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COVER ILLUSTRATION:
The abbey gateway, gatehouse, Minster House and the cathedral's central tower from the south-west c. 1850 by George Pryce, (a lithograph in the Fine Art collection, M651, Bristol Museums and Art Gallery).

THE ROMAN VILLA AT NEWTON ST. LOE

James Russell

"Mementos of man's nothingness! ye bear
Inscribed upon your ruins, '*Vanity*', -
A nation's epitaph, - yet leave half-told
Your story, for in vain we ask, who was
Your short-lived master? Whose the taste that planned
His summer dwelling here on Avon-side,
Chamber, and corridor, and hypocaust? And whose
The feet that, fourteen hundred years ago,
Trod yonder pavement's mazes intricate
Of daedal wreaths, and rich mosaic, match'd
So curiously elaborate, stone with stone?"

W.L. Nichols: *Horae Romanae* 1838

INTRODUCTION

The Newton St. Loe Roman villa is located on the south bank of the Bristol Avon some 4 km to the west of Bath, at a point where the railway line from Bath to Bristol (formerly the G.W.R.) is crossed by the A4 (Nat Grid Ref ST 70176552). The villa was discovered, and almost completely destroyed, during the excavation of a cutting for the railway in the autumn of 1837. Two substantial stone structures were revealed, one of which (Building A) contained a bath suite and a series of mosaics, including an important depiction of Orpheus encircled by beasts. The remains were investigated during their removal by a young civil engineer employed by the GWR, T.E.M. Marsh (1818-1907), whose records of the site are now housed in Bristol City Museum. These comprise a remarkable full-size coloured tracing of the Orpheus mosaic (BRSMG: Acc 8619), over 30 other plans and drawings (BRSMG: Fb 7086-7121) and a GWR surveyor's notebook containing details of Marsh's archaeological and engineering activities during 1837-1838 (BRSMG: Fb 7122).

Marsh's work on the villa received no recognition from his contemporaries and nearly a century was to elapse before the existence of his records was brought to the notice of scholars in two brief but valuable papers by G.R. Stanton (Stanton 1936, 1938). The present article, which sets out to provide a somewhat fuller description and assessment of the Newton villa and its mosaics than was attempted by Stanton, is based very largely on Marsh's records, a checklist of which will be found in the Appendix. Items from this archive are referred to in the text by their checklist numbers (prefix CL) with the exception of entries in Marsh's notebook, which are referred to by their page numbers with the prefix NB. For clarity the villa buildings and their constituent rooms have been lettered and numbered, the room numbering of Building A incorporating that used in Marsh's original records.

PART 1 THE HISTORY OF THE SITE: DISCOVERY, PUBLICATION & RESEARCH 1837-1987

Thomas Edward Milles Marsh was born on 3 April 1818, the son of Major Henry Marsh of Grosvenor Place, Bath. He was trained as a civil engineer by G.E. Frere, an assistant of I.K. Brunel and Resident Engineer for the Bristol Division of the Great Western Railway. It was in the course of this period of training that Marsh became involved in the investigation of the Newton villa. Entries in his surveyor's notebook indicate that clearance of the site began on 29 October 1837 (NB39) and continued intermittently until 24 December 1837 (NB81). As well as preparing measured drawings, tracings and sketches, Marsh succeeded during this period in safely lifting and removing two mosaics from Building A, the Orpheus pavement from Room A2 and a geometric mosaic from Room A6. In a letter of 1900 to J.E. Pritchard he describes how this was done "in frames and plaster of Paris filling to hold up the Tesserae while undercutting the Bed". Diagrams of the A6 pavement (CL29, NB71) show how it was divided into 20 sections for removal. Both mosaics were taken to the new railway station at Keynsham, 6 km west of Newton St. Loe, where they were put on public display, the Orpheus pavement being relaid while the A6 mosaic was left in its framed panels.

Two brief accounts of the villa were published within a short time of its discovery. The first, by the Rev. W.L. Nichols, appeared in September 1838 as a preface to his 120-line elegaic poem *"Horae Romanae, or a Visit to a Roman Villa"*. Marsh's annotated copy of this unusual work is preserved in the library of the Department of Archaeology, Bristol City Museum. Nichols is also known to have been responsible for a sketch plan of Building A (*PBDB* 1924, 17) and a crude drawing of the Orpheus mosaic (Scarth 1864, pl 47). In the following year a lithograph based on drawings by Thomas Jones was published by W.B. Cook of Bath; this combines a well-executed

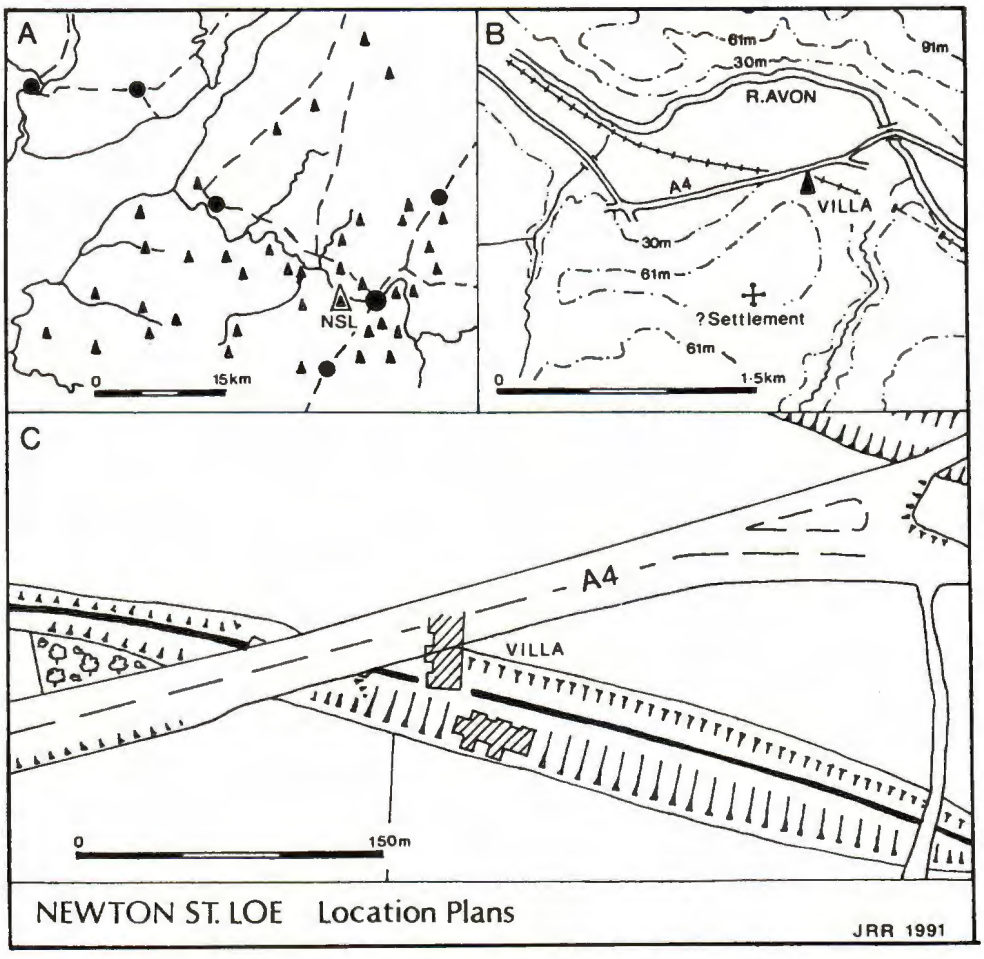

Fig. 1 ***Location Plans. A: Newton St. Loe in relation to major Roman settlements, roads and villas in the Avon Valley area. B,C: the villa in relation to local topography.***

depiction of the mosaics in Building A (reproduced in Aston & Iles 1987, fig 5.9) with a less satisfactory general plan of the same structure. The lithograph is accompanied by a single, anonymous page of descriptive text which has sometimes been attributed to Nichols but is more likely to be the work of the draughtsman Jones.

The two mosaics lifted by Marsh in 1837 remained at Keynsham Station until 1851, when it was decided that they required more suitable accommodation. Efforts were made to secure the Orpheus pavement for display in the vestibule of the Royal Literary and Scientific Institution at Bath (Scarth 1864, 115). These representations were unsuccessful, although it seems that parts of the second preserved mosaic, from Room A6, did eventually find their way to the R.L.S.I., where they were to be seen as late as 1936 (Stanton 1936, 44, footnote 2). Since 1945 the collections of the R.L.S.I. have been partly dispersed, and attempts to locate the mosaic fragments in the collections of the existing Bath museums now holding R.L.S.I. material (the Roman Baths Museum and the Bath Geology Museum) have so far proved inconclusive.

The remaining portions of both mosaics were presented by the Great Western Railway to the Bristol Institution, the forerunner of Bristol City Museum. The removal of the pavements to Bristol was entrusted to the Institution's curator, Robert Etheridge, a geologist. In his letter to J.E. Pritchard, Thomas Marsh indicates that, while he was consulted by Etheridge, he was not himself present during the lifting operation. It must be suspected that the Orpheus pavement was seriously damaged by Etheridge during his attempts to move it, since there is no definite evidence that it ever appeared on public display after its arrival in Bristol. The mosaic from A6, which had been left in loose panels, would have presented fewer removal problems, and it was probably parts of this, rather than of the Orpheus mosaic, which were exhibited to the Royal Archaeological Institute during its visit to Bristol in July 1851 (*Archaeological Journal* 8, 326). For the next 80 years both mosaics were to remain in store at Bristol, largely unregarded and in a steadily worsening condition (Stanton 1938, 27-29).

After the completion of his work at Newton St. Loe Marsh continued his engineering career, leaving the GWR in

1841 to construct and inspect new railway systems in India, Australia and North and South America as well as many parts of Britain. His later years were spent in his native Bath, where he carried out a number of civil engineering commissions. In 1877, for instance, he prepared a detailed report following the disastrous collapse of the Widcombe footbridge crossing the Avon to the south of Bath Spa Station, and in the following year was engaged to design its replacement, a sturdy structure which remains in use today, ornamented at either end with cast-iron plaques bearing the designer's name (Buchanan 1969, 9-10). Marsh's youthful activities at Newton St. Loe do not seem to have led to a wider involvement in archaeology. He did, however, carefully preserve his excavation records, making fair copies of some of the drawings. He also maintained an interest in the fate of the two mosaics which he had so laboriously rescued but which now remained hidden from public view in Bristol. This concern led him in January 1900 to write to the distinguished Bristol antiquary J.E. Pritchard, giving details of his part in the discovery of the villa and of the records in his possession. This letter, to which reference has already been made, is now preserved in the Library of the Society of Antiquaries, having been bequeathed in 1984 by Mr A.J. Gunstone along with Pritchard's copy of the 1839 Jones lithograph of the villa.

Thomas Marsh died in Bath on 19 December 1907, and was subsequently buried in Lansdown Cemetery; detailed obituaries (from which the foregoing biographical information is derived) were published in the *Bath Chronicle* for 26 December 1907 and the *Proceedings of the Institution of Civil Engineers* 176, 329. In the previous year Francis Haverfield had published his magisterial account of Roman Somerset; this included a brief, unillustrated account of the Newton villa, based largely on Nichols' *"Horae Romanae"* and making no mention of Marsh's work (Haverfield 1906, 302-3). Interest in the site was not revived until 1930, when G.R. Stanton, the energetic Curator of Archaeology & Anthropology at Bristol City Museum, retrieved the by now fragmentary remains of the Newton mosaics from the Museum's cellars and began to attempt their restoration. Stanton was alerted by J.E. Pritchard to the existence of Marsh's records, which were found to be still in the possession of the excavator's daughter, Miss F.M. Marsh; they were donated by her to the Museum in 1936 (BRSMG: history file 2069 M). Using these records Stanton was able to prepare two short but useful accounts of the villa (Stanton 1936, 1938). It is clear from both publications that Stanton hoped and expected that both the surviving mosaics would eventually be restored and exhibited. Under his supervision the fragmentary figured portions of the Orpheus pavement were painstakingly pieced together on a bed of sand and a valuable photographic record made (Stanton 1936, pl 8,9; Cookson 1984, pl 39; BRSMG: history file 6175), while the central panel of the A6 mosaic was consolidated "as an experiment" (Stanton 1938, 29). Probably at Stanton's instigation, a coloured postcard showing the figure of Orpheus from Marsh's monumental tracing was published by the City Museum (copy in the writer's possession). Sadly, the outbreak of war in 1939 put an end to further work and the mosaic fragments were returned to store, where their condition has continued to deteriorate to a point where restoration is no longer considered practicable.

In 1967-8, prior to the widening of the A4, small-scale excavations were carried out on the site of the villa by M.B. Owen, in a narrow triangular area between the south side of the main road and the north edge of the railway cutting (Owen 1968). The excavation was successful in relocating several walls of Building A, although all stratified deposits were found to have been removed by the 19th century excavators and no dateable finds were made. Although Owen's "reconstruction plan" of the site is not entirely satisfactory (Owen 1968, fig. 3), his work is of considerable value in enabling the villa buildings to be accurately related to the modern road and railway boundaries (see fig. 2).

By 1987 Marsh's 3 metre square tracing of the central figured section of the Orpheus mosaic had become extremely fragile. To perpetuate this important record it was decided by Bristol City Museum that a copy should be prepared using modern conservation and illustration techniques. This task was carried out in the main hall of the Museum during September 1987 by a team of illustrators from the Department of Archaeology's Community Programme Project, under the supervision of the then Curator of Archaeology, Miss Jennifer Stewart. A reduced version of the new tracing has since been placed on display in the Museum's Archaeology Gallery (Stewart 1988).

PART 2 THE VILLA

2A - THE SITE (Figs 1, 2)

The Newton St. Loe villa occupied the northern slope of a spur of lias limestone overlooking the flood-plain of the Bristol Avon, which in its present course flows some 500m north of the site. It consisted of two main buildings, A & B: of these, A was terraced into the slope on a N-S alignment while B was aligned WNW-ESE so as to follow the contour of the hillside. In the angle between them was a well approximately 0.8m in diameter (CL3, 4) described by Marsh in his letter to J.E. Pritchard as "only of ordinary rough construction"; there is no record of its contents. Of the doubtless extensive outbuildings of the villa, nothing was recorded by Marsh except for the north-west angle of a probable structure (Building C) to the south-west of Building A (CL3). Most of this complex of buildings has now been either destroyed by the 1837 railway cutting, which runs diagonally through it, or permanently obscured by successive widenings of the A4, which covers the northern half of Building A. The site of Building B coincides with a slight bulge in the southern slope of the railway cutting, which may conceal some residual structural remains.

No definite finds of Roman material have yet been reported in the immediate vicinity of the villa; burials and occupation debris, probably associated with a small farmstead, were however recorded between 1869 and 1903 during quarrying operations on higher ground some 800m to the south, at ST 709648 (Falconer 1904, Haverfield

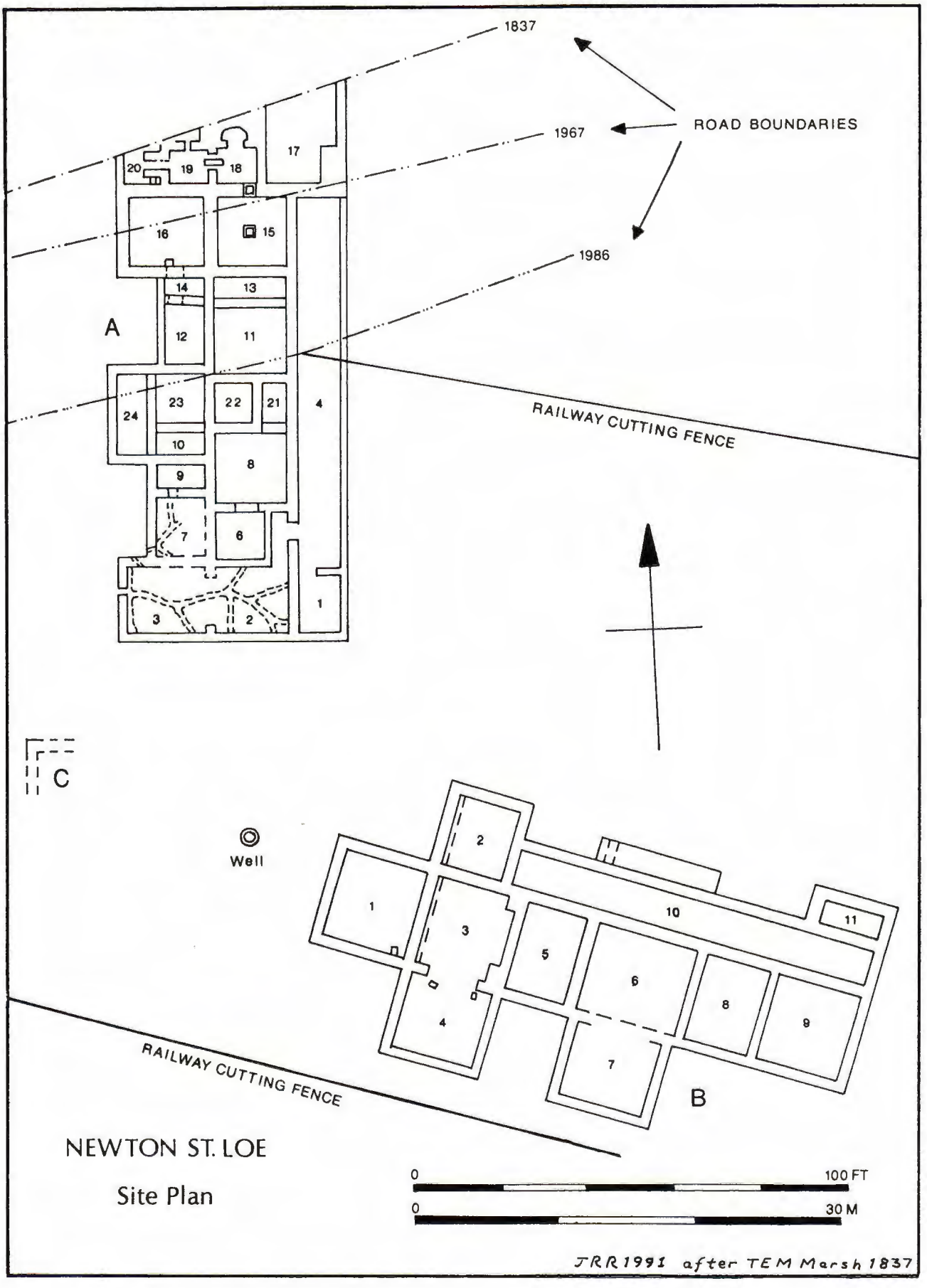

Fig. 2 Site Plan.

1906, 303). Further to the south-west within Newton St. Loe parish, at Park Farm (ST 696633) fragments of a Corinthian capital and pilaster, probably of Roman date, were found in 1983 (*BAA* 3, 57; *Britannia* 16, 302-3). While the main Roman road from Bath (*Aquae Sulis*) to Sea Mills (*Abonae*) ran to the north of the Avon (Margery 1973, 138-139 (Route 54)), it seems likely that a secondary route, probably following a similar course to that of the present A4, linked Newton St. Loe with other villas and settlements along the south bank of the river, such as those at Keynsham, Somerdale and Brislington (Tratman 1962, 163).

Like most records of early excavations, the available information concerning the Newton villa is of a limited nature, relating almost exclusively to its structure and decoration. Scant attention was paid by Marsh and his contemporaries to the recording of small finds, while evidence for the villa's economy and environment is confined to a comment in the text accompanying Jones' lithograph that "the ruins were thickly strewed with bones, horns and teeth of the Red Deer, Ox, Sheep, Hog, Dog & a Bird". While substantial quantities of pottery seem to have been found, none is described in detail, and only one piece, a jar of grey or black-burnished ware lacking its rim, was illustrated by Marsh (CL8). The absence of any mention of Samian ware being found may be significant, hinting as it does at a relatively late date for the site.

Numismatic evidence for the chronology of the villa is equally meagre and unsatisfactory. According to a cutting of *c.*1838 from the *Hereford Journal* (Hunt Collection, Bath Reference Library, Vol. 5, 178), some 20 coins were found on the site. Of these, Nichols (1838, 5) refers to bronze coins of Constans and Valentinian, together with a silver coin of Macrinus and a gold solidus of Honorius. The provenance of the two latter specimens is, however, challenged by Marsh who, in his annotated copy of Nichols' work in Bristol City Museum, comments "not correct; author may have been told so of some coin dealer". The actual source of Nichols' information seems to be a letter from W. Mendenhall in the *Bath Journal* for 13 January 1838 (cutting in Hunt Collection Vol. 5, 178) in which the writer draws attention to the alleged discovery of the gold and silver coins which he states were then "in the possession of Mr. Harris of Southgate St.". The 1837 Bath Directory reveals that Mr. Thomas Harris was indeed a "Dealer in Coins, Medals and Antiquities"!! This limited coin evidence, while clearly neither wholly reliable nor conclusive, tends to confirm that occupation of the site did not begin before the 3rd century AD. As we shall see later, the mosaics from Building A, which are not, however,

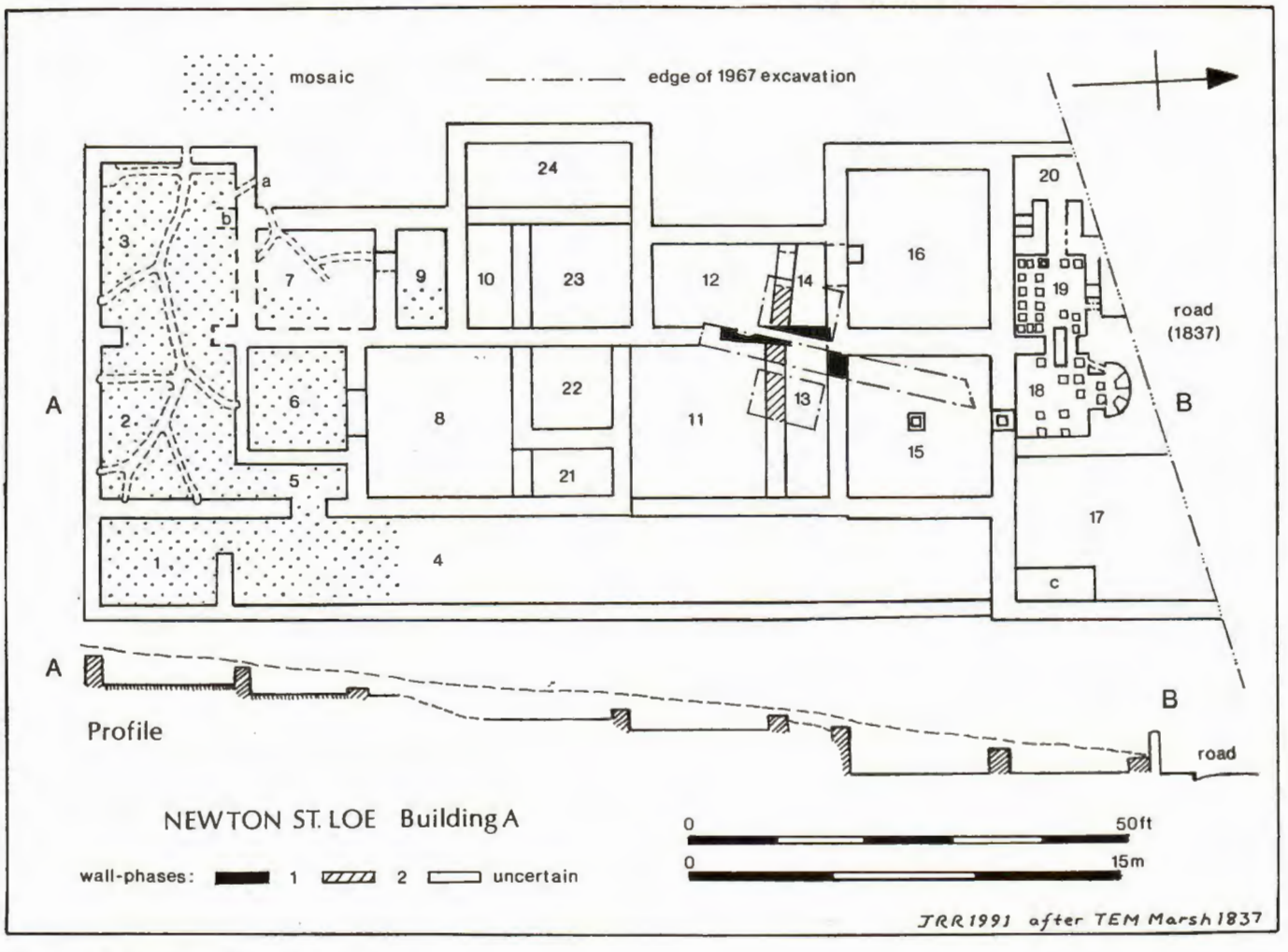

Fig. 3 Building A: Plan and Profile.

necessarily primary features of the structure, probably date from the second quarter of the 4th century AD.

2B - BUILDING A (Figs. 3-5)

Marsh's plans (CL1-5) indicate that Building A measured 16.76m from east to west and in excess of 39m from south to north; its full northerly extent could not be determined due to the destruction by the Bath-Bristol road prior to 1837. The irregular alignments of the few walls re-excavated by Owen in 1967-8 (Owen 1968, fig. 2) suggest that the layout of the structure may have been less rigidly rectilinear than Marsh's records imply. It had walls between 40 and 70 cm thick of lias limestone (Nichols 1838, 2) laid in regular courses (see Owen 1968, fig. 4) and was roofed, like most late Roman buildings in the Avon valley area, with hexagonal tiles of pennant sandstone, examples of which were recorded by both Marsh (NB92) and Owen (1968, 106) who also refers to the discovery of two stone voussoirs from arches or vaulting. At least some of the rooms had painted wall plaster; the *Hereford Journal* cutting in the Hunt Collection, already referred to, mentions walls "covered with beautiful frescoes in coloured compartments". The same source also describes the finding of "a curious relict resembling a grid-iron", possibly a window-grille. The building faced eastwards, being fronted on this side by a corridor or *porticus* (A4) 25.60m in length.

Marsh's records include a north-south profile through Building A (CL4, NB91; reproduced here in fig. 3) which shows clearly how the structure was terraced into the hillside, with rooms on two distinct levels some 3m apart. The upper or main floor level is represented by the surviving mosaics of the rooms in the southern part of the building (A1-7, 9), the lower level by the floors of the bath-suite (A17-20) and an adjacent cellar or undercroft (A15) towards its northern end. Floor surfaces in the intervening central section of the building seem to have been largely destroyed by 1837; they are likely to have been raised above the natural slope of the hillside at a level similar to that of the southernmost rooms, and would thus have been fully exposed to erosion by robbing or ploughing following the abandonment of the villa. The extent of this erosion is well seen in the entrance corridor A4, where only the southernmost 6 metres of the mosaic survived.

The southern end of Building A was occupied by a dining/reception room or *triclinium* (A2-3) entered from A4 through a dog-leg lobby (A5). The *triclinium* was of a bipartite type found in other Romano-British villas and town-houses (c.f. Russell 1984, fig. 3), consisting of an inner dining-area (A3) connected by a wide opening to an outer room (A2) containing the celebrated Orpheus mosaic. Beneath both rooms Marsh recorded a hypocaust consisting of partially stone-lined channels, capped with pennant sandstone slabs, leading from a stoke-hole in the west wall of A3 to flues in the walls (NB77-78). A channel running diagonally through the north wall of A3, recorded by both Marsh and Nichols (fig. 3a) does not seem to have been connected to this hypocaust and was probably a drain used for cleansing the dining area, a feature also found in the *triclinium*

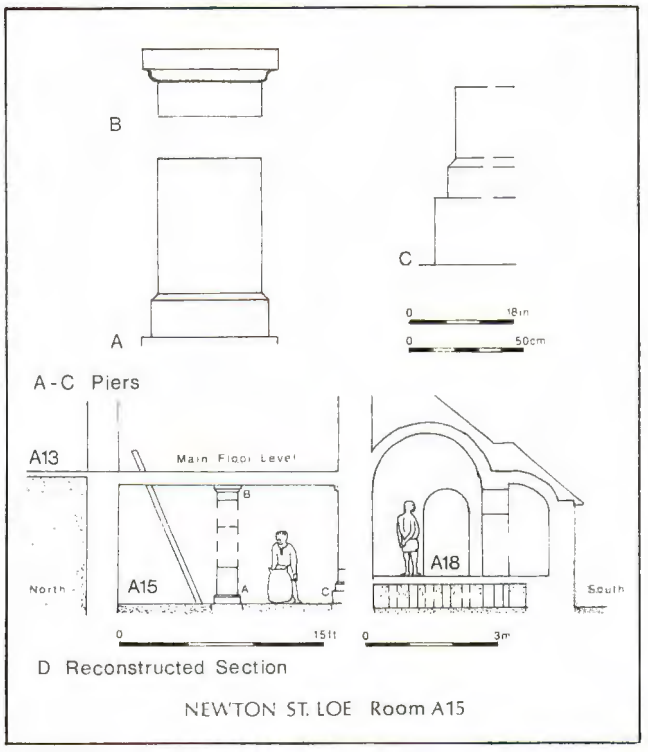

Fig. 4 Room A15: Pier fragments and reconstructed section.

at Chedworth (Goodburn 1972, 15). The functions of the remaining rooms in the southern and central sections of the building are less certain, although it is likely that both A1 in the south-east corner and A7, with its own channelled hypocaust, served as bed-chambers, presumably for summer and winter use respectively; in each room the mosaic pavement had a widened southern margin, apparently intended to allow the placement of a large piece of furniture such as a couch. In addition to the main eastern *porticus*, A4, at least six rooms (A5, 9, 10, 13, 14, 21) seem to have been used solely as lobbies or corridors. No hearths or ovens seem to have been recorded to indicate the possible location of a kitchen.

The bath-suite at the north end of the building contained two small warm rooms (A18-19) with apsidal extensions to the north and with pillared hypocausts heated from an enclosed stoking area (A20) to the west. These heated rooms seem to have been approached from the east through A17, a much larger apartment (partly destroyed by the Bath-Bristol road) which was presumably used as a combined cold room and dressing room. A rectangular foundation in the south-east corner of A17 (fig. 3c) probably formed the base of a flight of steps leading up to the entrance corridor A4. To the south of the bath-suite was a cellar or undercroft (A15) (erroneously described by both Marsh (NB92-94) and Nichols (1838, 3) as a *sudatorium* or "sweating chamber") which was probably entered from the main floor above by a wooden staircase or ladder, since no doorway was recorded. The centre of A15 was occupied by a square stone pier of which the lowest section, with a plain chamfered base (fig. 4A), and the capital, with a cyma recta

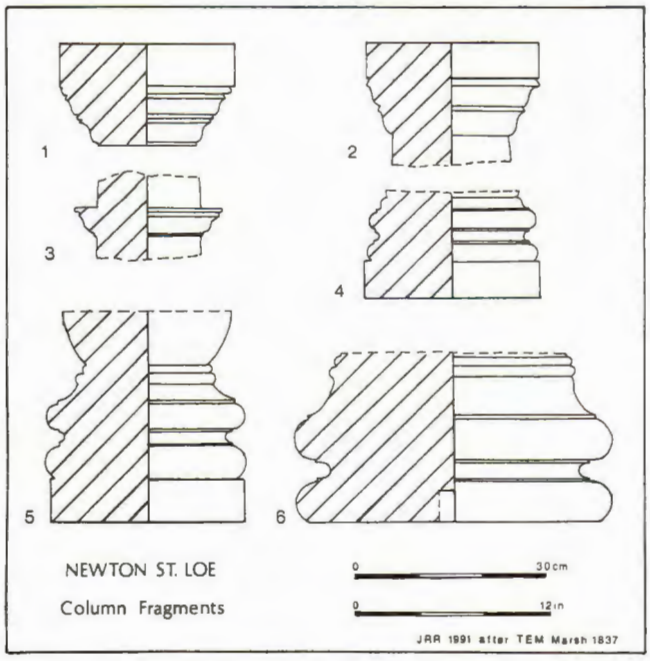

Fig. 5 Column fragments.

moulding (fig. 4B) were drawn by Marsh (NB93). His measured sketches of these components are accompanied by a note which seems to record the heights of the intervening "2nd & 3rd pieces" of the shaft (2' 11¼" (89.53 cm) and 1' 11½" (59.59cm) respectively). If this interpretation is correct, the overall height of the pier would have been approximately 2.74m, a dimension which would agree well with the assumed difference in level between the floor of A15 and that of the room above (fig. 4D). The chamfered base of a second pier (fig. 4C) was set into the north wall of the room, opposite the first.

As well as the piers in A15, other loose pieces of architectural stonework were discovered in and around Building A (fig. 5). Nearly all were parts of "dwarf" columns less than 1m in height, of a type widely paralleled elsewhere in Britain. One complete column, approximately 80cm high, was found lying on the floor of A1, where it was recorded *in situ* (though in different positions) by both Marsh (CL9) and Jones; unfortunately the details of its mouldings are unclear, being depicted entirely differently by the two draughtsmen. Fragments of other dwarf columns of the same general type were, however, recorded by Marsh in more convincing detail (NB92, 94; CL7). They had "attic" bases with double torus mouldings (fig. 5, 4,5), capitals of unclassical design with multiple cyma recta mouldings (fig. 5, 1,2) and neck rings round the upper shaft (fig. 5, 3). Variations in detail suggest that they came from several different locations rather than a single colonnade. While such small pillars are generally assumed to have been used chiefly in external corridors, some, as Woodfield (1978, 69-71) has pointed out, were probably employed internally. On his reconstruction drawings of the mosaic in A3 (CL 23-24) Marsh refers to the discovery of a column next to the north respond of the doorway linking A2 and A3, which may well have been one of a pair flanking the opening. In addition to dwarf columns, the "attic" base of a somewhat larger column, its lower shaft diameter of 34.8cm suggesting an overall height of between 2 and 3m, was found in the vicinity of A15 (NB94; CL7, fig. 5, 6); unlike the smaller examples, it had a dowel-hole in its lower surface.

There can be little doubt that the complex plan of Building A as recorded by Marsh was the product of several phases of construction and alteration. Clear evidence for modification was revealed by Owen's excavations of 1967-8, which re-exposed small areas of rooms A11-15 and demonstrated that the walls separating A11 from A13 and A12 from A14 were secondary insertions. At the south end of the building, alterations to the west end of room A3 are suggested by a block of masonry recorded by Marsh (NB77-8) below floor level on the north side of the room (fig. 3b) which seems to represent the stub of an original west wall in line with that of A7. This would imply a secondary date for the rest of the mosaics in the building, since, as we shall see later, similarities between the pavements indicate that all were laid in a single operation. Finally, we may note that two of the dwarf column fragments recorded by Marsh (NB92) are described as "built in wall", suggesting reuse, while one of the *pilae* in the hypocaust of A19 is shown by both Marsh and Nichols as circular, again implying the reuse of a column fragment.

The 19th century sources indicate clearly that the final abandonment of Building A followed destruction by fire. The text accompanying Jones' lithograph states that "the villa bears every appearance of having been destroyed by fire; it being, when excavated, covered with pennant tiles and nails from the falling of the roof". The *Hereford Journal* cutting of *c.*1838 in the Hunt Collection refers to "burnt timber, black ashes and tiles", while Marsh's sketch of the mosaic in room A1 (NB75) shows that part of the pavement close to the north wall was stained "pink to black", presumably as a result of intense heat. More questionable is Nichols' claim that the mosaics "were found carefully covered with slabs of lias, as if the former possessors, at their departure or flight, had looked forward to returning at some future period, to reclaim their dwelling" (Nichols 1838, 5). Although repeated in the text of Jones' lithograph, this statement is contradicted by Marsh who, in his annotations to the Bristol Museum copy of Nichols' work, makes it clear that the floors were covered only by pennant sandstone tiles from the collapsed roof. The available evidence does not permit us to put a date to the destruction of the building, still less to determine whether it was deliberately or accidentally caused. The villa's prominent location overlooking the Avon would, however, have obviously rendered it vulnerable to a barbarian attack along the river, such as that postulated by Branigan (1977, 93-96) to have occurred during the disturbances of 367 AD.

