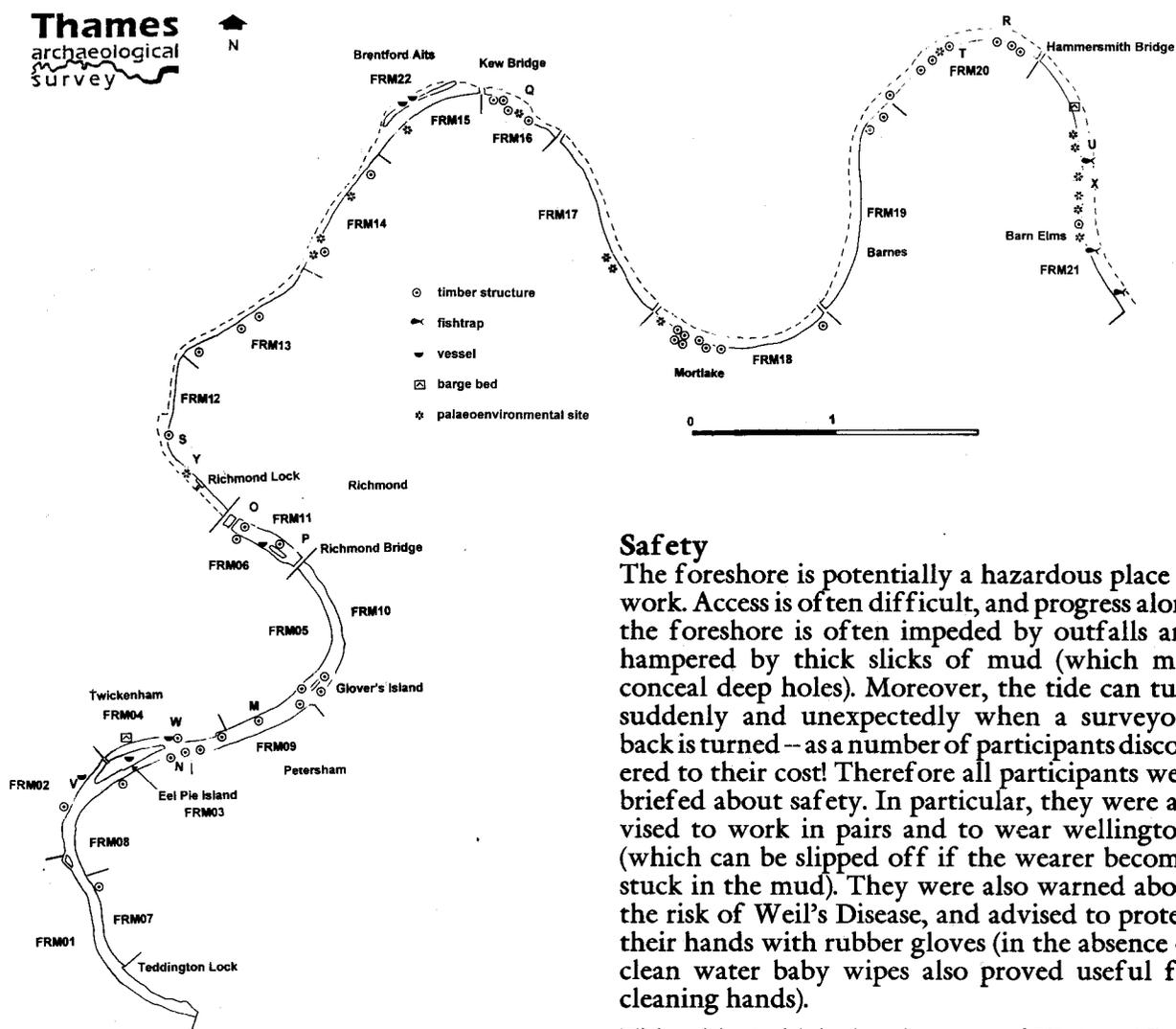


# An archaeological survey of the foreshore in the Borough of Richmond upon Thames, part 2: down by the riverside

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## Safety

The foreshore is potentially a hazardous place to work. Access is often difficult, and progress along the foreshore is often impeded by outfalls and hampered by thick slicks of mud (which may conceal deep holes). Moreover, the tide can turn suddenly and unexpectedly when a surveyor's back is turned – as a number of participants discovered to their cost! Therefore all participants were briefed about safety. In particular, they were advised to work in pairs and to wear wellingtons (which can be slipped off if the wearer becomes stuck in the mud). They were also warned about the risk of Weil's Disease, and advised to protect their hands with rubber gloves (in the absence of clean water baby wipes also proved useful for cleaning hands).

