate residues were concentrated around a "body space"; this can be declared a successful experiment.

During the 1983-93 campaign a special project was launched [funded by the Leverhulme Trust] to investigate the decay trajectories of bodies and other organic deposits at Sutton Hoo. This work found that an unfurnished body turned to soil in under 8 years, although bone was occasionally preserved in a pattern which was unexplained and probably depended on micro-environment. Proximity to metalwork may help preserve bone, as is indicated by Mound 17. But the mound 17 horse was astonishingly well preserved; so this mound might have been situated in a less aggressive chemical environment. Proximity to wood however rendered even the body-form unintelligible or invisible as examples of burials in unfurnished coffins showed.

The Leverhulme project also devised ways of chemical mapping, based on the cation component of the decay products of bodies and grave goods.

If the mound 1 body was in a coffin, without metalwork, or the metal was the chemically inert gold, it would seem to be in the most aggressive micro-environment possible, on a chemically aggressive site. The implication is that there could have been a body, but that if so it was probably dressed simply in cloth or in a shroud and laid in the coffin.

714.3 Furnishing the burial.

The disposition of the grave goods can be considered in four parts: the group of objects at the east end (cauldrons), the heap in side the coffin, the objects arrayed on the coffin lid, and the objects on and beside the west wall. This is also the likely order of their deposition during the ceremony, given the

stratigraphy we have, the size of the objects (ie cauldrons would have to have in first) and the possible door at the W end.

7143.1 The chamber itself was first fitted with floor covers and hangings.

71431.1 Floor covers.

At the E end 200 was sacking [SH25] which was found on the wood of rib 10.

Further to the W, 193 (SH18) and 194 (SH19) were rug or mat fragments under the cauldron chain. More SH 18 was recorded beneath the lamp and on cleats 219a, 219d and 219m [FIG 363].

No floor cover is assigned to the space beneath the coffin.

At the E end 192 (SH17) was rug or mat found "adhering to the underside of the shield board beneath the flying dragon" [SHSB I,475].

Also at the E end, fragments of the cloak material SH10 were found E of the shield boss, in the helmet remains and trapped between the two silver bowls that had slid off the pile of 10 [SHSB I, 476,478]. B-M proposes that a cloak was spread out on the floor over the E end, and that shield and helmet (to the N) and the bowls to the S lay on it. However, bowls and helmet probably arrived from the coffin lid and it is possible that the shield too was originally on edge. It is not certain therefore that this cloak performed as a floor cover, although it might have ended up on the floor. A starting position on the W end of the coffin could account for the evidence. This is one of three cloaks["cloak 1" say] of the same (luxurious) material discovered by B-M (p 481). The other two lay in more appropriate positions, under the drinking horns[cloak 2] and under the Anastasius dish [cloak 3]. It is possible that cloak 2 and 3 are the same garment [see below]; but whether one cloak or two, their position would appear to be over the E end of the coffin.

71431.2 Wall or ceiling hangings.

There were textiles suitable for decorative wall or ceiling hangings but less certainty which fragments actually performed the role.

According to FIG 363, p 477, the hanging material was SH 5 and 7. SH5 "may be the wool element of SH 7 without its base" (SHSB I, 480). SH 7 (with SH 8) is also the material "found consistently with arms and armour" (p 461), being recorded over the helmet, over the sword, over the scramasax, over the mailcoat and over the axehammer. SH 5 was found over the drinking horns and over the fluted silver bowl.

The top of the sequence in the principal pads of textile recovered (pads A, B and C) was SH2-SH5- SH4 in each case. If SH5 is a hanging therefore, SH2 was behind it or above it. This would imply that the hanging, whether ceiling or wall, was backed by a blanket type material.

Bruce-Mitford supposed that the sightings of SH 7 on the drinking horns, mailcoat and axe implied a continuous cloth [SHSB I, 464], which would offer negative evidence for the latter being inside a coffin. a cloth which came off the ceiling on to the drinking horns could not have survived to pass through the decayed wood of the coffin on to the handle of the axe hammer. But in pads A,B and C, SH5 was also found under SH 4 and leather deposit, so these fragments of SH 5 are more difficult to assign to a hanging. This increases confidence that SH 5 and 7 could be found in positions other than wall hanging.

7143.2 At the east end and beside the coffin

Cauldron 1 [113] was suspended since it lay over the tub [116]. There was a nail[225] associated with

the cauldron chain, [167] suggesting that it had been hooked up [p484]. The cauldron was 676mm in diameter (SHSB I, 219).

A nail [223-4] was also found with the remains of Cauldron 3 [115].

The pegs [u/n] found on top of this group were described by Phillips as "fair sized oak pegs, pointed at each end and resembling the wooden "cats" in the game of tip-cat [*what is tip-cat???*]. Some role in the suspension of the cauldrons seems probable - a nail would not do the job.

Cauldron 1 113, 3 and possibly 2 were therefor hung on or near the end wall, the chain of cauldron 1 being looped onto a nail in the E wall. Beneath them were placed the tub 116 and bucket 117. Whereas the suspended cauldrons were probably empty, the tub and bucket could have been filled. There was no evidence either way. The tub had a diameter of 584 mm tapering to 508 mm at the top; it was 507mm high. The cauldron 1 was 676mm in diameter. These dimensions give the basic layout at the NE corner of the chamber.

the lamp 166 was to the W of the cauldrons, unless it was on the coffin [see below]. As argued above, Bucket 2 118 was placed on the floor on the south side of the chamber.

7143.3 Inside the Coffin

The coffin could have been loaded in situ, given the instability of the heap at the foot. If there was a body it should have occupied the most westerly 6 feet.

RR shows the stratigraphy of the objects under the Anastasius dish, as drawn from the information to be found in different parts of SHSB I. It is consistent with the following sequence.

The axehammer 96 was placed at the foot of the coffin on the S side. The axehammer fits comfortably between the body which ends c rib 13 and the coffin which ends c rib 12.

Nearest the feet (heap B), was laid a leather garment [u/n]. Between this and the coffin end was laid a "folded twill cloth" like SH12 [u/n], making the base of heap A.

On heap B was placed a horn cup [135], two hanging bowls upside down [112, 111] and a wooden bowl [136]. Above these was placed a pillow [207 in pillow case 186-7] 450mm long its long axis running N-S. On either side to N and S was placed a pair of shoes [173-4] with tapes [181 in SH6 and 198 in SH 23]. In the pillow was a lady bird.

On heap A was placed the mailcoat [92] folded and with its axis running N-S, together with quantity of tape [188 in SH 13]. A flowering plant was placed on the mailcoat.

A third heap (Heap C) was developed over the other two. A leather garment or complex of leather [175], together with the double buckle 153, textile 190 in SH15, and bronze and silver buckles [137-159] was placed over both heaps.

On the leather garment was placed a silver fluted bowl in classical style[77], containing three combs [169-171], 4 knives with horn handles[162-5], 7 burrwood bottles[128-134], a small hanging-bowl [u/n?], a silver ladle [90,91], and a number of textiles [195 in SH 9-12,14,20] including a fragment of cowhair [217] and otter fur [216 with linen 196,in SH21], which B-M interpreted as an otterfur cap. Other textiles are reported as represented [SH 1-4, 8-10, 14] but their relationship to the bowl 77 is unclear. Also reported was a playing piece 172, which B-M relocates with good reason to a set of playing pieces near the shield.

Stratigraphically in the highest reaches of the heap were thin planks 214, a triangular wooden wedge

204 and a series of nail heads or escutcheons 209a-f, a textile bag(?) in SH9 and a fragment of cloak SH 10. All these might be attributable to the structure of the coffin itself [ie its lid] and the cloak which lay over its end. The drinking horns and the Anastasius dish would then be seen as placed *on* the cloak.

The pile as modelled here should have stood up within the E end of the coffin. Its constituents are consistent with the personalia which could have been put in such a position: leather garments, mailcoat; a pillow with shoes next to the feet and a bowl which would not be out of place as a Classical washbasin containing combs, shaving equipment and other toilet equipment.

7143.4 On the Coffin lid

It is argued above that the coffin area ran W-E from rib 15 to rib 12. It cannot have run further W, if it is to respect the supposed position of the shield. The position of the coffin in Mound 17 shows that it would be acceptable to the burial party to place the coffin on top of the shield; but in this case the existence and use of a chamber makes it improbable: as argued above, the W wall contained the door and the shield would have to be among the last objects deposited before the door was closed. The coffin could have run further E, up to the part occupied by the cauldrons.

The width N-S is defined by the clamps; it cannot have been wider, although it might have been narrower.