2C - BUILDING B (Fig. 2)

Very little information has survived concerning Building B; Nichols and Jones barely acknowledge its existence, while

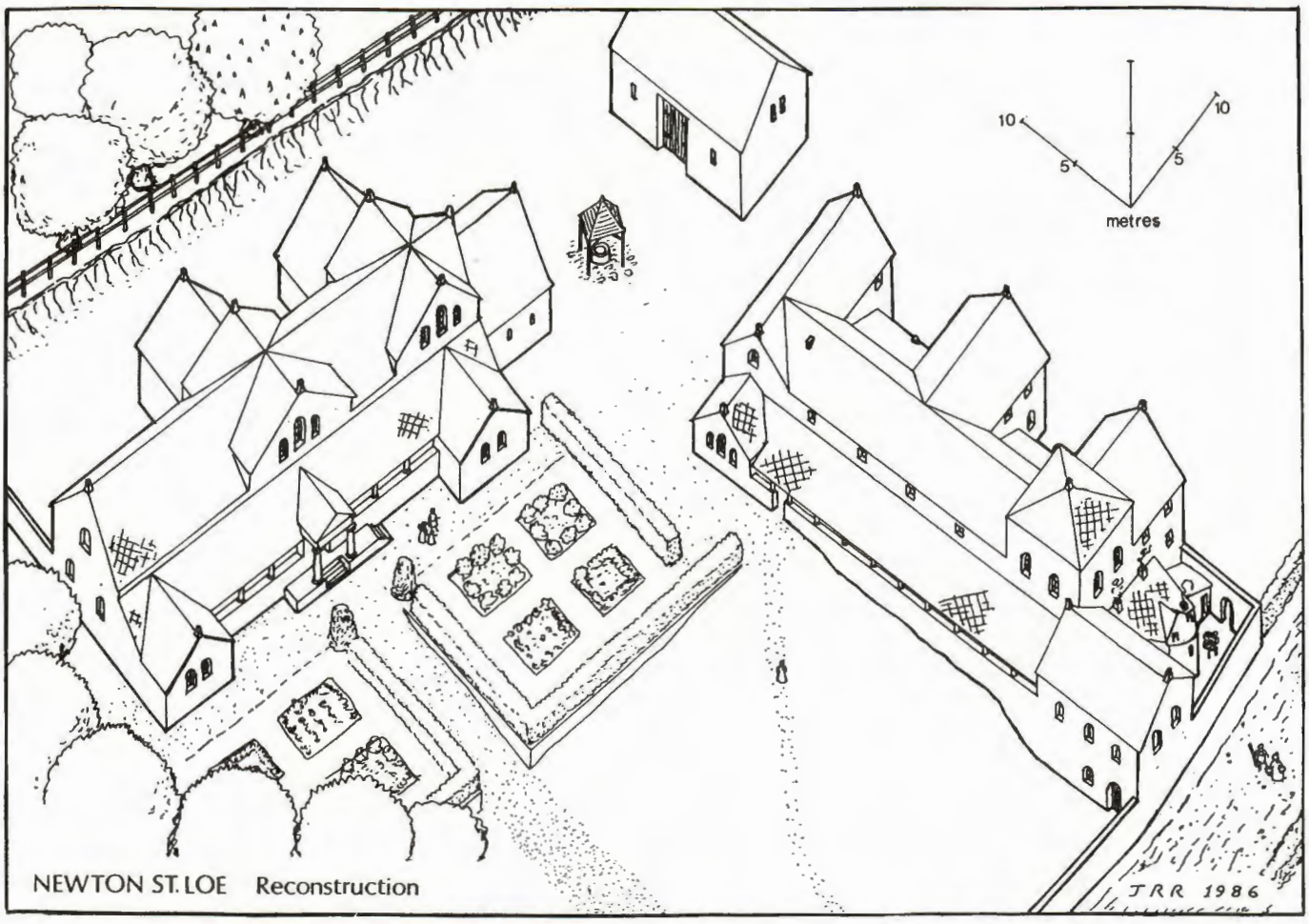

Fig. 6 Conjectural Reconstruction of the villa c.350 AD.

Marsh seems to have regarded it merely as an outbuilding, commenting in his letter of 1900 to J.E. Pritchard that it "had no traces of (mosaic) floors and flues in the walls". His outline plans (CL5-6) nevertheless show it to have been equivalent in size to Building A, measuring 39.00m from east to west and 19.50m from north to south, and suggest that it was constructed in at least two phases.

In its original form Building B appears to have had an almost completely symmetrical plan of "winged corridor" type. The centre of the structure was occupied by a large room (B6) measuring 7.00m by 6.09m, which may have opened into the slightly smaller room to the south (B7) to form an imposing bipartite reception hall. Flanking this central hall to east and west were balancing pairs of rooms B3/5 and B8/9, while to the north was an entrance corridor, B10, terminating in wing rooms B2 and B11. Extending northwards from the centre of B10, directly in front of and equal in width to B6, was a rectangular foundation for a porch or flight of steps. In the accompanying reconstruction (fig. 6) a simple porch with two columns has been shown, although a more grandiose tetrastyle portico occupying the full width of the foundation would have been equally possible.

The symmetry of this primary structure was subsequently broken by additions and alterations to its western end. Rooms B1 and B4 were added to the west and south of B3, B4 being linked to B3 by a wide doorway; Marsh's plans show small blocks, possibly column bases, flanking this opening on its south side. At the same time the west walls of B2 and B3 seem to have been strengthened or rebuilt, to judge from an offset course recorded by Marsh along their inner faces, while the wall between B3 and B5 was partially thickened. A small addition was also made to the western end of the step or porch foundation north of B10.

2D - DISCUSSION

Newton St. Loe is one of some 40 villas which have so far been identified within a 16km radius of the great healing sanctuary at Bath (*Aquae Sulis*) (Branigan 1977, 27). While varying greatly in their size and amenities, these Romanised farms and country houses display a remarkable uniformity in date, belonging almost without exception to the later Roman period, from c.250 AD onwards. Only at Box, 8km to the east of Bath, has evidence been produced for a substantial villa predating the 3rd century (Hurst *et al* 1987, 22, 27). The relatively sudden appearance of substantial numbers of villas in an area previously largely devoid of them is difficult to attribute solely to the increased prosperity of local farmers; the introduction of outside capital must be suspected, particularly in the case of large and

architecturally sophisticated establishments such as that at Keynsham (Bulleid & Horne 1926, Russell 1984). One explanation for the phenomenon is that a major imperial estate centred on the lower Avon valley was being broken up and disposed of to private landlords (Branigan 1977, 45-47). The identities of the villa-builders must remain uncertain and there is little solid evidence to support Branigan's suggestion of an influx of Gallic immigrants, although it is clear from inscriptions (cf *RIB* 140, 149, 163) that *Aquae Sulis* was frequented by Gaulish civilians. The exceptional amenities offered by the spa would have doubtless provided a powerful additional attraction to wealthy settlers and investors, whether Gaul or Briton.

While it may be assumed from its size and architectural pretensions that the Newton St. Loe villa formed the centre of a fairly extensive agricultural estate, the limitations of the available evidence render futile any attempt to reconstruct its economy. The distinctive layout of the villa buildings does, however, provide some scope for discussion of their planning and occupancy. In an important and influential discussion of "villas as a key to social structure" J.T. Smith has cited Newton St. Loe as an example of a villa made up of two adjacent dwelling houses of similar size, indicating, in his view, joint proprietorship by two interrelated families (Smith 1978, 150, fig. 47). There are, however, significant differences between the two main buildings at Newton which cast doubt on this interpretation. As we have seen, Building A seems to have undergone substantial structural alterations, making its original form uncertain. In its final phase, however, it is clear that it contained the villa's main living quarters; most of its rooms seem to have been paved with mosaics and several were provided with underfloor heating, while privacy was maximised by a multiplicity of lobbies and corridors. Building A also contained a bath suite, although it seems probable from its position that this was a shared facility accessible to all the occupants of the villa complex. The purpose of Building B is less immediately obvious, since, although architecturally it would undoubtedly have appeared the more important and imposing of the two structures, with its winged facade and symmetrical plan, it seems to have been devoid of the amenities and decorative features present in Building A.

One possible explanation of the seemingly anomalous relationship between the two buildings may be that they represent a separation of private and public functions, Building A providing secluded and relatively luxurious living accommodation for the proprietorial family during what may well have been only occasional periods of residence, while the more imposing Building B served as the administrative headquarters of the estate, permanently occupied by a manager or bailiff. The lack of recorded internal detail makes it hard to ascribe functions to individual rooms in Building B, although it is likely that the central rooms B6-7 served as an "audience hall" where tenants or dependant clients could attend on the proprietor or his representative for the payment of rent, receipt of largesse or transaction of other estate business (c.f. Hurst *et al* 1987, 30-32). The secondary alterations to the western end of the building may have been intended to create a self-contained suite of living rooms centred on the *triclinium*-like bipartite chamber B3-4.

PART 3 - THE MOSAICS

3A - INTRODUCTION

The following description and discussion is based largely on Marsh's records. Although, as we have seen, two of the Newton mosaics, from rooms A2 and A6, were lifted by Marsh and eventually transferred to Bristol City Museum, both are now for the most part in too fragmentary a condition to repay study. Though generally executed with considerable care and precision, Marsh's drawings are frequently incomplete and in some cases fragmentary; while some were clearly made at the time of discovery, others are fair copies, generally at a scale of 1:12, which seem to have been prepared as a leisure activity later in Marsh's life (see CL17). For the purpose of the present article a new series of drawings in a uniform style has been prepared, based as closely as possible on the Marsh originals but with some simplification of detail; guilloche bands, for instance, have been shown in outline only, while no attempt has been made to depict individual tesserae. Where, as in the case of the mosaic from room A4, Marsh's record is defective, reference has been made to the near-contemporary lithograph by Thomas Jones which, despite its relatively small scale, seems to have been carefully executed and provides a useful independent check on the accuracy of Marsh's work.

Only scant information is available concerning the structure of the Newton mosaics. The tesserae in the restored central section of the A6 pavement, the quality of which may be assumed to be typical of the geometric mosaics from the site, are on average 13-14mm square. The workmanship of the central, figured portions of the A2 Orpheus mosaic seems in general to have been no better; as Cookson (1984, 62) has pointed out, an examination of Stanton's photographic record shows that tesserae up to 18mm square were used, with gaps of up to 5mm between adjacent stones, although in certain key areas such as the face of Orpheus smaller elongated tesserae, more closely set, were employed. Much larger cubes, perhaps up to 30mm square, would have been used for the outer borders of coarse tessellation which surrounded each pavement.

Nichols (1838, 5) records tesserae of five colours - red (brick or tile), white (white lias limestone), blue (blue lias limestone), green (triassic marl) and brown (pennant sandstone). In addition, Marsh's drawings show areas of yellow tesserae, probably of oolitic limestone. All the varieties of stone employed could have been found within a few kilometres of the villa. The colours most frequently used were white (for backgrounds) and blue (for the basic outlines of designs). Green and brown tesserae seem to have been confined to the figured sections of the Orpheus mosaic in room A2. In the accompanying drawings an attempt has been made to indicate colour by shading or stippling; complex areas such as figures or guilloche bands have, however, been left in outline in the interests of clarity. Blue is indicated by dense stippling, yellow by widely spaced stippling and red by diagonal shading.

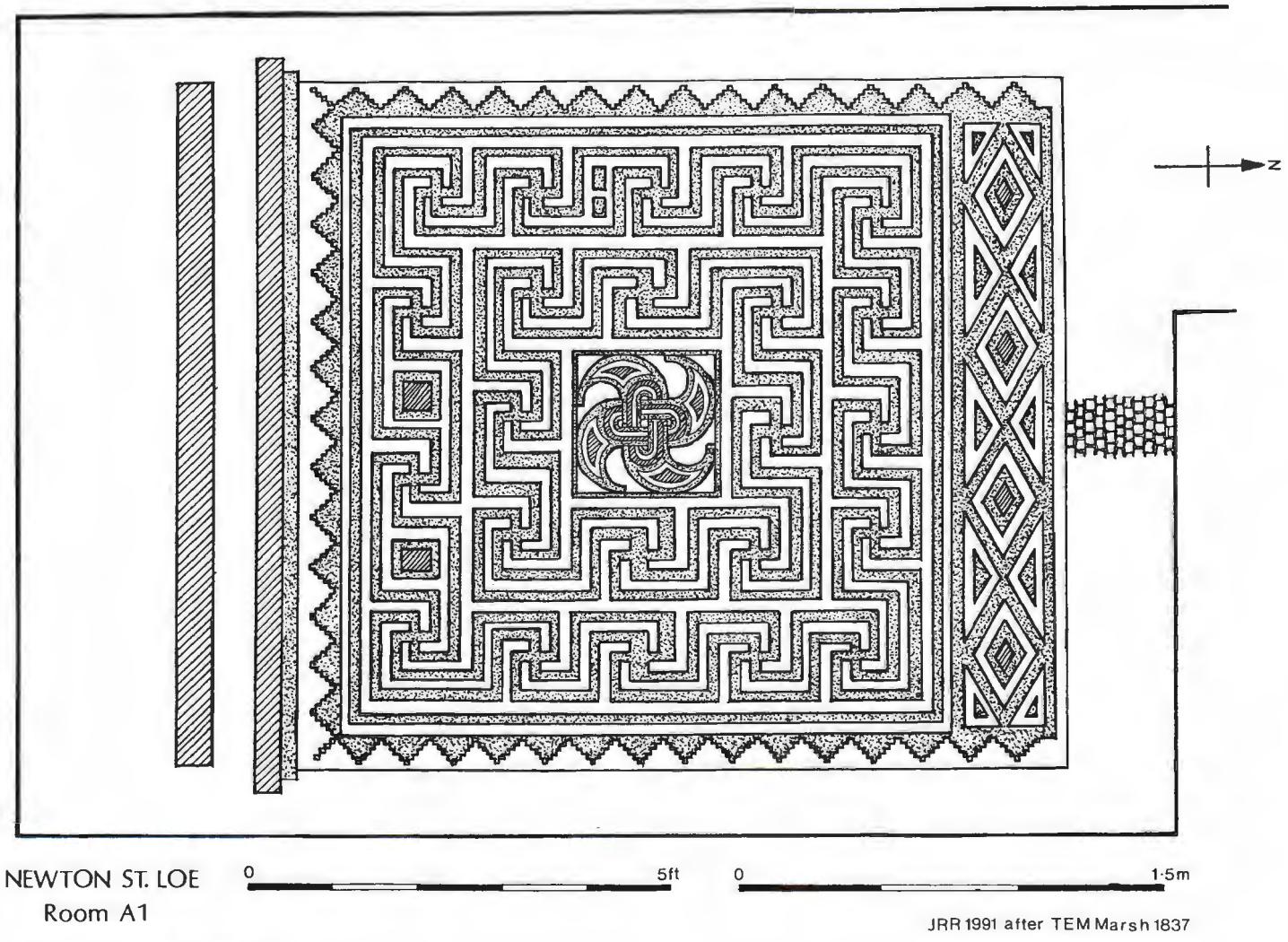

Fig. 7 Mosaic, Room A1.

3B - DESCRIPTION

A1 (Fig. 7; CL5, 9, 10; NB75)

The scheme comprised two continuous bands of swastika-meander enclosing a square central panel which contained a swastika-*pelta*. The outer meander band incorporated on its south side two rectangles with red centres and on the west two smaller blue squares, all evidently introduced to compensate for errors in setting out. These elements were contained within borders of stepped triangles to the east, west and south, and lozenges with red centres to the north. Outside the main panel to the south were three plain parallel bands, the innermost being blue and the others red. These bands seem to have been designed to emphasise the importance of the south end of the room, which also had an exceptionally wide outer border of coarse white tessellation, it seems likely that a large item of furniture, such as a couch, was placed here.

A2 (Fig. 8, CL11-19; NB79-80)

Fragments of this pavement are housed in Bristol City Museum (BRSMG: Fb 5886). The largest and most important of the Newton mosaics, it contained at its centre the figure of the legendary musician Orpheus, dressed in his conventional costume of Phrygian cap, knee-length tunic and flowing cloak; his legs were encased in short boots and breeches, while extraneous pieces of drapery billowed from his waist to right and left. He was seated on a bench of which one angle protruded to his right. His right hand plucked at a large, roughly rectangular lyre balanced on his left hip; the upraised hand of his otherwise concealed left arm was visible behind the strings. To his left was a fox with a protruding tongue, standing on its hind legs with its forelegs clasping and supporting the lower edge of the lyre. These two figures were tightly enclosed by a coarsely executed, roughly circular band of simple guilloche; the cap and the left foot of Orpheus, together with one corner of his lyre, impinged on this band, while the tail of the fox passed almost through it, the guilloche ending in loops on either side.

Surrounding this central panel was a band of animals and trees enclosed in turn by a narrow plain border which described an ellipse rather than a true circle (its diameter measuring 2.64m from north to south but only 2.48m from east to west). The seven animals represented were, in clockwise order, a hind, bear, bull, hound, leopard, stag and lion. With the exception of the bear they were arranged in con-

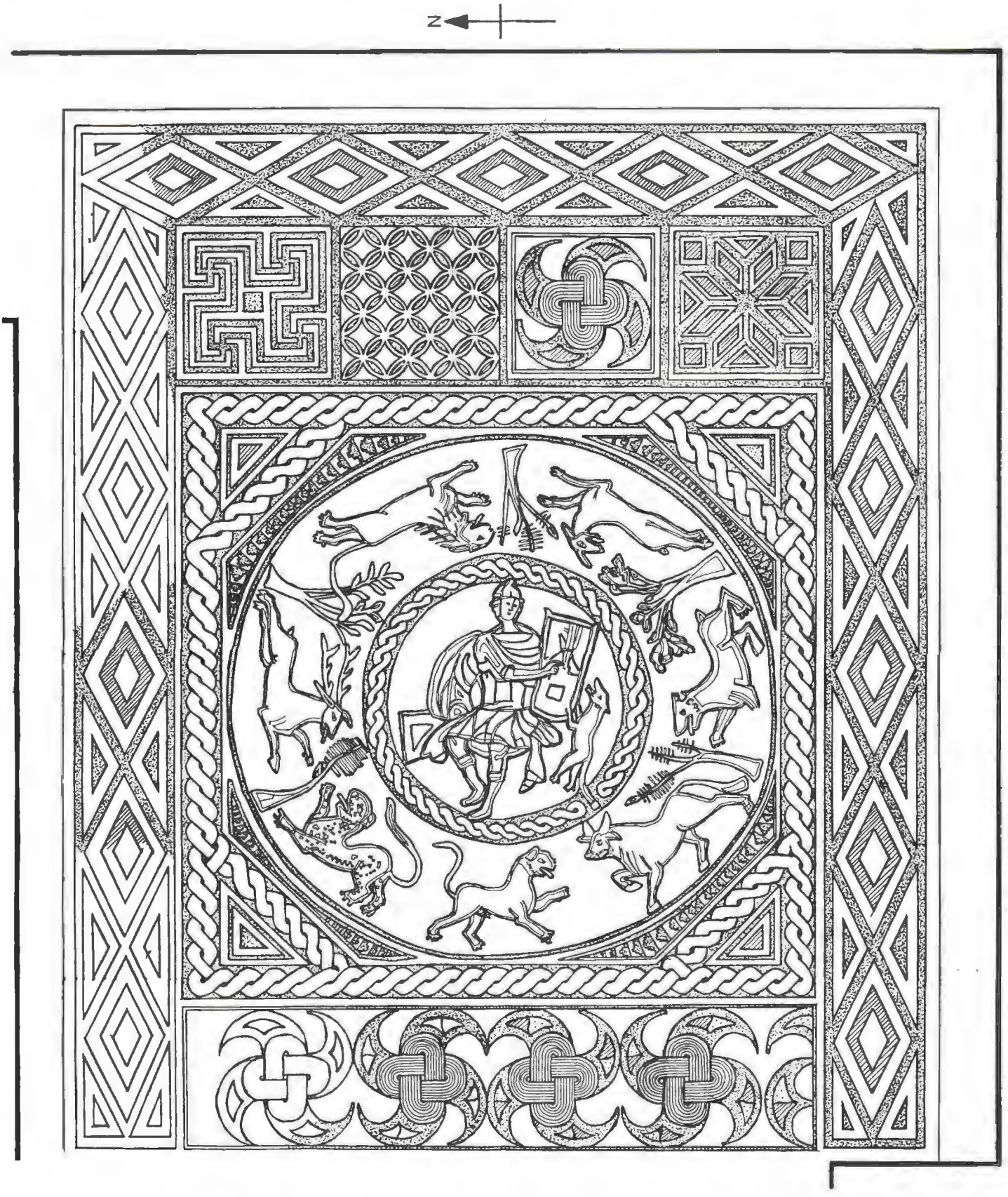

Fig. 8 Mosaic, Room A2.

JRR 1991 after TEM Marsh 1837

fronted pairs, alternately herbivore and carnivore, and were depicted in lively running or prancing poses suggestive of aggression (in the carnivores) or fear (in the herbivores); all except the bull were open-mouthed with protruding tongues. The spaces between the animals (with the exception of those on either side of the hound) were filled with trees or bushes of three different types. Type 1 (between lion and stag) had slender leaves evenly spaced, while Type 2 (between hind and bear) had large shapeless leaves clumped near the top. The remaining trees (Type 3) had isolated small leaves and patches of bushy vegetation indicated impressionistically by parallel horizontal bands of tesserae. This "impressionistic" technique of depicting foliage is rarely encountered in British mosaics, although it occurs in pavements elsewhere in the Empire, for example in a late 3rd-early 4th century mosaic from Lillebonne (Henig ed, 1983, p. 14). The only other British example of the technique appears to be the panel depicting the death of Actaeon in the 2nd century "Seasons" mosaic from Dyer Street, Cirencester.

The elliptical central figured area was framed within a rectangle of simple guilloche, additional strips of guilloche ran across the corners of the rectangle to create an irregular octagon. The spaces between the sides of this octagon and the band of animals were filled by panels of superimposed stepped triangles. East of the main rectangle was a row of four square panels containing respectively (from north to south) a swastika-meander pattern, intersecting circles, a swastika-*pelta* and an eight-lozenge star. West of the rectangle was a panel, partly destroyed at its northern end, containing a row of swastika-*peltae* - four according to Marsh's drawings but only three according to Nichols (Scarth 1864, p. 47) and Jones. All these elements were enclosed on the north, south and east by an outer border of red lozenges with white centres.

As D.J. Smith has observed, the figures in the A2 mosaic were almost certainly prefabricated, probably by the "reverse" process, from a design which was evidently substantially modified in the course of execution. As we have seen, the seven animals in the mosaic are arranged in opposed pairs of herbivores and carnivores, with the exception of the bear, who lacks a herbivore antagonist. In his most recent discussion of the mosaic Smith has argued that the original design consisted of only six paired animals, the seventh being added as an afterthought (Smith 1983, 317). This interpretation is, however, less convincing than Smith's earlier suggestion that eight animals were originally intended, one of the beasts and three of the intervening trees being subsequently eliminated (Smith 1969, 98). That the design has been reduced rather than expanded is demonstrated by the fact that the central figures of Orpheus and his attendant fox are clearly too big for their encircling band of guilloche, which was evidently not prefabricated but somewhat crudely improvised around the figures after the latter had been placed in position. The stylistic and iconographic problems raised by this mosaic are considered further in the discussion below.

A2/3 (Fig. 9; CL20, 21)

The threshold between rooms A2 and A3 was occupied by a wiry acanthus scroll with sharply pointed red and yellow leaves, springing from *cornucopiae* at either end of the panel. In the centre of the scroll was a roundel containing, within a border of stepped triangles, the bust of a woman looking to her right. Her elaborate coiffure was surmounted by a triangular projection, almost certainly a stylized top-knot comparable with those worn by the female busts in the "Tyche & Nymphs" mosaic at Brantingham (Yorks) (Liversidge, Smith & Stead 1973, 96, p. 13-14, Neal 1981, No. 12).

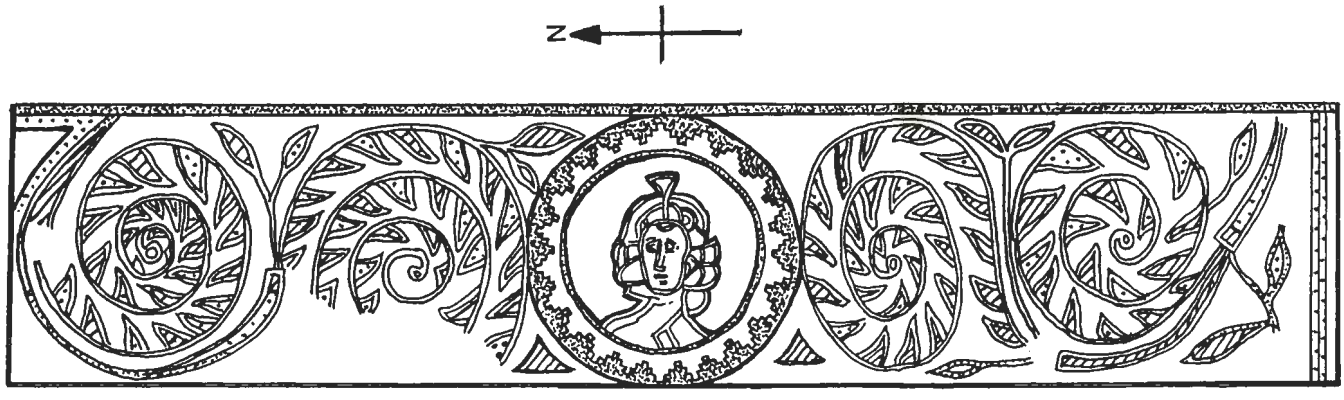

Fig. 9 Mosaic, Threshold panel between Rooms A2 & A3.

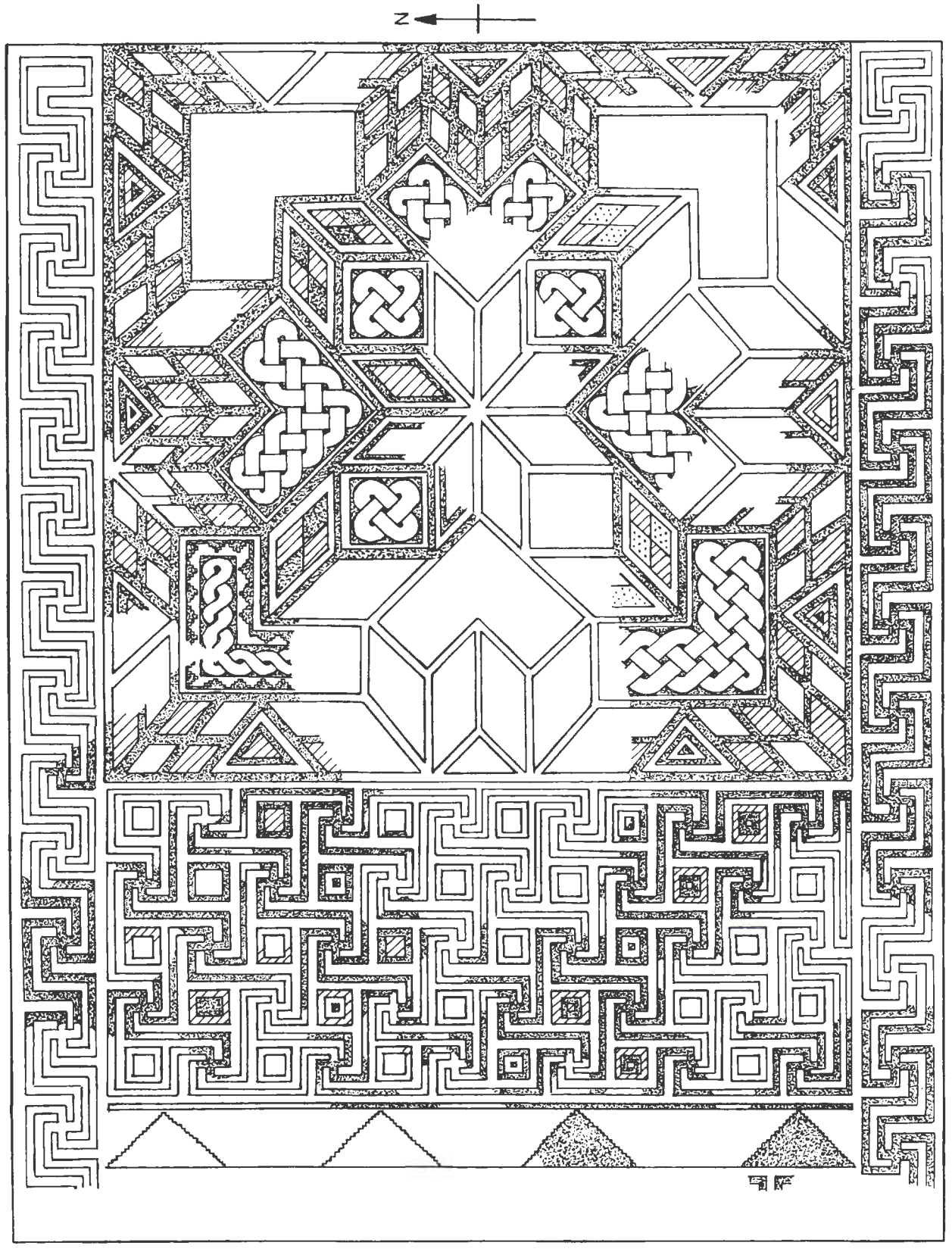

Fig. 10 Mosaic, Room A3. JRR 1991 after TEM Marsh 1837

A3 (Fig. 10; CL21-25; NB81, 87)

Much of the A3 mosaic was found by Marsh to have subsided into the underlying channelled hypocaust; his field drawings show that large areas of tesserae had disintegrated completely while elsewhere the design had been severely distorted. In the accompanying drawing an attempt has been made to correct these distortions while missing areas of the pattern have been reconstructed in outline.

Within the main panel of the mosaic the central element was an eight-lozenge star with four squares containing duplex knots in its angles. The remainder of the square panel was filled by a complex arrangement of L-shaped panels, triangles and quartered lozenges, creating a striking three-dimensional effect. In the outer lozenges the quarters were alternately red and white, while closer to the centre they were either red and blue or red and yellow. The eight L-shaped panels all appear to have been filled with mats of guilloche with the exception of that in the north-west corner, which contained a strip of simple guilloche surrounded by stepped triangles (in Marsh's reconstruction drawings (CL24-25) this panel is erroneously transposed to the south-west corner).

The zone to the west of the main panel was occupied by an all-over swastika-meander developing staggered squares. To the west of this again was a border of large stepped triangles; Marsh's reconstructions show a continuous row of seven triangles but examination of his field drawings suggests that there may have been only four, with gaps between. Enclosing all these elements on the north, west and south was a continuous border of swastika-meander.

A4 (Fig. 11; CL26; NB76)

Within this 25.6m long corridor only the southernmost 6 metres of the mosaic had survived. The accompanying illustration is based largely on Jones' lithograph as Marsh's field drawing (CL26) is badly damaged by ink-staining. The scheme of the surviving fragment consisted of zones of blue and white chequers incorporating a square panel with an eight-lozenge star, and enclosed by two broad blue bands. At the northern end of the surviving fragment a sketch by Marsh (NB76) shows the edge of a second, larger eight-lozenge star panel, unrecorded by Jones.

A5 (Fig. 12; CL16, 27)

Within a narrow plain border the scheme consisted of *peltae* mostly arranged in pairs placed back to back so as to form roundels. This motif is paralleled in Room B at Wellow, Avon (Haverfield 1906, fig. 72) and Room 14 at Chedworth (Goodburn 1972, pl. 7.2; RCHM *Glos* p. 6).

A6 (Fig. 13; CL28-29; NB71)

Parts of this mosaic, in a fragmentary condition with the exception of the central panel which was restored by Stanton (Stanton 1938, 29), are housed in Bristol City Museum (BRSMG: F 2387). The central feature of the scheme was a square panel containing a swastika-*pelta* enclosed by a band of simple guilloche. This was set within a larger square infilled with an all-over pattern of intersecting circles with smaller circles covering the intersections. This unusual variant of the common intersecting-circle motif is paralleled in Room D at Wellow, Avon

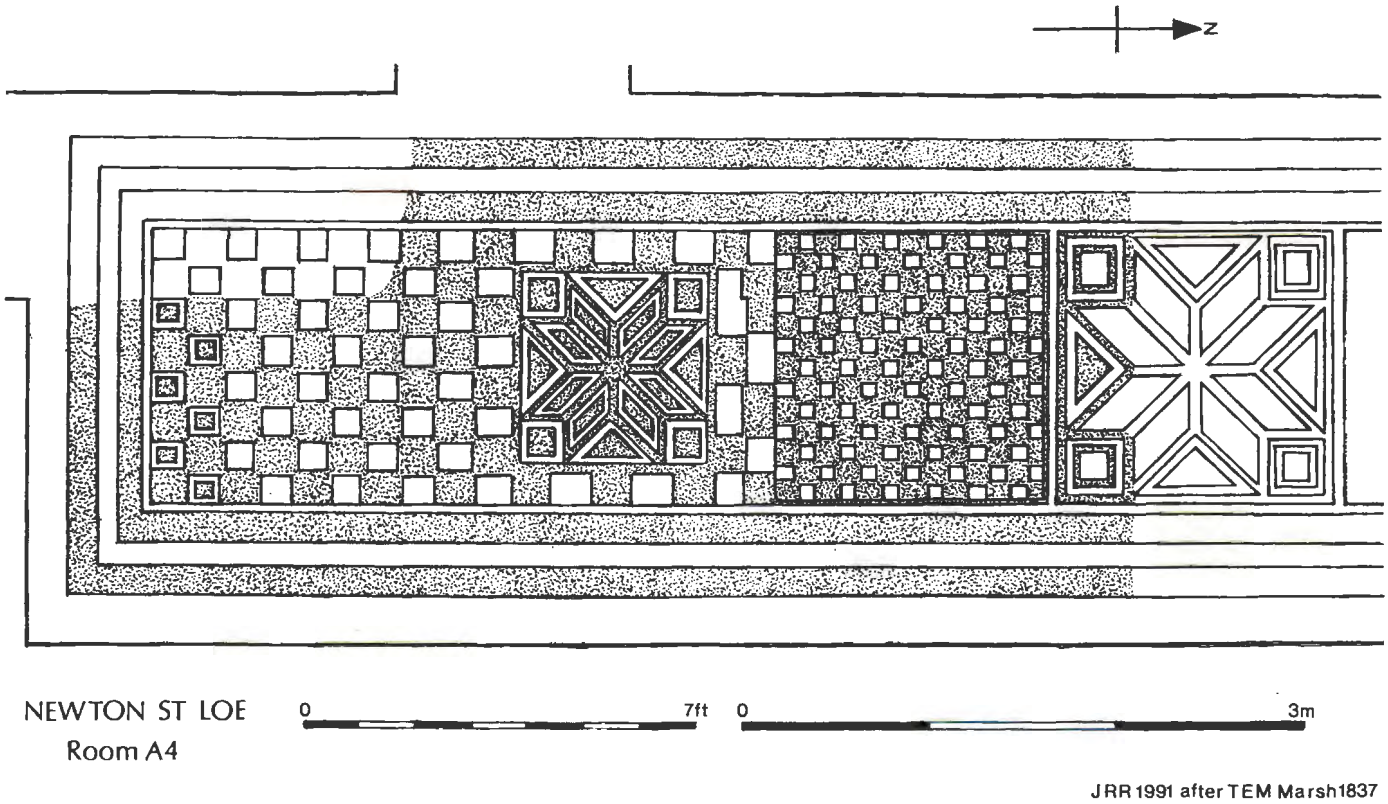

Fig. 11 Mosaic, Room A4.