Tide tables (which give the times of High and Low Water at London Bridge) were always consulted, although it was found that Low Water at Rich-

Fig. 5: plan of the survey area, divided into zones (FRM01-22), showing the location of sites recorded during the 1994/5 season (M-Y).

mond usually occurred between one and two hours after the time implied by the tables.

## Methodology

The methodology and recording system were based on those developed by Gustav Milne and Damian Goodburn<sup>52</sup>. Accordingly, the Survey was undertaken in three increasingly focused stages:

- 1) *Reconnaissance survey*: to obtain an overall picture of each zone.
- 2) *Extensive survey*: to obtain a basic record of the archaeological features and deposits in each zone.
- 3) *Intensive survey*: to obtain a detailed record of selected archaeological features and deposits.

The survey area was divided into twenty-two zones (numbered FRMO1 -- FRM22) (Fig. 5). Ideally each zone should comprise a length of foreshore between two access points, that can be surveyed briefly within one 'tidal window'. Our zones were on average just over 1km in length, which with hindsight proved to be a little too long.

- 1) *Reconnaissance survey*: During the winter of 1994/95 each zone was visited and information was

gathered about the type and location of access points, the appearance of the foreshore and its extent at low tide, danger areas (such as channels, outfalls and deep mud), and local amenities and services, including the nearest public transport, car parks and public lavatories. Data were recorded on survey forms and marked on 1:1250 OS maps. A few archaeological features were noted at this stage, but observations were limited by exceptionally high river levels over the winter. Furthermore, little or no foreshore was exposed at low tide between Teddington and Richmond (FRMO1-11), because for most of year the lock at Richmond retains the water at half-tide level during the ebb. Fortunately this was remedied by the 'drain-off' in November 1995, when Richmond Lock was opened for a month, thereby exposing the upstream foreshore.

- 2) *Extensive survey*: In June the team began to methodically map archaeological features. Each zone was systematically walked, but particular emphasis was placed on examining areas next to the low water mark, which were only briefly exposed during the lowest tides. Sludge would often tem-

52. G Milne and D Goodburn *Foreshore archaeology* (unpub report for RCHME).



Fig. 6: members of RAS recording a timber structure on the site of Crane Wharf at the end of Old Palace Lane, Richmond, with Richmond Bridge in the background (Photo: Susan Eastmond, RAS).

porarily blanket an area, so that more than one visit was necessary in order to record fresh exposures. Features were briefly noted on zone record forms, and were plotted on 1:1250 OS maps. Most of the area below Richmond Lock (FRM12 – FRM22) had been mapped by mid-August, while the zones upstream from the lock were substantially completed in November during the 'drain-off'.

3) *Intensive survey*: Intensive surveys were undertaken in August and September of selected features identified in the zones immediately upstream and downstream from Hammersmith Bridge. During the 'drain-off' further detailed surveys were undertaken of structures revealed on the Richmond town foreshore.

Some of the more interesting features were only exposed by the lowest tides, which only occur every four weeks or so. Because the working window (near the low water mark) may be thirty minutes or less survey work had to be carefully planned in advance and executed with unusual speed.

Before wooden structures were recorded they were brushed and washed down with buckets of river water to remove sediment and slime. Features and individual timbers were described on record sheets and photographed. Survey baselines were established across or near features by hammering rows of wooden pegs into the foreshore (if pegs are driven in deep enough they can survive indefinitely, allowing a site to be recorded over a long period if necessary). Their locations were established by taking triangulation measurements from topographical features shown on 1:1250 OS maps. However, in future a Global Positioning System may be used to fix the position of baselines, especially in areas of relatively featureless riverside. Scale plans of features were drawn from offset measurements taken from baselines (Fig. 6). Because features near the low water mark were often submerged by the incoming tide before measurements could be completed their position was sometimes marked with long canes which would project above the rising water level allowing work to continue for several valuable minutes.