However, the argument does not require the coffin to extend any further than the proportions offered by the clamps (3x1m).

Given these dimensions, the objects which could have placed on the coffin covered the whole area of its lid. AS already argued, the coffin was first draped with cloaks in material with a glossy pile [SH10]; B-M argued for the existence of three: cloak 1 on the floor at the W end; cloak 2 under the drinking horns and a separate cloak 3 under the Anastasius dish [SHSB I, 481]. Cloak 3 may have been inside the coffin on top of the heap. It is argued here that cloak 2 and 3 could have been one and the same, and outside (ie on) the coffin, but that still leaves at least two cloaks made in this superior material with which to cover the coffin lid. All the objects were therefore placed on cloaks spread over the coffin lid.

At the E end, the Anastasius dish would have dominated. On it or in it may have been placed a meat offering, the evidence for which, a few fragments of burnt bone or other organic substance [SHSB I] to which can be added the comments of the excavators about other fragments, mobile in the wind [Carver 1998, 17; and see the photograph in SHSB I fig 139, described as the Anastasius dish "with material on top of it partially cleaned away"]. Textile 201 (in SH26) is associated with this deposit. The dish had been bent into a concave shape, dome up. This had presumably happened after the coffin wood had gone soft, and collapsed onto the pile beneath, inside the coffin. The pedestal of the dish had cut into the ladle, but the pile itself remained sufficiently robust for the Anastasius dish to have been bent round it.

The lamp 166 and the pottery bottle 168 are also candidates for placement on the coffin lid. If they were, both would have to have been situated on the SE corner of the coffin lid. The lamp could however have been on the end of the coffin lid, where its position would have been more symmetrical. The lamp contained a pad of beeswax showing it had gone out before it had run out. Since the movement in the chamber before collapse is likely to have been minimal, this is most likely to have happened when the chamber door was closed for the last time.

To the W of the Anastasius dish, the two large drinking horns were placed tip over tip one to each side of the central axis of the deposit, with their mouths to the W [SHSB I, 205]. Arranged symmetrically along the long axis, three inside the arc formed by the horns and three beyond their tips to the E, were the 6 maplewood bottles. These had been crushed in situ, although the displacement from the symmetry suggested by B-M is easier to accept if they had fallen first. They would have fallen onto the space occupied by the lower legs of the body.

At the W end, approximately over the space occupied by the chest and head of the body, lay the sword,

baldrick, helmet and playing pieces.

The sword (19-33, 95) lay on the S side, equivalent to the right hand side of a body lying on its back with its feet to the E. The sword was equipped with two "extra" rolls of tape, 6m and 10m long. These were under the sword and not attached to it [SHSB I, 460?]. They were also said to lie on a small wooden box, the evidence for which was slight [SHSB I], and which might rather represent part of the coffin. The spare tape strongly suggests that the burial attracted different kinds of gifts, like a wedding list. The sword was also associated with textiles SH 3, 7 and 8, of which SH 7 and 8 were "consistently found with arms and armour"[SHSB I, 461]. Although SH 7 is elsewhere argued by B-M as belonging to SH 5 and assigned to the overhead hanging, it is possible that this observation could be related to the storage of arms and armour. AS is normal practice in the army today, quality metalwork is routinely wrapped in slightly oily cloth before being stored. This is how Sir Walter Scott found the Honours of Scotland, when he rediscovered them in the bottom of an oak chest in Edinburgh Castle, a hundred years after the Union had made them redundant and in jeopardy from recycling. Whether wrapped or not, the sword lay on the coffin lid and descended with it on collapse. It was presumably at this point that the handle and tip fractured.

The baldrick comprised the great gold buckle and a number of connectors (1-18, 34-75). AS excavated, a number of these, including the great buckle were upside down, causing B-M to decide that the harness as a whole could not have been in situ on the wearer, but must have moved or fallen:" It is difficult to explain the torque and the fact that many pieces are upside down and others the right way up, except by assuming that a leather harness to which they were affixed fell as a whole while the leather was still resilient".

If the baldrick had been placed on the coffin lid, there are three different occasions when any original symmetry could have become contorted: when the baldrick was placed on the coffin lid, when it fell with the coffin lid onto the coffin base and when it fell with the coffin base onto the inside of the hull. Of these, the first is the easiest to visualise, since it is at this point that the leather is at its most resilient. The leather in a modern Sam Brown is as sturdy as that in a horse harness, and virtually impossible to fold. Nor would it be folded, since much energy is routinely expended on polishing the exterior, and if folded the polish would crack. There are a number of ways in which a Sam Browne can be arranged. All of these would involve some of the fittings being face-down, or becoming face down on any collapse.

The helmet 93 was situated above the head end of the coffin, on the N side. It was furnished with tape 188 in SH 13 and associated with cloth in SH 2,7 and 8 and 199 in SH 24. The helmet too can therefore have been wrapped for storage. It will have collapsed in situ with the coffin lid, at a time when it had already become brittle with erosion [SHSB I].

B-M deduced the presence of a set of playing pieces at the W end, and it is argued above that their dispersion can be explained if they were originally sited on the coffin lid. Their position would have to be nearly central over the assumed position of the head.

The silver bowls lay upside down, with the two silver spoons beneath them [SHSB I, 194]. Cloak material SH 10 was found "amongst the nest of silver bowls"[p 476] or "trapped between fragments of the two silver bowls that had slid off the pile of 10" [p 478]. The decay trajectory is not easy to reconstruct. If the bowls began upside down, then the two uppermost bowls could have slid almost immediately onto the cloak, fragments of which stuck to the bowls as these most exposed of the bowls eroded. This sequence would apply equally if the bowls were stacked on the cloak on the hull [or rather chamber-floor] as suggested by B-M, or stacked on the cloak laid over the coffin, as suggested here. Subsequent collapse with the coffin lid, would not greatly affect the tableau. Alternatively, the bowls could have begun the right way up on the coffin lid with the spoons in them. Erosion would have to proceed to the point at which the pile of the cloak had become incorporated with the metal of the two lowest bowls, the lowest of which was certainly, and the second lowest was probably, in contact with it. The whole pile would then have to invert, so that the lowest bowl base down became the uppermost bowl base up, at the same time retaining the spoons inside the uppermost bowl, now at the bottom of the

heap. This is a little contrived, but not impossible given the disposition in this area of the coffin clamps, which indicate that the side had burst open towards the SW corner.

The bell [INV 212] was found high up in area IV 2, which places it above the sceptre (SHSB, III, fig 639), and 'just to the west of the driven-in shield-rim'. In this position it could have hung on the west wall or been placed on the coffin.

7143.5 At the west end, on and beside the wall.

B-M argues that a number of the objects situated at the W end had been standing up or hung up. The standard was bent before it had rusted through [SHSB I, 183]. Hanging bowl 110 had a nail rusted on to its handle. It must have originally hung on the end wall of the chamber "with its bottom turned outwards". This bowl had then fallen "by pure coincidence" into the coptic bowl 109 [p 188]. "The large hanging bowl was not placed inside the coptic bowl; it fell there from the end wall of the chamber [p 484]. The shield lay partly under the sceptre [p 191] which would have stood vertically on its saucer end on the keel line [p 484].

Bearing in mind the case for a door in the W wall [above], it might be supposed that W end was the last to be furnished, after the coffin had been placed in position. The coffin was at least 3ft or 1 metre wide, so that the door would have to be at least this wide, and a no go area at least 1 metre from N to S may be supposed.

To the N of the door were the standard and the shield. If the standard (161) was deposited upright, this would imply a roof line at least 1.7m from the floor, this being the length of the standard. Such a headroom would be more acceptable in the centre; but this is an unlikely position for the standard to have occupied, not only because of the door, but also because the foot of the standard is at the extreme N of the chamber. This implies a position along the W wall, with foot on the floor and the standard inclining to bring its summit approximately over the door frame. Some evidence for what might have held it in such a position is offered by the "spanner" (210) which would have been a fitting suitable for supporting and locking the standard to the wall in the manner of the brackets used in armorial displays.

The shield (94, with tape 197 in SH22 and ring-sword ring 206) may have begun flat on the floor or begun upright and fallen flat. The boss later parted from the board by being displaced downwards, this providing good evidence for a chamber floor [see above]. The shield had a reconstructed diameter of 3ft 6" (900mm) [SHSB I, 194]. With this dimension it will fit on the floor between the coffin and the W wall. It does overlie the threshold, but this need not be a counter-argument since the shield could have been among the last objects to be deposited. On the other hand it could have begun propped up either on the W wall or the coffin and have slid into the stable position at the first instability of wall or coffin.