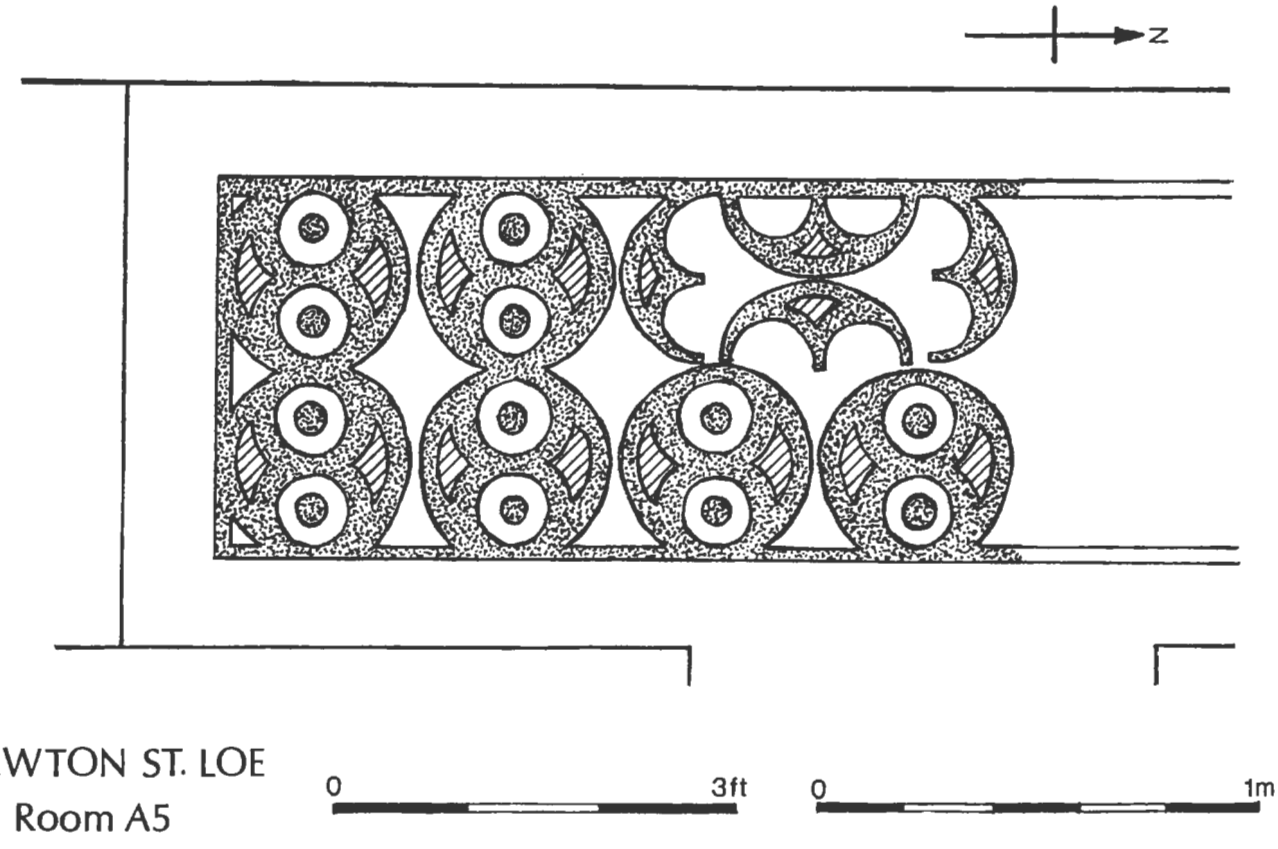

Fig. 12 Mosaic, Room A5.

(Skinner 1823, pl. 3) and in two side panels of the Orpheus mosaic at Littlecote, Wilts. (Walters & Phillips 1980, pl. 4). The outer border consisted of red and white chequers.

A7 (Fig. 14; CL5, 30; NB89, 96)

The greater part of this mosaic had collapsed into the underlying hypocaust, leaving only the south-east corner intact. Within the surviving fragment the main panel was occupied by an all-over pattern of intersecting circles (misinterpreted as an urn-like feature by Jones). This was enclosed by a border of stepped triangles, with an additional band of superimposed right-angled triangles to the south. This last motif is paralleled in Mosaic B at Pitney, Somerset (Haverfield 1906, fig. 86) and at Olga Road, Dorchester (RCHM *Dorset* pl. 223). The outer border of coarse red tessellation was, as in A1, wider on the south than on the east, again possibly indicating an emplacement for a couch.

A9 (Fig. 15; CL2)

No detailed large-scale record of this mosaic survives. Pencilled indications on Marsh's general plan of Building A (CL2) suggest, however, that its scheme consisted of intersecting octagons forming a network of elongated hexagons framing squares. Examples of this motif in south-west Britain include Room C at Wellow, Avon (Skinner 1823, pl. 2), Widford, Oxon (Neal 1981, No. 77), Colliton Park, Dorchester (RCHM *Dorset* pl. 222) and Room A at Withington, Glos (RCHM *Glos*, p. 16).

A12

"Broken up tessellae" were recorded by Marsh (NB76).

3C - DISCUSSION
STYLE, TECHNIQUE AND CHRONOLOGY

During the first half of the 4th century AD the mosaic industries of southern and eastern Britain underwent a remarkable revival. Research carried out since the early 1960's by Dr D.J. Smith has defined four regional mosaic "schools" active during this period; in south-west Britain "schools" centred on Cirencester (*Corinium*) and Dorchester (*Durnovaria*) have been postulated. As Roger Ling has pointed out (*Britannia* 13, 423) these "schools" should be regarded as loose regional groupings of craftsmen rather than formal, centralised ateliers. While some mosaic workers operated within semi-permanent workshops (*officinae*), others seem to have been itinerant, coming together with other craftsmen to execute one or two commissions before disbanding and regrouping elsewhere. The products of some of the more stable and successful *officinae* can be recognised archaeologically by their uniform style and technique; thus pavements executed by the early 4th century "Corinian Orpheus" workshop, responsible for a major series of mosaics in the palatial villa at Woodchester (Glos), can also be identified at Barton Farm and Chedworth (Glos) and Stonesfield (Oxon) (Johnson 1982, 33-40). The work of itinerants, on the other hand, tends inevitably to be more hybrid in character and is consequently more difficult to

trace from site to site. The attribution and chronological placement of many mosaics, including those from Newton St. Loe, thus remains problematical.

The Newton pavements were almost certainly laid in a single operation by the same group of craftsmen. This may be inferred from the recurrence from room to room of motifs such as the eight-lozenge star (present in A2, A3 and A4), the swastika-*pelta* (A1, A2, A6) and borders of lozenges (A1, A2) or stepped triangles (A1, A3, A7). While some mistakes in setting out are apparent, notably in the outer meander band in A1, the workmanship of the mosaics seems from the limited surviving evidence to have been competent, but by no means outstanding. The composition of the abstract elements in the pavements is in general uninspired and unadventurous; only in A3 is any degree of complexity achieved. The designer's limitations are most clearly apparent in the outer sections of the "showpiece" Orpheus mosaic in A2, where he seems to have attempted a bold effect by including as many of his favourite motifs as possible the result is decidedly banal, the four eastern panels in particular resembling nothing so much as a set of samples lifted without modification from a pattern book.

Most of the abstract motifs employed in the Newton pavements formed standard elements in the Romano-British mosaicist's repertoire, and are thus of limited diagnostic value, although the presence of motifs specially-favoured at Newton, such as eight-lozenge stars and swastika-*peltae*, in the Woodchester mosaics may suggest

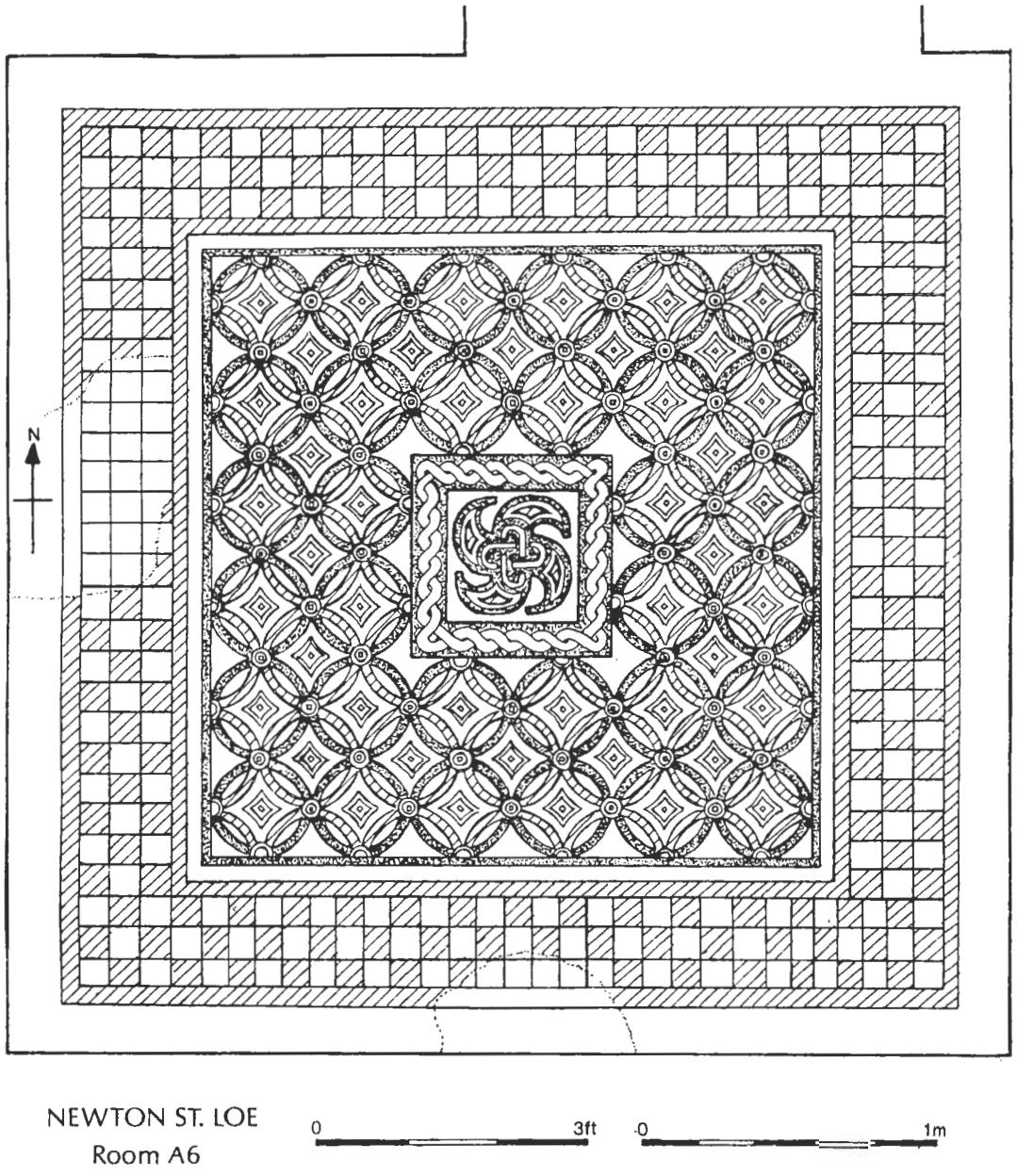

Fig. 13 Mosaic, Room A6.

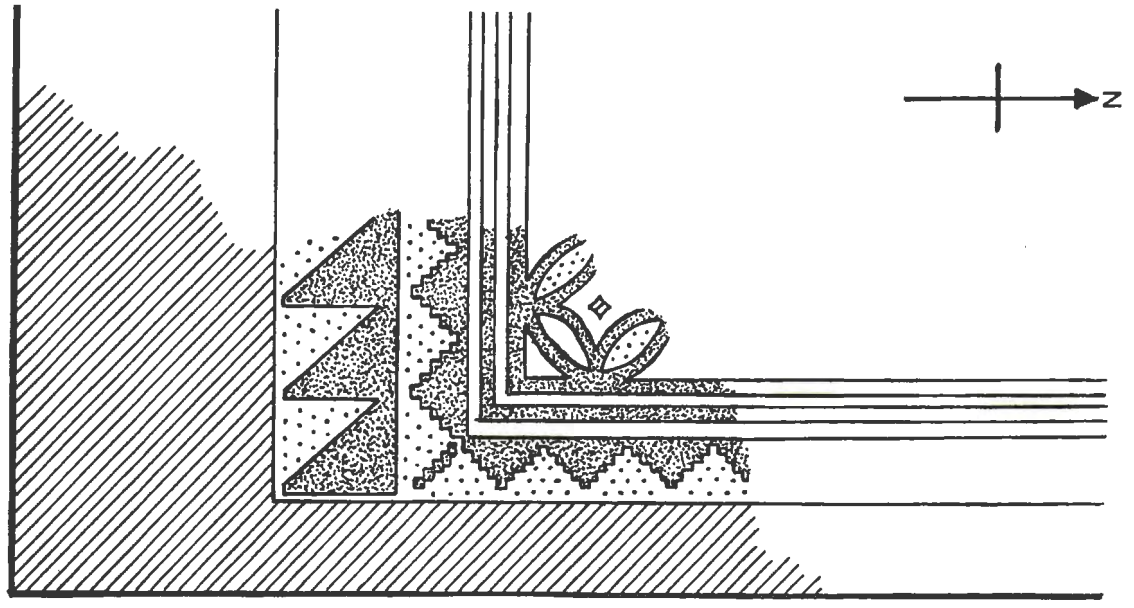

Fig. 14 Mosaic, Room A7.

that the Newton craftsmen were operating under the general influence of the "Corinian Orpheus" *officina*. The Newton mosaics do, however, contain a number of less common motifs of which three, the *pelta* roundels in A5, the intersecting octagons in A9 and the intersecting circle variant in A6, are paralleled in the pavements of an extensive courtyard villa at Wellow, 7km to the south-east. The scheme of the largest Wellow mosaic (Room A), which seems from Haverfield's reconstruction to have consisted of an extraordinary "patchwork" of abstract and figural motifs disposed with little regard to symmetry, was compared by him to the almost equally naive composition of the A2 mosaic at Newton (Haverfield 1906, 313-14, fig. 71). The unusual variant of the intersecting circle motif, with small circles covering the intersections, which is found in the A6 mosaic at Newton and in Room D at Wellow, is also present in the large and elaborate pavement of the triconch at Littlecote, Wilts. The same Littlecote mosaic also includes a panel showing a confronted pair of (?)panthers flanking a central urn against a background of vines; very similar beasts against a vine tendril backing occur at Wellow in the pavements of Rooms A and B (Haverfield 1906, figs. 71, 72).

There would thus appear to be significant, if limited, overlaps of repertoire between the mosaics of Newton St. Loe and Wellow, and also between those of Wellow and Littlecote. While Newton and Wellow assemblages lack good-quality dating evidence, the Littlecote pavement, which is almost certainly the latest in the sequence, can be dated relatively securely to around 360 AD (Walters & Phillips 1980, 7-8). The limited nature of the interrelationships between the three sites suggests the transmission of ideas and personnel between groups of itinerant craftsmen rather than successive commissions of a single workshop. It is, however, possible that the craftsmen responsible for the Newton and Wellow mosaics at least were based for a time at Bath, where building work during the early 4th century around the baths and temple complex, apparently including the construction of several substantial private houses, may well have created significant opportunities for employment (Cunliffe 1986, 42-43). The few fragmentary mosaics so far recorded in central Bath vary considerably in style, and probably cover a wide date-range. Some of the simpler geometric pavements from the town, such as the rather coarsely executed example from the Weymouth House Schools with its borders of meander and stepped triangles (Cunliffe 1969, pl. 83a), could, however, well have been the work of the Newton mosaicists.

The discussion so far has excluded the central panels of the A2 Orpheus mosaic, which require separate and more detailed consideration. From the relatively coarse workmanship of these figured areas it may be assumed that they were executed by the same craftsmen as the rest of the Newton mosaics. The design and draughtsmanship of the figures is, however, of superior quality, suggesting the use of patterns supplied by a more accomplished outside artist. This accomplishment is best seen in the circle of animals surrounding Orpheus, which are vigorously yet gracefully drawn in a fluent, almost calligraphic style which economically conveys both the movement and essential character of each creature. The figure of Orpheus himself is somewhat less successful, the quality of the design being here

more seriously undermined by the mediocrity of the workmen interpreting it; while from a distance the figure is effective and imposing, closer inspection reveals an uncertainty and lack of coherence in the treatment of the limbs and clothing.

It has already been observed that the composition of the Orpheus pavement shows evidence of a substantial modification involving the removal of an animal and three trees. This tends to reinforce the impression that the designer of the figured panels was not directly involved in the laying of the mosaic, since it seems unlikely that such a crude alteration of the composition would have been required had he been present on site. It may be inferred that the executant mosaicists were working from a series of full-size cartoons (possibly intended by the designer for an entirely different location) which they were incapable of scaling down to fit the available space. This apparent reliance on patterns suggests that prefabrication was used to produce the figures. Two possible methods of prefabrication could have been employed. In the simpler of the two the tesserae would have been laid face-up in a bed of sand incised with design-lines; on completion of a figure or panel a sheet of linen would have been glued to its upper surface to enable it to be transported to site. Alternatively, the tesserae could have been glued face-downwards onto a cartoon drawn in mirror-image on linen or parchment. The use of this second, "reverse" process in antiquity has been denied by many mosaic scholars; since, however, it would have facilitated the accurate transmission of a design by craftsmen of limited ability, its employment may be strongly suspected at Newton, where, as we have seen, the figures combine accomplished draughtsmanship with indifferent execution.

The type of Orpheus pavement represented at Newton St. Loe, in which Orpheus occupies a central panel surrounded by one or more bands of animals is (with the exception of a single example from Merida in Spain (Alvarez-Martinez forthcoming)) confined to Britain, where it seems to have been developed during the first quarter of the 4th century AD by the "Corinian Orpheus" *officina*. In the two Orpheus mosaics definitely attributable to this workshop, at Woodchester and Barton Farm, the central figure of the musician, accompanied by a fox, is enclosed by an inner band of birds and an outer one of large quadrupeds, each band moving in the same direction in stately procession; their workmanship is highly competent, special attention being paid to the texturing and patterning of body surfaces. It will be readily apparent that in their composition, style and technique both these Orpheus pavements differ markedly from the Newton St. Loe example. Greater similarities can, however, be found between the Newton mosaic and a third Orpheus pavement from the Cirencester region, at Withington (Black 1986, fig. 3). Here Orpheus is surrounded by a single circle of animals, chasing after one another; the style is livelier and more linear than that of the Woodchester and Barton Farm mosaics while the workmanship, to judge from surviving fragments such as a bear in Bristol City Museum (BRSMG: F 2386), is coarser. As Neal (1981, 122) has observed, the tesserae at Withington, as at Newton, are widely spaced, except in details such as the heads and feet of the animals, which are made up of thin rectangular stones; the latter technique is also employed in the face of the Newton Orpheus. At the same time connections between the designer and craftsmen responsible for the Withington mosaic and the "Corinian Orpheus" mosaicists working at Woodchester and Barton Farm are suggested by the inclusion at Withington of panels of birds alongside the circle of animals, and the comparative care taken over details such as the leopard's spots, shown at Withington as oval patches but indicated in the same figure at Newton merely by a scatter of red tesserae.

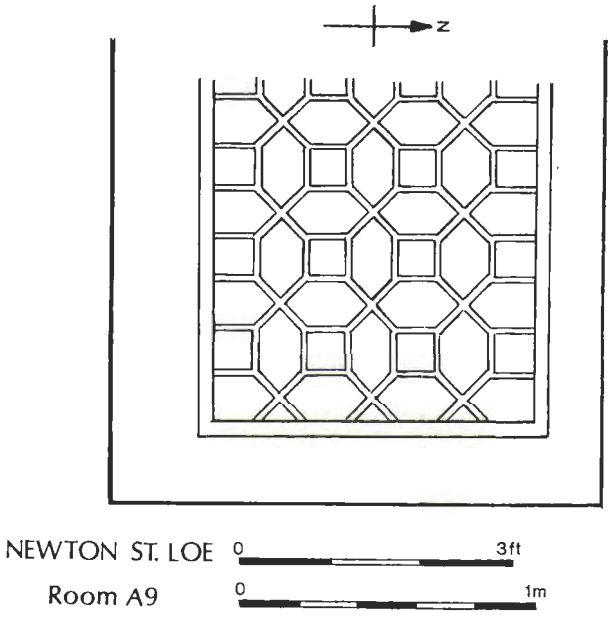

Fig. 15 Mosaic, Room A9. JRR 1991 after TEM Marsh 1837

The Withington mosaic seems to occupy an intermediate position between the Newton Orpheus pavement and those of the "Corinian Orpheus" workshop, which as previously mentioned, are generally thought to date from the first quarter of the 4th century. In his initial assessment of the Corinian "School" Smith (1969, 100) interpreted the Newton St. Loe and Withington pavements as early, immature products of the craftsmen responsible for the "Corinian Orpheus" mosaics, and consequently dated them to the end of the 3rd century. Subsequent commentators, notably Neal (1981, 122) and Cookson (1984, 62-5), have, however, come to the opposite conclusion, seeing the Withington and Newton mosaics as later works by independent workmen and designers influenced to varying degrees by earlier "Cornian Orpheus" models. More recent comments by Smith (1986, 90-91) indicate a move towards acceptance of this viewpoint.

Arguments for a later rather than earlier dating of the Newton Orpheus pavement are strengthened by apparent links between it and the products of the Durnovarian "School", whose constituent *officinae*, operating mainly in present-day Somerset and Dorset, seem to have been active between *c.*330 and 370 AD. Smith (1986, 90) has pointed out that the attitude of the hind at Newton St.

Loe, with its head turned sharply back in fear, is almost identical with that of two of the deer in the important Durnovarian mosaic at Hinton St. Mary, Dorset, probably dateable to around 350 AD (Neal 1981, No. 61). The Hinton St. Mary animals have the same protruding tongues as those at Newton St. Loe, while their general style, though more mannered and angular, shares the same expressiveness, vigour and emphasis on outline. Smith (1983, 324-6; 1986, 90) has also drawn attention to compositional similarities between the Newton St. Loe pavement and a mosaic at Whatley (Somerset). This included a square panel, largely destroyed prior to discovery, in which a zone of animals, in confronted pairs separated by trees, surrounded what was almost certainly a figure of Orpheus. Other sections of the same mosaic depicted aquatic motifs - dolphins, fish and sea-monsters - considered by Smith to be characteristic of the Durnovarian repertoire. In its general layout the probable Orpheus scene at Whatley was almost certainly influenced by that at Newton St. Loe, although the choice of animals (including an elephant and griffin) was different, while the draughtsmanship of the figures and trees seems from the 19th century record to have been decidedly inferior. Numismatic evidence from other parts of the Whatley villa suggests that the mosaic is unlikely to have been laid much later than 350 AD (Stead 1970, 42-44).

In conclusion it may be suggested that the Newton St. Loe Orpheus mosaic occupies a mid-point between the products of the early 4th century "Corinian Orpheus" workshop and those of the somewhat later Durnovarian School. A date for the mosaic within the second quarter of the 4th century would seem likely. The relationship which we have noted between other pavements in the villa and the mosaics of Wellow and Littlecote would appear to be compatible with such a dating.

ICONOGRAPHY

The iconography of the Newton St. Loe Orpheus mosaic is of considerable interest. In most parts of the Roman Empire mosaic depictions of Orpheus almost invariably show the musician playing his lyre to a docile and appreciative audience of birds and animals, all contained within a single panel. This widespread type is illustrated here (fig. 16) by the fine example from Blanzy-les-Fismes near Soissons (Stern 1955) where we see Orpheus, in a bird-haunted arbour, flanked on one side by three herbivores (horse, stag and elephant) and on the other by a corresponding trio of carnivores (boar, bear and leopard). In Britain this type of composition occurs only once, in a poorly executed mosaic at Brading, Isle of Wight (Smith 1983, 316). The other British Orpheus pavements adopt variations of the scheme apparently developed by the "Corinian Orpheus" *officina* in which, as we have seen, birds and animals are separated out from Orpheus into one or more concentric bands. In the Corinian mosaics at Barton Farm and Woodchester only one animal, a fox, remains in immediate association with Orpheus; this companion is also present at Withington and Littlecote, as well as at Newton St. Loe.

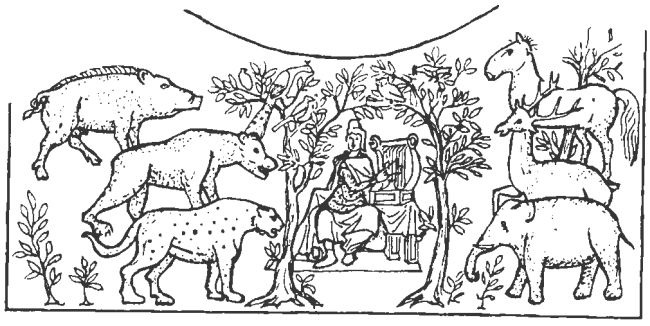

Fig. 16 The Blanzy-les-Fismes mosaic; herbivores and carnivores subdued by Orpheus.

At Barton Farm and Woodchester the relationship between Orpheus and the creatures surrounding him remains clear; circles of birds and animals pace slowly and decorously around him, obviously lulled by his music. At Withington, however, the circling animals are no longer well-behaved but chase after one another with evident signs of tension and aggression. In the Newton mosaic this mood of alienation seems to be heightened further. The Newton hind, looking fearfully backwards, suggests that its designer may have originally intended his animals to run in the same direction, as at Withington. In the event, however, the beasts were, as we have seen, arranged in opposed pairs of herbivore and carnivore, thus rendering the theme of conflict more explicit.

As Jesnick (1989, 10) has demonstrated, Orpheus mosaics form part of a much wider genre in late Roman art in which large assemblages of animals are depicted. In the majority of such scenes animals are shown in situations of conflict and carnage, reflecting the enthusiasm of the age for blood sports and spectacles of all kinds. Thus the animal circle at Withington belongs to a type of stylized hunt scene which enjoyed widespread popularity for several centuries; almost identical depictions occur, for instance, on a series of 6th century buckets of East Mediterranean manufacture (Mango *et al* 1989, 286-305, fig. 5). Similarly, parallels for the confronted animals of Newton St. Loe can be sought in the set-piece amphitheatrical wild-beast fights depicted with gusto on North African mosaics (Jesnick 1990, 8) or on the Rhenish painted glass cups found at Nordrup (Harden 1969, 59, 75, pl. 9E). It may be noted that at Newton (as in most Orpheus mosaics) even the herbivorous animals must be regarded as "wild", being either dangerous, like the bull, or difficult to catch and control, like the stag or hind.

In the conventional type of Orpheus mosaic, where the beasts are charmed and subdued, Orpheus can be seen as equalling, and indeed surpassing, the achievements of the successful huntsman or gladiator, obtaining dominance over the unruly animal kingdom through the divine beauty of his music rather than by physical force, and in the process providing a powerful metaphor for the victory of civili-

sation over barbarism. In the Withington and Newton pavements, however, this triumphant aspect of Orpheus is less readily apparent; while his own image remains unaltered, the animals which encircle him no longer appear to be under his control, and their conflicts continue unchecked. Black (1986, 155) has proposed an elaborate reading of the Withington pavement. He suggests that the "hunt scene" of running animals illustrates the pains and struggles of earthly existence, while the panels of birds which flank it represent repose in paradise. Orpheus is to be regarded as the intermediary of a saviour-god, interpreted by Black as Bacchus on the strength of the wine-cup (*cantharus*) which appears, flanked by peacocks, in one of the side-panels.

While an analysis of this kind can rarely be wholly conclusive, it may nevertheless be justifiably attempted in the case of the Withington mosaic, where the imagery present is rich and diverse. In the case of the Newton pavement the modifications to which the design seems to have been subjected during execution render interpretation more difficult. From the distinctive nature of the limited surviving imagery it may be suspected that the designer intended to create an extended religious allegory along similar lines to that proposed by Black at Withington, but that additional figures and symbols which might have made the pavement's meaning more explicit were excised by the executant mosaicists along with elements of the animal circle. The apparent readiness of the proprietor of the villa to accept the composition in its curtailed form suggests that his interest in its symbolic aspects was limited and that he was content to regard it primarily as decoration, doubtless rendered more rather than less attractive by the connotations of conflict and impending bloodshed contained within it. There is certainly no justification for supposing that the suite of reception rooms within which the mosaic was situated served any ritual purpose, as has been suggested in the case of the rooms containing the Orpheus pavements at Withington, Whatley and Littlecote (Walters 1982).

ACKNOWLEDGEMENTS

The writer is grateful to the Director and staff of Bristol City Museum for allowing access to the Marsh records, and in particular to the former Assistant Curator of Archaeology, Miss Georgina Plowright, for her valuable assistance. He is also grateful to Mr R.G.J. Williams for help in locating biographical information relating to Thomas Marsh, and to Mr S. Bird and Miss D.M. Smith for answering queries regarding the collections of the Bath Literary and Scientific Institution.

APPENDIX CHECKLIST OF RECORDS BY T.E.M. MARSH IN BRISTOL CITY MUSEUM

A - PLANS & DRAWINGS

(Note: The City Museum registration or accession number of each item, with the prefix BRSMG omitted, is given at the end of its description).

CL1 Sketch plan of Building A (Fb 7091)

CL2 Plan of Building A (1:120) (Fb 7102)

CL3 Tracing of CL2, showing in addition positions of well and Building C (Fb 7104)

CL4 Plan and north-south profile of Building A, showing relationship to well and Building B (1:240) (Fb 7103)

CL5 Sketch plans of Building B and south end of Building A, and sketches of mosaics in rooms A1 & A7 (Fb 7093)

CL6 Plan of Building B (1:240) (Fb 7092)

CL7 Drawings of architectural stonework (1:4) (Fb 7101)

CL8 Drawing of pottery "urn", lacking rim (Fb 7087)

CL9 Working drawing of A1 mosaic, showing position of fallen dwarf column overlying it (1:12 approx.) (Fb 7095)

CL10 Finished (but uncoloured) drawing of A1 mosaic (1:12) (Fb 7100)

CL11 Full-size coloured tracing of central panels of A2 mosaic (Reproduced Stanton 1936, pl. 7) (Acc. 8619)

CL12 Early photograph of CL11 (Fb 7112)

CL13 Drawing of central panels of A2 mosaic, not executed by Marsh (Fb 7085)

CL14 Drawing of outer panels of A2 mosaic (Fb 7111)

CL15 Drawing of outer panels of A2 mosaic (Fb 7113)

CL16 Sketches of outer panels of A2 mosaic and A5 mosaic (Fb 7114)

CL17 Measurements of central panels of A2 mosaic on headed notepaper with date 186... (Fb 7110)

CL18 Studies of animals in A2 mosaic (1:6 approx.); rear portion of stag (Fb 7115); bear (Fb 7116); lion & hind (Fb 7117); bull & hound (Fb 7118); leopard & stag (Fb 7119)

CL19 Finished drawing of A2 mosaic (Orpheus panel separate) (1:12) (Fb 7120)

CL20 Watercolour of female bust in threshold panel between A2 & A3 (1:6) (reproduced Stanton 1936, fig. 5) (Fb 7088)

CL21 Working drawing of A3 mosaic, including acanthus scroll in threshold panel between A2 & A3 (1:12) (Fb 7106)

CL22 Finished drawing of A3 mosaic (1:12) (Fb 7108)

CL23 Sketches of parts of A3 and A5 mosaics (Fb 7097)

CL24 Restored drawing of A3 mosaic (1:24) (reproduced Cookson 1984, pl. 40) (Fb 7107)

CL25 Copy of CL24 (Fb 7121)

CL26 Working drawing of A4 mosaic, badly damaged by ink staining (1:12 approx.) (Fb 7096)

CL27 Finished drawing of A5 mosaic (1:12) (Fb 7089)

CL28 Finished drawing of A6 mosaic (1:12) (Fb 7105)

CL29 Diagram of A6 mosaic showing division into panels for removal (Fb 7094)

CL30 Finished drawing of A7 mosaic (1:12) (Fb 7099)

B - NOTEBOOK (BRSMG: Fb 7122)

(Note: only entries relevant to the villa are listed here; other pages contain notes and measurements relating to engineering work on the Great Western Railway during 1837-1838, including (NB95) a sketch of construction work in progress on the GWR tunnels at Brislington).

NB39 Note: "Mon Oct 29 began to remove Roman remains at Newton".

NB40 Notes: "Wed Decr 26th to Saltford & back to Bath ... coach and to see Mr Bell about pavement".
"Dec 28 to Brislington to look for lodgings".
"Dec 31 entered lodgings at Mr Chesworth's; heard from Harvey(?) Bryden that I was to go to Corsham, consequently went back to office in Bath".

NB70 Note: "Dec 18 took on 2 of contrs extra at ½ day to expedite the taking away (of) the pavement".

NB71 Diagram of A6 mosaic showing division into panels from removal.

NB72 Sketch of a horn or iron object.

NB74 Notes: "Dec 20 gave Mr T ... permission to take some of the planks of the shed at R(oman) Villa".
"Dec 26 coach to Saltford & back to office".

NB75 Sketch of part of A1 mosaic.

NB76 Sketch of part of A4 mosaic.
Notes on floors in Building A: "Floors upon the same level (A)1,2,3 paved with tessellae; 6" below (A)4 & 5.
Below (A)6,7,8,9,10; (A)8 & 10 paved with wood,
(A)11 & 12, (A)12 broken up tessellae".

NB77-78 Sketch plan of flue system below A2/A3.

NB79-80 Coloured sketches of outer borders of A2 mosaic.

NB81 Sketch of part of A3 mosaic.
Note: "Dec 24 contractor's men finished carrying pavement to office".

NB82 Rough sketch-plan of part of Building A.

NB83-84 Notes, including: "Nov 7; 2 men ¼ hour tightening bank at Villa, it having fallen & endangered a man's life".
"Nov 10; had 2 of contractor's men ½ day to take pavement to office".
"Nov 14 2 contr's men to take pavement to office ¾ day each".
"Nov 15 at home unwell".
"Mon Dec 3 began again at pavement after return from Monmouthshire".

NB85-86 Details of workmen employed on villa on Oct 30 1837 and other notes, including:
"Tuesday, carpenter came to office and not to the villa as was desired".
"Aldridge sent his bench, Oct 31st".
"Nov 1st Aldridge commenced carp(entry)".
"Nov 6th had 2 men ¼ hour".

NB87 Sketch of part of A3 mosaic.

NB88 Measurements.

NB89 Measured sketch of A7 mosaic.

NB90 Sketch plan of part of Building A.

NB91 Levels along north-south profile through Building A.

NB92-94 Measured sketches of architectural stonework, and hexagonal roof-tile.

NB96 Sketch of A7 mosaic.

NB97-98 Measurements.

ABBREVIATIONS

BAA *Bristol & Avon Archaeology.*
BRSMG Bristol City Museum & Art Gallery.
PBDB *Proceedings of the Bath & District Branch of the Somerset Archaeological & Natural History Society.*
PSANHS *Proceedings of the Somerset Archaeological & Natural History Society.*
RIB *Roman Inscriptions of Britain Vol. 1* ed R.G. Collingwood & R.P. Wright 1985.