Another aim of the survey was to monitor processes of aggradation and erosion that could respectively bury or destroy archaeological deposits. To achieve this the profile of the foreshore was recorded in several places by taking levels (relative to Ordnance Datum) at one metre intervals across its

width. This process will be repeated along the same transects sometime in the future to see if any changes have occurred.

## Results

The results of the field survey are summarised in Table 1, and are briefly discussed below.

	Number of features
Watermen's steps and stairs	10
Docks, inlets and slipways	5
Landing stages, wharves and jetties	13
Revetments	15
Other timber structures	32
Stake clusters	4
Wattles?	2
Fish traps	5
Single posts, stakes and timber pieces	29
Barge beds and hards	8
Foreshore consolidation deposits	7
Boat house	1
Boat timbers	8
Vessels	22
Scatters: nails, etc.	4
sherds, etc.	4
bones, etc.	3
Other features, including tree stumps	19
Peat	19
Clay and other deposits	23
<b>Total</b>	<b>233</b>

Table 1: features recorded during the survey. The interpretation of some structures is provisional and may change in the light of new evidence.

### Watermen's steps and stairs

There are about a hundred publicly available landing places in the borough, most of which are made of concrete and are relatively recent in date<sup>53</sup>. However, the foreshore survey discovered ten steps or stairs with features of possible archaeological interest. For instance, the remains of timber steps (or landing stages) survive under their concrete successors on the riverside at Marble Hill Park (FRM05) (M) and Ham House (FRM09) (N).

### Landing stages, wharves and jetties

One of the most interesting features in this category was found at the end of Old Palace Lane, Richmond (FRM11) (O). Historically this was the site of Crane Wharf, the Tudor quay which served Richmond Palace, and may also have been the site of the palace jetty built in the 1380s<sup>54</sup>. The feature mainly comprised 131 vertical or angled posts (Figs. 6, 7 and 8). Most were concentrated in an area measuring 9m x 8m. Some were whole roundwood, but others had been boxed, halved, quartered or otherwise trimmed. Some were badly decayed