To the S of the door stood bucket 3 (119). This bucket is an anomalous position, since all other containers of the sort are at the E end. The bucket is small enough to have not impeded circulation around the coffin, or to have stood behind the door.

A bell (?) 212 was found near bucket 3 [SHSB III]. It may have started from the coffin lid, or had an association with the door.

As argued by B-M the hanging bowl 110 must have hung on the W wall. Since the lyre was inside it, the lyre (203, in its beaver skin bag 208, 215) must have been hanging too. The group of bowl and lyre could then have collapsed together from the same nail and landed fortuitously inside a coptic bowl that was seated on the ground, as surmised by B-M.

However, the most puzzling feature of the tableau in this corner of the chamber is the fact that there are three ankon heads (98-100) through the W handle of the coptic bowl (109). These would have to have been so placed by the burial party, unless the Coptic bowl too were suspended. The bowl as found is mid way between the coffin and the W wall so might have come off either. If the angons entered the

handle during collapse, they would have to have their points up or at least exposed, so that a bowl could drop onto them. this is easiest to visualise on the w wall. The length of the angons is not known [SHSB II]. The length of the spears is given by the position of the supposed ferrules [101-8 + 211?]. The spearheads lay beneath the Coptic bowl, and had apparently been disturbed (by it) at a time when two or more of the heads had become separated from their shafts. This is additional prima facie evidence that the coptic bowl was suspended.

The tableau which might account for these anomalies would be that the large hanging bowl was hanging face inwards from one of its handles on the W wall S of the door. Inside it and probably on the same nail, hung the lyre in its beaverskin bag. Immediately below it, the inside facing outwards hung the Coptic bowl, suspended from the handle that became the N most. leaning against the wall were the three angons (throwing spears) probably about 4-5 ft long. Their heads were just below the suspended handle of the Coptic bowl. The spears lay on the ground alongside the coffin. AS the roof of the chamber gave in and the W wall buckled, the coptic bowl came off the wall looping its handle around the tips of the angons which it brought down with it onto the supine spears. The coptic bowl settled in the upright position. At the same time or very shortly afterwards, the hanging bowl and lyre slid into their position on top of the coptic bowl.

7143.6 Other material relating to the chamber layout,

Finds 246-304 [refer to vol III].

A final comment: The tableau as hypothesised here allows for a door to have opened inwards; it also allows for there to have been a free circulation of visitors. They passed through the door, around the coffin to N or S, viewing the treasures on its lid and between the coffin and the cauldrons hanging on the E wall. On their return journey, they could glimpse the standard, spears, lyre and bowls on the W wall. Turning to the pay their respects for the last time, they will notice the sceptre standing against the w wall of the coffin. This ritual, these obsequies work as a burial service, whether or not there was a body in the coffin.

7.1.5 *The assemblage*

For descriptions and arguments for affiliation and date see SHSB I-III

<i>BM Inv. Nos.</i>	<i>Identified Object</i>	<i>Date</i>	<i>Affiliations</i>	<i>Reference in SHSB</i>
WEST WALL				
161	Iron 'STANDARD'	-	-	I, 183-8, 190, 277, 336, 444, 484, 689-90, 740; II, 403-431
210	support for standard?	-	-	I, 452, 533, 538n, 740; II, 419-20
94, with 206 (ring), 197 (tape), 299 (board)	SHIELD	6/7th c	Sweden	I, 183, 191-4, 203, 278, 313, 330, 336, 441, 452, 469, 475-6, 483, 485, 492, 517, 741-2, 745; II, 1-127 ; 137
160 with 205 (stag)	'SCEPTRE'	-	-	I, 183, 189-90, 227-8, 233, 277-8, 335, 443-4, 451, 483-4, 686, 689, 738, 740n; II, 311-393

119	Iron bound BUCKET 3	6/7th c	-	I, 142, 178, 180, 183, 190-1, 206, 233, 274, 330, 337, 442, 482, 735, 737, 740-1, 743. II, 9, 39n, 335, 420; III, 575- 594
110, with 222 supporting nail	HANGING BOWL 1	c600	North Britain	I, 140, 183, 188, 223, 226-7, 313, 331-3, 441, 483, 508-9, 737-8; III, 202, 204n; III, 202-243
203-4; 208, 215 (bag)	LYRE, in beaver skin bag			I, 128, 183, 188-9, 223, 226-7, 277 (amber), 451- 2, 481, 483; III, 611-731
109	COPTIC BOWL	after c550	E. Mediterran ean	I, 140, 183, 188-9, 223-7, 441-2, 483, 737, 738, 740; III, 732-757
98-100	3 Angons			I, 179, 183, 188-9, 339, 441, 737, 738, 740; II, 259-264
101-105; 106-108; 271 (ferrules)	5 spearheads, 3 ferrules			I, 179, 183, 188-9, 339, 441, 737, 738, 740; II, 241-258
CENTRE	[OR ON COFFIN	LID]		
93; 188,199 (cloth)	HELMET, wrapped in cloth			I2-1-2, 232, 278-9, 335, 440, 463, 465, 483-4, 492, 540, 742-3. II, 138- 231
172	GAMING PIECE[S]			I, 210, 216, 330, 336-7, 444, 541, 573-577; III, 853-874
212	BELL			I, 452; III, 890-898
88-9	2 Silver SPOONS		Byzantine	I, 194-5, 440, 483, 707-9, 741; III, 125-146
78-87	10 Silver BOWLS		Byzantine	I, 194-5, 206-216, 440, 483, 707-9, 731, 741; III, 69-124
97	Spear 6 (south of keel)			I, 179, 200, 441, 463, 538 (as scramasax); II, 241,254 (as spear)
211	Possible spear 7 (north of keel)			II, 268, 274, 330, 452 (Found in 1967)
1	Great gold BUCKLE	c600	E. Anglia	I, 128, 196, 438-9, 493, 521, 737; II, 536-563

2, 3	PURSE, with gold frame and garnet inlaid plaques			I, 196-9, 438, 521, 737, 743; II, 487-522
4, 5	2 gold and garnet SHOULDER-CLASPS	c600		I, 196, 438, 517-20, 541, 685, 740; II, 523-535
6-18	BALDRICK, with gold and garnet connectors and buckles			I, 200, 439, 493, 741, 737; II, 432-625
34-75	37 gold COINS with 3 blank flans and 2 small ingots (in purse)	600+		I, 198, 440, 578-681 , 686,
19-29, 95, bound with tape 191, with rod 30-33	SWORD, with gold and garnet pommel and scabbard studs			I, 196-200, 439-41, 464-5, 478n, 535-41, 553-4, 693, 707-9, 736-743; II, 273-310; II, 394-402
-	Fine CLOAKS in fabric SH10		E. Mediterranean	I, 481; III, 457
122-7; 213 (silver wire)	6 maplewood BOTTLES, with silver-gilt mounts	7 th c		I, 202-6, 338, 442, 469-70, 509-10, 742; III, 347-360; III, 902-4
120-1; 218; wrapped in cloths of pads A-C	2 DRINKING-HORNS, with silver gilt mounts	7 th c	Sweden	I, 202-6, 338, 442, 469-70, 509-10, 742; III, 324-346
201; wrapped in cloth SH26	Cremated [animal] bone on dish 76			I, 528, 540, 542n, 713
76	Silver DISH (Anastasius)	491-518	Byzantine	I, 180, 206-16, 440, 469, 472-4, 483-4, 736-9, 742; III, 1-44
CENTRE	[INSIDE COFFIN?]	UPPER	HEAP C	
204, 214, 300	Wood from box or lid			I, 452
175 (?); 209a-f	Leather bag with escutcheons (?)			I, 209-10, 223, 444n, 445, 452, 739-40; III, 899-901
77, with cow hair 217	Silver FLUTED BOWL	6 th c		I, 140, 180, 208-9, 216, 223, 440, 474, 452, 526-7, 546, 739, 741; III, 45-68
196, 216	OTTER FUR CAP			I, 216, 223, 452, 472, 474, 482; III, 905-7