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AN EXCAVATION AT BROAD QUAY (WATERGATE), BRISTOL, 1979

Roger Price

SUMMARY

A small section of the east face of the 13th-century town wall was located (N.G.R. ST 5862572745). Associated with this, and probably contemporary with it, was a double-arched structure which gave access through the wall, connecting the river with tenements in Marsh Street, and is interpreted as a watergate.

INTRODUCTION

The heart of the medieval town of Bristol lay on the ridge of high ground between the rivers Avon and Frome and was enclosed by a wall. The course of the Avon remains the same, but originally the Frome ran approximately alongside the line of the present St. Stephen's Avenue/Baldwin Street, to meet the Avon just below Bristol Bridge (Price 1979). Commencing in about the year 1240, the Frome was re routed to its present line, under what is now called the Centre. This made available not only an adequate docking facility for large ships, but allowed intensive development of the formerly marshy ground south of Baldwin Street. This extension to the town was enclosed on the south by the Marsh Wall, which ran from the west bank of the Avon along the line of the north side of the present King Street, turning north just east of the new river, to meet the earlier town wall by the end of St. Stephen's Avenue, near the original line of the Frome.

In 1979 the development work on the Stage II extension to the Bristol and West Building Society's Offices on Broad Quay provided an opportunity to try to locate the second phase town wall, in order to determine its precise line and the nature of its construction.

Prior to this, in 1970, Mr Horace Morris, Site Agent to William Cowlin and Son (the builders of the original office) had located a few metres' length of the east face of the town wall when digging a trench approximately 0.5-1.00m west of the pillars which form the west edge of the Stage I building (N.G.R. ST 5862072775; Figure 1). He recalled that the bottom of the wall was some 4-5m below the modern pavement level, i.e. at approximately 3-4m A.O.D. It rested on huge timber piles, but he could supply no further information. The reasons for identifying this as the town wall are that it was massive in scale and lay on the line traditionally ascribed to the structure.

The contractors' trench for the 1979 development revealed a small stretch of a very wide (at least 2.4m) wall on the same alignment as that observed in 1970 (Figure 2; Wall 1). It was built in the local hard, red Brandon Hill Grit and was bonded in a soft, reddish-brown, sandy mortar which included some lime flecks. This mortar was similar to that found in the portion of the inner circuit of the town wall excavated in Baldwin Street in 1974 and in numerous other medieval buildings in Bristol (Price 1979). Owing to the confines and instability of the trench, the full width and depth of the wall could not be determined, nor could a longer stretch be examined.

Piercing Wall 1 and sloping downward from east to west were Walls 2 and 3 (Figure 2). Wall 2 directly adjoined Wall 1 with no traces of a butt joint. It was built in green Pennant Sandstone and bonded in a soft, orange-brown, sandy mortar which contained quite a lot of lime flecks. It was constructed on Pennant rubble of unknown depth,

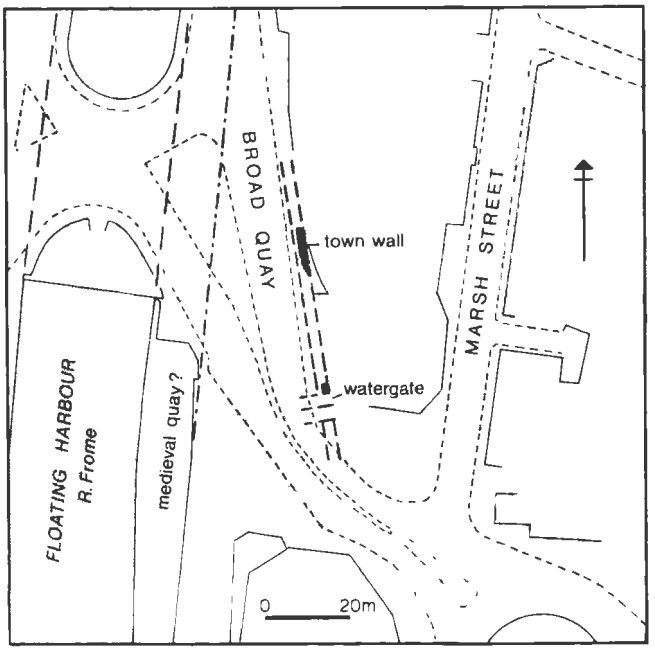

Fig. 1 Site location plan

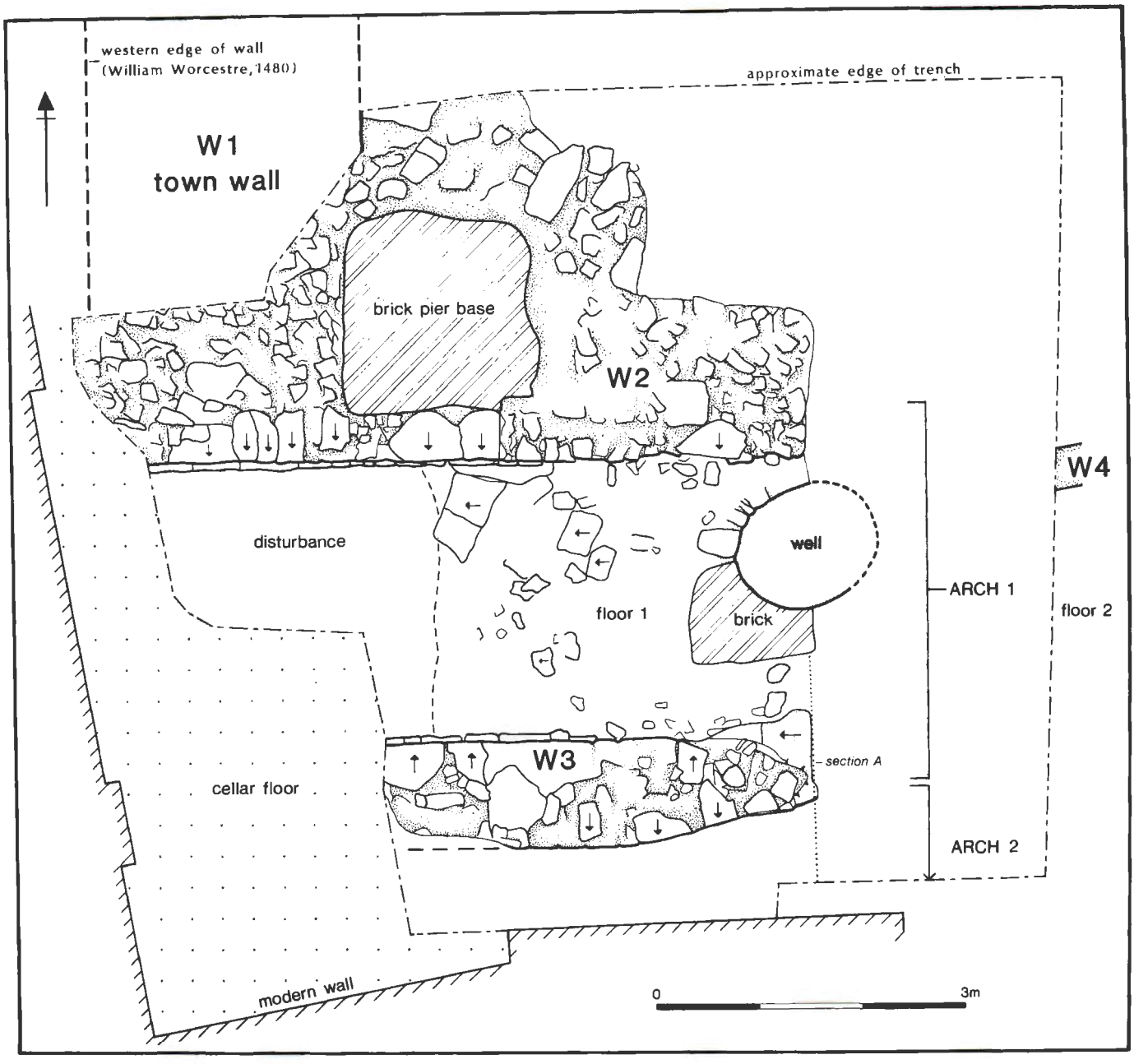

Fig. 2

set in the natural alluvial clay, over which were built properly faced footings varying in depth from 0.05m at the east end to 0.40m at the west. The wall was at least 3.0m thick where it met Wall 1, although further east it was reduced to 1.4m. Although it could not be proven, this narrowing appeared to be part of the original plan rather than a later rob, but the wall face here was very rough. Further east the area had been disturbed where the trench was dug by the excavating machine.

Built on the southernmost footings of the wall was the springer for Arch 1. The south side of the arch had been Wall 3, which was 2.5m from Wall 2.

Wall 3 was built in Pennant Sandstone, as Wall 2, and was bonded in a soft, medium-brown, sandy mortar which contained a few lime flecks. The wall was 1m wide and a test-trench dug by the contractors showed that it was built on rubble to a depth of 1.8m below its footings (Fig. 3). It was set in natural clay, with no sign of timber piling. It formed the springer between two parallel arched tunnels, Arch 1 to the north and Arch 2 to the south. The south wall of Arch 2 was not found.

A staggered section through the arches, cut by the excavating machine, indicated a construction trench for Wall 3 and Arch 1 (Figures 2 and 3, section A). Apparently cutting what was presumed to be natural grey clay, which contained some lumps of yellow clay and wood fragments (1) was a layer of light-brown/blue clay (2). However, there was no opportunity to excavate this gully. Cutting the

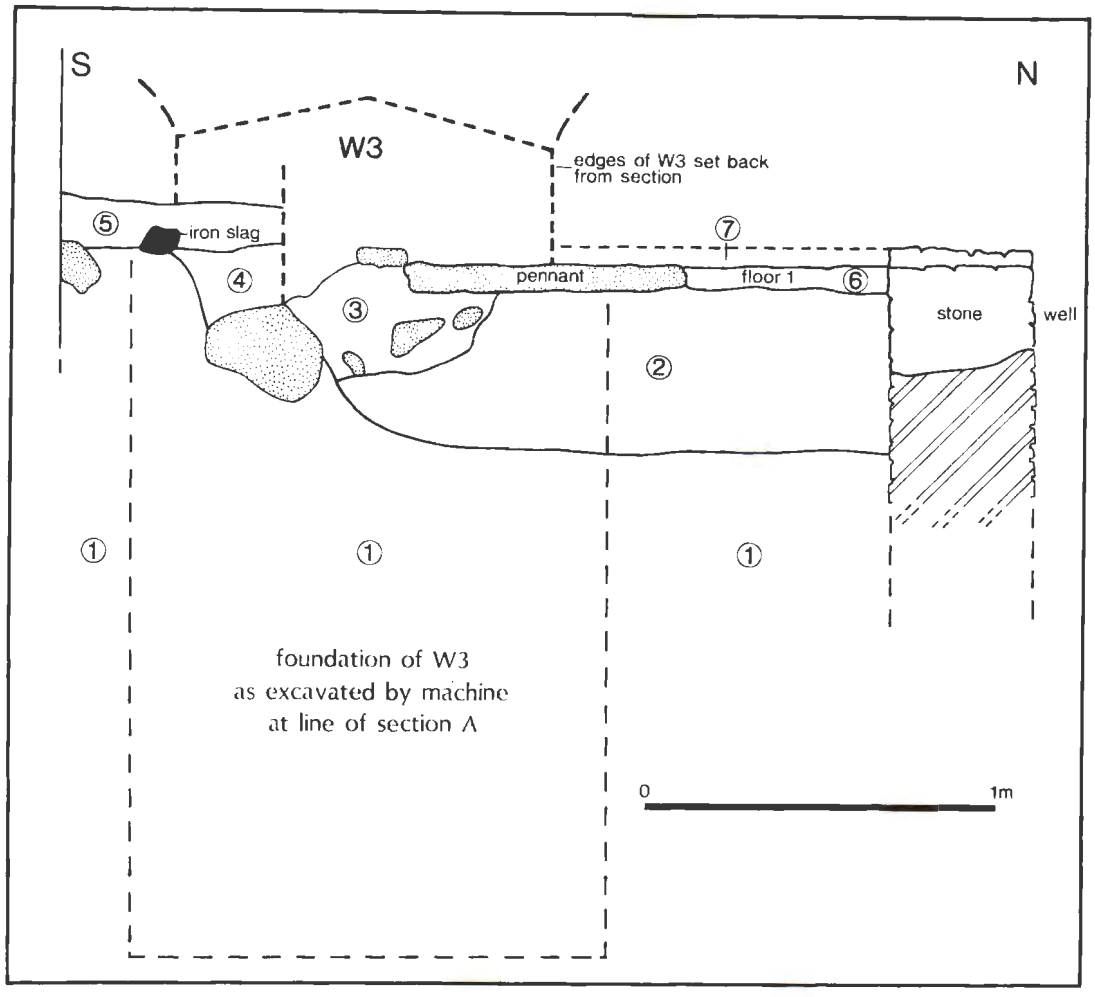

Fig. 3

latter in turn, directly below the wall, was the same orange-brown mortar as used in Wall 2 (layer 4).

The floor of Arch 1 was paved, but much of this had been removed during the development work. The pavement (Floor 1) consisted of Pennant flags of varying size which were laid directly on the light-brown/blue alluvial clay (2) and bonded in the same mortar as that used in Wall 1. The pavement sloped down to the west at an approximate pitch of 1:20, but considerable disturbance both to the east and the west made more accurate estimation impossible. It was laid at the same level as the footings in Walls 2 and 3, the eastern edge being at about 5.4m O.D.

Over the apparent natural grey clay and the green-brown clay back-fill, directly against the south edge of Wall 3, was a deposit of medium-brown clay, 0.15m deep, possibly a result of silting (5).

Wall 3 narrowed at its east end. On the north side one of the Pennant flags of Floor 1 had been positioned as far south as the mid-line of the wall, further than might be expected if it were to be covered by a straight wall-face. This suggests that the curve was part of the original build. However, the curve on the south side of the wall appeared to be a later rob, probably represented by the greenish-brown clay backfill shown in the section (Figure 3, section A, layer 3). This might be taken to imply that the curve on the north was also a later rob. No proper faces were found on either side of this end of the wall, but, as it had been largely destroyed by 19th-century rebuilding work, no definite decision could be made.

If the narrowing of the wall was an original feature, the entrance to the arches would have been approximately at the end of the wall as excavated. Certainly the arch-complex as such did not continue to the east section. Unfortunately, this eastern part of the trench had been dug out by the contractors when no archaeologist was present and the precise eastern boundary remains unknown.

A curious feature of Wall 3 was a roughly circular vertical shaft, 0.2m in diameter and 0.8m from the east end of the wall. The hole was 6m in depth and the wall appeared to have been constructed around it. Its function is in doubt but it was probably the hole for a scaffold-pole; a recent bore hole would have caused damage to the stone-work.

The eastern section of the trench cut by the machine showed Wall 4, which was on the same east-west alignment as Walls 2 and 3, although only 0.2m of its length was

examined. The wall was 0.3m wide, built in the same Brandon Hill Grit as Wall 3, and bonded in a brown, sandy mortar similar to the others described (Figures 2 and 3, section B). The bottom of the wall was found at approximately 5.4m O.D. There appeared to be a construction trench for the wall on its north side, cut into the natural alluvial clay and backfilled with light-brown/grey clay.

Immediately abutting the south face of Wall 4, over the brown/grey clay, was a 0.15m deep layer of black iron slag at 6.1m O.D., Floor 2. This was probably metalling for a pavement. No direct relationship between the Wall 4 complex and the tunnels to the west could be demonstrated, owing to the massive disturbance of the area, but the slag used in the floor was similar to the fragment found south of Wall 3. If the metalled pavement was an entrance to the arch complex, the slope down would here have been approximately 1 in 3, much steeper than the flagged floor to the west.

All the medieval structures described had been badly disturbed by 19th-century cellaring and by a well with an internal diameter of 1.1m and of unknown depth.

DISCUSSION

There is little doubt that Wall 1 was the town wall. First, despite the lack of positive proof for its date, the wall was built with materials typically in use during the medieval period. Second, it lay on the line ascribed to the wall from documentary evidence (Lobel and Carus-Wilson 1975, Map 2). This was the same alignment as the section of what was almost certainly the town wall discovered in 1970. Third, although only a very small portion of the wall could be examined, it was clear that it was built on a massive scale and was at least 2.4m thick.

William Worcestre, writing in *c.*1480, records that the town wall on the Quay was some 8ft (2.4m) thick and approximately 40ft (12m) high (Dallaway 1834, 41). This thickness is in reasonable accordance with the remains of Wall 1.

Precisely when the town wall was built along the Quay is uncertain and doubtless it took a number of years to complete it. Work probably commenced soon after the diversion of the Frome was finished and it was presumably for this purpose that grants of murage were made in 1255 and 1261 (Harding 1930, 31 and 41; Price 1979, 21). It is likely, too, that the actual Quay itself was built at the same time as the wall.

The two-arched structure was of particular interest. Although it could not be proven that Arches 1 and 2 were contemporary with the town wall, this seems likely. The difference in the mortars could be a result of using a different mix on the day. At their apices the arches were probably some 2m high. There is less evidence for Arch 2, but there is no reason to suppose that it was different in size. It is assumed that the arches would have been built with fairly low profiles in order to continue below the road level on the Quay outside.

The width of the Quay at this point is uncertain, but it was probably less than recently because of the tendency to build outwards when repair or restructuring took place. The hypothetical line of the Quay edge shown in Figure 1 is based on results from an excavation of the 17th-century Aldworth's Dock, some 100m to the south of the present site, and on documentary evidence relating to the construction of the dock (Good, 1987).

The width in the medieval period was probably similar to that in the 17th century. If so, the distance from the river edge to the town wall would have been some 37m. Using this measurement, and extrapolating Floor 1 from the excavated site to the river at the slope of 1:20, the tunnels would have met the river at approximately 3.7m O.D. This level is of significance in relation to the possible function of the tunnels, although they may well have changed in slope further west and come out an entirely different height.

The principal feature of the river was the huge tidal reach. At low tide ships lay on the mud (called by William Worcestre 'le woose'), their timbers straining, to be floated at high tide (Dallaway 1834, 40).

The rivers in central Bristol are at present locked at some 6.2m O.D. and the effect of the tidal force is now lost. There is no reason to suppose that the height of mean high water in the medieval period was any different from that which it would be today, were it not locked. This is estimated to be approximately 5.4m O.D. (information supplied by the Port of Bristol Authority). The present excavation revealed natural alluvial clay at 6.4m O.D., which is a minimum height that the river must have reached on occasions. This is the order of the height of the alluvial clay revealed on a number of excavations in various parts of Bristol carried out by the City of Bristol Museum during the last twenty years or so.

The present mean low-water mark is now -4.75m O.D., giving a tidal-reach of a little over 10m (information from Port of Bristol Authority).

The east end of Floor 1 was found at 5.4m O.D., the same level as the theoretical high-tide mark, and would therefore have filled with water unless blocked off. The metalled pavement, Floor 2, was at 6.2m O.D.

If the estimated height of Floor 1 at the Quay edge is correct, it would have been some 8.5m above low-water mark, but this relationship is entirely conjecture.

It remains to speculate on the function of the tunnels. It is just possible that they served as common sewers for the whole of, or much of, the thickly populated Marsh Street area, but their sheer size makes this improbable. It seems more likely that they provided direct access between the river and the inside of the town wall.

No positive evidence for any function has yet been found amongst documentary sources. Writing about this part of the Quay, William Worcestre notes that in the 15th century ships were built there. Trees and ships' masts lay about the great space on the quayside below which were several cellars (Dallaway 1834, 40). A particularly large vessel had been built there for John Burton, one of the leading Bristol merchants of the first half of the 15th century who died in 1455 (Dallaway 1834, 140; Wadley

1886, 136). It is probable that shipbuilding had gone on there from the earliest days after the diversion of the Frome, and would presumably have required a dry-dock. The tunnels may have provided direct access to any such complex.

Alternatively, they may have been open to the river so that lighters could be floated in to unload directly within the town wall. If so, they would have been of restricted use as they could be employed in this way only when water was neither too low nor too high. It may be that towards the quay edge the tunnels were not arched over and functioned as a slipway whereby ships could be unloaded at low-water and goods brought up through the town wall on sleds. The story has become more complex since this excavation was conducted but there is now clear evidence for the construction of similar but single 'slipways' on the Redcliffe waterfront. The Broad Quay structure differs by being associated with an *official* structure, the town wall and therefore for corporate use (Ponsford 1981, Jones 1991).

Whichever of these, if any, is true, the tunnels seem to have functioned as a watergate and remain the only example of such an arrangement so far found outside the elaborate structures documented at Bristol Castle (Ponsford 1980).

FINDS

Five sherds of pottery and a strip of leather were found when clearing the area south of Wall 3. The material was all of 12th 13th century date. Details may be found in the archive and are accessioned as BRSMG: 138/1980.

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SOME ASPECTS OF THE DEVELOPMENT OF THE REDCLIFFE WATERFRONT IN THE LIGHT OF EXCAVATION AT DUNDAS WHARF

G.L. Good

First, as the fountain of thy future wealth,
The nurse of thy advancement, let us view
Thy well-adapted Harbour. Note the Port
By nature form'd to suit th'expansive views
Of wide-extended commerce, and by art
Still render'd more commodious.

Anon 1833, 16

SUMMARY

This report forms an interim statement on the excavation carried out at Dundas Wharf, Bristol, during 1982-3 under the direction of the writer. The development of the Redcliffe waterfront is discussed, particularly with regard to the construction of the early quays. The riverside industries of tanning and dyeing in the medieval period are also examined.

HISTORICAL INTRODUCTION

The archaeology of Bristol's medieval suburb of Redcliffe was the subject of intense study during the 1980s, with a number of excavations being carried out there under the direction of the staff of the City of Bristol Museum and Art Gallery (Fig. 1). The excavation at Dundas Wharf lay alongside the Floating Harbour, formerly the River Avon, near the north end of Redcliffe Street (Fig. 2), in a part of Redcliffe separated out as a parish in its own right when the church of St. Thomas the Martyr was founded in the late 12th century. Here, as at several other sites, particular attention was paid to the development of the waterfront, since the quays at Redcliffe played an important part in the history of Bristol as a port.

The origins of Bristol may still be obscure, but it was undoubtedly its position as a port which accounted for its rise to prominence towards the end of the Saxon period. Whether it was first founded by the Saxons or the Vikings, it was as a point of contact between these peoples that Bristol's early importance lay. As a well-protected west-coast port, with easy access inland, Bristol was ideally situated as the centre of trade with the Viking ports on the Atlantic coast, and particularly with the important ports of Dublin, Waterford and Limerick on the coast of Ireland. Trade was the source of Bristol's early prosperity and the main reason for its growth and continued importance throughout most of its history (Cronne 1946, 15-19; Sherborne 1965, 1-3; Lobel & Carus-Wilson 1975, 1-3).

After the Norman Conquest, trade was extended to the Atlantic coast of France, especially to the ports of the south-west, as Bristol became a major centre for the importation of wine. Commercial activity continued to increase with the growth of the cloth trade in the 14th century, and the export of finished cloths became even more important in Bristol's economy than the trade in wine. The ports of Spain and Portugal now also began to increase their share of trade with Bristol, but ships from Ireland remained the most common sight at the Bristol quayside throughout the Middle Ages (Sherborne, 7-12, 23-25).

According to William Worcestre writing in the 15th century, Bristol's earliest quays were located on the River Avon alongside Worship Street (Dallaway 1834, 60, 124), just above Bristol Bridge (Fig. 1), though there is some dispute as to whether the bridge which gave the town its name was in the same position. It is perhaps more likely that the original bridge lay further upstream on a line between Dolphin Street and Temple Street, and the siting of the early quays by Worship Street lends support to this argument. At this time, too, the River Frome joined the Avon just below the position of the modern bridge, and this left little room for expansion of the port southwards as the volume of trade increased.

The natural solution to this problem was to build quays along the opposite bank of the River Avon and this led to the development of a flourishing community to the south of the river. Further down this bank of the river, on the gravel terrace below Redcliffe Hill, there may already have been some facilities for loading and unloading vessels, serving the manor of Bedminster. The presence of some settlement around a small port such as this might explain the location of the church of St. Mary Redcliffe, in a position which was later to be left outside the city walls. It was not long before the whole of this bank of the river was built up with quays as trade continued to expand and the wealthy merchants began to settle in the area.

During the 13th century the volume of trade became so

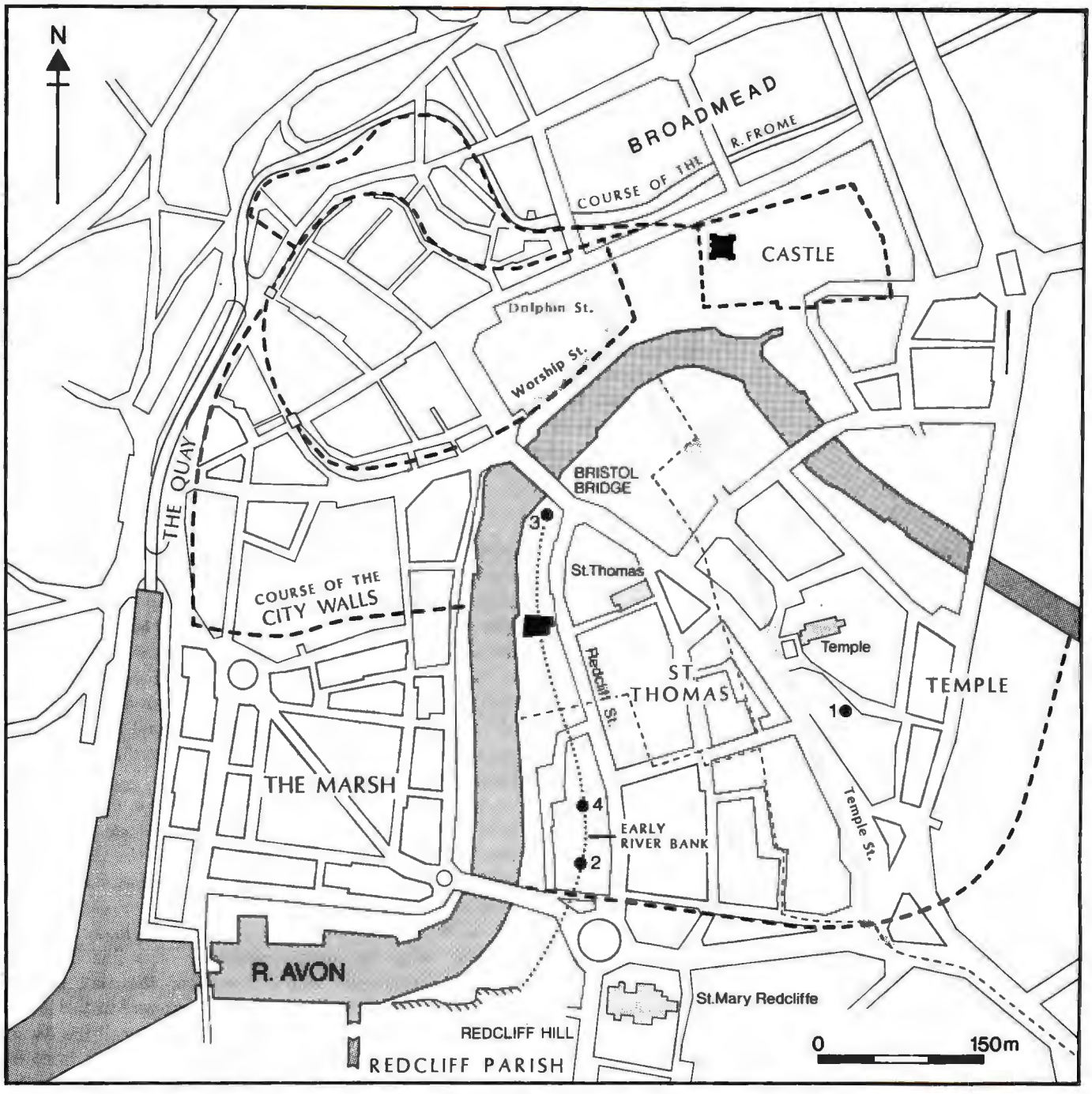

Fig. 1. Plan of Bristol showing the location of Dundas Wharf and other sites mentioned in the text.

great that in the 1240s a huge engineering project was undertaken to improve the port's facilities. This involved the diversion of the River Frome to a new course across St. Augustine's Marsh, and the building alongside of a new quay ("the Quay") which was better equipped to handle the larger ships now using the port (Harding 1930, 18-19; Veale 1933, 89-90; Cronne 1946, 37-39). It is likely that the original Saxon quays went out of use when, as part of the same project, a new stone bridge was built over the Avon in the same place as the modern bridge. However, smaller vessels continued to use the quays below the bridge, and these became known as the "Backs" and handled mainly coastal and river traffic.

THE EARLY WATERFRONT

The early river bank at Dundas Wharf ran north-south across the middle of the site some 20-25m from Redcliffe Street and 25-30m from the present riverfront. Here the clay of the bank dropped away to the west where the river had scoured out its channel through the alluvium. Other

Fig. 2. Redcliffe Street and the Floating Harbour (River Avon) with the site at Dundas Wharf in the foreground. Photographed from the top of the Robinson Building at the north end of Redcliffe Street.

excavations have also exposed the early river bank (Williams 1981, 12; Jones 1986, 7), and it has been shown that it was originally much closer to Redcliffe Street, which was probably laid out roughly parallel to its line (Fig. 1).

The earliest way of stabilizing the river bank appears to have been by the use of wattle-work revetments. This would seem to be a fairly usual first step in the creation of facilities for loading and unloading vessels at the riverside (cf Exeter - Henderson *et al* 1987, 4-6, and Henderson 1991, 125; Norwich - Ayers 1985, 50-1), and was probably only ever regarded as a temporary measure prior to the erection of proper quays. Only fragmentary evidence for such a revetment survived at Dundas Wharf over the northern part of the bank early in the 12th century, but similar hurdling has been found elsewhere on the Redcliffe waterfront (Jones 1986, 7-9; Williams 1982, 12), and it probably occurred in large stretches along the water's edge, if not for the full length of the Redcliffe bank.

During the second quarter of the 12th century the first of a succession of stone quays was erected, providing a more permanent consolidation of the riverfront which could stand up to the steadily increasing volume of trade being undertaken at the quayside.

An important consideration which had to be taken into account by those responsible for the building of the quays was the extreme range of tides in the River Avon. Although Bristol is several miles inland from the mouth of the river at the Severn Estuary, and at low tide the river is little more than a muddy stream, when the tide comes in the level of water can rise by several metres. In the Middle Ages this led to the adoption of special arrangements in some parts of the waterfront in order to maximize efficiency in discharging and loading cargoes at the quayside. In front of the main quay a terrace was built which may have acted as a platform on which a ship could rest when the tide ebbed. The vessel would have been secured to the quayside to prevent it from falling over, and loading and unloading could then continue between tides so that it could be ready to sail at the next high water. Evidence for this type of arrangement has also been uncovered at Hull (Ayers 1979, 18-21). The picture at Bristol, however, is complicated by the large variation in high water at spring and neap tides. At neap tides there would be insufficient depth of water to enable a ship to reach the quayside, and at such times the platform itself would serve as a quay.

The earliest of these double quays uncovered at Dundas Wharf was represented by the walls W80 and W89 (Figs. 3 and 4). Lying horizontally in front of the upper wall were two massive timbers held in position by small posts and stakes, F176. They had mortice holes cut into the top faces to receive upright timbers, and were the base plates probably of a loading platform built against the quay wall. It is

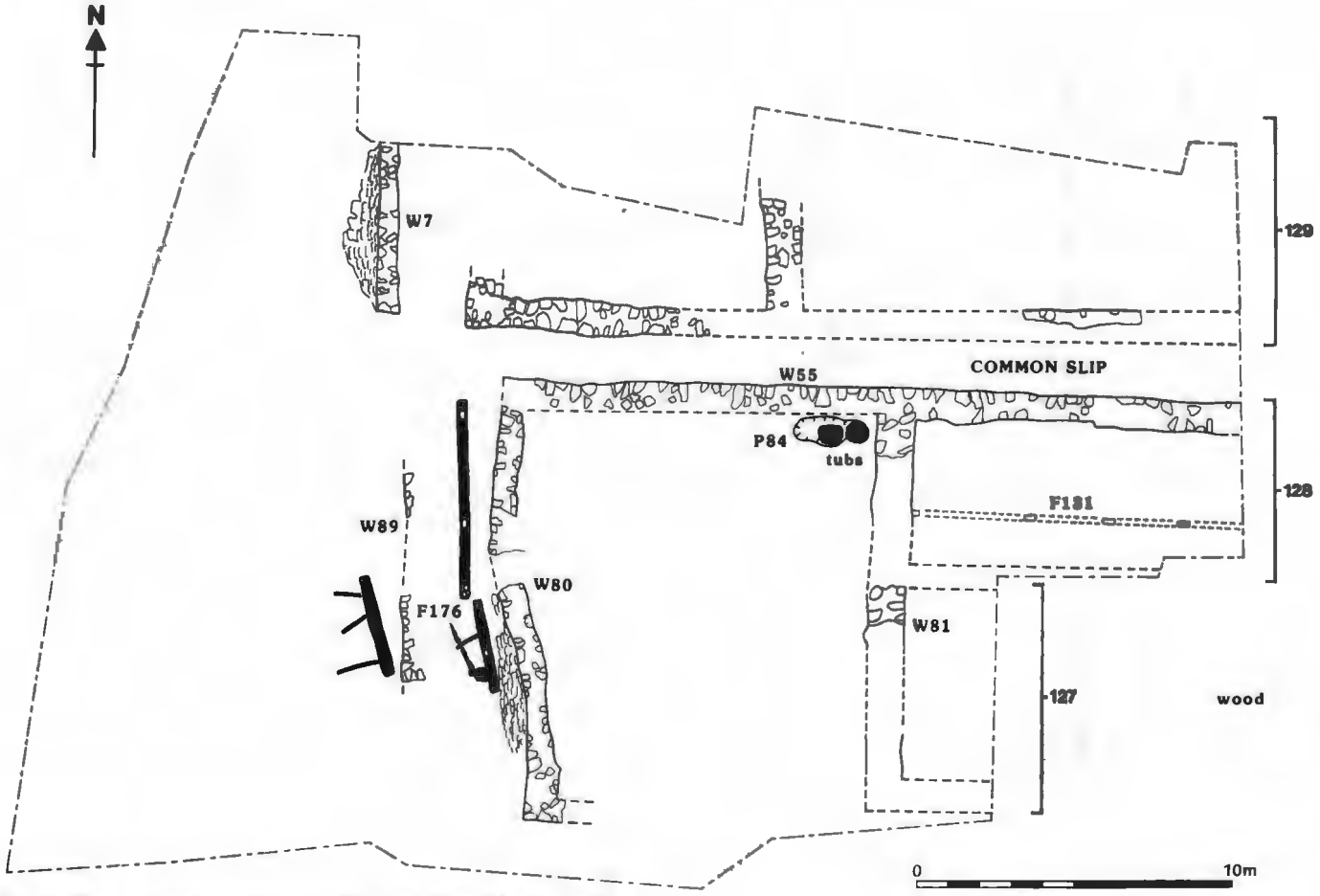

Fig. 3. Plan of the waterfront at Dundas Wharf in the mid to late 12th century.

Fig. 4. The walls of the earliest double quays with the timber base plates of the wooden platform and stairway.

very likely that the structure also held a stairway, providing access between the two quay levels. Such stairs seem to have been a common feature of the Thames waterfront in London (Milne & Milne 1982, 43-6).

Dendrochronological analysis was carried out on some of the timbers from this feature and this showed that the trees used to make the structure were felled in 1147 (Nicholson & Hillam 1987, 141 and table 1). Since several of the samples analysed gave the same felling date, it is likely that the platform was built soon after this, with no time being allowed for the wood to season. The use of green wood was common practice in the Middle Ages, though there would be no need in any case to use seasoned wood in a structure which would regularly be immersed in water.