53. PLA *Access to the River Thames. Steps, stairs and landing places on the tidal Thames* (1996).

54. A A Barkas 'An ancient Richmond wharf' *Surrey Archaeol Collect* 27 (1914) 144-6; J Cloake, *op cit* fn 31.

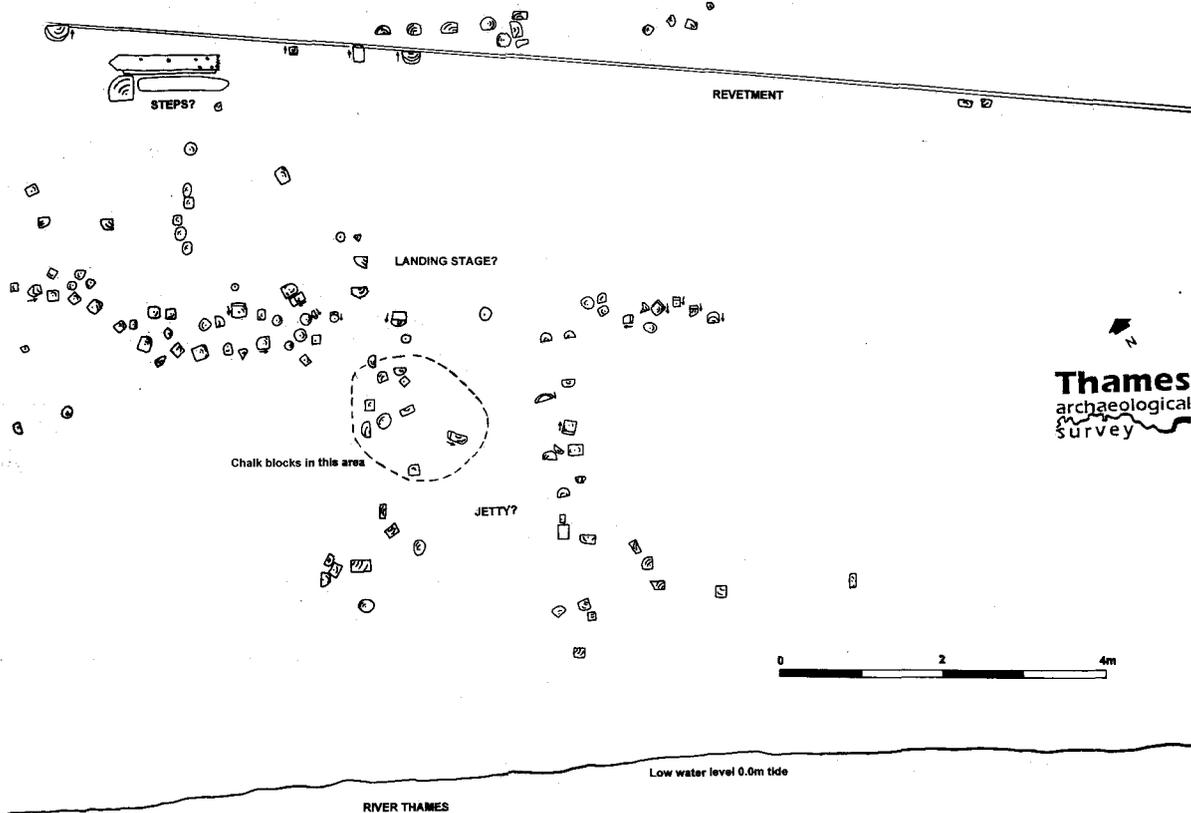


Fig. 7: plan of the timbers at the Crane Wharf site.  
(based on a drawing by John Alderton, RAS)

stumps barely projecting from the foreshore, while others were relatively well-preserved. The group appears to represent the remains of at least two structures (quite possibly more). A few posts were clearly associated with a plank revetment which crossed the area close to the modern waterfront. Three horizontal timbers immediately in front of the revetment may have served as steps. One with peg holes and a halving lap joint was clearly reused. The remaining posts were located farther out from the modern waterfront, and appeared to be the remains of an earlier openwork structure, which would probably have supported timber decking. The configuration of the posts suggests that a narrow jetty extended out into the river from a broader landing stage. Dendrochronological analysis indicates that two posts in the 'jetty' came from a tree felled in the winter of 1584-5, confirming the identification of the structure as Crane Wharf<sup>55</sup>. A few large fragments of moulded stone found

nearby were tentatively identified as demolition rubble from the palace.

Another large group of timbers was discovered about 300m upstream near the White Cross Hotel, Richmond (FRMII; Fig. 9) (P). It comprised 91 vertical posts and stakes, probably dating to the post-medieval period. At first it was thought that the timbers may have been part of the Town Wharf built in the late 16th century. However, records suggest that the site of the wharf is further inland, and it now seems more likely that the timbers are either connected with 17th- and 18th-century land reclamation schemes<sup>56</sup>, or are the remains of an unidentified waterfront structure.

A particularly enigmatic group of timbers was found about 200m below Kew Bridge (FRM16) (Q), where some 200 posts and stakes have been recorded so far. They appeared to represent more than one structure, although no obvious pattern in their layout could be discerned.

55. One sample with bark edge gave the exact felling date; the other lacked bark, but probably came from the same tree. The wood in other samples taken from the site may be too knotty for tree-ring dating. Jennifer Hillam, Dept. of Archaeology

and Prehistory, University of Sheffield, *pers. comm.*

56. See J Cloake 'The Early History of the Friars Area' *Richmond History* 3 (1982) 3-10.

A little way upstream from Hammersmith Bridge (FRM20) a group of eighteen roundwood posts (c 0.17m in diameter) were found (R). The posts were vertical and aligned in three parallel rows, which suggested that they once supported a rectangular structure such as a jetty.

### Revetments

Most of the post and plank revetments found during the survey do not appear to be very old, and probably date to the 19th or 20th centuries, but some may be earlier.

### Stake clusters

Clusters of stakes were recorded at a few locations on the Surrey shore, including a site opposite Isleworth Ait (FRM12) (S) and one near St. Paul's School (FRM20) (T).

### Fish traps

The remains of five structures were provisionally identified as fish traps. One at Barn Elms (FRM21) was represented by a row of about twenty vertical roundwood stakes, aligned at an angle of about 30 degrees to the bank (U). The stakes were irregularly spaced over a distance of 28.25m. Two of the stakes,

identified as oak, gave radiocarbon dates of 1470+/-60 and 1350+/-60 BP, calibrated to AD 430-670 and 600-780 respectively<sup>57</sup>.