90-1	Silver LADLE and CUP	6-7th c	Byzantine	I, 208-9, 216, 223, 440, 739; III, 146-156
128-134	7 BURR-WOOD CUPS		Local	I, 209, 216, 223, 442, 739; III, 361-374
162-5	4 KNIVES, with horn handles and leather sheaths			I, 216, 223, 444, 528; III, 881-887
169-171	1 double-side and 2 single-sided COMBS			I, 209, 216, 223, 444, 508; III, 813-832
153 (double buckle); buckles 137-51, 153-9 175?	Leather GARMENT with textile, silver and bronze buckles and fasteners			I, 210-2,443, 465; III, 758-787
		HEAP B		
207, in pillowcase 186-7; with ladybird 228	PILLOW, filled with goose down			I, 208-9, 215, 452, 460-1, 472-4, 508, 739; III, 888-889
173-4, 181, 198; 152 (buckle)	2 pairs of SHOES [size 7/40] with laces			I, 44n, 212, 216, 444, 465, 473, 508, 516, 739; III, 788-812
136	Wooden BOWL			I, 212, 216, 442, 740; III, 877-880
111, 112; 259 (solder)	HANGING-BOWLS 2 and 3		North Britain	I, 213, 216, 441, 740; III, 244-315
135	Horn CUP			I, 213, 216, 442, 740; III, 875-876
un-numbered	Leather GARMENT			I, 472
		HEAP A		
188	Coils of TAPE			I, 448
92; with flower 229	MAILCOAT			II, 214-5, 232, 440, 453, 464-5, 470, 472-4, 481-2, 484, 487, 742-3; fig 177; II, 232-240 ; III, 835; fig 309
un-numbered	Folded TWILL			I, 472; III, 460
EAST WALL				
230a-c	3 Wooden PEGS	670-890		I, 453

113	CAULDRON 1			I, 180, 219, 278, 312, 337, 442, 483-4, 739, 742-3; III, 488-498
167, with nail 225	CHAIN for Cauldron 1 [at least 4.30m long]			I, 219, 278, 312, 339, 444, 460, 478-80, 734, 738-9, 742; III, 511-553
114	CAULDRON 2			I, 180, 219, 278, 312, 337, 442, 483-4, 739, 742-3; III, 499-502
115, with nail 223, 224(?)	CAULDRON 3			I, 180, 219, 278, 312, 337, 442, 483-4, 739, 742-3; III, 503-510
116, with swivel 221	Iron-bound yew TUB			I, 218-9, 442, 483, 739, 742; III, 554-562
117	Iron-bound BUCKET 1			I, 142, 178, 180, 183, 190-1, 206, 233, 274, 330, 337, 442, 482, 735, 737, 740-1, 743; III, 563-566
ON THE FLOOR				
96	Iron AXE-HAMMER			I, 126, 140, 213, 215, 441, 464, 492n, 742; III, 833-843
166, with beeswax 305	Iron LAMP	540-680		I, 142, 217-8, 444, 478, 482, 682, 739. II, 125n, 423-4; III, 844-852
168	Pottery BOTTLE		N. France	I, 142-3, 217, 444, 482, 738; III, 597-610
118	Iron-bound BUCKET 2			I, 142, 178, 180, 183, 190-1, 206, 233, 274, 330, 337, 442, 482, 735, 737, 740-1, 743; III, 567-574
250-1	Stockholm TAR			I, 455, 486
193-4	FLOOR COVERS			See Table 19
176-201	HANGINGS			See Table 19
STRUCTURAL OBJECTS				
219a-m; 219.9-11; 219.17; 219.24-27; Cleats R, T; 220(ring); 226 (nail)	CLEATS and fittings for coffin or other structure			See Table 20. I, 219-20, 277, 338, 453, 476. II, 254; III, 910-923

202	c1560 Iron SHIP-RIVETS			I, 349, 352, 354, 362, 364, 378, 381, 390-8, 400-2
248, 262	1600 samples from the burial chamber for phosphate analysis			

7.1.6 Construction of the mound

The evidence for the construction of the mound is based on (1) Comments by Basil Brown during his trenching and cutting back operations; (2) observations by Charles Phillips after he had arrived to excavate the burial chamber and (3) observations by Bruce-Mitford and Paul Ashbee during their excavation of the lobes of mound 1 that remained in 1966.

716.1 The "clay-pan"

The clay-pan was found above the roof of the burial chamber and below the trench filling; it therefore belongs in the stratigraphy at this point. In interpretation however it is likely to have been formed after the mound was constructed. It therefore belongs more properly to the "aftermath" section 7.1.8.

The clay-pan was the remains of an extensive amount of layered clay found and largely removed by Basil Brown. He was working on it on the 3 July when he "cleared the clay deposit amidst ships exactly above the place where I expect the chief lies....we want to get on". It is not clear whether this means that the clay was removed or cleaned.

Some at least remained for Phillips to examine: "On or just above the site of the ridge [of the chamber] a curious object was found: an oval basin of clay 3ft long and seemingly built up in layers"... "Its position above the burial chamber a little west of the middle suggests that it may have been used to receive libations when the grave was being closed" [Phillips 1940, 12]. It is not clear how Phillips imagined such a libation-pouring facility would function. Apparently he thought it had been shaped from laminated clay and had then fallen through the roof.[SHSB I, 173].

As it survived for Phillips to find it, the clay-pan was 3ft long by 18" wide by 5" deep (or 1m x 0.85 x 0.15, and 40mm deep at the bottom of the dish). Its position is shown in SHSB I, Fig 168A, p 243. "When cleaned it showed a horizontal laminated structure which looked very unlike human work, though at the same time the artificial nature of the object as a whole could not be doubted" [SHSB I, 173]. The clay contained small stones, a piece of Bronze Age pottery and two fragments of charcoal, as well as other traces of carbonised matter [SHSB I, 174].

There would appear to be clear evidence that the clay-pan as found lay above a lot of fill, whether or not it lay above the roof of the chamber. Phillips presumably saw the roof line migrating southwards [SHSB I, 171] after the clay pan had been removed. Fig 109 implies that the clay pan was situated at about the level of the gunwales; fig 168A has it about a foot higher. There was "normal dark sand" underneath it [ibid p 174]. According to B-M, "the clay pan lay in barrow material which had slumped into the ship after the collapse of the chamber roof". It was "some five feet higher than the burial deposit and not directly on top of it" [ibid, 175]. This disqualifies the clay pan from forming in an empty chamber, from eg libations [or rain] pouring through a hole in the roof. B-M makes a convincing case for the clay-pan being of natural formation, but offers no explanation for its presence.

There is obviously a considerable difficulty in providing an explanation of this deposit, since we do not know for certain how big it was or what shape before Basil Brown began to remove it. It is rather more certain that it was deposited or formed at about the height of the chamber roof, which may itself have been not far off the contemporary ground surface. If the chamber roof were exactly level with the old

ground surface the chamber would have stood about 3.5m from hull to ridge or 1.95m from ridge to floor. The chamber could therefore rise above OGS but need not do so.

This allows a suite of alternative models for the role and position of the clay-pan:

(1) The clay-pan is redeposited sub-soil, formed in the Pleistocene deposits and dug out of the ship trench. It was dumped in the ship trench during backfilling and came to rest fortuitously over the ridge of the chamber and some way above it. After the burial chamber collapsed it filled with the dark sand [ex turfs] that had covered the chamber. The clay-pan was a late arrival in this refilling process. The laminations of the pan are simply those of its quaternary formation. The hemispherical hollow is unexplained, unless it was the result of speculative cleaning by Brown.

(2) The clay pan is formed in situ at ground level as a result of ritual activity. The backfilling of the ship had covered the burial chamber, leaving only the two end posts of the ship emerging. The burial is left like this for several years. In the centre of the ship, now covered by 3-4m of turfs and soil to bring it level with the contemporary ground surface, visitors pay their respects to the dead by pouring libations. The hollow so formed is enlarged and deepened by winter rains, which encourage the formation of clay lenses from finely divided deposits which wash in to the sump. After ten years or so, the mourning period is completed and the mound is built. The chamber immediately collapses, and the newly formed pan and the fill below it descend vertically into the void created by the collapsed chamber.

(3) The clay pan is formed in situ inside the mound as a result of a void. IN this model the chamber rises to old ground level or slightly above it, and has a viewing hole in the roof, where mourners can pass at ground level for some considerable time, peering into the hole. When the time comes, the mound is constructed over the chamber which fills in spasmodic episodes through the hole. The effect of this is to create a void in the mound make up higher up; this void gradually fills over many years with clay deposits.

(4) The clay-pan was formed at the bottom of a robber pit which was left open. This robber pit was otherwise unobserved, although it is not inconceivable, given the vagueness of the recording, that it was the bottom of the robber pit which fell in on Basil Brown, but was incompletely excavated by him [see below].