When the first stone quays were replaced later in the century by another similar arrangement of riverfront walls, W37 and W73 (Fig. 5), part of the wooden platform was incorporated in situ into a box-like structure, F36, of upright and horizontal beams with plank shuttering at the sides, set into the upper quay (Fig. 6). Dendrochronological analysis on some of the other timbers of this feature suggests that these too may have been reused from the platform. Such reuse of timbers appears to have been common practice on the London waterfront (Milne & Milne 1982, 53), and it was probably an equally regular occurrence here. It is not at all clear what function this structure served, but there are two possible interpretations which could fit the archaeological evidence. The feature was initially interpreted as a fish-trap into which fish might be attracted at high tide by the use of bait and left stranded when the tide receded. As such, however, it would only work at spring tides, though it could serve as a pool keeping fish fresh at other times. An alternative consideration is that it was a cess-pit which served a latrine at the side of the quay and which would be flushed out by the action of spring tides. There were the remains of what may have been a removable shutter, which would generally have been left in to help retain any offensive smells, and so reduce any unpleasantness for those working on the lower quay when the tide was out. This could then have been removed as required for cleaning out. There was no evidence, though, for any cessy material in the fill or even a staining of the clay at the bottom which might be expected if the contents were cleaned out so infrequently.

Vehicular access to the lower quay was gained by way of a narrow cobbled lane, known as the "Common Slip", leading from Redcliffe Street (Fig. 7). Observations on other development sites along the Redcliffe waterfront suggest

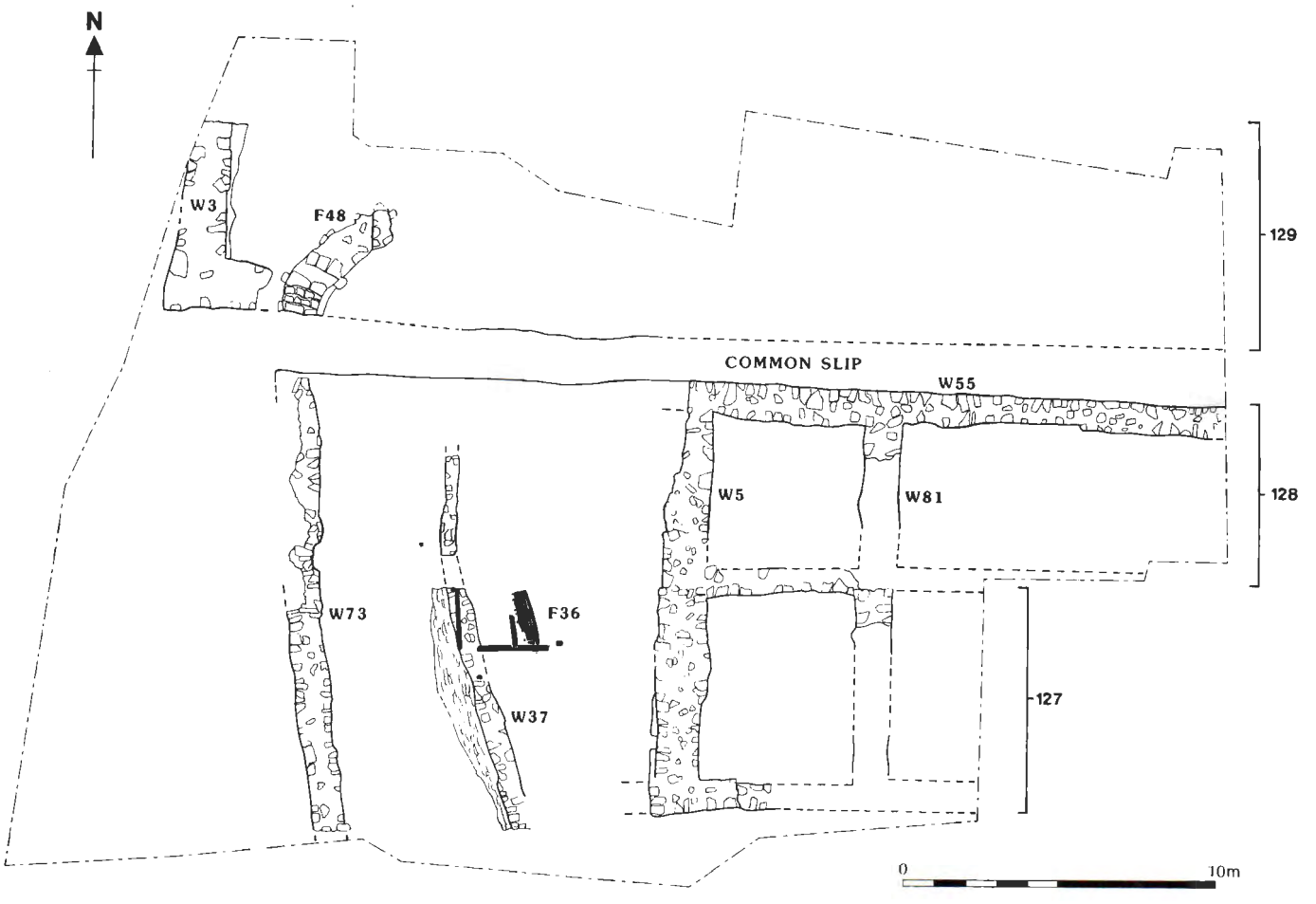

Fig. 5. Plan of the waterfront at Dundas Wharf in the 13th century.

Fig. 6. Possible fish-trap or latrine pit on the 13th century quay (not fully excavated). The wall on the left is a later intrusion.

that similar slips provided access to the river's edge at frequent intervals along Redcliffe Street in the medieval period. At the Canynge's House site a stepped slip provided a private access to the waterside, possibly shared by two adjacent properties (Jones 1986, 10-11). There was no evidence for a lower quay there, but instead a stone jetty projected out into the river. It is thought that the Canynge's House slip may have been used to moor small boats, but, whereas this may have been true for private slips, it is unlikely to have been permitted at one which provided general public access from the street unless it was much wider than that at Dundas Wharf. The Common Slip was gradually extended to serve a succession of quays as they were rebuilt further out into the river. During the 16th century it was covered by an arch (Fig. 8), and the buildings of this period carried across its line, but it still continued to provide access to the river at low tides.

QUAY CONSTRUCTION

One of the most notable features of the early quays at Redcliffe when they are compared with quays at other major English ports is the use of stone rather than timber in their construction. How much this is due to the ready availability of building stone or is simply a reflection of the wealth of the city is not fully clear. Certainly by the 13th century Bristol was among England's leading cities, and the communities to the south of the Avon were no less prosperous as is shown by levies imposed by King John in 1210, to which both Bristol and Redcliffe contributed 1000 marks, twice as much as the city of Gloucester (Pipe Roll Soc XXIV, 143-144). Their wealth is further demonstrated by the enormously expensive undertakings of the middle of the century to improve the port.

Good building stone was easily obtained in the area around the city, and easily transported by river. The main building stone generally in use in the Norman period in Bristol was Brandon Hill Grit, a hard quartzitic sandstone of the Millstone Grit Series occurring principally at Brandon Hill on the north side of the River Avon just west of the city. The earliest quay walls at Dundas Wharf, however, were built predominantly of Carboniferous Limestone, which occurs a little further down the river in the cliffs of the Avon Gorge and on Durdham Down to the north. Later extensions of the quays contained more of a mixture of stone, but were constructed mainly of Pennant Sandstone, which by the second half of the 12th century was becoming the most commonly used building stone in Bristol. There are numerous outcrops of Pennant where the belt of the Coal Measures runs north-south across the ancient royal forest of Kingswood to the east of Bristol,

and the main source in the medieval period would have been where the Avon crosses this band a few miles upriver from the city, or along the valley of the Frome which runs along its western edge. From here there would have been no difficulty in transporting the stone down the river in barges.

It is perhaps surprising that Pennant was not in use much earlier, since, as well as being freely available, it is extremely useful as a general building stone. Because it laminates readily, it is very easily extracted and worked, much more so than Brandon Hill Grit, which is too hard for easy working. Its lack of use for general building purposes may have been limited by the number of licences granted by the king for its extraction, and until at least the end of the 13th century it would appear that it was being quarried mainly for use as roofing slate (Sharp 1982, 1ii). The foundations of the keep of Bristol Castle (probably built *c* 1125) are of Pennant (Marshall 1951, 14), undoubtedly because it made economic sense to construct a royal fortress using stone whose source lay within the bounds of the royal forest (though it would appear that expensive stone imported from Caen, in Normandy, was also used in its construction (Allen Brown *et al* 1963, 578)), and it is likely that this marks the first major use of the stone for general building.

Fig. 7. The Common Slip from the west with side entrance to tenement 129.

Fig. 8. The Common Slip from the east, showing the arch built across it in the 16th century.

Elsewhere in England at this time most quays were of wood - even in London stone does not seem to be used on the waterfront until later in the 12th century, and it was not in common use until the 14th or 15th century (Allen Brown *et al* 1963, 493; Milne 1981, 33; Milne & Milne 1982, 40-42). The Bristol quays must have been among the earliest, if not actually themselves the earliest, medieval

stone quays in the country, though there were stone quays in cities such as Gloucester and Lincoln in the Roman period (Heighway & Garrod 1981, 124; Chitwood 1991, 169), but it is unlikely that any of these would have survived into the Middle Ages.

Although the use of stone is undoubtedly an indication of the wealth of Bristol, because of the ready availability of stone it is not as strong an indicator as in an area where building stone was not so easily come by and therefore much more expensive. This was probably a major factor in the use of timber in the early quays at London. Timber too was easily obtained and transported in the Bristol area, and was probably much cheaper than stone, but it is clear that the extra expense incurred in using stone was not too great here to be prohibitive, at least to the wealthy merchants responsible for the building of the quays. They obviously considered that the superior strength provided by the stone was worth the additional outlay, particularly as strong quays were necessary to stand up the power of the tidal regime in the River Avon.

There was some evidence that timber was used for revetments in the medieval period from the site just south of Bristol Bridge c 100m upriver from Dundas Wharf (Williams 1982, 12), but this was very much an exception rather than the norm at this time. It is likely that the embankment around the "Marsh", too, was at least partially revetted using timber, but there were no proper quays here until much later. During the Middle Ages shipbuilding was carried out behind the embankment alongside the River Frome, and this was then broken open to allow the ships to be launched (Dallaway 1834, 40; Farr 1977, iv; Good 1987, 26-34). In places the embankment was used for wharfage, and here it was probably more solidly revetted in timber. One such place was "ye Wood Key" shown on Millerd's map of 1673, though the name probably refers to its use for the unloading of timber rather than to its method of construction.

During the second half of the 17th century the town's main, stone-built quay on the River Frome was gradually extended southwards (McGrath 1952, 140-143, 149-153), and the shipbuilding industry was transferred to docks further downriver. The Society of Merchant Venturers, who were responsible for the upkeep of the docks, put forward several reasons for the need to extend the quay at this time. Apart from providing additional wharfage, the main reason given was that efficiency at the quayside was suffering because there was insufficient depth of water to enable ships to approach the quay at neap tides, and this could be improved by lengthening the quay down the river where there was a greater depth of water. This situation was probably partially due to the build-up of silt against the quays, as well as to the increase in size, and therefore in draught, of vessels since the port improvements of the 13th century. Whatever the reasons, it is clear that the great tidal range was once again causing difficulties, and perhaps suggests that the double quay arrangements used earlier on the River Avon may not have been adopted when the Quay was built on the recut channel of the Frome.

CONSTRUCTION METHODS

At Dundas Wharf the material which had accumulated behind the quay walls provided evidence of their method of construction. These deposits consisted of mainly organic layers, often containing domestic or industrial refuse, interspersed with lenses and spreads of clay and silt. Although construction was presumably carried out mainly at neap tides when work was possible at any time without interference from the water, it is clear from the deposition of the clay layers that, during their construction, water did flow over the walls at spring tides. At these times the work presumably continued at low tide, at least during the day, and the site was abandoned when the tide came in. When the water receded deposits of clay and silt were left behind. It is likely too that much of the lighter rubbish which was dumped as makeup behind the walls as the work progressed was washed out with the ebbing tide. The rubbish layers also often showed signs of disturbance and resettling, since clay particles were intermixed with the debris.

It was not always possible to tell, because of slumping or collapse, but some of the quay walls appeared to have been deliberately battered for stability and resistance to tidal forces. Many of the walls of the quayside buildings too, where these had been built over reclaimed land, showed structural features which demonstrated that account had been taken of the instability of the underlying, soft, waterlogged soil. A number of the walls were founded on wooden piles consisting of circular stakes, generally around 8 to 10cms in diameter and up to about 1m long, which had been driven into the loose soil (Fig. 9). These would have helped to consolidate the soil and provide a more stable base upon which the walls could be erected. In order to distribute the load of the structure, construction arches were sometimes incorporated into the wall foundations (Fig. 10). These diverted pressure from the superstructure, localizing it in areas which were piled for greater stability. There was also evidence to suggest that some of the walls had been deliberately lined with clay in an attempt to keep water out as much as possible.

Fig. 9. Wooden piles driven into the soil beneath a wall line to consolidate it prior to building.

Fig. 10. A construction arch built into the foundations of one of the walls of a quayside building.

REASONS FOR RECLAMATION

The reasons for advancing the quays into the river are complex, and a combination of factors must have been taken into account in making the decision. Several of the quay walls at Dundas Wharf show signs of slumping, and some had collapsed completely, so that the necessity of repair work would have been an important factor. The build-up of silt against the quays must also have been a consideration. The main economic advantage of reclamation, namely the gaining of additional land for warehouses and wharfage, must have been largely offset by the enormous expense of building new quays. It is likely that in many cases less expensive factors such as the need to carry out repairs and the cost of clearance of sediment tipped the scales economically and acted as triggers for the major investment of quay extension.

Further south along the riverside the economics were somewhat different. Here, because of the comparatively shallow slope of the river bottom and because the river was much wider, the quays could encroach further into the river and a much larger area of land could be reclaimed for a similar cost, so that it was not necessary to wait for these additional factors to make the investment worthwhile. This is comparable with the situation in London, where, although much of the reclamation was primarily to maintain a sound frontage, there were a number of instances where apparently serviceable quays were buried in the rush to gain more land (Milne 1981, 36; Egan 1991, 12).

MEDIEVAL WATER LEVELS

An important element in any discussion of the waterfront is the comparison of the present day water level with that of the period under consideration. It is not always easy to determine past water levels and the methods adopted vary from site to site.

A factor normally considered to be a good indication of the mean high water mark at neap tides (MHWN) is the position at which timbers at the quayside rot, this being the place at which the timbers are subjected to the greatest stress as the wood contracts and expands as it dries out to varying degrees with the fluctuation in water level. This type of evidence has been used to great effect in determining the level of the tides in medieval times in London (Milne & Milne 1982, 60-62), but in Bristol there are few timber structures on the waterfront which can furnish this kind of evidence. The stairway at Dundas Wharf was entirely above MHWN, so that the stresses of expansion and contraction were more uniform as the whole structure was generally subjected to long periods of drying out during neap tides. An equivalent point of maximum stress for this structure might be the level of the mean high water mark at

spring tides (MHWS), since above this the timber would be almost permanently dry, but below would still be fairly regularly immersed. This height, however, is likely to be above the level of the water table, so that the waterlogged conditions necessary for the survival of wood to the present day would not be maintained. These timbers, therefore, will probably have rotted away by natural means to below MHWS, and the height of the surviving structure cannot be relied upon except as a likely minimum possible height for MHWS.

The most relevant indicator of water levels on sites so far excavated in the Redcliffe area is the level of the top of the tidal deposits, since the maximum height to which these will accumulate gives a rough indication of MHWS. The highest medieval tidal deposits of clay at Dundas Wharf occurred at about 6.4m above O.D., which is 0.5m lower than modern MHWS, as given by Arrowsmith's Bristol Channel Tide Table, for the Cumberland Basin c 2km downriver. When the distance separating these points on the river is taken into account, along with the amount of compaction of the sediments which is likely to have occurred, it can be seen that there was probably very little difference between water levels in medieval and modern times. This suggests that MHWN in the medieval period was also at much the same level as today, i.e. slightly lower than the present level at the Cumberland Basin of 3.6m above O.D., and probably a little over 0.5m below the level of the lower platform of the earliest quay.

WATERFRONT BUILDINGS AND TENEMENT DEVELOPMENT

A number of pits and post-holes cut into the lowest levels above the marsh alluvium indicated the presence of timber buildings associated with the earliest quays. It was not possible to identify any complete buildings, and there was insufficient evidence to give a clear picture of their size or nature, but the number of large post-holes indicated that there must have been some fairly substantial structures. Some of the post-holes may have been associated with quayside structures other than buildings such as cranes and other installations linked to waterfront activities.

It was probably while the earliest double quays were still in use that the first major buildings on stone foundations were erected, though traces of walling indicated that there had been some use of stone prior to this. These structures were laid out in tenement plots whose boundaries remained in the same position until the 20th century. The main part of the excavation area lay across three of these tenements, which were later numbered, from south to north, as 127, 128 and 129 Redcliffe Street, though small parts of nos. 126 and 130 were also excavated.

Because of the destruction caused by late cellarage, little information could be gained about tenement no. 129, but the surviving stratigraphy within nos. 127 and 128 furnished considerable information on the development and use of the buildings occupying these tenements.

It is likely that the first buildings on tenements 127 and 128 were erected at the same time since the same end wall (W81) appears to have continued across the line of both tenements (Fig. 3). Most of this wall, though, was robbed out at a later date, so that it was not certain that the full length of the wall was of the same construction. When the buildings were extended towards the river in the late 12th century it was clear that this was done in both tenements at the same time, since the rear wall (W5) was all of one build (Fig. 5). Dendrochronological dates from the timber piles beneath this wall confirmed this, since several timbers from both ends of the wall were shown to have been felled in 1182 (Nicholson & Hillam 1987, 141 and table 1). This suggests that both tenements were owned by the same person at this time, though it is possible that it could represent a cooperative venture between neighbouring property owners.

Later extensions of the tenements do not reflect the same degree of cooperation, indicating that subsequent ownership was probably separate. A succession of extensions to the waterfront buildings in the 13th and 14th centuries reflected the manner in which the quays were being advanced into the river at the same time (Fig. 11). It appeared that the boundary line between the two tenements was being strictly adhered to as the outer face of the side walls followed this line, only crossing it by a few centimetres to provide a proper abutment to the corner of the previous extension to the neighbouring property. This arrangement allowed as much frontage on the river as possible for each tenement, while still respecting the rights of neighbours and so preventing disputes.

Although there was generally some open space in front of the quayside buildings in the medieval period, this was often limited, and it is possible that sometimes warehouses stood at the very edge of the quay, so that discharging of cargo at higher tides took place directly into the warehouse. The successive side accesses to the Common Slip from tenement 129 clearly led from the inside of buildings (Figs. 5, 7 and 11), and the position of the earlier one relative to the contemporary upper quay wall suggests that there can have been only a fairly narrow area of quay in front of the wall of the warehouse. In the 17th century, tenement 127 also had a stairway which provided access from inside the warehouse directly onto the lower quay, and it is likely that this was an example where the warehouse wall coincided with the edge of the upper quay. By the 19th century it appears to have been standard practice to build right up to the river's edge and to unload directly into warehouses.

INDUSTRY

At Dundas Wharf it was also possible to examine some of the early industrial activities being carried out in Redcliffe. Many industries require the use of water, and for this reason it is most convenient to locate these alongside a river. One such industry is tanning, and there was evidence for this or a related trade being carried out on a small scale in tenement no. 128 in the 12th century.

Just outside the earliest stone building - perhaps in a small shed against the back of the building, though this was not certain - were the remains of two wooden tubs, about

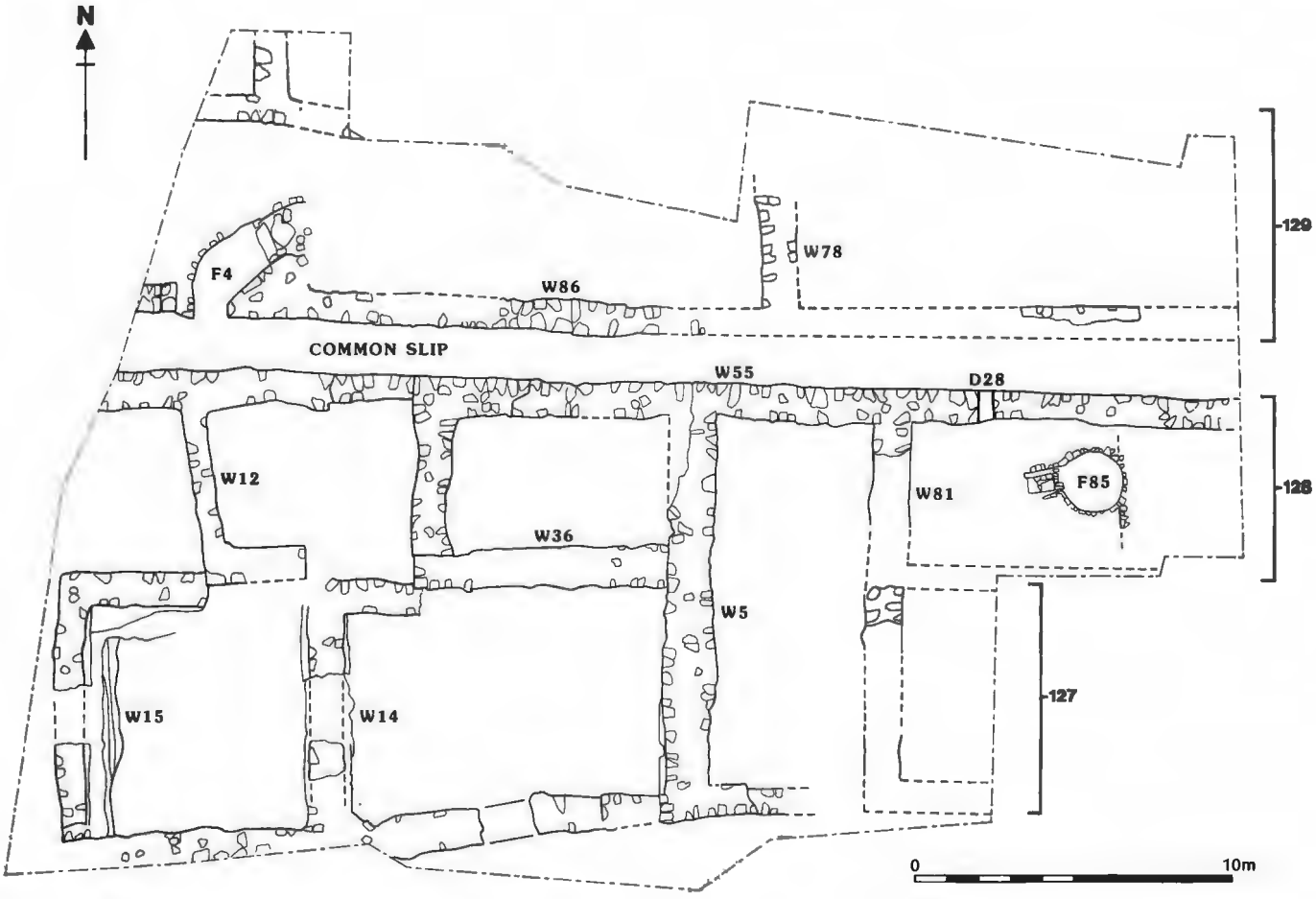

Fig. 11. Plan of the tenement extensions at Dundas Wharf in the 14th to 15th centuries.

Fig. 12. Wooden tubs in which skins were soaked in lime during the tanning process.

80cms in diameter, set in a pit about 80cms deep, P84 (Figs. 3 and 12). These could have been used in the initial stages of the production of leather, where cleaned hides were soaked in water containing lime, and often urine, to loosen the hair and break up the epidermis. In the bottoms of the tubs was what appeared to be a limey deposit up to 10cms thick, which may have been a residue from this process.

This operation was followed by scraping away the flesh and the hair from the skins prior to their immersion in a solution containing trypsin, an enzyme, generally obtained by using bird droppings or dog excrement, which made the skins soft and enabled them to absorb the tanning agents more readily. These were all preliminary operations to prepare the hides for the main process of tanning itself, which involved soaking them for long periods in a series of vats containing successively stronger solutions of tanning agents obtained from crushed oak bark.

The size of the tubs suggests that smaller skins, such as those of sheep or goat, might be being treated here, and could indicate that the operation being carried out was the related trade of tawing rather than tanning. In this process small skins were treated with alum and salt instead of vegetable tanning agents.

When the tanning treatment was complete, the leather would be passed on to a currier who would dress the skins to make them supple and ready for the appropriate leather-working craftsman.

Liming was the only stage in the tanning process which could be identified on site, and the lack of evidence for any of the other parts of the process is an anomaly if the interpretation is correct, since it is unlikely that the different stages would have been carried out at a separate location. It is possible that the back yard of the adjacent tenement, no. 127, might have been shared, particularly since the two properties appear to have been jointly owned, but there, too, there were none of the large pits which would be expected for the tanning stage itself. There was, however, a considerable amount of disturbance in this tenement which might fortuitously have removed any trace of the pits. It is difficult to think of an alternative interpretation for these tubs, particularly as they seem to have contained lime. It could be, therefore, that, rather than the full tanning or tawing process, only the liming and scraping stages were being carried out. The skins might then have been dried, without further treatment, for use as parchment.

More evidence for industrial activity in no. 128 occurred in levels dating from the second half of the 13th century probably till the 15th century (Fig. 11). Parts of several hearths from this period were uncovered including a number which were circular with the remains of walls around their edges. The only complete one of these, F85 (Fig.13), was c 1.80m in diameter, and, as far as it was possible to estimate, the others seemed to be of a similar size. Many of them cut through others, so that they were clearly replacements, and the disturbance caused by this made it impossible to tell how many, if any, might have been in operation at the same time.

There are two possible explanations as to what purpose was served by these circular hearths. One consideration is that they were the bases of ovens for baking bread, though they were rather large for such a purpose. The possibility that the premises may have been a major commercial bakery, however, is clearly worth taking into account. An alternative interpretation is that they are furnaces for heating vats of dye for use in the cloth industry. Again they are somewhat large compared to furnaces found elsewhere which are thought to be dye-vat bases, particularly those excavated further south in Redcliffe Street (Williams 1981, 18-20 and fig. 4), but this is at present considered to be the more likely explanation.

The remains of a dyeworks would normally be expected to furnish evidence of a more extensive drainage system than was uncovered during excavation, but the considerable later disturbance, particularly alongside the positions of the walls, where the drains might be expected to run, could well have destroyed most of this. There was in fact only one short length of drain which might have been associated and even this was not certain. This was a short drain, D28, running across the line of the side wall, W55, to the slip alongside the building.

The cloth industry was the mainstay of Bristol's prosperity in the later Middle Ages, particularly in the middle of the 14th century when there was a considerable expansion in textile production throughout England, and Bristol became the country's leading provincial exporter of cloth (Sherborne 1965, 10). Early on the centre of this industry had become established in the southern suburbs, where all of the associated trades were to be found. The documentary record abounds with evidence for weavers, fullers or tuckers, and dyers (Lobel & Carus-Wilson 1975, 10). Other archaeological investigations in the area have also furnished evidence of these trades in the form of a dyer's workshop near the southern end of Redcliffe Street (Williams 1981, 17-22) and 15th and 16th century tenter-racks, used to stretch drying cloth after fulling and dyeing, found at Cart Lane in Temple Fee (Webster & Cherry 1975, 242-3).

The dyeing process used complex recipes involving mainly materials obtained from vegetable matter which was fermented to produce the colouring agents, and the chemical reactions involved caused very unpleasant smells to emanate from the dyeworks. When the dye had been prepared, the cloth was mordanted with alum to make the dye fast, and immersed in a vat of the dye and heated.

Environmental evidence for dyeing was obtained from the site in the form of a deposit of waste from the process. This deposit was from a layer of material dumped to make up the ground level behind one of the quay walls and could not be related directly to the supposed dyeworks in no. 128, but it does confirm that dyeing was being carried out in the vicinity. It contained remains from plants used to produce dyes - including madder root, which produces a red dye; dyer's greenweed, which gives a yellow colour and is used in combination with woad to produce greens; and seeds of weld from which a lemon yellow is obtained (Jones & Watson 1987, 154). Although woad, the source of blue

Fig. 13. Circular hearth in tenement 128, probably the base of a dyeing vat.

colouring, was probably the most commonly used dyeing agent, the process by which the dye is extracted is very destructive and would leave little trace which could be recovered by environmental sampling. Wool fibres from the same deposit were examined, and these had been dyed in a variety of colours ranging from reds to blues as well as browns and blacks. It is thought that some white fibres may originally have been yellow, but that this colouring had faded because of the instability of the yellow dye.

Usually the cloth came to the dyer from the fuller (or tucker), where it had been cleaned and thickened and then tentered on racks to stretch it to a uniform size. Where a blue colour was required, however, it was ordained that the cloth be dyed in the wool (Bickley 1900, 6), i.e. that the wool itself be dyed prior to spinning. This was only one of a number of regulations which the Bristol dyer was required to follow, particularly as regards the preparation and use of woad from which the blue dye was obtained (Bickley 1900, 6, 38-40, 81-92, 170-176). After the wool had been dyed in the piece (as was normal for light or bright colours since these could not retain their strength of colour through the fulling process), it was returned to the tucker to be racked once again before the final finishing processes of raising and shearing were carried out.

LAYOUT OF TENEMENT NO. 128

While no. 128 was in use as a tannery or similar premises, the main building had a small room on the street front with a larger room behind, and running alongside these was a narrow passage through the building (Fig. 3). It would normally be expected that the front room might house a shop, but it is not certain what function was served by the larger room. Although this could have held living accommodation, it is perhaps more likely, since this was an industrial premises at that time, that this was a working area and that all of the living quarters were at first floor level. On the other hand, this type of arrangement, with the corridor along the side of the building, would keep the living area separate while still allowing access between the shop front and the work area to the rear. Unfortunately there was insufficient evidence to be able to say which was the more accurate interpretation.

When the building was converted to a (supposed) dyeworks there were clearly no living quarters at ground floor level. There was once again a small shop at the front of the building, and the main workshop with its dyeing vats was housed in the larger room behind this. By this time the building had been extended to the rear, but it was not clear whether this too was work area or whether it was used mainly for storage.

CONCLUSION

A large number of excavations have now been undertaken in the southern suburbs of medieval Bristol, and a good overall picture of the history of the area is gradually emerging. The excavation at Dundas Wharf has furnished a con-

siderable amount of information towards this picture, particularly with regard to the development of the Redcliffe waterfront and its industries. There is still a great deal to be done, however, before the full report is completed and ready for publication. It is for this reason that an interim statement of some of the most important results of the work so far has been prepared, though it must be realised that some of the interpretation may change as further evidence is examined and taken into account. It is to be hoped that, when the evaluation of the evidence from Dundas Wharf is complete, and the information from all of the excavations in the area has been collated, we will have greatly increased our knowledge and understanding of the history of this important part of Bristol.

ACKNOWLEDGEMENTS

This report owes much to the work of Eric Elias and Tish O'Connor, area supervisors on the excavation, and Juliet Dearbergh, the planning supervisor, who must be thanked, not only for their work on site, but also for the considerable help they provided with the initial post-excavation processes. The contributions of the other excavation staff, too, cannot be left until the final report without acknowledgement, particularly as they showed great endurance in the extremely arduous conditions. Thanks are also due to Nick Watson and Julie Jones for their report on the environmental samples, to Rebecca Nicholson and Jennifer Hillam for carrying out the dendrochronological analysis, and to Ann Linge for preparing the drawings for this report. The Dickinson Robinson Group should also be thanked for allowing access to the top storey of their building in Redcliffe Street for photography, as should the Manpower Services Commission for financing the excavation, and the developers, the Standard Life Assurance Company, for contributing towards post-excavation costs as well as for allowing the excavation to take place.

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THE MINSTER HOUSE - BRISTOL CATHEDRAL

Eric Boore

A small trench was opened in November 1991 in the area between the west front of Bristol Cathedral and the Abbey Gatehouse (ST58317267). The trench, which measured 4.0 x 2.50m, was on the site of the proposed new Visitor Centre. This building will reunite the Norman gateway and gatehouse with the church and precincts of St. Augustine's Abbey, now the Cathedral of the Holy and Undivided Trinity.

The trench was located 8.0m to the south of the cathedral west front, and 0.50m to the west of the modern revetment boundary walls which enclose the grass area between the cathedral and the gatehouse (Fig. 1). The aim of the investigation was to assess the archaeological potential of the site prior to construction work in 1992. This year is the 450th anniversary of the abbey church becoming the cathedral for Henry VIII's new diocese of Bristol, created in 1542. The abbey had been surrendered in 1539 during the Dissolution.

The assessment was carried out on behalf of the Dean and Chapter and with the generous financial support of Gateway Foodmarkets Ltd. through the Bristol Cathedral Trust. The results of the assessment could provide information which would be included in a formal submission for approval for archaeological investigation, to the Cathedrals Fabric Commission for England, under the provisions of the Care of Cathedrals Measure 1990.

HISTORICAL BACKGROUND

The site had contained a complex of buildings variously known as the Prior's Lodging and Minster House (Winstone 1966, 56). The buildings included structures associated with both the monastic period of the abbey development and the post-Dissolution cathedral period. The Minster House does not appear on the Ordnance Survey map of 1885 though it does indicate the outline of earlier buildings. They extended from the Abbey Gatehouse and were variously described as, (site of) the 'Guest House', 'King's Hall', 'Prior's Lodge' and 'Granary and Cellarage', the latter to the west of the 'Great Cloister' (Ordnance Survey 1885, 1:500). The site of the 'Guest House', that is, to the east of the Abbey Gate on the Deanery Road frontage, was represented by a Georgian terrace (Winstone 1965, 38 and 45). This terrace was similar to the recently renovated buildings between the cathedral and the Swallow Royal Hotel on College Green.

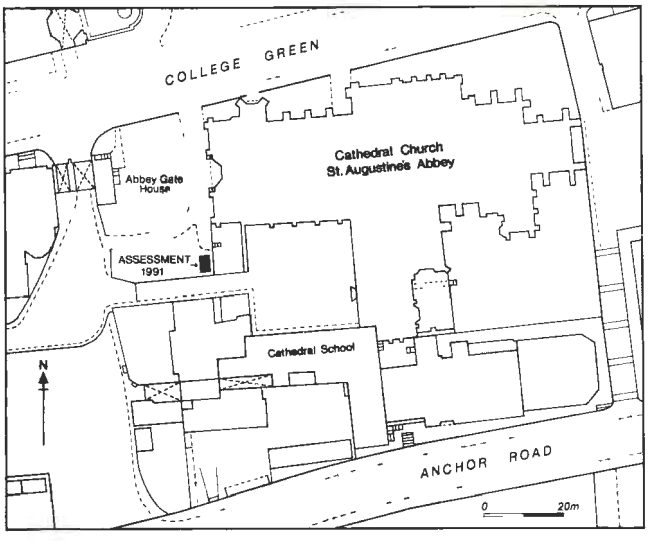

Fig. 1. Site location plan.

The King's Hall may have been part of the work of Abbot Edmund Knowle (1306-1332), though this building may lie further to the south on the site of the Deanery, now part of the Cathedral School (Paul 1912, 244). The Prior's Lodge or Minster House, which was constructed over the site of the c.14th-century cellarer's range on the west side of the cloister, was part of the rebuilding programme carried out by Abbot John Newland (1481-1515) and continued by Abbot Robert Elyot (1515-1526). It also included rebuilding the upper floor of the gatehouse which bears the arms of both abbots, and work on a new nave. At the time of the Dissolution in 1539 work ceased and the partially constructed nave was subsequently demolished. The cathedral church of 1542 survived without a nave until 1868, when a new nave was begun under the architect G.E. Street. After his death in 1881 the two west towers were completed by J.L. Pearson in 1888. Both the abbey gate and gatehouse were also restored at this time.