### Vessels

Most, if not all, of the twenty-two wrecked or abandoned vessels recorded during the survey probably date to the 20th century. The majority were located on the foreshore around the Brentford Aits (FRM22), where no fewer than fifteen hulks and six individual boat timbers were found. Other vessels included the remains of a punt, which was seen upstream from Twickenham (FRM02) grounded within a cavernous brick-built boat house (V), which was only accessible during the 'drain-off'. While at Twickenham (FRM04) a rowing boat was found rotting on a slipway (W), and was identified as the former Twickenham Ferry, which was still in use in the early 1970s.

One find which briefly caused much excitement was a large wooden object on the foreshore at Barn Elms, which at first was thought to be part of a dug-out canoe, but was later ignominiously dismissed as a badly eroded log<sup>58</sup>.

57. Alex Bayliss, Ancient Monuments Laboratory, English Heritage, *pers. comm.*

58. Damian Goodburn, MOLAS, *pers. comm.*



Fig. 8: the remains of a possible landing stage and jetty at the Crane Wharf site.

## Stray finds and artefact scatters

It was not a specific objective of the survey to collect unstratified artefacts, which generally have limited archaeological value, and take up scarce storage space. Nevertheless, a number of objects were recovered from the foreshore, and range from a struck flint to a semi-automatic pistol (which was handed in to the police). One of the most interesting finds was a laterally-perforated antler beam mattock, a heavy-duty digging tool probably dating to the mesolithic period (but possibly later), recovered from the Middlesex foreshore at Richmond Bridge. It brings the total number of antler mattocks from the study area (see part 1) to thirty-six, which represents over a third of all British finds<sup>59</sup>. The shaft of a human femur found at Twickenham (FRM05) might be further evidence for funerary rites connected with the river. Clusters of artefacts were also observed, notably a scatter of nails opposite Mortlake High

Street (FRM18), which might possibly be linked to the construction or repair of boats.

## Palaeoenvironmental sites

Most exposures of peat and shelly deposits occurred downstream of Richmond Lock in the part of the river most vulnerable to tidal erosion.

At Barn Elms (FRM21) (X) an extensive layer of peat was exposed near the low water mark for a distance of *c* 750m (treated as one feature in Table 1). The deposit was up to 0.20m thick (top *c* -1.50m OD), and contained fragments of wood, including a tree stump. A few bones of red deer, cow and aurochs were found at the top of the peat (some partly embedded and others loose on the surface). Two auger cores from the site revealed a series of strata, the earliest of which consisted of Pleistocene flood plain gravel and sand. In one core these were overlaid by about 10mm of grey-green alluvial clay. The peat lay immediately above these deposits. Samples from the base and the top of the peat gave radiocarbon dates of 10150+/-110 and 7500+/-150 BP, calibrated to 10360-9050 and 6600-6000 BC respectively<sup>60</sup>. The first of the two dates is surprisingly early, and its accuracy is uncertain. Nevertheless, it would appear that the peat began to form at about the end of the last glaciation, and continued to develop over the next three or four thousand years, which would make it roughly contemporaneous with a small number of London sites, notably Point Pleasant at the mouth of the River Wandle, where a peat layer dated to between 9410+/-160 BP and 7620+/-80 BP was found just below -1.50m OD<sup>61</sup>. Peat of similar date has also been discovered further up the Wandle Valley at Strathville Road, Wandsworth (9240+/-60 BP and 9270+/-60 BP), which produced pollen indicating pine woodland<sup>62</sup>, and at Streatham House, Merton (9423+/-72 BP)<sup>63</sup>.



Fig. 9: a timber structure on the foreshore near the White Cross Hotel, Richmond. Some posts have been damaged by boats mooring at the adjacent landing stage. (Photo: Mike Webber, Thames Archaeological Survey)

59. Thirty-four local finds (mostly from Hammersmith, Kew and Mortlake) are listed by C Smith 'British antler mattocks' in C Bonsall (ed.) *The Mesolithic in Europe: papers presented at the Third International Symposium, Edinburgh 1988* (1989) 272-83. An additional find came from *c* 100 yards upstream of the Ship Inn, Mortlake; information Frank Berry, Jon Cotton *pers. comm.*

60. Alex Bayliss *pers. comm.*

61. Point Pleasant (PPT95); Jeff Perry. Sutton Archaeological Services, *pers. comm.*

62. SVR94; J Giorgi, R Scaife, K Pitt, J Sidell and K Wilkinson *Former Kenco Works, Strathville Road, Wandsworth SW18*, MOLAS assessment report 1995 (unpub).