Model 1 demands the deposition of a very large block of subsoil (bigger than a shovel) in exactly the same orientation in which it was formed in the post-glacial period. It does not explain the presence of bronze age pottery in the clay layers. Model 2 appears rather contrived, and demands that the laminations of silty clay be paid down over a relatively short period. Model 3 has to commend it the slow formation which the pan would seem to demand, although the rest of the model is weak: there ought to have been many voids inside the collapsed chamber, each forming pockets where clay pans would develop to be found by the excavators - but they were not. It is unlikely that the passing mourners could see much through the hole, which would however present a constant temptation to tomb robbers. Model 4 requires there to have been a robber pit which was not observed otherwise by either Phillips or Brown, both of whom were aware of the robber pit which contained the sherds of Bellamine [F 4]. It is also not easy to see how the clay would have formed at the base of a pit whose summit is cut into the top of a sloping mound: no natural sump would have resulted.

In favouring model 2 I am influenced by Mound 17, where a small pit with a fill of laminated silts was found between the two burials. It was there interpreted first as a post-pit, which was clearly impossible, and then as an unsuccessful robbing, on the grounds that the pit had contacted undisturbed subsoil between two burials. However this interpretation is still not satisfactory [see VOL 5.7.1] since the pit is actually cut into a backfilled prehistoric ditch and asks a high standard of archaeological interpretation from the robbers. A "libation pit" at the level of the OGS is an alternative interpretation, even if the libation is divided between the boy and his horse, rather than being directed at the boy alone.

Both Mound 1 and mound 17 could have been the scene of post-burial, pre-mound libation pouring which created shallow deposits of laminated silts or clay in the centre of the burials. The "corner pits" at Mound 2 could also have been ritual in intent, although they contained no comparable deposits. "Libation pits" if they exist should provide ritual therapy for mourners over a number of years, perhaps connected with the availability of mates, after which the mound was erected.

716.2 Filling in the trench.

The back-filling of the ship in the chamber area was reported by Phillips on the basis of the "large pillar of material" left standing on the S side of the excavation. The filling was a downward slumping mass of rotting turf, some of which at least may have been specially laid over the chamber roof [SHSB I, 171]. Elsewhere under the clay pan it was "normal dark sand" [ibid 174], although this too can have been former turf. The "pillar" had been left to support a piece of carbonised oak plank, found at a little above the old ground surface. If there were post-burial rituals to perform, such a plank could form part of a walk way. Phillips commented elsewhere that "a few pieces of carbonised oak plank occurred in an entirely haphazard way, probably refuse from the building of the burial chamber" [SHSB I, 166].

716.3 The initial loading of the platform.

The first layer on the mound platform was the upcast from the digging of the ship trench. This was of course a very pronounced layer owing to the size of the hole dug to bury the ship - very much larger than any upcast from the construction of a burial chamber [cf Mound 2, where it was glimpsed, and Mound 14, 17 where it was not seen]. Phillips reported that "the layer of sand from the digging of the [ship] trench underlay the barrow on either side [Phillips 1940, 12]. This yellow layer on both sides of the trench was traceable for almost the full length of the ship; it had a thickness of 2-4 inches. The sand is also described as being in "piles", the N pile being 15ft and the S pile 22 ft 6" clear of the ship trench [SHSB I, 166]. Although a layer was trodden in all the way round the trench, therefore, the main spoil heaps from the excavation of the trench were 15-22ft [5-8m] back from the trench edge, allowing the ships' rollers, or visitors, to pass unimpeded on either side of the trench.

716.4 The Mound make-up

Phillips was convinced that the mound was constructed mainly of turf. "The whole barrow was constructed of turf from the surrounding heath" said Phillips [1956, 152]. His turfs were dark sand in which outlines could be distinctly seen. According to B-M, Phillips observed "faintly defined outlines of individual turfs.....in many places in the section" [SHSB I, 166]. Ashbee was able to recognise here and there individual turfs about 1ft square and 3-5inches thick [SHSB I, 166; on p 319 they are said to be 1ft 3" square].

No ditch or other quarry has been found for mound 1, either in the 1939, 1967 excavations or subsequently, during the excavation of INT 55.

There is no record from Brown who shovelled out most of the mound makeup as it remained in 1939. Ashbee records relate mainly to the lobes on the extremities.

The information we have suggests the mound was constructed from the upcast from the ship-trench and from turf stripped first from the barrow area and then from further afield. The upcast was stacked in two large spoil heaps N and S of the ship trench. The turf was gathered and stacked off the mound platform. The ship itself was infilled with the stacked turf, which then went on to fill the space between the two spoil heaps of upcast. The final covering was no doubt of more turf cut and transported from either side and possibly down the slope. There is very little topsoil now left on the N side of mound 1 and it has obviously been truncated here; but the reconstruction of mound 1 by A Evans after 1971 is also thought to be responsible for much of the soil loss here.

716.5 The final mound size and appearance.

RR shows the extent of mound 1 in 1939 and versions of its original peripheries as suggested by Phillips and Bruce-Mitford. "As it was originally built " says Bruce-Mitford " mound 1 was flat-topped, circular and no greater in diameter than mounds 2 and 3". But the Mound was shown by re-excavation to have extended 98ft by 110 ft [directions?] [SHSB I, 154,148]. Basil Brown is also thought to have said the mound was circular [SHSB I,145], but in a letter of 12 May 1939 he says it is "72 x 96 ft and oval in shape".

The extant height in 1939 is reported as 9 ft or 10 ft 3" on the N side and 10ft 8" or 10 ft 6" on the S side, but there is no scientific corroboration of these measurements or what they are measured from [SHSB I, 153].

On analogy with Mound 2, the mound for this burial could have risen to 4-5m. It would have required a long axis of 30m, but was probably oval rather than circular, as B-M [and Basil Brown] say in the first of their two contradictory statements.

7.1.7 Aftermath

717.1 Inside the chamber

All observers were convinced that the chamber had stood for some time before its collapse. Phillips felt that the advanced state of decay suggested a [substantial] time interval before collapse [Phillips 1940, 13], presumably on the grounds that oxygen would be more freely available to speed decay as long as the chamber remained up. Bruce-Mitford specifically cites the helmet, which had corroded before impact, and thus was shattered into iron "sherds" thus aiding reconstruction[SHSB I], and the mail coat which had become "glassy" ;but he counters with the standard, which had bent before it had rusted through[p 183].

The collapse of the chamber would have been the most decisive event in the decay trajectory of the burial deposit. Given the long centuries which followed the collapse, it is not easy to be sure what had transpired before the event. Our experiments with organic materials at Sutton Hoo showed that organic matter, including wood, had lost its structure within ten years, thanks to the porous acid sand which pervades the site. After an initial oxidation in these acid conditions, most metals appear to hold their shape and rigidity. Neither does redeposition re-activate the decay process, as shown by many examples from robbed mounds. The presence of coffin, which might have had conserved an aerated space for a certain time appeared to make little difference. Although there were differences from burial to burial the generality was much the same: wood decayed to black sand without structure and much diminished in thickness, with very occasional carbonised wood pieces; the body reduced to brown sand, with bone meal and occasional bone; cloth surviving only where it was in contact with metal; metals (other than gold) surviving within a jacket of oxide.

In this light, the decay of the Mound 1 finds does not appear particularly advanced. There are, on the contrary, several indications that the roof came down while most of the material, including organics, were reasonably robust. The standard was bent before it had rusted through. The hanging bowl 110 and the lyre inside it were sufficiently coherent to fall off a wall and land inside another bowl without breaking. The heads of three angons could get through the handle of the coptic bowl, the drinking horns and bottles were smashed while still rivetted to rigid horn or wood, the Anastasius dish had been bent over the mainly organic heap beneath it. The soumak cloths, if originally wall or ceiling hangings retained enough viability to cover objects the length of the chamber [SH 5,7].

Against this may be set the helmet, which had become brittle before impact, the sword which had fractured, and cauldrons 2 and 3 which had been shattered beyond restoration.

Some of these anomalies can be resolved by considering separately the two principal forces of decay acting on the burial chamber: the chemical forces of the acid sand which weakened the wood, and the physical force of the weight of the mound which broke it. The chemical forces would be active

immediately on any wood in contact with the sand, that is the ship, and the roof and the walls of the burial chamber. The physical forces may be supposed to have precipitated three episodes of physical movement, corresponding to the collapse of walls, roof and floor in that order.

Unfortunately very little is known about the structure of the burial chamber [see above], but what is known supports an analogy with the best preserved chambers of the later burials at Gokstad and Oseberg. Here the roofs and walls are of strong unfinished planks, and their condition on discovery is an indication of the physical forces of decay, in a terrain where the chemical forces were almost negligible.