The whole group of buildings between the gatehouse and the new west front of the cathedral were demolished between 1882-1885 (Winstone 1966 and 1972, 56 and 60). The Minster House, after some discussion, was demolished in 1884 (Smith 1991, 8). A variety of reasons were put forward to justify the preservation of the Minster House, none of which prevailed. The area was subsequently used for open access with pathways and lawns.

Fig. 2. The Minster House from the south-west dated 1821 by Hugh O'Neill (a pencil and watercolour in the Braikenridge collection, M.1750, Bristol City Museum and Art Gallery).

There are few records or descriptive details of the architecture or internal layout of the Minster House. The architect Pearson refers to the existence of 'masonry belonging to the fifteenth century' (Fletcher 1932, 69, and Smith 1991, 8). Documentary sources include paintings and photographs in 19th-century collections which depict some dateable, external architectural features. A blocked-in window with trefoil-arched lights is shown in the upper east gable (Winstone 1968, 36). Several views of the west gable show a large traceried window in the upper floor and a late Perpendicular window with panel tracery on the ground floor (Winstone 1966, 56). Both are probably later insertions. The panel window is similar to those that still survive in the early 16th-century arcade, to the south of the refectory, which are from the north walk of the Lesser Cloister (Pevsner 1958, 385, and Boore 1987, 31-34). It may have been reused from material which came from the destruction of the Bishop's Palace area of the cathedral during the

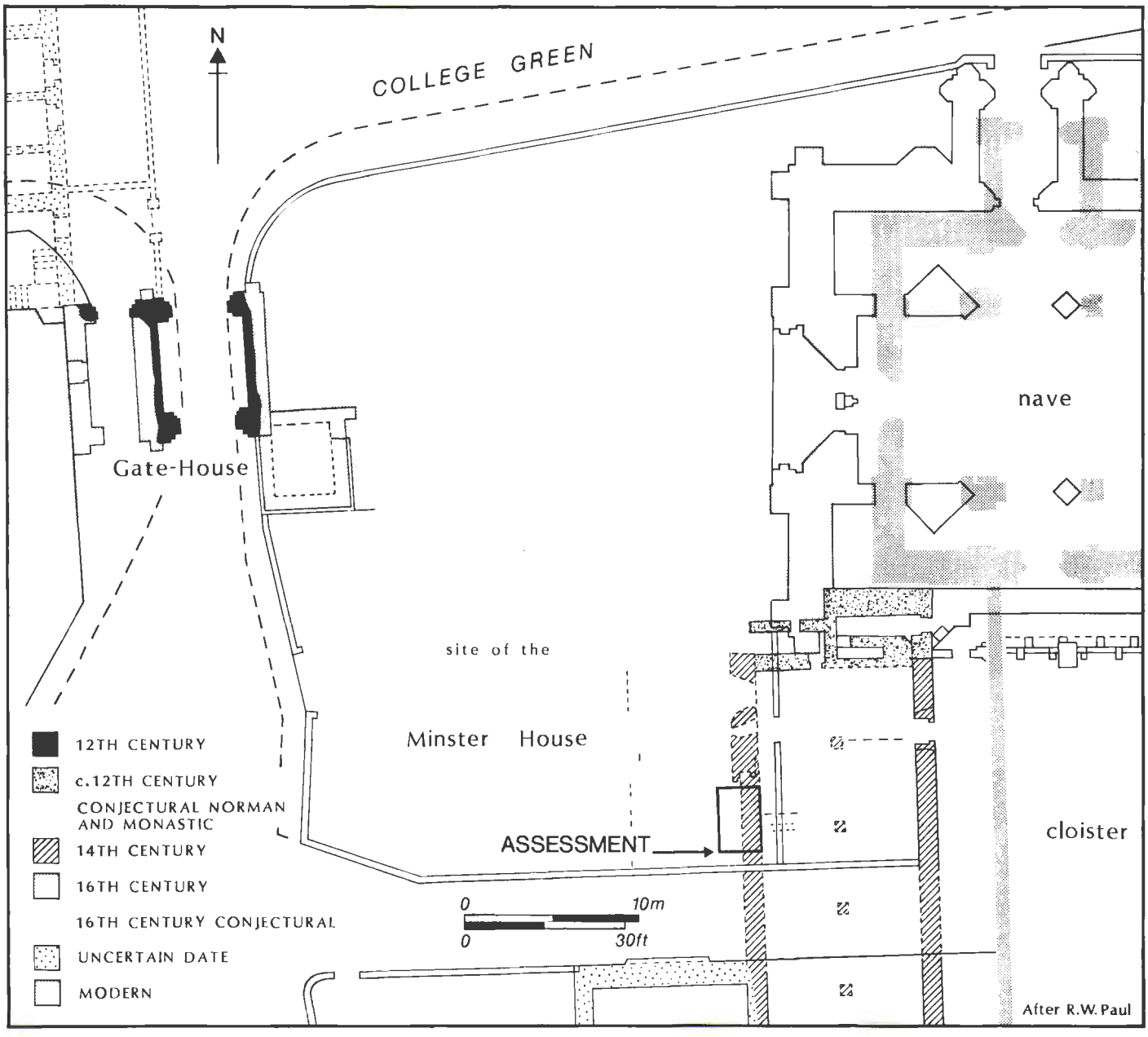

Fig. 3. The Minster House and monastic buildings (after R.W. Paul 1912, Pl. XXXIV).

Bristol Riots of 1831. The corners of the Minster House, at its west end, appear to be supported by angle buttresses (Winstone 1966, 56 and 1968, 36). Other 19th-century illustrations depict square-headed windows with dripstone mouldings of the 16th and 17th centuries (Fig. 2). The documentary sources, so far, would suggest that the Minster House dates back at least to the time of Abbot Newland with modifications to the building continuing under his successor, Abbot Elyot and later.

There are, unfortunately, no surviving illustrations of the internal arrangements of the Minster House. However, there is a conjectural plan of the Minster House and other buildings on R.W. Paul's splendid plan of St. Augustine's Abbey (Paul 1912, Pl. XXXIV, 247). Paul suggests the Minster House is 16th century. On the east side it partly overlies the 14th-century cellarium or great storehouse range on the west side of the cloister. Paul's plan does not contain descriptive or interpretative information for the buildings or indications as to their particular use.

THE ASSESSMENT - OBJECTIVES

The siting of the assessment trench was in part determined by Paul's plan, to avoid an electricity cable to the north and to cause minimum disturbance to the activities of both cathedral and school. The trench would, in theory, uncover at least two periods of occupation and hopefully confirm the potential for a full-scale excavation. It could substantiate and record in detail Paul's conjectural buildings (Fig. 3). It could also provide dates, add interpretative information and, of course, record any earlier occupation or

features in advance of the construction of the new Visitor Centre. The trench was to be reinstated after excavation.

THE EXCAVATIONS 1991

The turf and the humic sub-soil (AA and AB) were removed to a depth of 0.20m. This revealed a substantial layer of a mixed deposit of grey and pink mortar, ashy soil and stone (AC). This layer was a demolition material dating to the late 19th-century and had been used as a make-up for the later paths and lawns. At this stage the length of the trench, below the level of (AB), was reduced by 2.0m from its northern edge in order to allow more time on a smaller area (Fig. 4).

The depth of the excavation below make-up layer (AC), from the contemporary ground level, was 0.30-0.40m. Context (AC) overlay two contemporary layers: a deposit of grey concrete in the north-east (AD), and a spread of black tarmac in the south-west (AE). Both layers continued into their respective sections. Contexts (AD) and (AE) are dated to the end of the 19th century and represent the remains of activities associated with the initial post-demolition period of the Minster House and completion of the west front of the cathedral. The tarmac level south-west could possibly be a continuation of the tarmac road surface to the south of the trench, pre-boundary wall, which connects College Square to the cloister garth. The concrete may represent a path or foundation for a site hut prior to the landscaping of the area.

Both layers sealed the foundations of substantial walls (Fig. 4). It is worth noting the difference in levels between the cloister area to the east (the surviving medieval level of the abbey), which is *c.*0.90m lower than the area under investigation between the gatehouse and the cathedral's west front. It is impossible to say at present why this is so, even allowing for changes in the natural bedrock, but a possible explanation is, of course, a build-up in level resulting from an accumulation of occupation levels. This could include occupation which dated back as far as the Norman period, at the time of the foundation of the abbey, if not earlier. Below the tarmac spread on the south-west (AE), there was a similar layer to the demolition material (AC), a mixed make-up (AF), which continued for a depth of 0.40m.

The earliest substantial feature recorded was a wall W.1 which was orientated north-south, and ran along the east side of the trench. The west face was recorded while the east face lay behind the trench east section (Fig. 4). Wall W.1 continued north and south into the respective sections. A regular east-west robbing of the upper levels of the south end of the wall probably represents the eastern continuation of the latest phase of wall W.3 to the west. Wall W.1 measured 1.60 x 0.80 x 0.50m. It was constructed with Pennant Sandstone and Brandon Hill Grit with Triassic Sandstone and Dolomitic Conglomerate in its west face and bonded in a pinkish, red-brown sandy mortar.

This wall represents the west wall of the medieval cellarium or great cellar-storehouse range located on the west side of the main cloister garth. It is similar to the claustral

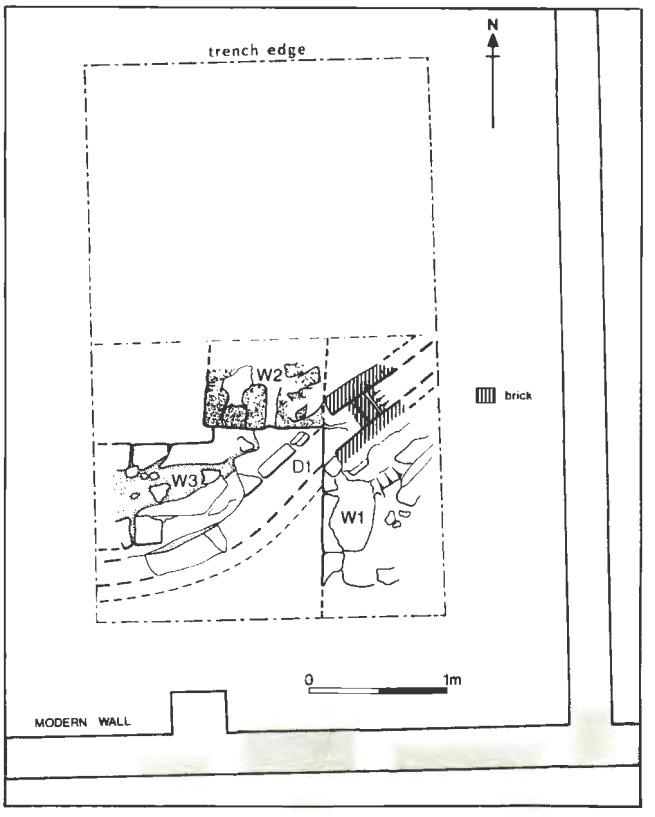

Fig. 4. The Minster House-trench plan showing the main features.

layout of the Augustinian houses at Llanthony Priory in south Wales (Craster 1963, 16) and Lanercost Priory in Cumbria (Gilyard-Beer 1959, Fig. 13). The east wall, though much rebuilt and repointed, survives *in situ* complete with entrance way into the cloister 9.0m to the east. This wall W.4 measures 1.14m thick. The present level between the two walls is 0.30m lower than the area to the west. It is hoped that the floor level in the cellarium may survive. The substantial walls of the cellar undercroft obviously carried an upper floor, possibly the abbot's lodgings or guest house, as at Lanercost Priory (Butler and Given-Wilson 1979, 279). The demolition of this range probably contributed to the need to build the new Minster House. The provisional date for wall W.1 is c.14th century.

Immediately to the west of the north end of the excavated wall of the cellarium W.1 lay a second wall W.2 (Fig. 4). Wall W.2 appeared to abut wall W.1 west face, although their relationship was obscured by the presence of a late drain D.1. Wall W.2 possessed two regular faces, one on the south and the other west, and it continued into the north section. It was of similar construction and mortar to wall W.1, but also included grey slate. This might represent a damp-course or possible threshold entrance. Wall W.2 measured 0.50 x 0.80m. It appeared to be contemporary with wall W.1 although subsequently re-used as part of the building associated with wall W.3. Wall W.2 may represent an external buttress supporting wall W.1, or the foundation for a doorway on the west leading into the great cellar.

South of and abutting onto wall W.2 south face, there

was a later wall W.3 which was orientated east-west and measured 1.0 x 0.75m (Fig. 4). There was a clear north face and internal corner between walls W.3 and wall W.2. Between both walls there was a stratified deposit of reddish-brown sandy soil, suggesting a floor make-up layer (AG). Wall W.3 was built of Brandon Hill Grit, grey slate and Pennant Sandstone. There appeared to be two phases of construction. The north face was bonded in a pinkish-white mortar and the southern face in an off-white mortar. Wall W.3 probably continued into the east section, overlying wall W.1, but it had been robbed out around a possible doorway (Paul 1912, pl. XXXIV). Wall W.3 may represent the foundations of a bay window or a chimney stack (Winstone 1966, 56).

The latest feature was drain D.1 running north-east - south-west (Fig. 4). This feature was cut into the north end of W.1 and continued into the north-east section. It was constructed with walls of orange-red brick and Pennant Sandstone which also served as base stones. Drain D.1 also cut wall W.3 on its south face where the drain continued into the south-west section. It gave a semi-circular appearance to the south face of wall W.3. Drain D.1 south wall and capping stones were robbed out. It was bonded in hard, pale grey mortar and was 19th century in date. At its north-east end there was *in situ* an oolite trough SF.1. This drain was for effluent, probably associated with the latest phase of the Minster House.

The demolition make-up (AF) below tarmac (AE) continued for a depth of 0.35m between walls W.1, W.3 and D.1. It overlay a reddish-brown, very sandy deposit (AH) for a depth of 0.40m. Layer (AH) sealed a compact layer of rubble stone which included Pennant Sandstone and Brandon Hill Grit. At this level occupation was still continuing at a depth of over 0.60m below the level of the tarmac road to the south, at 15.51m OD. Natural bedrock was not located. The stony layer may represent a medieval demolition level, a foundation trench for wall W.1 or possibly a rubble raft foundation overlying natural rock and serving as make-up for the medieval cellarium wall W.1.

The natural Mercian Mudstone has been observed at a higher level below Deanery Road to the north (Boore 1988, 34-35). This may suggest that perhaps the natural is sloping off to the south or that natural terracing is occurring as it does further south (Boore 1987, 31) or, of course, artificial terracing. A stone sample was taken from wall W.1 (AJ), and identified as Triassic Sandstone by Roger Clarke of Bristol Museums and Art Gallery. The site was subsequently back-filled and the turf relaid.

DISCUSSION

The assessment provided ample evidence of surviving archaeological remains including substantial medieval and later walls and undisturbed, stratified occupation levels. The depth of overburden was determined although, in this area, not the level of natural bedrock. The conjectural walls on Paul's plan were identified and recorded in detail and other features and deposits were observed. Further excavation was not attempted as this would have involved disturbing the archaeological sequence. The relationship between the medieval cellarium and the Minster House buildings was beginning to be documented and occupation deposits recorded. The objectives of the assessment were achieved and confirmed the need for full-scale excavation.

THE FINDS

Finds were recovered only from the turf (AA), sub-soil (AB) and the 19th-century make-up layer (AC). Ceramic finds included 14th-century glazed roof-tiles and plain floor-tiles dating from the late 13th century to the early 16th century. All of the pottery sherds were post-medieval. They included tin-glazed pottery and slip-wares of the 17th and 18th centuries, a decorated sherd of 17th-century Chinese porcelain, 18th- and 19th-century red wares, stonewares and cream wares. An interesting vessel was an early 19th century German, brown, salt-glazed stoneware bottle. It would have contained either mineral water or 'bitters'. The vessel had been thrown on a wheel and then squared off with bats (Fig. 5).

Other finds included fragments of wine and apothecary bottles, clay tobacco pipes, iron nails and ivory knife handles of the 18th and 19th century. A moulded fragment of oolite, probably from a window, Pennant Sandstone roof-tiles and fragments of lead window cames were recorded with a small amount of animal bone and oyster shells. The site records and finds are in the Department of Field Archaeology, Bristol City Museum and Art Gallery (Accession Number BRSMG 37/1991).

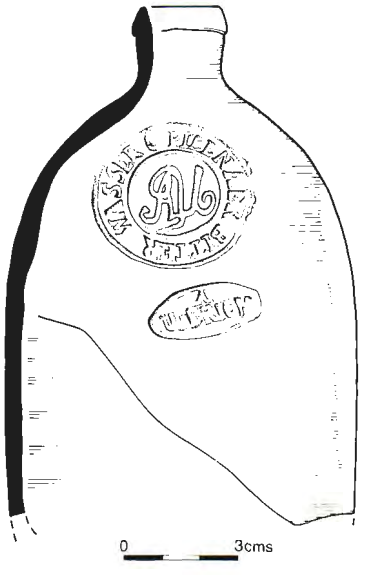

Fig. 5. An early 19th-century, German, salt-glazed stoneware, mineral-water bottle.

ACKNOWLEDGEMENTS

I am most grateful to the Dean and Chapter for their kind permission to carry out the assessment and for the generous financial support of Gateway Foodmarkets Ltd. through the Bristol Cathedral Trust; for providing storage facilities in the Abbey Gatehouse and to the Cathedral School for allowing access to the Lower Gateway and to the Cathedral Buttery. I am particularly grateful to the Dean, the Very Rev. Dr W. Carr, Canon P.F. Johnson and Mr R. Hipple, Head Verger, for their interest and enthusiasm, to Dr W. Rodwell for his advice and encouragment and to my colleagues in the Bristol City Museum and Art Gallery. The excavation and survey was carried out by Ken Sims and G.L. Good, the plans and illustrations drawn by Ann Linge and the text typed by Pip Jones. Fig. 2 was photographed by Andy Cotton from the Braikenridge Collection (M. 1750), Bristol City Museum and Art Gallery.

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FURTHER NOTES CONCERNING MEDIEVAL BRISTOL POTTERS

Roger Price

The brief notes presented here supplement those previously published and form part of a long-term programme which aims at the correlation of surviving documentary evidence with the results from excavations in Bristol (Price 1979).

Since the publication of the earlier article reference has been found to another potter (termed 'crocker' in original sources) working in Redcliffe Parish. On 15 August 1293 Edward le Crokare was one of the witnesses to the conveyance of a property which probably lay on Redcliffe Hill to Thomas de Lantesdoune (Bickley 1899, 15). It is likely that Edward was living and working in Redcliffe, but exactly where remains unknown. Some ten years later, in 1303, William Fellard granted to Edward le Crokare a tenement described as opposite the churchyard of Redcliffe, between the tenement of Sir William, vicar of Redcliffe, on the north and that of Thomas de Lantesdon on the south; extending from the street in front to the tenement of the same vicar behind. The annual rent for the property was in several parts: two shillings for lights in St. Nicholas' Church, twelve pence to Redcliffe Church, seven pence to St. Katherine's Hospital and to William Fellard a clove of gillyflower (Bickley 1899, 17).

Fortunately the will of Edward's wife, Isabella, survives, dated 29 August 1306 (Bickley 1899, 17). Examination of a photograph of the original document (a copy of which is kept at Bristol Record Office) shows that she was in a position to leave sums of money to officials of Redcliffe Church for the fabric and lights of the building, provision for masses to be sung at the Franciscan Friary, bread for the poor, articles of clothing and a silver spoon to friends and neighbours (including the son of Thomas de Lantesdone) and the residue to her husband. She might, therefore, be termed modestly affluent by the standards of the day.

This does not necessarily imply that Edward had a substantial pot-making business as Isabella had probably inherited sums of money from her parents; but that she had anything at all to bequeath suggests that the family was not destitute. Incidentally, there is no mention in the will that the couple had any children who might have carried on their business after them.

The last known reference to Edward le Crokare is on 22 January 1328, at which time he was still living in Redcliffe Hill when Lantesdone's property next door was sold (Bickley 1899, 29). How much longer he stayed there is unknown.

It is interesting to note that the only two potters referred to in the Tallage of 1313 as working in Redcliffe were Juliana le Crokkere and William le Crokkere, no mention being made of Edward (Price 1979, 57). It is clear, however, that the Tallage Roll was not a complete list of taxable citizens, and anyway is imperfectly preserved. The references to Edward are of more than usual interest.

The references to Redcliffe Churchyard and what was presumably the site of Redcliffe vicarage indicate that the property which he held lay on the west side of Redcliffe Hill, a little to the south of the present Redcliffe Parade, at approximately N.G.R. ST 59057228.

In 1970, M.W. Ponsford salvaged waste sherds of what is now termed Redcliffe ware on or very near the site of Edward's tenement (Wilson and Moorhouse 1971, 152). Ponsford has suggested that the site of the factory which made this pottery was very close to the waste dump and, on the basis of many excavations in Bristol, Redcliffe ware is now dated to *c.*1250-*c.*1500. It seems reasonable, therefore, to suggest that the excavated material came from the factory of Edward le Crokare and may be dated at least to the period *c.*1303-*c.*1328.

Another important potter, who was working in the Old Market area in the later 14th century was William Stiel (Price 1979, 57). Until now he was known only from references in the period 1395-6. He was clearly a man of some substance and might be expected to figure in documents relating to Old Market.

A William Steil was witness to conveyances of property in Old Market held by All Saints' Church on 2 February 1363 and 21 August 1374 (Strong 1967, 272). He also witnessed conveyances of property in the same street on 16 November 1379 and 12 October 1384 (Bickley 1899, 63 and 66). There is no proof, but it is likely that this William Steil was the potter. If so, it would give him a working life of *c.*1363-*c.*1396.

The overall picture given by documentary sources is of two principal centres: in Redcliffe from the late 13th to mid 14th centuries and in eastern Bristol in the second half of the 14th century. The latter centre may even have produced the so called St. Peter's ware (Dawson *et al.*, 1972).

Potmaking appears to have been carried out elsewhere in Bristol in the early 14th century, but so far detailed information is lacking (Price 1979, 57). Nevertheless, the evidence from excavation demonstrates that far more

pottery was made in Bristol during the medieval period than can be accounted for by the potters referred to in documentary sources so far found. It is to be expected that, as further information comes to light, the simple picture given may well be drastically altered.

Finally, a note of caution. It must always be borne in mind that a crocker was not necessarily an earthenware potter and could well have been working in metal. The previous article referred to a potter named William Tanner living in Redcliffe Street in 1454 (Price 1979, 58). However, two deeds, respectively dated 20 March and 12 November 1456, refer to a William Tanner, brasier, living in the same place (Bickley 1899, 88; B.R.O. P/st.T/D/311). It is just possible, but unlikely, that these references are in error.

It may be that Tanner was working in both clay and brass (both trades requiring fire) or that he had changed his occupation between 1454 and 1456, going over completely to the (probably more lucrative) brass trade. It may even be that the brasier was the son of the potter. However, the distinct possibility remains that Tanner had never worked in clay at all, which demonstrates all too clearly that it is never wise to be too dogmatic about interpreting the evidence.

ACKNOWLEDGMENTS

I would like to thank Mary Williams and the staff of the City of Bristol Record Office for allowing me access to the original documents used here.

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AN 18TH CENTURY BATH HOUSE & GARDEN LAYOUT AT CREWS HOLE, BRISTOL

James Russell

INTRODUCTION

On the steep northern slope of the Avon valley at Crews Hole, some 2km to the east of central Bristol, are the extensive remains of a mid 18th century terraced garden, incorporating a well-preserved bath house. The remains (NGR ST623732) are bounded on the south by Crews Hole Road, on the east by Strawberry Lane and on the north by Avon View Cemetery. The site as a whole has so far received little scholarly attention, although the bath house is a grade 2 listed building and its facade is briefly described by Pevsner (1958, 459). The area of the garden was until recently used as allotments but is now wholly abandoned and is becoming heavily overgrown. Its basic layout can, however, be established with some confidence from successive editions of 1:2500 and 1:1250 Ordnance Survey maps.

THE GARDEN (Fig. 1)

The garden covered a trapezoidal area measuring some 65m from north to south and between 75 and 85m from east to west. It consisted of three east-west terraces, each approximately 4m wide, separated by broader sloping areas. The topmost terrace is defined by an earth scarp on the south and on the north by a pennant sandstone wall 2.7m high; the centre of this is occupied by the ornamental facade of the bath house, described in greater detail below. From this uppermost terrace the ground drops sharply to a second terrace, defined by pennant sandstone retaining walls to north and south. Near the centre of this second terrace the western end of a culvert or cistern (Fig. 1a) has been revealed by the partial collapse of its vaulted roof; it was probably intended to contain the flow of water from the bath house immediately above. The 1883 1:2500 O.S. map shows that the steep slope between the first and second terraces was then traversed by a quincunx arrangement of paths or ramps, almost certainly a survival of the original 18th century layout. The thick undergrowth now covering the hillside makes it difficult to determine how much of this path system has survived; it appears, however, to have suffered some disturbance from additional terracing for allotments.

Below the second terrace the ground falls less steeply to a third terrace, less regularly laid out than those above it and decreasing in width from 9m to 4m from west to east. Its eastern end has been encroached upon by the remains of a brickworks, in existence by 1883 and operated until 1912 by the Bristol Fireclay Company. Photographs taken by the present writer in 1982 show that the northern retaining wall of this terrace, now concealed by ivy, is carefully constructed in alternate courses of grey and purple pennant sandstone.

The eastern and western boundaries of the garden are no longer clearly defined on the ground and are likely to have been marked by hedges rather than continuous stone walls. To the west are a number of irregularly laid out terraced enclosures defined by earth scarps with some stone revetting, and incorporating the ruins of a small building (Fig. 1b). Although in place by 1883, these features almost

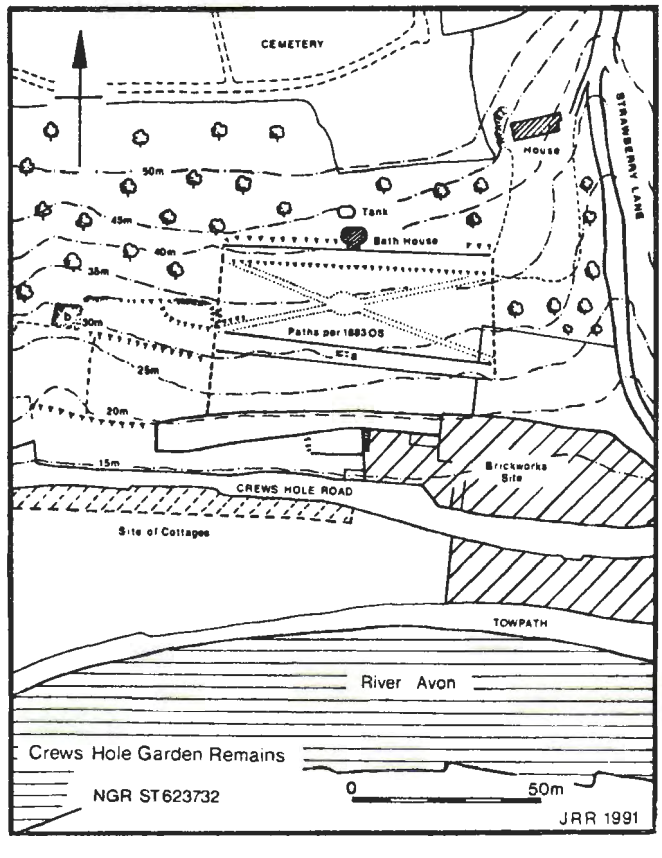

Fig. 1. *General Plan of Garden Remains, Crews Hole.*

certainly post-date the main garden layout. To the north-east of the garden area is a small two-storey cottage (no.1 Strawberry Lane), apparently of early to mid 19th century date.

THE BATH HOUSE (Fig. 2)

Cold plunge-baths start to appear as adjuncts of larger English town and country houses towards the end of the 17th century. Installed sometimes in the basements of mansions but more commonly in separate garden buildings, they appear to have been resorted to for medicinal rather than hygienic purposes, on a weekly or monthly rather than daily basis (Girouard 1978, 256-262). In the Bristol area good surviving examples are to be found in the basement of 7 Great George St., Bristol and in the grounds of Corsham Court, Wilts. and Painswick House, Glos.

The Crews Hole bath occupied a vaulted octagonal hall sunk into the hillside behind the topmost garden terrace and entered from the south through a vestibule fronted by an ornamental screen wall. Above a plinth of dressed pennant sandstone this facade consists of three bays defined by pilasters constructed of copper slag blocks alternating with plastered brickwork to create a rusticated effect. The central bay contains the entrance doorway with a pointed brick arch while the narrower side bays have small blind circular "windows", also edged with brick.

Above a string course of slag blocks is an attic storey, the central bay of which contains a large circular brick-edged panel flanked by rusticated pilasters similar to those in the lower storey; these are flanked in turn by quadrant ramps. It is likely that the central attic bay was originally crowned by a segmental pediment. It should be noted that the details of the attic storey from the string course upwards are at present wholly obscured by ivy; their depiction in Figure 2 is based on photographs taken in 1982 when the facade was more clearly visible. The whole of the facade, with the exception of its pennant sandstone plinth and brick and copper slag detailing, was formerly covered in white plaster, substantial traces of which still remain. The combination of red brick, purple black slag and gleaming white stucco would have originally produced a striking polychrome effect, and made the building visible from a considerable distance.

The vestibule, also plastered throughout, has a pointed barrel vault, tall semi-circular niches in the side walls and a narrow doorway with a pointed arch leading to the inner chamber. The theshold of this inner door consists of a large block of copper slag, while in the damaged plaster above are traces of a circular panel.

The octagonal bathing hall beyond, constructed almost entirely of pennant sandstone, is 5m in width and approximately 5m high. Above a brick cornice it is roofed by a domical vault pierced by four brick-edged circular light-shafts or *oculi*. The floor is covered by earth and debris and no trace of the bath itself, presumably also octagonal in plan, is currently visible, although it is referred to by Sanigar (1931, 24). The side walls, formerly rendered up to cornice level but now almost bare of plaster, contain semi-

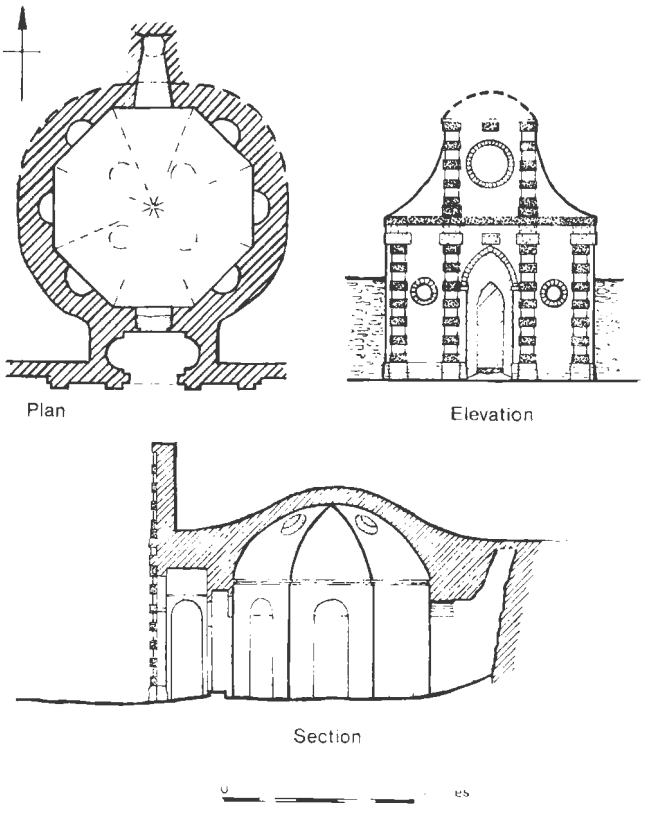

Fig. 2. *The Bath House, Crews Hole.*

circular niches. In the rear or north wall there is a deeper recess with splayed sides and a segmental arch which leads back to the natural rock-face. At the back of the recess is a chimney-like void which runs upwards against the rock-face towards the ground surface. On the hillside immediately to the north-west of the bath house are remains of an oval stone-revetted tank measuring 4.3m from east to west and 2.8m from north to south. It seems probable that this was a reservoir, presumably fed by a now defunct spring, from which water would cascade into the recess just described and thence into the bath.

On stylistic grounds alone it is difficult to propose an architect for the Crews Hole bath house. While the generally "baroque" character of the facade might seem most appropriate to the early part of the 18th century, the presence within it of copper slag blocks, almost certainly derived from the nearby works of the Bristol Brass Company, points to a somewhat later construction date, around 1750. Copper slag does not seem to have achieved its position as one of Bristol's most distinctive building materials before the 1740's; the earliest example of its use is probably in the side elevations of the Chesterfield Nursing Home (formerly Clifton Court) on Clifton Green, dating from after 1742 (Ison 1952, 38; Gomme, Jenner & Little 1979, 151). The use of pointed "Gothick" arches would similarly have been unusual before the 1740's or 50's.

DISCUSSION

Further research is still required before the history of the Crews Hole garden can be fully unravelled. As we have just seen, the architectural details of the bath house, which is clearly an integral part of the garden layout, indicate that the complex dates from around the middle of the 18th century. Attempts by "popular" local historians such as F.C. Jones (1946, 137) to identify the site with terracing known to have been constructed at Crews Hole by members of the Broadmead Baptist Church in August 1682 are patently erroneous. It is clear from the contemporary records of the Broadmead congregation that their terraces, used for worship during a period of persecution, must have been on an extremely small scale, being apparently cut from the hillside in less than a week by a single workman (Hayden *ed* 1974, 244).

The siting of the garden is in several respects unusual. It seems to have formed a self-contained unit, since there is no evidence, either documentary or cartographic, for a contemporary gentleman's residence in the immediate vicinity. It would furthermore have looked out upon a scene of intense industrial activity. Less than 500m to the south-east (NGR ST627729) were the extensive copper and brass works of the Bristol Brass Company, with 49 furnaces in operation by 1754 (Day 1973, 207-9), while nearer still was a colliery and glassworks (Powell 1925, 253-4). All these installations are depicted in a sketch of 1754 by the Swedish traveller Rienhold Angerstein (Jenkins 1942, p.11) which seems to have been drawn from a viewpoint close to, or possibly even within, the garden itself.

This location, coupled with the use of copper slag in the bath house facade, suggests that the creator of the garden may have been a local industrialist. While documentary proof has yet to be found, the likeliest candidate would seem to be the Quaker entrepreneur William Reeve (d.1778.). Accounts of this somewhat shadowy figure generally refer to him as being involved in copper-smelting at Crews Hole, although he does not appear to have had his own, independent, copper-works there; Day (1973, 219) mentions him only in passing as having connections with the Bristol Brass Company, which, as we have seen, had a major installation in the valley.

Reeve is best known today for the extensive building work he undertook between c.1756 and 1765 at Arnos Court, his country estate 2km to the south-west of Crews Hole (Ison 1952, 181-9; Gomme, Jenner & Little 1979, 166-71). Here, in addition to the "Black Castle", a fantastic "Gothick" annexe constructed almost entirely of slag blocks, Reeve created an unusually splendid bath house, dated by Dr Tim Mowl to 1764, this consisted of an elongated, niche-lined octagonal bathing hall, flanked by dressing rooms and fronted by an elaborate colonnade, transplanted in 1958 to Portmeirion before the rest of the disgracefully neglected building was demolished. It is difficult not to regard this highly sophisticated structure, with its crisply carved freestone facade and sumptuous internal plasterwork, as a replacement for the much simpler octagonal bath house at Crews Hole. Another echo of Crews Hole is to be found in the entrance porch of Arnos Court itself, identified by Dr Mowl as an addition to the house of c.1765. This displays similarities with the Crews Hole bath house in its pointed archway flanked by rusticated pilasters, and in the tall semi-circular niches which occupy the side walls of the vestibule behind.