63. Streatham House, Windsor Avenue, Merton (SHM89); Ken Whittaker, English Heritage, *pers. comm.*

64. John Hood, RAS, *pers. comm.*

Shelly deposits were recorded at several locations, including site Q just below Kew Bridge, where a layer of sand contained shells of freshwater and hygrophile mollusca<sup>64</sup>, and immediately downstream from Richmond Lock (FRM12) (Y), where a 0.15m thick layer of shells and sand lay below 0.10m of sandy silt containing frequent molluscan remains.

### Conclusion

The survey provided RAS with a rare opportunity to participate in fieldwork, and to make a considerable contribution to the study of London's past. It has yielded information about how the Thames has influenced the region's settlement and economy since prehistoric times, and how successive generations have used and exploited the river. The results of the survey make a significant addition to London's archaeological record, for numerous features were discovered, a number of which have already been added to the Greater London SMR.

So far only a small proportion of the features discovered during survey have been fully recorded, and much work remains to be done on planning and identifying archaeological remains. To the extent that each low tide is as likely to uncover an interesting new feature as to bury an old one, the prospects for a fascinating ongoing survey are good. It is encouraging that the Environment Agency have agreed to fund the Thames Archaeological Survey for a further three years (1996-1999),

and that English Heritage have continued to support the project.

From a social standpoint, the abiding memory from the fine summer of 1995 is of a Society mud-larking with intent alongside a shimmering Thames until forced by the incoming tide to take refuge in an inviting riverside pub.

### Acknowledgements

Funding for equipment and the hire of meeting rooms was provided by RAS and individual participants. The project was also generously supported by the Richmond Parish Lands Charity and by an anonymous donor.

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## Excavations and post-excavation work

**City of London.** Museum of London Archaeology Service, Walker House, 87 Queen Victoria Street, London EC4V 4AB (0171-410 2200).

**Croydon & District,** processing and cataloguing of excavated and museum collections every Tuesday throughout the year. Archaeological reference collection of fabric types, domestic animal bones, clay tobacco pipes and glass ware also available for comparative work. Enquiries to Jim Davison, 28 Blenheim Park Road, South Croydon, CR2 6BB.

**Greater London** (except north-east and south-east London), by Museum of London Archaeology Service. Excavations and processing in all areas. General enquiries to MOLAS, Walker House, 87 Queen Victoria Street, London EC4V 4AB (0171-410 2200).

**Borough of Greenwich.** Cataloguing of excavated and other archaeological material, the majority from sites in the borough. For further information contact Greenwich Borough Museum, 232 Plumstead High Street, London SE18 1JT (0181-855 3240).

**Hammersmith & Fulham,** by Fulham Archaeological Rescue Group. Processing of material from Fulham Palace. Tuesdays,

7.45 p.m.-10 p.m. at Fulham Palace, Bishop's Avenue, Fulham Palace Road, SW6. Contact Keith Whitehouse, 86 Clancarty Road, SW6 (0171-731 4498).

**Kingston,** by Kingston upon Thames Archaeological Society. Rescue sites in the town centre. Enquiries to Kingston Heritage Centre, Fairfield Road, Kingston (0181-546 5386).

**North-east London,** by Passmore Edwards Museum. Enquiries to Pat Wilkinson, Newham Museum Service, Archaeology and Local History Centre, 31 Stock Street, E13 0BX (0181-472 4785).

**Surrey,** by Surrey County Archaeological Unit. Enquiries to Rob Poulton, Archaeological Unit Manager, Old Library Headquarters, 25 West Street, Dorking, RH4 1DE (01306-886 466).

*Individual membership of the Council for British Archaeology includes 10 issues a year of British Archaeology, as well as the supplement CBA Briefing, which gives details of conferences, extra-mural courses, summer schools, training excavations and sites where volunteers are needed. The individual subscription rate of £20 p.a. includes postage; payment should be sent to C.B.A., Bowes Morrell House, 111 Walmgate, York, YO1 2UA (01904 671417).*