From this scattered and circumstantial information, we could construct a decay trajectory as follows:

DECAY PHASE 0: The chamber is not buried. Inside the circulation of dry air and the wrapping around weapons means that there is excellent preservation.

Year 0: COLLAPSE EVENT 1: The chamber and ship are buried, but no mound is built. No initial movement.

DECAY PHASE 1: Timbers in contact with sand, the ship and the walls and roof of the chamber begin to soften. Sand begins to enter through cracks in the roof.

Year 5-10: COLLAPSE EVENT 2: The weakened W and E walls of the chamber are pushed in displacing standard, shield, hanging bowl, lyre Coptic bowl, angons [W] and cauldrons [E]. Sand enters through the walls.

DECAY PHASE 2: The roof continues to soften, the W and E ends of the floor begin to soften. Sand enters through the roof, displacing the textile hangings.

Year 5-10: COLLAPSE EVENT 3: The mound is built. Immediate collapse of the roof timbers, which create voids where they are still intact and elsewhere are cushioned by the sand that has already entered. Immediate flattening of coffin; its lid descends carrying everything on the lid with it, except the playing pieces on their board which are scattered, and the lamp and bottle. these may in any case have been displaced already by sand falls. The Anastasius dish is bent over the fractured lid over the heap of clothing etc inside the coffin. The decayed body is now pressed between two pieces of flat wood with great force from above. The grave goods are pressed onto a flat floor by N-S timbers and a great tonnage of acid sand and decayed turf.

DECAY PHASE 3: Sand and wood create a strongly acid environment hostile to organics, and causing iron to erupt, except in voids where "dry" decay is still possible. such voids might accommodate the helmet and sword.

Year 5-100: COLLAPSE EVENT 4: The floor finally gives way. The shield boss descends vertically leaving its decayed board behind. Helmet and sword fall from void to void, fracturing. Cauldrons 2 and 3 shatter. The remaining "timber sandwich" settles on the bottom of the boat.

DECAY PHASE 4: The chamber is now a giant broken timber coffin full of sand. The timbers of the chamber and coffin and boat are compressed into narrow lines in the sand. All voids are eliminated. The body is compressed and lost in the timbers of the coffin, the chamber floor and boat. Local anaerobic and acidically neutral pockets which inhibit decay remain impenetrable until excavation [eg silver bowls in nest, textile pads A,B,C].

717.2 The mound

717.2.1 Truncation and ploughing.

The profile of mound 1 as recorded in 1939 is no more prominent than its companion mounds, all of which have since been shown to have been greatly reduced by ploughing, following a systematic excavation campaign in the mid 19th century. Mound 1 does not however appear to conform to this pattern, although both ploughing and robbing have been attributed to it.

Brown notes the information [Diary 29 Jun 1939] that the field at the W end of mound 1 had been ploughed up to 1882, following which it became Top Hat Wood. A furrow had been ploughed right over the [W] end of the ship; this implies that the axis of the ploughing was N-S, but this may of course be where the plough turned. This is consistent with the formation of a lynchet [Bruce-Mitford's "Medieval Boundary bank" as determined in INT 48.

Elsewhere on the site [eg Mound 7], the 19th century ploughing is over the robbed mounds and runs E-W. It should have rubbed down Mound 1, as mound 17 and mound 12, **before** the ploughing on the W side created the lynchet over them. This implies that there are two ploughings in the 19th century both severely affecting Mound 1 which was first rubbed down from the E and then ploughed on the W where a lynchet was formed. The line of the lynchet was reinforced by a ditch which ran on the E side.

Brown also reported recent quarrying operations. On the W side "many tons of soil had been removed", but this may have been his reading of the lynchet. On the E side, only a few tons had been removed apparently for the bunker in the private golf course constructed either by Mr Lomax or Lady D'Arcy [SHSBI, 145 n2].

Mound 1 was also reported to have had a "fan of soil" at the E end [supposedly observable in fig 218, p 307]. From this B-M proposed a general model for detecting ship burials: a fan of soil indicating the additional soil required to cover the stem and stern of a buried ship, and the "transverse sinkage" ["ship-dents"] caused by the collapse of a chamber. He speculated that mounds 7 and 10 could be interpreted in this way [SHSBI, 153].

The major campaign showed that the ship-dents were certainly due to robbing, and the fan might be interpreted in the same way. The scarcely observable fan at the E end could even be due to BB himself, who began his excavation at the E end.

7172.2 Robbing. A single robber pit was reported by the excavators. It was discovered by Basil Brown on 30 May following a fall of sand during his trenching operation. "I only escaped being buried by a large landslide of 10 tons or more missing me by a few minutes. Signs of medieval disturbance found and sherds of jug (the treasure seekers' hearth)". This pit/hearth was not so much excavated as casually encountered over a number of days. Brown had no real interest in recording it. On 3 June "continued the widening and taking off the top soil preparatory to excavating another section of the ship and other parts of the medieval jug came to light". On 7 Jun he offers his one and final description: "traces of attempts by treasure seekers were clearly shown by a filled-in hole which could be traced downwards 10ft or so from the apex or summit of the barrow. At the side of this was what was thought to be the base of a burnt off post. It existed with a central core black matter surrounded by a red ash band. This material was kept and submitted to examination by Mr C W Phillips. The feature was then clearly proved to have been the remains of a hearth evidently that of a fire lighted by treasure seekers. This feature was allowed to remain and nicknamed "the lighthouse" by Jacobs, but it later collapsed, when the soil near it was being removed". From this description it can be inferred that the hole, or its more colourful fill, was long and thin.

The position of this pit was recorded by Phillips [SHSBI, fig 168A]. It was dug in the then centre of the mound, and was attributed by Brown, Phillips and Bruce-Mitford to a failed robbing, followed by a picnic. This first interpretation is questionable, and the second silly. It is not likely in any period that sane picnickers would make a fire in the bottom of a hole 10 ft deep, in which there would be no space to cook anything apart from themselves. The hole itself is unlike any other robbing at Sutton Hoo. It can hardly have escaped the robbers' notice that their hole had not arrived at a depth likely to contact any burial.

It may be that Brown's initial reaction was the correct one. The feature was a post-pit, dug as is not uncommon in the 16th century and later to found a post mill].

7172.3 The reduction of mound 1 is very difficult to sequence and date.

A boundary ditch was already supposed by B-M to have been in existence along the line of the bank by 1836, on the basis of Map evidence. Since he also supposed that the pit F 4 was a 16th century robbing attracted to the distorted centre of an already truncated mound, he felt that the bank must have been medieval in date. However, as Brown pointed out, the slopes of the W were being ploughed until the implantation of Top Hat in 1882. Therefore, whether it had existed earlier or not the plough was still forming a lynchet against mounds 1, 17 and 12 until the late 19th century.

B-M's model remains attractive, but is not consistent with the robbing and ploughing elsewhere being 19th century. This however requires the boundary to exist before the mounds are reduced by ploughing, or the W ploughing to precede the E ploughing. It also requires a 16th c post-pit or robbing to be dug from an extant mound. This implies a post-pit 18 to 20 deep, dug off centre, but ending up in the centre after a certain amount of ploughing at a later date. This is all rather far fetched.

A model (for testing against the documentary evidence and the excavation of the lynchet in INT 48 and INT 5-10) might be as follows:

1. A land boundary separates the land of the plateau ["the E estate"] from the land on the slope ["the W estate"] from at least sometime in the middle ages to the late 19th or early 20th century. The boundary is still there in 1836, in 1860 and maybe in 1882; but it has gone by Mrs Pretty's day. The actual boundary is a hedge which runs along the top of the westernmost mounds (now Mound 1, 18, 17, 12).
2. In the late/post medieval period, the W slope is ploughed almost up to the hedge, forming a lynchet on the W sides of mounds 1, 17 and 12.
3. In the late/post medieval period, a robber pit is dug into mound 1 on the E side of the hedge OR a post mill is erected there. Although the size of mound 1 is considerable, the height and steepness is less than mounds 2, 3, 6, 7 10. The mound height and F4 might be as little as 15ft [5m].
4. In the mid 19th century, there is a new owner of the E estate, who also decides to cultivate. But first, he excavates all the burial mounds which entirely on his land, avoiding only those which would mean litigation with a neighbour (mound 1, 17, 12). Then he ploughs, E-W, turning the plough N-S along or before the hedge line.
5. In 1882, the W estate stops ploughing and plants a wood of conifers (Top Hat Wood). The E estate stops ploughing at the same time or very soon after. THE two estates may have merged about this time allowing ploughing to be continuous E to W for a short period, grubbing out the hedge apart from a ribbon of deciduous trees, and rubbing out any joins apart from the relic lynchet.
6. The land E of Top Hat Wood then reverts to heath, which it stays until the time of excavation.