If Reeve was indeed responsible for the building of the Crews Hole garden, it is likely that its life as a pleasure ground was brief, lasting only from around 1750 to 1765, when Reeve's grander works at Arnos Court would have been complete. The steepness of the site, the lack of facilities for entertainment and ever-increasing pollution from neighbouring industries would all have told against it once the initial novelty had worn off. Thenceforward the site seems to have been put to more mundane uses as market gardens and, latterly, allotments, until its abandonment within the last decade. Today heavy industry has departed from the Crews Hole valley and the semi-derelict landscape is being slowly revitalised by new housing and environmental improvements. It is to be hoped that in future years resources will be found to clear the garden of the undergrowth which now chokes it and to restore both it and the bath house, which so far has survived in remarkably good structural condition, to their rightful place as striking and attractive local landmarks.

ACKNOWLEDGEMENTS

The writer is grateful to Mike Baker, Ian Beckey and John Hunt for assisting in the investigation of the Crews Hole site and to John Cornwell, Stewart Harding and Dr Tim Mowl for their helpful comments and advice.

ABBREVIATION

TBGAS Transactions, Bristol & Gloucestershire Archaeological Society

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ARCHAEOLOGY IN AVON 1990-91

V. Russett

During the period covered by this article, a number of important changes have occurred in the archaeological world, several of which directly affect Avon and its constituent parts.

The advent of the Department of the Environment's *Planning and Policy Guidance Note 16 : Planning and Archaeology* has helped to promote a process that had already begun in Avon County Planning Department, with developer-funded evaluation of sites beforc planning consent. This has taken the form of large-scale implications surveys, earthwork surveys, small and large-scale excavations, watching briefs on soil movement of various types, and some building survey. Much of this work is carried out by staff of the Planning Department, but much is also carried out by consultants for the developers in question.

The Department has also begun the placing of developer-funded archaeological staff full-time on major engineering projects which will inevitably reveal and destroy archaeological sites, with a member of staff currently working as the site archaeologist on the construction of the Avon Ring Road Stage 4a, from Hanham to Keynsham, and a second due to commence on a further section of the Ring Road, Stage 1bii, from Downend to Shortwood. This should form a useful precedent for any other major engineering schemes in the future.

The sequence of landscape surveys on land of the Duchy of Cornwall in Wansdyke continued in 1991, with the historic survey of Priston and Wimington by Mike Chapman for Avon County Planning Department, funded by English Heritage.

Elsewhere in the county, the City of Bristol Museum Archaeological Field Unit and the Bath Archaeological Trust have continued their yearly programmes of excavation and survey in Bristol and Bath, some of the results of which are published elsewhere in this volume.

In addition, the Glamorgan-Gwent Trust have carried out a programme of archaeological work (largely evaluation excavations) on the line of the approach roads to the Second Severn Crossing, following up the initial work carried out by Avon County Planning Department staff in 1990, and other bodies, such as AC Archaeology and Trust for Wessex Archaeology, have carried out other watching brief and evaluation work.

The intense proliferation of Local History groups in the county (in some parts of the county, one per parish) continues to amaze; in the coming years, it is hoped that this will result in an increased input to the SMR and this round-up feature.

The appointment of Avon's first full-time Sites and Monuments Record Officer (Vince Russett) in November 1991 should go far towards making the Sites and Monuments Record for Avon more available to the public, and help with its much-needed updating and expansion.

PREHISTORIC

BANWELL, Bone caves ST38235880

During 1990 and 1991, old records of the Axbridge Caving Group and Archaeological Society's excavations in the Banwell caves have been re-examined, particularly those relating to the excavation of bone deposits in the cave 1951-4, and the first-hand descriptions of the further chambers discovered in 1952-3. A copy of the first transcription is deposited at Axbridge Museum.

A study of the bone deposits in the eastern branch of the Bone cave is currently in progress, with re-evaluation of various aspects such as evidence of climatic change and varying rates of deposition.

Some 'arrangements' of bones, jaws and animal teeth suggest the possibility of human access and interference in antiquity. A bone fragment with groups of incisions (see Fig. 1) might perhaps be a notation piece, or a tally.

Opportunity has also occurred to section specimens of stalactite removed from the cave many years ago. Of special significance is a piece of anciently-fractured flowstone, close to the Bone cave 'Pitfall' (a natural shaft). This appears to exhibit, from a very early stage, entombed organic growths, as well as much later surface invasion from enveloping and decaying bone deposits. This could indicate that the cave was open to airborne contamination by organic material for an extremely long time prior to the laying down of the bone deposits.

Descriptions of the new chambers as they appeared when discovered will be published, together with illustrations, this year, the fortieth anniversary of the Axbridge Caving Group. *(Jim Hunt)*

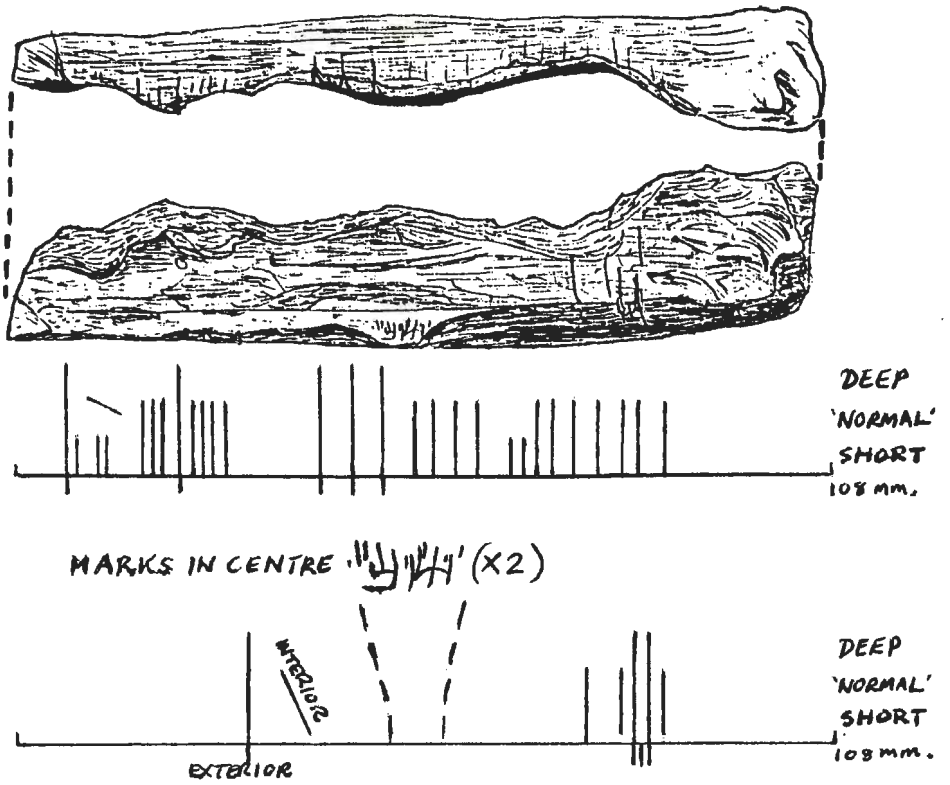

Fig. 1. The Banwell bone cave "notation" (J.W.H. 31-12-1952, eastern branch, layer 3).

BRISTOL, Hallen Marsh Iron Age occupation site ST54308041

An Iron Age occupation site was identified sealed beneath 0.9m of alluvium at this site during a watching brief by Vince Russett in 1990 (Russett 1990). Evaluation excavation by Glamorgan-Gwent Trust in 1991, combined with large-scale augering, identified a site spreading over at least 2400 square metres. A number of features (ditches, pits and rubble spreads) were identified, all containing Iron Age pottery and charcoal, bone, etc. No Romano-British material was found on the site, and the full extent and nature of the site has not yet been identified. Full excavation should take place before the construction of the Second Severn Crossing approach road across the site.

BRISTOL/NORTHAVON, Avonmouth Levels peats

The watching brief by Vince Russett on the Second Severn Crossing geotechnical programme in 1990 identified a sequence of peats up to 4.0m beneath the current land surface, with some pits containing up to three discrete peat bands (Russett 1990). Larger-scale sampling of the peats was carried out by Glamorgan-Gwent Trust in 1991, for radiocarbon and environmental studies. The first of these studies, looking at plant macrofossils, pollen, diatoms, insects and molluscs, was carried out during 1991, and summarised by Vanessa Straker. The peats have great potential for palaeoenvironmental studies, and further work is planned.

CLEVEDON, Dial Hill ST408718

An evaluation excavation on the shoulder of Dial Hill by Jonathan Erskine for Avon County Planning Department in 1990 confirmed the extension south-west of the agricultural bank shown on the OS map. Two sherds of late Iron Age pottery were recovered and one Romano-British sherd from the make-up of the bank.

OLDBURY-ON-SEVERN, The Toot ST609927

An evaluation excavation by Jonathan Erskine for Avon County Planning Department in 1990, in the garden of Wisteria House, Oldbury, resulted in a section through the inner ditch, berm, outer bank, glacis and outer ditch of the Iron Age earthwork. The bank was greatly eroded, located only by the presence of the ditches on either side. Further to the west, a small, possibly medieval field boundary was located. The only datable finds were medieval sherds of the 12th to 13th century.

A second evaluation made by observing and recording foundation excavations for a bungalow further south in the grounds of Cherry Tree Cottage revealed the outer bank and ditch in a similar state of erosion. Both of these features turned towards the south-east, towards Rook Farm. One sherd of Romano-British grey ware was found in the ditch fill and a medieval sherd in the sub-soil.

STOKE GIFFORD, Bradley Stoke District Centre ST620820

A prehistoric occupation site was located on the line of Bradley Stoke Way and the site of the District Centre, specifically on the site to be developed as a Tesco Superstore. This site was totally excavated during the months of September to November 1991, by Jonathan Erskine, for Avon County Planning Department. At least one round house was identified, together with a pit alignment, ditches

and many postholes. It appears to be mainly of the Bronze Age, with the addition of a more recent structure, probably of post-medieval date. Large numbers of palaeoenvironmental samples were taken, and work is continuing on the analysis and all other post-excavation work.

THORNBURY, Marlwood Farm ST628888
An evaluation excavation in the field north-east of "Chelwood" by Jonathan Erskine for Avon County Planning Department in 1990 located six small, undated postholes and four worked flints in an area where an arrowhead had been previously found.

ROMAN

BATH, Aldridges Auction Rooms, Walcot Street ST75116549
Outline planning permission was sought in 1991 for redeveloping the street frontage of the old school in Walcot Street, currently an auction house. The site is now largely tarmac yard but a light timber shed has been added to the old school rain shelter to provide extra show space.

In line with the recommendations of PPG16, the developer was required to detail the archaeological impact of the scheme. The Bath Archaeological Trust carried out this assessment in June, financed by the developer.

The site is adjacent to the line of the Fosse Way (Walcot Street) and obviously of high importance. It is only 140 metres south of Hat and Feather Yard (see below) on the main road into town.

Although developed in the late 18th century, large areas were never cellared. Excavation of two trenches revealed Roman surfaces and building debris 1.8 to 2 metres below the modern surface covered in medieval hill wash. Even cellared areas showed substantial survival of Roman deposits. A report was submitted recommending that either the deposits not be disturbed or that full excavation be carried out in the event of destructive development. *(Peter Davenport BAT).*

BATH, Cross Bath ST74936472
A trench near the Cross Bath was dug by the City Engineers Dept. to repair a leaking drain running south-east from the new Tourist Information Office. It revealed stratified deposits in the side similar to a trench excavated in 1986 just to the south. It was possible to enter this trench, however, and get a closer look at the deposits.

Natural clay was encountered 3.5 metres below the present street surface; it supported a 90 cm thick layer of Roman gravel and stone surfacing representing successive floors (probably external) with the top 30 to 40 cm consisting of packed small rubble in gravelly mortar. This is broadly similar again to that seen just to the south in 1986 but is perhaps closer in detail to the layers interpreted as a Roman street just north in the excavations on the site of the Colonnades shopping centre. The alignment was not clear, however, and did not obviously fit in with the Colonnades street, neither was the latter street so substantial.

Over one metre of mixed gritty loam represented the medieval deposits. Above this was the post-medieval and modern accumulation of about the same thickness. The deposits in the open space around the Cross Bath are of great importance simply because their sequence survives so completely, whereas they have been severely truncated by buildings in the immediately surrounding area. *(Peter Davenport BAT).*

BATH, Hat and Feather Yard ST75186561/ST75176562
Fig. 2
The creation of a new access road for the housing development between the northern end of Walcot Street and the River Avon led to a short rescue excavation over Christmas and New Year 1989-90. This in turn led to the mounting of a major excavation in 1991.

Trial trenching in 1982 had suggested that there were no Roman remains surviving east or riverwards of the line of the new road. This was broadly confirmed by the observations this year. Further trials in 1989, however, showed substantial material west of it as excavation and observation to the north had showed survival nearer the river there. A watching brief was mounted as the road bed was excavated and walls and surfaces of Roman origin were soon revealed. Fortunately, the Christmas holiday and a natural break in the building programme meant that the remains were not immediately destroyed but that it was possible to spend nine days on site investigation.

When building work resumed in January, the digging of land drains provided the opportunity to record further evidence of the extent and nature of the Roman occupation. The evidence revealed was of the highest quality.

Stratified structural and occupation debris extended in many places up to two or even three metres thick. Walls up to two metres high were revealed. Much evidence of burning was at first thought to represent a destructive conflagration, but in 1991 was seen to be the result of industrial craft activities. It indicated a substantial urban presence in Roman times one kilometre from the Baths Temple complex. This has a major impact on our assessment of the shape and size of Aquae Sulis. Taken with the results of the Nelson Place excavation 50m to the north in 1989, these results show a major occupation focus starting very early in the Roman period, certainly pre-Flavian and perhaps Claudian, and continuing well into the fourth century.

The 1991 excavation was carried out on the site of a proposed warehouse retailing development behind the Hat and Feather. This was carried out, the Trust funding the bulk of the excavation costs, between February and June. We now have a good sample of the type and density of settlement in the area in all Roman periods. Unfortunately, the very latest Roman and early post-Roman layers were truncated by later activity, principally in the last two hundred years. Enough survived, however, to suggest a major replanning at the end of the 4th century.

Fig. 2 shows the plan of the main 1990-91 area in the 3rd-4th century with close-packed houses and workshops around lanes and yards. There was occupation here in the

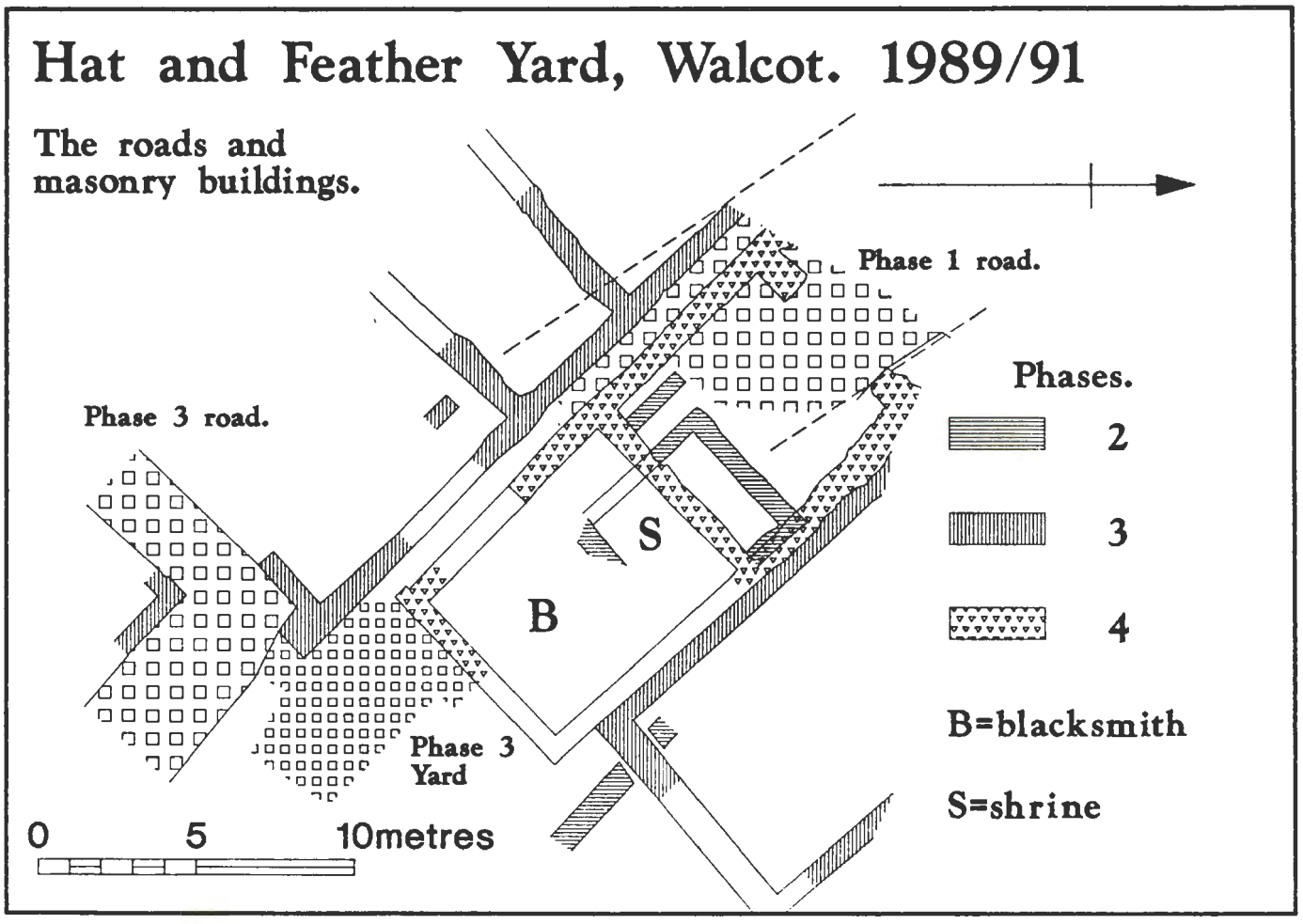

Fig.2. Hat and Feather Yard, Bath Excavations 1990-91

second century, including a square room which was probably a shrine. In a very early phase of occupation which may well turn out to be conquest period, a gravel road (probably military) was laid out running down the slope to the river. Several gullies not parallel to the road were either contemporary or earlier as were complex terracing works south of the road which were supported by coarse rubble walls and timber revetting. Stratification was complex, clear and well preserved, and associated finds were prolific; structures were also well preserved. It should prove possible to construct a well-dated, precise and detailed interpretation of the excavated data. *(Peter Davenport BAT).*

BATH, London Road West ST765666
Evaluation excavations by Jonathan Erskine for Avon County Planning Department in 1990 north and south of London Road produced no evidence of any extramural settlement prior to the 18th century. The Fosse Way itself may well be located if the Batheaston bypass is ever constructed on this site.

COMPTON MARTIN/WEST HARPTREE, Roman road/park boundary ST553574
A watching brief was carried out by the Trust for Wessex Archaeology on the line of a sewer pipe from Compton Martin village to West Harptree, which cut the line of the known Roman road forming the boundary between these two parishes and the eastern boundary of the medieval Compton Martin park. In the event, no structures connected with either were recorded by the watching brief. *(Vince Russett ACC).*

CONGRESBURY, Pineapple Farm ST440630
Trial excavations at this site, which lay adjacent to two known areas of Romano-British occupation and a Romano-British kilnfield, were carried out by Vince Russett for Avon County Planning Department in 1990. No archaeological features or finds were recorded.

CONGRESBURY, The Stycks, Venus Street ST44286295
A quantity of Romano-British pottery was recovered from this site during the excavations at Pineapple Farm, Congresbury by Vince Russett for Avon County Planning Department in 1990 (see above). The pottery was of 2nd to 4th century date, and in sufficient quantity to possibly imply an extension of the known kilnfield site and settlement to the south of Venus Street. A number of sherds of medieval pottery of 12th-14th century date were also found.

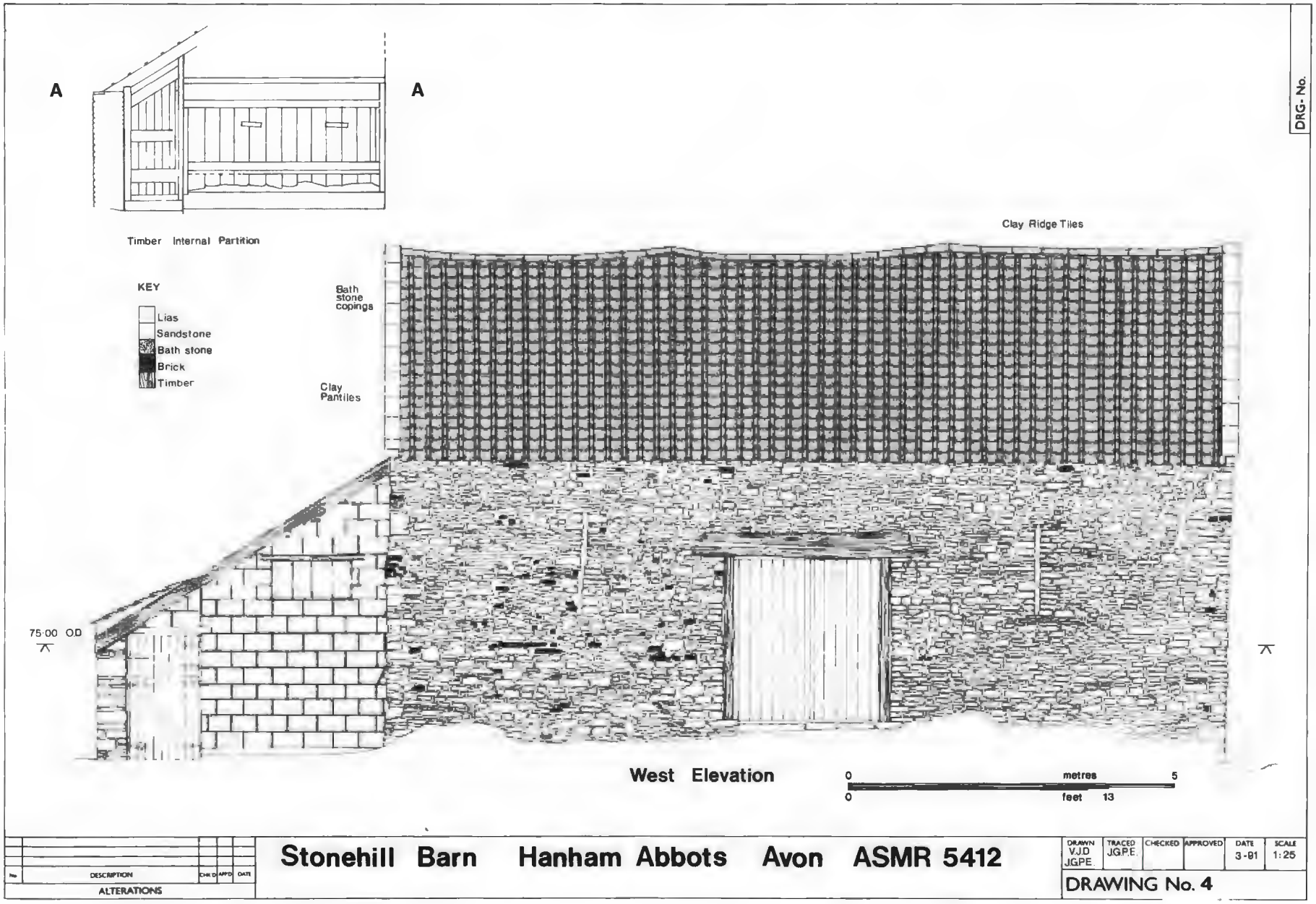

Fig.3. Romano-British building at Stonehill, Hanham

HANHAM, Stonehill Nurseries ST65107182
Trial evaluation excavation by Vince Russett for Avon County Planning Department in 1990 indicated substantial Romano-British occupation at this site, and subsequent full excavation revealed two phases of Roman occupation, both probably within the 4th century.

An initial phase, with a substantial roadside ditch, was represented by a semi-circular ditch, backfilled with large quantities of charcoal, which incorporated a small building of horseshoe-shaped plan, *c* 5m across, with a heavily burnt Pennant sandstone floor. The whole was covered in a thick deposit of tapslag, possibly resulting from Roman iron smelting activities. Undated mining of a substantial seam of haematite adjacent to the main road at the south-western end of the site may have been Roman in origin.

A second phase involved the construction of a large stone-walled building (Fig. 3), one room with a flagstone floor, and a second with a carefully constructed rammed gravel floor. The room with the flagstone floor incorporated a drain running along the inside of the wall, and two large oolite blocks in an internal wall indicated that the site may have been aisled. The structure revealed (clearly only a section of a much larger building extending to the east) was interpreted as an agricultural building, possibly for housing cattle. It had been abandoned and allowed to collapse naturally at the end of the 4th century.

Despite reasonable conditions for its preservation, little bone and other evidence for the economic activity of the site was discovered, with the exception of a complete rotary quern lower stone recovered from a floor level.

No trace of the metalling of the Sea Mills to Bitton Roman road (the so-called Via Julia) was found in the excavations, although trial excavation extended right up to the side of the A417 on both sides.

The site is currently being completely removed by the construction of phase 4a of the Avon Ring Road.

MARSHFIELD, Oldfield Romano-British site ST752735
In 1988, a metal detector user brought a collection of finds from Oldfield Farm, Marshfield, to the attention of staff of Bristol City Museum and Art Gallery. The finds were identified by Jennifer Stewart and Vince Russett, then both of the City Museum. Six copper alloy coins were recorded, including an AE3 of Constantine II (337-340 AD), and three late 3rd century *antoniniani*. Other metal finds included a tinned bronze spoonbowl, probably of late third/fourth century date, a decorative circular headed bronze stud, a biconical lead steelyard weight, with an iron suspension loop, and a quantity of pottery. This included a greater percentage of fine wares than that recovered during the parish survey (Russett 1985); fragments of late third/fourth century New Forest colour coated beakers, several fragments of undatable Samian (including one with an edge ground down long after breaking, probably to obtain clay powder for medicinal or cosmetic purposes), and around fifty other sherds of coarse pottery of various types, mainly BB1 or local copies. The group tends to indicate a later Roman date for the site. *(Vince Russett ACC).*

OLVESTON, RB ditch at Awkley ST59438632
A machine-cut trench was excavated across the junction of the solid mudstone geology and the alluvium at Awkley, by Glamorgan-Gwent Trust in 1991. A ditch *c* 1.0m wide running along the interface was identified, and dated to the Romano-British period. Similar ditch features are known at the alluvial/solid geology interface on the western side of the Severn.

PILNING AND SEVERN BEACH, Romano-British site at Redham Lane ST56548606
Four machine-cut trenches were excavated by Glamorgan-Gwent Trust in 1991 to investigate a site first located at this site by Vince Russett in a watching brief in 1990. A complex sequence of inter-cutting ditches containing quantities of pottery, bone, stone and charcoal were revealed, along with some indication of occupation surfaces. The site appears to span the late Iron Age/early Roman transition, with the latest material apparently of third century date. Further work is planned for 1992.

PILNING AND SEVERN BEACH, RB site at Whitehouse Farm ST55298423
A trial excavation by Glamorgan-Gwent Trust at this site in 1991 revealed a large cut feature of uncertain type, containing quantities of Roman pottery, bone, charcoal, burnt clay and burnt stone. The pottery ranged from first to late third century in date. Among the environmental evidence was found eggshell of Roman date, identified as that of domestic fowl and pigeon.

PRISTON, Great Croft RB site ST69406075
The Romano-British settlement in Great Croft on the north side of the village was walked during the survey by Mike Chapman for Avon County Planning Department. A large quantity of C2-C3 pottery was found over the north half of the field. Although no building material was evident, the pottery scatter extended a further 150m west into the next field, and a number of low banks lying across the site appear to extend northwards, possibly in connection with the early field system on Pensdown Hill. The system may be connected with the area around Pressbarrow Farm, 200m along the ridge, once known as Westend Town. *(Mike Chapman ACC)*

ST. CATHERINES, Hollies Lane Roman site ST77506910
In a field that straddles the parish boundary between Batheaston and St. Catherines on the sunny southern slopes of Charmy Down about 2.5 miles east of Bath lies a small market garden business. It should perhaps have come as no surprise when the erection of hothouses and consequent terracing here exposed well preserved walls and gutter blocks of a masonry building; in retrospect the site is a classic one for a Roman villa.

Evidence for a substantially built late Roman building with plastered walls standing a maximum of 1.9m high and with a much repaired *opus signinum* floor was revealed. One large room of what might be a villa style of building

was partially examined and shown to have one side open to the next room or perhaps a courtyard looking south along Ramscombe Bottom. The building was set in an artificial terrace, and a stone water tank and drainage suggested a water supply system.

The excavated building did not extend west of the excavation but remains of other Roman buildings are known here through the small holes excavated for greenhouse posts. The small amount of pottery recovered suggests that, in common with all of the villas around Bath, this one dates to the 4th century. The building stands 100 yards uphill of a putative corndryer and a spread of Roman building debris which was discovered in 1970. On present evidence, the site would appear to be that of a substantial Roman farm or villa.

In 1991 the opportunity arose for some extra recording to be carried out. More excavation by the landowners revealed further buildings and major terracing works of the Roman occupation and further indications of field ditches. One of these is earlier than the building and cuts a field lynchet. The field systems in this area are usually assumed to be medieval (see Hollies Lane Reservoir) but here at least can be shown in part to be of Roman or earlier origin. A large cylindrical stone water cistern was also revealed from a spot adjacent to the excavations of 1990.

The site appears to be made up of several separate well constructed masonry buildings, although it seems likely that the eastern group of walls make up one larger building of winged corridor type. Further work is not envisaged as the site is not to be further disturbed. *(Peter Davenport BAT)*

STOKE GIFFORD, Brook Way ST620815
Four sites destined for housing owned by Northavon District Council were evaluated prior to their sale. One site produced evidence of Romano-British features, pits and ditches with small quantities of associated pottery. This area was totally excavated in December 1991 by Niall Phillips for Avon County Planning Department. It is tentatively identified as agricultural activity of the Roman period. Post-excavation work is proceeding.

STOKE GIFFORD, Great Meadow ST629810
This site, first identified during the evaluation excavations on Bradley Stoke Way, was subsequently totally excavated in July 1991 by Jonathan Erskine and Sandy Kidd for Avon County Planning Department, and features dating from the late Iron Age to early Roman were identified. Two Romano-British graves with associated skeletons were also recovered. The final excavation report on this site is in preparation.

THORNBURY, Marlwood Farm ST631888
An evaluation excavation by Jonathan Erskine for Avon County Planning Department in 1990, on the site of previously recorded Romano-British sherd finds, located three small beam slots of indeterminate purpose, many sherds of Romano-British pottery and one sandstone spindle whorl.

SUB ROMAN

COMPTON DANDO, Fairy Hill
Two evaluation trenches were excavated by Jonathan Erskine for Avon County Planning Department in 1990, over the line of a bank marked on the 1931 OS plan on the presumed line of the West Wansdyke. They revealed a low bank approximately 10.00m wide by 0.50m high. Several abraded Romano-British sherds were recovered from the make-up of the bank, perhaps going some way to confirming the supposed seventh century date of the monument. There was no indication of a ditch to the north. The bank had been concealed by tipping, probably as a result of the construction of council houses in the 1960s.

MEDIEVAL

BATH, Bath Abbey ST75096476
Bath Archaeological Trust organised a full photogrammetric survey of the west front prior to conservation work in 1991. This is now held in Autocad format for the Abbey authorities along with the original survey data and stereo pairs. It is hoped this will form the basis of a full masonry recording programme. *(Peter Davenport BAT)*

BATH, *Bimbery*
The tithing of Bimbery in the south-west corner of the city of Bath has been mapped onto the seventeenth century map of the city, and seen to coincide exactly with the area above the 20m contour (Chapman and Holland 1990). It is referred to in various documents as a distinct administrative district, even a hundred. In its early medieval form, the name appears to mean 'fortified place by the baths', and it is possible that this district of Bath was a focus of occupation in the city before the tenth century Saxon street layout was completed. *(Mike Chapman and Elizabeth Holland, for the Survey of Old Bath)*

BATH, The Kingston Estate
A map at 1:250 scale of the Kingston estate in the early eighteenth century has been compiled. This once constituted the precinct of the medieval monastery of Bath, occupying the south-east corner of the city. The map was mainly compiled from plans and details in the papers of the Duke of Kingston held by Nottingham University, enabling a high degree of accuracy. *(Mike Chapman and Elizabeth Holland, for the Survey of Old Bath)*

BATH, Seven Dials ST74876482
Bath was certainly a walled city but argument continues over when it acquired its walls. That there was a Roman earth rampart is certain but its ditch has not been found. Various parts of the wall have had the appearance of Roman work but no proof has been forthcoming. 18th century accounts of demolition suggest strongly that the wall had some Roman structure surviving. Excavations in 1980 suggested a possible late Roman ditch of the type that

usually goes with a wall, but the evidence was inconclusive.

In 1990 the chance arose to investigate not the wall itself but the associated moat or ditch. The site was made available by the demolition of Chemies night-club and the fact that the site was a scheduled ancient monument consent which required excavation in advance to our specifications.

The ditch appeared on a line some twenty metres away from the wall line and was about six metres wide and about three metres deep. It had been redug or cleared after neglect on a number of occasions. Some of these are documented in historical records, as when both Edward III and Richard II commanded the wall and ditches to be repaired in the 14th century.

The finds are still being analysed but evidence of maintenance in the 12th century and later is clear and the ditch is likely to be of late Saxon origin (in 1189 it was referred to as the old ditch).

Building in 1970 (now demolished) removed all traces of the ditch's last military use in the 17th century. No sign of a Roman defensive ditch was found unless a small ditch closer to the wall than the medieval one represents a defensive circuit. It is more likely to be a drainage ditch for a length of metalled road running roughly parallel to the wall. The existence of this road reflects that of one on the north side of the city and is additional indirect evidence of a Roman defensive circuit.

A surprise was the scattering of early medieval rubbish pits near and apparently over the ditch, probably dug at a time when the ditch was out of use. They imply occupation of the area but more probably craft industrial than domestic to judge from the paucity of domestic refuse. One pit was almost certainly a sawpit, taking the history of nearby Saw Close back to the 12th century.

After the completion of the excavation, a watch was kept on the building works. As most of the work involved piling, little was observed.

However, the excavation of a sewer trench in 1991 into Saw Close revealed a near complete cross-section of the city wall. This proved to be very similar to that exposed in 1951 by Bill Wedlake at the Ham Gate, with a vertical section built on stepped offset foundations. In 1951 the exterior of the wall was observed, but here the interior was uncovered and a contemporary earthen rampart was recorded. The wall survived to within a very short distance of the pavement and perhaps 0.80m of vertical wall face survived. This may well have been rebuilt or refaced as there was a cut through the rampart visible at this point. Below this the wall was stepped out course by course. A further 2.5 metres of this part of the wall still stood. The front face of the wall had been removed by 18th century cellars. The rampart was piled up against the wall and was clearly contemporary and essentially of one period, although tip lines were visible here and there. There was no evidence of earlier or later work except as noted above but Roman levels were not reached.