7.1.8 Environmental Evidence

718.1 The Environmental sequence according to Dimbleby
[see VOL 9, 6.1]

718.2 Under Mound 1. Brown reported an undulating surface to the buried soil under mound 1. The buried soil had been under the plough at some time. Since there was no turf line, it was possible that the soil was under the plough at the time of the erection of the mound. However "it is also possible that turf had grown but was removed by the barrow builders for a marking-out wall or some other purpose [ie

building the mound, filling in the ship trench]; but the distribution of pollen in the upper layers does not support this" [SHSBI, 154].

B-M was puzzled by the "perched" buried soil platform under mound 1 [ibid]. This is presumably explained by quarrying around mound 1 to construct later mounds. It tends to support a chronological position for mound 1 early in the sequence.

7.1.9 *Model of the Burial rite enacted at Mound 1 and its aftermath: the Mound 1 Story.*

1. The selected site for the burial is on a flat part of the plateau opposite a promontory. The area is under turf; this is stripped off over the area of the barrow and stacked outside that area.
2. A trench E-W is dug, and the subsoil [sand] extracted from it cast up into two large spoil heaps 4 or 5 m away from the trench edge to N and S.
3. A clinker-built warship 27m long is brought up from the river on rollers, probably via the gentle route to the S, and rolled into the trench from the W. The thwarts and sailing tackle are removed.
4. A log-cabin burial chamber is constructed amidships from planks. It extends from c rib 16 to rib 10. A floor is first laid out with N-S planks crossing the vessel at the level of strake 5. Then planks are laid E-W edge on to give the floor its second surface. The E and W walls are single planks set end to end, probably held in place by a cross piece nailed in position. A door with a bolt is placed in the W wall, centre. The roof is laid from gunwale to ridge, the planks running N-S. A second layer of planks running E-W finishes the roof.
5. The chamber carpeted with fabrics SH17-19 and then furnished, beginning at the E end. A tub is placed near the E wall and cauldrons are hung on the wall.
6. The coffin is carried through the door and is placed on the floor between c rib 15 and rib 12. The body extends from approx rib 15 to rib 13. With the lid off, a folded twill cloth is laid on the coffin base at the E end. Then an axehammer is placed there, on the S side, handle to W. Two heaps develop beside the axe hammer at the E end of the coffin. Heap A, the more westerly, begins with a leather garment, two hanging bowls and a horn cup, surmounted by a pillow with a pair of leather shoes placed either side. Heap B, the more easterly, has a folded mailcoat lying N-S.

A leather garment is placed over the two heaps and on it a fluted silver bowl of Classical type containing toiletries, underclothes and an otter fur cap. The lid is then closed.

7. The lid of the coffin is furnished. Two fine cloaks with long silky pile are laid over the coffin. On it, at the E end, the Anastasius dish with its burnt offering, the pottery bottle and the lamp beside it. To the W two large drinking horns laid out symmetrically with 6 maplewood bottles. Over the body position, the sword and baldric are arranged on the lid. At the W end on the N side, the helmet; on the S side, a stack of 10 silver bowls with two spoons of Roman type in them. In the centre, in pride of place, a board game with playing pieces.
8. The standard is fastened to the W wall, its basket above the door. The shield leans up against the W wall on the N side. Bucket 3 stands behind the door. The lyre and large hanging bowl hang on a nail on the W wall, S side. The Coptic bowl also hangs on the wall. Three angons lean up against the wall. Four spears are placed with their shafts parallel to the long axis of the coffin on the S side. The sceptre is placed upright on the floor against the W wall of the coffin. Hangings in soumak fabrics [SH 5,7] are placed on the walls and ceiling.
9. Visitors circulate around the coffin until the time comes to say the final farewell. The door is closed and bolted and the light goes out.

10. The ship trench is backfilled with turf, covering the walls and roof of the chamber. The stem and stern posts protrude from the ground. The site is thrown open to the public who pour their offerings of ale etc into the buried ship amidships. This becomes a sump draining the winter rains. The chamber roof and walls begin to rot and let in sand.

11. After a period of between 1 and 10 years, the mound is completed with turf stripped from the surroundings inland, (which do not as yet contain mounds). The burial chamber collapses; its walls buckle inwards dislodging the standard, shield, playing pieces, lyre and bowls to the W and the cauldrons to the E. The roof falls onto the coffin which itself collapses sandwiching the body between the lid and the base. The Anastasius dish is bent concave around the pile of still coherent clothing and other objects at the foot of the deceased.

12. A hedge is laid over the centre of the mound. The land to the E is ploughed up to the hedge, removing the E part of the mound and disturbing the E end of the ship.

13. A large hole is dug in the W half of the mound, either as an attempted robbing or to found a post-mill.

14. The mound is not trenched at the same time as Mound 2, 5, 6,7 etc because it is in other ownership, like mound 17, and perhaps 12.

15. After about 1860, the hedge is grubbed out and the mound is ploughed from the W.

16. After about 1882, Top Hat Wood is planted and the land of the cemetery becomes heath.

17. In 1939, Basil Brown trenches the mound on behalf of Mrs Pretty

7.2 Mounds 2-4, Burials 13-14, 45, 50, 51, 56. New studies made by Martin Carver are published in Sutton Hoo. *A Seventh century Princely Burial Ground and its Context*, Chapter 4 and 6.

7.3 Mound 11.

7.3.1 *Suffolk Archaeological Site Report - Sutton Hoo Mound 11 Date: February 1982 Author R.D.C (R. Carr)*

Introduction

The robbing was reported over the weekend of the 13th-14th February 1982. It was later established that the pit was first noticed early the previous week. ON the 17th the robbing pit was recorded, the base of the pit lined with perforated polythene sheet and backfilled. Apart from cleaning down the sides of the pit and emptying loose soil from the base no digging whatsoever was done.

The robbing pit

The pit was rectangular and had regular sides, it measured c 3.4 x 2.7m at the surface and was c 1.000m deep. On average the sides were battered in by 0.4m, the base of the pit was thus c 2.7 x 2.0m (8ft 1 1/2ins x 6ft 7in). The pit was central to the apparent earthwork of the mound © 18m dia. And c 1.00m high), and aligned NE - SW. The 1979 survey (by Central Survey D.C.E.S) shows a weapons pit (1.8 x 1.00m) on the crest of the mound, the robbing pit appears to have been placed directly over this feature and on the same alignment.

Examination of the soil sections around the pit showed there was a topsoil layer of dark brown sand overlying a layer c 0.5m thick of mixed light brown and brown sand with some gravelly sand patches. At the bottom was a c 0.25m layer of brown gravelly sand. Superficial examination of the sands and gravels forming the base of the pit suggested that they were undisturbed 'natural', certainly their level

confirms with the apparently undisturbed ground level between mound 11 and mound 10, but since any excavation to test this conclusion was not considered proper some doubt must remain. Overall, the sections had the appearance of being thoroughly disturbed, rabbit burrows would seem to be the cause of this (see section B/C).

The thin layer of brown sand on top of section B/C is likely to be upcast from the digging of the weapons pit. The lack of tip lines and the generally horizontal nature of the two apparent layers below topsoil would suggest that the pit was at or very near the centre of the mound. It is possible that the bottom layer is a buried soil horizon.

The robbing pit had been cut right through the body of the mound, stopping when the apparently undisturbed brown and yellow sandy gravel was encountered. There was a single rectangular feature c 165 x 0.75m showing a patch of brown sandy gravel with a small area of dark brown staining, probably organic, along one side. This feature was not investigated further. However, its alignment and size conform with the depression recorded by the 1979 survey as a weapons pit. There is a slight discrepancy as to its exact position (it is c 40cm further North West on our plan than its location on the 1979 survey) but the size and alignment together with the presence of what appeared to be relatively recent organic material suggests very strongly that this feature was the base of the weapons pit.

Conclusions

It is impossible to say with any certainty whether the robbers uncovered anything of value or interest. The hole was dug systematically and in a relatively disciplined fashion (viz its rectangular shape, the lack of extensions, excavation to gravel and no further) and it seems probable that it is very near the centre of the extant mound. It is possible, therefore, that something could have been uncovered. Against this is the fact that the whole pit was taken down to natural, which would probably not have happened if anything had been located; also that no hole appears to have been dug into natural - which one might have expected to be a property of any burial in antiquity. Further, examination of the upcast during the backfilling of the pit revealed no artefacts or organic remains; it seems unlikely that any finds made by the robbers could have been so cleanly lifted as to leave no trace in the upcast. On balance it seems unlikely that anything was, in fact, recovered by the robbers.

The episode has several interesting sidelines and lessons for us, not least the vulnerability of this notable field monument. The robbers were an organised, determined and well versed bunch. It seems implausible that one man could shift nearly 10 cubic yards (=tons) of sand, assuming, as we do, that it was carried through in one night, three or more would be required. They were sufficiently acquainted with archaeological methods to recognise natural and to dig only to that level, though not sufficiently thorough as to 'clean up' at that stage or they would have found the rectangular stain and emptied it out (digging at night and its inherent problems, however, must be an acceptable excuse for this failing).

7.3.2 Report by R.L.S Bruce-Mitford Jan/Feb 1982

Report on Damage to the Sutton Hoo Site, Jan/Feb. 1982

1. The mound chosen for this robbers' attempt was no. XI, the most southerly of the group. No sign of damage to the site other than interference with this mound was noticed.
2. The attention of the landowner (Mrs. Anne Tranmer) was drawn to the damage on Saturday afternoon, Feb. 13th. She inspected the mound on Sunday 14th Feb and notified the police. On Monday morning, 15th Feb, the Ipswich police, in a routine press briefing on local crime, announced that an attempt had been made to excavate one of the mounds. Around midday on that day I was telephoned at home by the landowner, and also by a reporter speaking from the Woodbridge office of the East Anglian Daily Times, which is also the office of the local newspaper, the Woodbridge Reporter. (The reporter who telephoned was a Mr. John Grant). Both callers gave me a fairly detailed account of what they had seen at the site. I telephoned the Chief Inspector (Andrew Saunders) about 2:15 PM and reported what I

had been told. He said that he would arrange for an Inspector to go down immediately. I said that I hoped to get down to the site the following day and would also report on what I found.

3. On Tuesday 16th I called on Mrs. Tranmer at 0930 hrs and then visited the site. It was a very cold and extremely dull, overcast day: conditions were very uncomfortable to be out in and the light was very bad. I managed only some poor record photos with colour film.

4. Mound XI is a low mound marked by a pine tree at one edge (the west edge). It is a 'Class II' mound, marginally (Class II mounds are between 60-70 feet in diameter and 1 to 6 - 3 or 4 feet in height). Mound XI measures approximately 60ft in diameter with a height of 2 ft 6" (Sutton Hoo Vol. 1, pp. 18, 21 and figs. 5-8). It is not well defined from the north or east, but is best seen from the S or SW when its shape and limits are well-defined. Seen from this point of view the robbers' pit had been dug at the exact centre of the mound.

5. Fortunately I had had a contour plan of this mound made in 1980. This records the mound as flat-topped with no general central sinkage or depression, but as having had a rectangular war-time weapon pit, or slit trench, dug in its flat top. I attach a copy of this plan, on which I measured in the robbers' pit as shown. The pit measured at surface level 11ft x 8 ft: it was neatly dug with slightly battered straight sides down to a depth of 4ft 6" in the NW corner and 3ft 6" in the SE corner (measured from grass level). The pit thus penetrated to between 2ft and 1ft below the old ground surface beneath the barrow. Spoil from the excavation had been carefully heaped up well back from the edge of the hole all round. The bottom of the pit was approximately flat, and it was altogether quite a professional job. It was evidently not a casual fossick by a metal detector enthusiast, but a calculated attempt to rob the primary burial. The sides of the pit were on 16th Feb dusty and weathered. The pit had evidently been open for some time. The mound was said by the landowner to have last been seen intact at the end of January (the week end of the 30/31) and the attempt was probably made about that time, when two slightly suspect-looking men, claiming to be members of the 'Kent Museum Preservation Society' had appeared at the site in a car.

6. Stanley West, in charge of the Suffolk Unit at Bury, visited later in the morning and was to return next day to record the sections, and to back fill. I had a trowel and had cleaned down the section faces in various places and examined the floor of the pit to the best of my ability in the circumstances. I was 'caught' down the pit by a BBC cameraman and an Anglia TV unit, to which I later gave a brief interview at their special request. The upper levels on all four sides were similar, barrow material of sandy soil and turf apparently scraped from the surrounding area. I saw no sign in the section of any earlier excavation or robbers' attempt. At the base of the barrow material was a darker zone which I took to be the old turf-line, and this seemed to be present on all four sides of the cutting. Underneath this at the N end of the pit was clean gravel, which I thought at first might be back-fill into a primary excavation (like the clean sand that had been back-filled into the bow and stern of the Sutton Hoo ship on either side of the burial chamber). Stanley West however thought it undisturbed natural and a more leisureed examination by him showed this to be the case. At the SE end of the pit the floor was more sandy. The axis of the pit (NE by SW) would have cut more or less at right angles across the axis of any buried boat (as seen in Mounds 1 and 2) and in my sporadic attempts to examine the floor I was looking out for a dark transverse line or points which would be the first indication of a gunwale or thole tips but saw nothing. These should show in sand, but are not so likely to survive in gravel. Altogether it seemed that the primary burial pit was not impinged on by the robbers and that this mound had not been subject to an earlier attempt, but remains intact. The next day Stanley West found and left undisturbed the earthy bottom of the war-time slit trench, the rest of which had been dug away by the robbers. If the primary burial pit has as it seems been missed by the robbers, it must be off centre of the mound as it appears today, and could have been dug into by earlier robbers, traces of this intrusion having been missed by the 1982 robbers' hole. There is however no obvious sinkage in the mound elsewhere to suggest this, and it seems the mound may well be intact.

7. I had a cursory look at all the spoil heaps but saw no sign of fragments of artefacts or carbonised material such as might have come from a disturbed cremation.

8. CONCLUSION

It looks as though the robbers' pit has missed the site of the primary burial pit. If a buried turf-line is seen by Stanley West's section drawings to have been intact and present on all four sides of the robbers' pit, this would suggest that not only had the primary burial pit been missed, because off the apparent centre of the mound, but that the barrow does not contain a boat-inhumation; since even if a burial pit of an ordinary inhumation is of limited area, the trench dug for a boat would be long; and if aligned as in Mounds 2 and 1 (pointing to the water, roughly E/W), it should have shown a gap in the buried turf line on the E and W faces of the modern robbers' pit, under the barrow. Such impressions as I have obtained, subject to checking against Stanley West's more leisureed examination, is that this mound is unlikely to contain an inhumed boat, in spite of its siting (see below); that the robbers' pit has not impinged on the primary burial, and no very significant damage has been done. It is a good thing that the contour survey was carried out before the attempt, to record the intact state of the mound, since no ground level photographic record of the mound exists.

9. Mound XI is of special interest. The most southerly of the group, it is sited alone in a perfectly central position directly at the head of the southern steeper fork of the coombe by which the plateau on which the mounds are situated is approached from the estuary. The siting of this mound clearly suggests that the burial in it arrived at the site by water, and might have been thought to enhance the possibility that it could contain a boat, though the external configuration of the mound gives no indication of this; and evidence from the Jan/Feb robbers' pit may prove to give a contra-indication. This will depend on the final reading of Stanley West's section records. The siting of the mound should also have significance for the chronology or sequence of mound construction in the vicinity. In an optimum position it might prove to be the first of the series or cluster of mound sited in relation to this particular approach route from the estuary.

10. Lastly, it may seem that the selection of this mound by the robbers for their attempt is relevant to the general security of the site. Being farther from the house it is least open to supervision or scrutiny from the occupants: and the sizeable pine tree on its western edge offers further concealment of activity from the house. The branches reach almost to the centre of the mound where they touch the surface of the mound, some branch ends being covered by the dumps from the robbers' hole. There is also a concealed approach to this mound and this corner for the site for vehicles. The coombe at the head of which Mound XI was constructed is wooded, and just at the point where the mound is the track which runs past the west side of the site in full view of the house swings right and disappears behind the trees - there is concealed access for vehicles from this point to the Melton/Bawdsey road via the Heath Cottages region and the long open drive leading to Little Haddon Hall and Ferry Farm. Any vehicle passing the Heath Cottages site would be assumed to be going to the Hall or Ferry Farm, but in practice by turning off to the north beyond the Cottages, could drive right up to the site of the barrows unseen.

11. Other factors which presumably led to the choice of this mound are the facts (well known from the BM guides, etc.) that it was not one of those excavated in 1938/9; and its lowness, which might be thought to hold out a prospect of being able to reach the burial in a single nights' digging. It seems clear that the large pit was the work of two or three men working throughout one night.

R. Bruce Mitford
2.4.82