The wall as seen is almost certainly of medieval date, probably around 1300 AD but no dating evidence was recovered. The rampart in particular was lacking in any finds. The trench shows that the medieval city wall survives remarkably well under Saw Close and the rampart probably seals early medieval and Roman remains which would also be well preserved. This reinforces the need to safeguard the archaeological deposits in this area from further damage. *(Peter Davenport BAT)*

BATH, White Hart Inn site ST74996477

An examination of the White Hart Inn site, at the top of Stall Street, Bath, has re-examined the findings of J.T. Irvine during the demolition of the Inn in 1867, and the historic documentation for the site. Irvine's finds have also been republished. The implications for the location of the lost church of St. James, and the possibility of the site being that of the original Saxon Abbey of Bath have been discussed (Chapman and Holland 1990).

BATHAMPTON, Bathampton Farm ST781669

An evaluation excavation by Jonathan Erskine for Avon County Planning Department in 1990, to check on the possible route of a Roman road south-west of the River Avon, located a small area of clay with 22 sherds of Bath A ware and one sherd of Minety ware dated to 13th to 14th century.

BATHEASTON, St. Catherines, Hollies Lane ST78206925

In 1991, Wessex Water invited Bath Archaeological Trust to tender for a contract to carry out an assessment of the archaeological implications of a proposal to build a new reservoir and associated works at St. Catherines Valley.

This area is one of considerable interest, as the valley sides are below Holts and Charmy Downs which are known to be of great importance for prehistoric studies. The slopes themselves presented *prima facie* evidence for a well preserved medieval landscape.

In the event, a four-week field-work programme, recommended after a desk-top evaluation and carried out by Vince Russett, showed that the lanes, fields and lynchets and associated hedgerows had been laid out in the twelfth to thirteenth centuries on previously open ground. As the site also straddles the parish boundary between St. Catherines and Batheaston it was of considerable interest to find an upright marker stone still *in situ* and buried in a lynchet. It was probably of medieval date as it seemed to predate the lynchet formation. *(Peter Davenport BAT)*

BRISTOL, Mere Bank, Avonmouth ST53717879

A section was cut through this linear earthwork by Glamorgan-Gwent Trust in 1991. The date of the earthwork has been frequently debated, formerly being thought to be of Roman origin, but recently being suggested to be early medieval. The bank was found to be a simple layered clay construction, sealing a horizon of silty clay that contained a sherd of twelfth century pottery.

BROCKLEY, Brockley Church ST46606696

A large drain was constructed close to the eastern end of

Brockley Church during 1990, involving the digging of a trench 2m deep and up to 1m wide along the end of the nineteenth century chancel. The work was observed by Vince Russett for Avon County Planning Department. The base of both chancel and the adjacent churchyard walls proved to be entirely of nineteenth century construction to the base of the foundations, which were clearly exposed. Although the trench ran within 20cm of the corner of an eighteenth century box tomb in the churchyard proper, no trace of the grave cut was seen. No other features were disturbed.

CONGRESBURY, The Stycks, Venus Street ST44286295 (see *Roman* above).

HANHAM, Stonehill Nurseries ST65107182
The Romano-British buildings excavated at Stonehill in 1990 (see above) had been extensively robbed during the late Saxon period, and the remains of a cobble-floored building, with central drain and line of post-pads representing the site of its northern wall, were also associated with a spread of late Saxon pottery of tenth/eleventh century date. There was no evidence for its occupation beyond the eleventh century, although substantial quantities of abraded medieval pottery of twelfth-fifteenth century date were scattered over the site, indicating settlement nearby. A field ditch, probably of thirteenth century date, had cut through the remains of the Roman buildings.

NEWTON ST. LOE, Coin find at Newton St. Loe Church ST70106487
During the excavation of a soakaway and drain at Newton St. Loe Church in 1991, a silver coin was found by the contractors. It was identified by Vince Russett of Avon County Planning Department, who also subsequently watched the rest of the works. Little, except the coin and disarticulated bone, was discovered. The coin was a silver halfpenny of Henry VI, of the 'pinecone and mascle' issue from the London mint, dating 1430-1434. It was in very good condition, although thin, with only the 'HEN' of the 'HENRICUS' legend on the obverse worn, or badly struck. Otherwise, the coin was exactly as Seaby No. 1884 (Coins of Great Britain 1988). The coin is at present in the keeping of Mr Pitt, of West Country Tiling, at Frome in Somerset.

OLDBURY-ON-SEVERN, The Toot ST609927
A few medieval sherds were recovered during an evaluation excavation in 1990 (by Jonathan Erskine for Avon County Planning Department) of the Iron Age earthworks in association with a possible field boundary ditch.

OLDLAND, Barrs Court ST658720
Evaluation excavations, by Jonathan Erskine for Avon County Planning Department in 1990, of the derelict land to the west and north of Barrs Court Moat produced no indication of any surviving archaeological deposits.

The Middle and Lower moats were drained and sectioned by machine, in an evaluation excavation prior to relining work by Kingswood District Council. The Middle moat had been formed from an enlarged natural stream, and the Lower moat originally excavated to the natural Pennant sandstone. Further revetting walls were located and a construction sequence postulated. Dating is still undetermined.

OLDLAND, Barrs Court watching brief ST658720
A watching brief was carried out by Lesley Cross for Avon County Council in 1991, during the renovation of Barrs Court Moat, with site notes including plans, a collection of samples of materials used in the project and a photographic record. The work, carried out after earlier archaeological evaluation (see above), included the clearance of some silt, puddling in of a clay liner to protect the existing archaeology and the construction of a new concrete weir to raise water levels, with a pedestrian bridge between the Middle and Lower moats.

PRISTON, Medieval field systems
At least nine previously unrecognised sets of earthworks of field systems, probably medieval in date, were recorded in the parish during the survey for Avon County Planning Department. Particularly well-preserved was a flight of strip lynchets at Wilmington (ST69906253), and a massive causeway bank south-east of Priston village at ST69956025. Details are lodged with the Avon SMR. *(Mike Chapman ACC)*

PRISTON, Potterne Mead ST68646141
This site was fieldwalked during the Priston survey by Mike Chapman for Avon County Planning Department, and a scatter of twelfth/thirteenth century pottery located above the road junction to the mill. Despite the field name, there was no obvious evidence of pottery manufacture.

PUBLOW, Earthworks of ?deserted farm ST61226407
This site (Fig. 4) was surveyed by Bob Williams in April 1991. It consists of the earthwork of a level enclosure cut into the south-facing slopes overlooking the river Chew. There are two apparent raised building platforms, and a depression, possibly marking the site of a spring, one of several in the vicinity that drain into a ditch or leat running parallel to the river. Several old field banks in the immediate vicinity and 'reversed-S' fields on the hillside to the north east suggest a medieval field pattern. The Stanton Drew Tithe Map of 1840 shows that the earthwork then lay in an orchard, and that the field below was a water meadow. No other documentary references to the site have been found. *(R.G.J. Williams)*

SWAINSWICK, Uplands ST760685
An area of ridge and furrow and a hollow-way were surveyed in 1990 by Jonathan Erskine for Avon County Planning Department as part of the evaluation of the proposed A46 realignment.

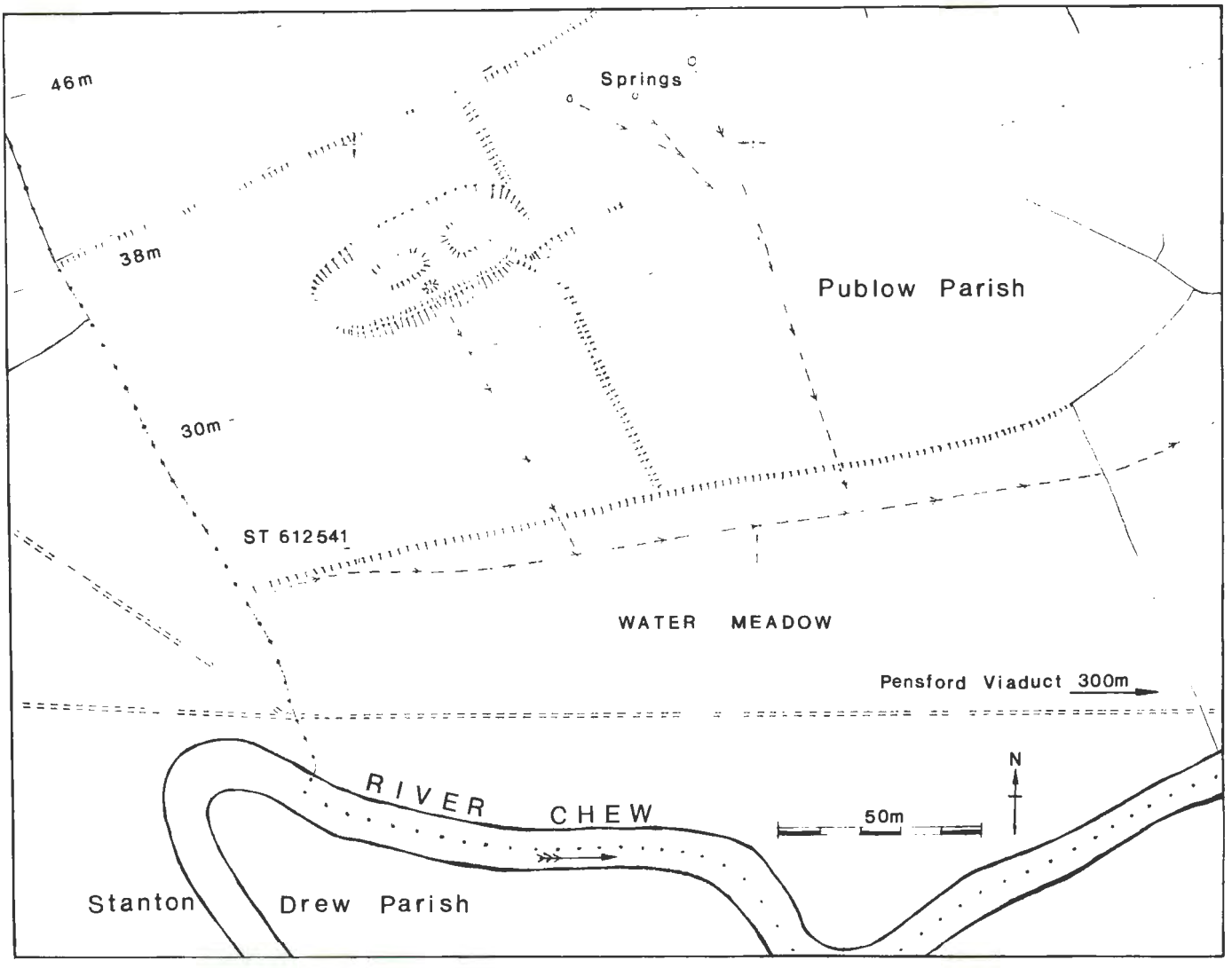

Fig.4. Earthworks at Publow

THORNBURY, Marlwood Farm ST632887
Evaluation excavation, by Jonathan Erskine for Avon County Planning Department in 1990, of a stony mound immediately adjacent to the footpath from Marlwood Grange to Alveston, located a small ditch (undated) and two medieval pots *in situ* dated to the 13th century (Ham Green) and late 12th century, together with other sherds of a limited contemporary time-span. The Ham Green pot contained three decorative iron studs and a knife blade. Investigation of the fields called The Warren and Great Fishpond Leaze produced no evidence of specialised usage.

WICKWAR, Manor house and fishponds ST724889
Wickwar Church stands alone on the northern end of the medieval town, on the far side of a small natural valley, now partly removed by quarrying connected with the tunnelling of a railway below it in the mid-nineteenth century. The Tithe Map of 1840, however, shows a large house at ST72368885, of which only a section of terraced garden now survives, and a set of two fishponds in the valley bottom. One of these, at ST72428890, has been entirely destroyed by the railway cutting at the entrance to the tunnel, while the second, at ST72358880, survives as a very faint earthwork in the valley bottom. These features presumably formed part of the manorial complex next to the church at Wickwar, and may, from their position, have predated the town itself. *(David Lambert and Vince Russett ACC)*

YATTON, Court de Wyck, Claverham ST34491661
In advance of major extensions to the Fairey Hydraulics factory at this known medieval manorial site, and of restoration and alteration to the structure of the old chapel building, an architectural and historical survey of the chapel, and trial evaluation excavation of the area of the proposed factory extension, were undertaken by R.P.S. Clouston. The recording of the chapel identified the original late medieval features, and a sympathetic restoration and conversion to office space has since taken place. The evaluation excavations identified the post-medieval agricultural buildings on the site, which correlated well with available eighteenth century plans. Structures and bone

scatters connected with the recent use of the site as a tannery were also recorded in the evaluation.

YATTON, Yatton Church ST43126542
During construction work in Yatton Church in 1991, observed by Vince Russett for Avon County Planning Department, the floor between the pillars supporting the central tower of the church was lowered by *c* 30cm for the laying of a new floor. The layers removed were largely of lumpy pinkish-white mortar, containing a few fragments of nineteenth century crown glass, and miscellaneous metal fragments of similar age. From the stained bases of the pillars themselves, it is clear that the layer covered the bottoms of the pillars. A Victorian heating duct had subsequently cut at least 0.8m into the floor, but this was not removed during the works. No features earlier than nineteenth century were disturbed by the works.

POST-MEDIEVAL

BATHAMPTON, Dry Arch ST780658
A survey, by Jonathan Erskine for Avon County Planning Department in 1990, was made of the arch of 1810, carrying the Bathampton Stone Company's tram-way over the 19th century Warminster to Bath road. It was found to be in a very poor condition.

BRISTOL, Redcliffe Caves ST58957234
During 1988, Vince Russett (then of Bristol City Museum Field Archaeology Unit) recovered (from known pottery waste heaps in the caves) several fragments of tin-glazed earthenware wasters, including saggar, tile and girder fragments, fragments of wasted chamberpot and small bowls, and contemporary stoneware and pantile fragments. The kiln components are similar to those from the Delftfield Pottery, Glasgow (Denholm 1982). The fragments have been deposited in the Bristol City Museum and Art Gallery.

CHURCHILL, Dolebury warreners house ST45165897
The warreners house at Dolebury Warren, now only a foundation, was suggested to have been a tower building when surveyed by Charlie and Nancy Hollinrake (1987). This is confirmed by the depiction of the site on Day and Masters' 1782 map of Somerset *(Som Rec Soc 76 1981)*, where it was clearly portrayed as a tower. It seems to have been Day and Masters' usual cartographic practice only to record buildings in any detail if they were features of landscape importance, implying that the tower was intact, and possibly in use, in the early 1780s. It was not recorded on the subsequent Greenwood map of 1822 *(Som Rec Soc 76 1981). (Vince Russett, Avon County Planning Department)*

HANHAM, Stonehill Barn ST650718
Prior to the demolition of this Grade II listed building, dating from the 18th century, for the construction of a further phase of the Avon Ring Road, a complete drawn and photographic record was made, by Jonathan Erskine for Avon County Planning Department in 1991 (Fig. 5). All

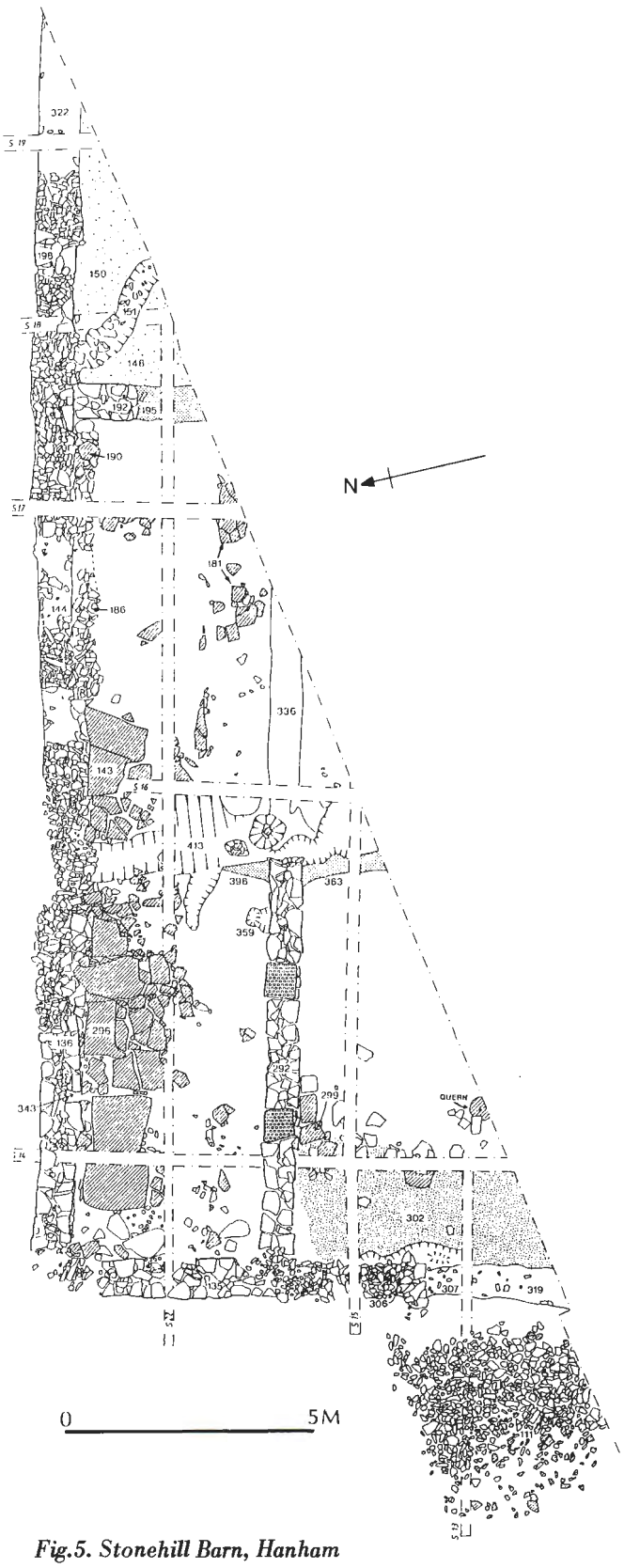

Fig.5. Stonehill Barn, Hanham

the exterior construction and as much of the interior as was available were recorded. This was published by Avon County Planning Department. The barn was later demolished, and it is planned to reconstruct it at Grimsbury Farm, Warmley.

HANHAM, Stonehill Farm ST65047174
Trial excavations were carried out in the yard and adjacent areas at Stonehill Farm, Hanham, by Andrew Young for Avon County Planning Department in 1991. Despite the evidence of Roman and medieval occupation from the northern side of the road at this site, little evidence of such was found. A post-medieval drain, and a large stonewalled structure, of post-medieval date and possibly associated with the local coal-mining industry, were recorded.

HANHAM, Stonehill Nurseries ST65107182
A number of post-medieval features were revealed during the excavation at Stonehill Nurseries in 1990 by Vince Russett for Avon County Planning Department. These included the remains of five bellpits, and a drainage system associated with one of the largest. Later features (dated to *c* 1770) were a series of parallel gullies, backfilled with debris from mining operations. They were possibly connected with the abstraction of topsoil.

IRON ACTON, Acton Court ST677842
Restoration work continues at the early Tudor house. Robert Bell has kept a watch on construction work. A Tudor fireplace in the East Range was unblocked and further information on an underlying medieval fireplace, probably from the kitchen range, was recorded. Other restoration work revealed architectural fragments which are thought to be from a Jacobean strapwork masonry screen, apparently containing letters reused as blocking in 18th century work. *(Peter Davenport BAT)*

KEYNSHAM, 34-42 Temple Street ST656684
An evaluation excavation by Jonathan Erskine for Avon County Planning Department in 1990, to the rear of these properties prior to redevelopment, revealed two dry-stone-built gullies, one of which was associated with a wall foundation. These features were interpreted as waste water management systems. There was also a stone-built vaulted well or cistern in the rear yard of 42 Temple Street still holding water. The well measured approximately 3.0m by 3.0m by 2.50m deep. The walls had been rendered in cement or mortar with a pump tube in the north-west corner.

MARSHFIELD, Ruxleigh waterleat ST77777353-ST78627334
A gully lies along the contour, across the north-facing slope of the valley to the south of Marshfield, from Ruxleigh cottages, formerly Ruxpoole, to the side of the valley at Ringswell. This is clearly a waterleat, similar to examples found elsewhere in the Highland zone (e.g. in west Somerset). The system is difficult to date, but is probably post-medieval in origin; there is no clue from place-name evidence. The function of these leats was to run a thin film of water across the fields in the early spring (see Priston report below), to promote early grass growth.

NAILSEA, Nailsea Glassworks ST478709
A watching brief was carried out on geotechnical trial pitting at the glassworks site by Lesley Cross for Avon County Council in late 1991. Although it was possible to relocate most of the pits to avoid known areas of buildings (identified from nineteenth century plans of the glassworks made while it was in production), three of the pits revealed substantial walls of buildings standing to three or four courses high. All were of Pennant sandstone set in grey ashy mortar, built in construction trenches cut into the natural clay layer above the Pennant bedrock. The individual buildings were identified from the plans, and recommendations for further work put forward.

PILNING AND SEVERN BEACH, The Binn Wall
The sea defences of the Binn Wall were recorded in the initial survey of the Second Severn Crossing construction camp area by Vince Russett for Avon County Planning Department in 1990. Further work by Glamorgan-Gwent Trust in 1991 elucidated the history of the Wall, with a possible reference to it in 1563, and the discovery of a detailed survey of 1820-1. Features on the wall, including an old limekiln and several stones, were recorded.

PILNING AND SEVERN BEACH, Fishtraps at New Passage
During the course of the survey work for the Second Severn Crossing approach roads by the Glamorgan-Gwent Trust in 1991, two wooden structures were recorded on the shingle beds offshore at English Stones, New Passage. One, at ST53928591, was fully recorded, and was almost certainly a fishtrap of late nineteenth or twentieth century date. A second, further offshore at *c* ST5386, was not recorded fully.

PILNING AND SEVERN BEACH, Redwick village ST545862
The village of Redwick, developing from a small hamlet of seventeenth century, and possibly medieval, origins, became an embarkation point for the ferry at New Passage in the early eighteenth century. Details of the seventeenth century houses predating this development and other buildings in the village were recorded by the Glamorgan-Gwent Archaeological Trust during its Second Severn Crossing work in 1991. In addition, the remains of the demolished eighteenth century Redwick House (now the walls of a farmyard) were recorded, and several trial excavations made in various parts of the village.

PILNING AND SEVERN BEACH, Whitehouse Farm ponds ST54928470
The initial watching brief on the geotechnical pitting on the line of the Second Severn Crossing approach roads identified a group of ponds at Whitehouse Farm as a possible medieval moat or fishpond complex (Russett 1990). The complex was surveyed by Glamorgan-Gwent Trust in 1991, and a trial excavation revealed that the ponds are more likely to be post-medieval in date. A ditch found below the pond contained no dating evidence, and has been suggested to be possibly of prehistoric date.

PRISTON, Farm Survey
A selective survey of agricultural buildings on six farms in the parish of Priston was undertaken on behalf of Avon County Council and HBMC by James Bond and Mike Chapman in 1991. All the farms studied had been mixed farms in the past, and this was reflected in the range of crop storage and livestock housing recorded. Although several of the farms occupied medieval sites, no very early agricultural buildings survived; the building stock reflected substantial new investment in the later eighteenth century, a time when many of the old copyhold tenures were being reorganised into new farm units. Most of the buildings were of white Lias rubble with Bath freestone dressings, and certain architectural details, including four-gabled finials, ovolo-cushioned gable copings and bead-moulded window mullions and surrounds, were repeated from farm to farm with only minor variations.

Substantial barns survived at Wilmington, Priston Mill and Pressbarrow Farms. Other buildings characteristic of several of the farms were arcade-fronted shelter sheds facing a foldyard, and unusually deep gable-entry cart sheds. The only earlier building of note was a brick granary perched upon staddles at Church Farm, probably dating from the late seventeenth or early eighteenth century. A fuller report is in preparation.

PRISTON, Conygre and Redfield Collieries
Two eighteenth century collieries were identified in the parish survey, at Conygre (ST68316118) and Redfield (ST67666128), the shaft of the latter being still open for c 6m, and well-constructed of coursed lias and Bath freestone dressing. A pair of egg-ended boilers used for water storage at Wilmington Farm may have been salvaged from one of these neighbouring collieries. *(Mike Chapman ACC)*

PRISTON, Limckilns
The sites of six post-medieval limekilns were identified during the survey, mostly of eighteenth century date, but only the remains of one nineteenth century example have survived at ST69806069. *(Mike Chapman ACC)*

PRISTON, Water management features at Priston Mill
A feeder canal once ran from the brook below Priston village, at ST69896090, around Pensdown Hill, as a supplement to the headrace of Priston Mill at ST69316142. Originally over 1000m in length, only a few hundred metres have survived, together with a culvert at ST69876139. Its origin is uncertain, but it was certainly in existence by 1810. A similar project was carried out later, in the early 1840s, when a channel was cut for an unusual water-meadow system, which took water from the millpond at ST69476143 along the upper boundary of the field at ST69936198. A series of sluices distributed along the channel allowed the water to drain across the field. A short section has survived in the garden of Mill Farm house, most of the 750m length having been infilled by cattle trampling. The sluices are said to be still in place under the turf. *(Mike Chapman ACC)*

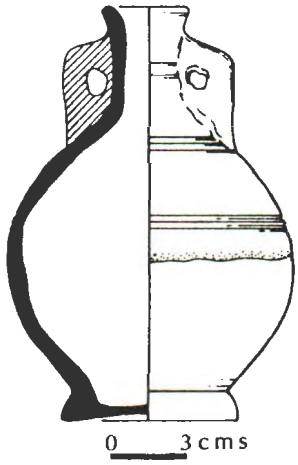

Fig.6. Wanstrow costrel from Thornbury

THORNBURY, Kington ST620903
The illustrated vessel (Fig. 6) was discovered during the underpinning of foundations of a building originally constructed as an extension to a mid-17th century house at Kington, near Thornbury, in Avon, and brought into the Bristol City Museum in 1988, where it was identified by Vince Russett, and drawn by Ann Linge, of the Museum Field Archaeology Department.

The vessel stands 16.4cm high, and is complete except for a missing section of the lip, and three small holes at various points on the body. It has a slightly flared rim, with opposed upright pierced lug handles, the piercings being assymetric. The base has the typical rounded splay of East Somerset products, and the decoration of the body (three parallel girth grooves, three parallel grooves on the shoulder, overlain by the luted-on handles, and two further on the neck) is also typical. The top 60% of the vessel is glazed, but the finish is poor and heavily pitted; some splashes on the underside of the base show that this vessel was fired upside-down.

Perfunctory examination of the clay inside the vessel did not show any evidence of objects secreted in the vessel when it was buried. The vessel probably dates from 1680-1730. Thanks to Mike Ponsford for comments on the first draft of this note.

TORMARTON, Tormarton churchyard survey
ST76957883
The churchyard at Tormarton has been surveyed by Gwynn Stock, with photographs and a measured survey of the graves, and some work on deciphering epitaphs and inscriptions thought to be lost, by the use of low angle lighting. The oldest standing tombstone is dated 1650. Comparison with the parish records of Tormarton has brought confirmation of the accuracy of the headstone dates. During the survey, elements of the earthworks recorded in the adjacent field (probably the remains of settlement shrinkage) were surveyed in the churchyard, which seems to have expanded over them in the late eighteenth century. A similar survey is underway at West Littleton.

WEST HARPTREE, Widcombe pound ST57475838
The site of the manorial pound for Widcombe, a manor of the Duchy of Cornwall, was recorded in a survey by Avon County Council staff in 1984. In 1990, the cutting back of the hedge at the site revealed that the side of the pound against the field survived as a mortared stone wall c 1.5m high. The site was recorded in the Duchy Court Rolls at this site from 1662 at the latest. *(Vince Russett ACC)*

WESTON-SUPER-MARE, Uphill Road ?ST31735977
Among a number of sites identified as part of a survey of Uphill, deposited with the Avon County SMR by Mrs Anderson of Weston-super-Mare, was a 19th century gun battery in Uphill Road. A notice of February 16th 1861 in the Weston Mercury stated that '... the earthworks and platforms of the artillery battery being constructed on Uphill Road had been completed, and work was proceeding on the magazine. It was anticipated that the guns would shortly be placed in position ...'. A note from the Forge ledger belonging to Mr D. Minifee of Uphill adds, on January 2nd 1909, '... to demolishing the old magazine as agreed £1.00 ...'. The structures may be the three square structures recorded on the eastern side of Uphill Road on the 1904 1:2500 map of the area. The survey also included much useful information about nineteenth and twentieth century water supplies and 'keeching stones' (stones marking the lengths of rhyne to be keeched or cleaned by certain individuals) in the parish, some of which were depicted on the 1904 1:2500 OS plan.

MULTIPERIOD

ALMONDSBURY, BRISTOL, OLVESTON, PILNING AND SEVERN BEACH, Second Severn Crossing Survey 1990
A desktop study (by Deborah Porter 1990) and watching brief on geotechnical trial pitting (by Vince Russett) were carried out for Avon County Planning Department on the line of the approach roads to the Second Severn Crossing Bridge at Severn Beach. One hundred and six trial pits were observed, and a number of other field records made. One mid to late Iron Age site and two Roman occupation sites were definitely identified in the Levels, each sealed by up to 0.9m of estuarine alluvium. A number of abandoned or shifted medieval and post-medieval farm sites were identified, along with major drainage features, and a number of undated enclosure earthworks. A site, possibly a medieval moat or fishponds, was recorded at Whitehouse Farm, Severn Beach.

BATHEASTON, COLD ASHTON, DYRHAM AND HINTON, MARSHFIELD, SWAINSWICK, TORMARTON, WAPLEY AND CODRINGTON, WEST LITTLETON, Realignment of the A46 (Tormarton to Upper Swainswick)
Approximately ninety archaeological sites were identified or reconfirmed by a desk survey and field walking in 1990, by Jonathan Erskine and Vince Russett for Avon County Planning Department. These included a number of sites on the west and north of Charmy Down, where prehistoric, Romano-British and medieval earthworks survive. The majority of the rest of the sites were either prehistoric (at least two barrows, and a number of flint scatters), post-medieval, principally structures such as milestones and roadside quarries relating to the A46 turnpike, or of World War Two date, and connected with the airfield complex at Charmy Down. The survey was undertaken in connection with the proposed realignment of the A46 by the Department of Transport. All sites were indexed and published as a report by Avon County Planning Department.

KINGSWOOD, MANGOTSFIELD, PUCKLECHURCH, SISTON, Avon Ring Road Stage 2
An implications survey of the proposed line of Stage 2 of the Avon Ring Road was carried out by Vince Russett for Avon County Planning Department during 1990. The survey revealed and added a total of 90 sites to the Avon County Sites and Monuments Record. These were mostly of post-medieval date, including a number of features relating to the pre-19th century coal-mining activity in the area, the Dramway of 1828-31, Siston Hill brickyard, and a number of features connected with the Midland Railway of 1869. In addition, earthworks were recorded on the line of the Bitton to Berkeley Roman road, and a number of farms of potentially medieval origin were recorded.

PILNING AND SEVERN BEACH, Second Severn Crossing Construction Camp Survey 1990
The area due to be utilised as the construction camp for the Second Severn Crossing Bridge at Severn Beach was surveyed by Vince Russett for Avon County Council in 1990. The survey identified a number of sites, mostly of post-medieval date and connected with the construction of the sea defence bank, the Binn Wall, and its maintenance. A series of geotechnical pits and trenches were also watched, but were largely uninformative, the only feature recorded being a field pond, cobbled with stones from the nearby beach and backfilled in the early 20th century. The documentary work for the project identified the site of a seventeenth century saltworks at Salthouse Farm, Severn Beach.

SEVERN VALLEY, Watching brief
A programme of observation and recording was carried out by Andrew Young for Avon County Planning Department on a series of construction sites in the Severn Valley. The well-preserved and substantial remains of two previously unknown Romano-British settlements were identified at Elmington Manor Farm (ST55878130) and in pasture near Rookery Farm (ST57758459). Elsewhere during this fieldwork, unstratified prehistoric pottery was recovered adjacent to Brynleaze Farm (ST57278368), and a cobbled platform, possibly of prehistoric date, was recognised west of Washingpool Farm at ST56848316.

STOKE GIFFORD, PATCHWAY, Bradley Stoke Way ST615826-630808
Prior to the construction of the completion of Bradley

Stoke Way from Great Meadow to Pear Tree Road in 1991, evaluation excavation was carried out by Jonathan Erskine for Avon County Planning Department. Medieval sherds were found near Webbs Wood (ST624815) but no associated structures. Iron Age and Romano-British finds were made at Great Meadow with associated subsoil features (ST629810). In the same evaluation exercise, a Bronze Age site was located on the road line and the site of the District Centre, specifically on the site to be developed as a Tesco Superstore. A nineteenth century house (Primrose Cottage) was also recorded prior to demolition.

STOKE GIFFORD, Bailey's Court Road ST627813
An area already identified from aerial photographs and entered on the Avon Sites and Monuments Record as an enclosure, was evaluated in December 1991 prior to the granting of planning permission for housing. The enclosure itself was not found but several archaeological features were located which seem to justify further work on the south-east end of the site. This work has not yet commenced (February 1992).

YATE, Hall End Farm ST709874
Observation of test pits in December 1990, by Jonathan Erskine for Avon County Planning Department, indicated the presence of prehistoric ditches or pits below a layer of alluvial silt. Further research and observation during mineral extraction in January 1991 confirmed the presence of a pre-1842 field boundary and the realignment of the Ladden Brook during the construction of the Bristol to Gloucester railway. No further archaeological features were recorded.

UNDATED

BROCKLEY, Steep Holm ST23186066
A carved stone Celtic head was found in 1991 by Terry Gore, a member of the archaeological team working on the Steep Holme medieval priory site, under the direction of Stan and Joan Rendell. The stone was a chance find, unconnected with the priory excavations. Sharply sloping ground by the zigzag path from Steep Holm's East Beach (the main landing place) is the only wooded area of the island, largely self-grown sycamore on loose scree. The team has long been aware that a particular part of this slope occasionally yields artefacts derived from higher up the slope; they are not stratified. In scanning the area after heavy rain, Mr Gore picked up several sherds of medieval pottery before becoming aware of the algae-covered face resting upright on a slight ledge of soil and stones among the trees above the path. A specialist report on the head is being prepared by Dr Miranda Green. *(Stan and Joan Rendell)*

PRISTON, ?Stone row ST68836188
During the Priston survey, besides considerable lengths of boundary ditch on the western and southern sides of the parish, an unusual stone bank containing a number of upright megaliths of up to 2.3m (7') by 1.8m (5') in size was found along the ancient boundary between the manors of Priston and Wilmington. *(Mike Chapman ACC)*

MISCELLANEOUS

BATH, Orange Grove ST75186480
A large-scale subsurface radar survey of the whole of Orange Grove and a little of Kingston Parade was carried out in February. 1500 line metres of transects were surveyed. It was hoped, on the basis of demonstrations and previous work in other towns, to achieve a clear picture of the four to six metres of buried deposits. Although some information about total thickness of deposits did appear to be captured, no significant results could be seen from the radar plots. These disappointing results are, in fact, common to several other recent surveys of urban archaeological deposits and it appears that this technique is not yet suitable for surveying complex and deep stratigraphy.

BLEADON, Sewage treatment works, Bleadon Level ST310568
A watching brief was carried out by Andrew Young for Avon County Planning Department, during geotechnical trial pitting at the proposed sewage treatment plant site at Bleadon in August 1991. Ten pits were dug in all, and each proved to be completely archaeologically sterile. No peat layers were detected down to the lowest points of the trenches (c 3.5 - 4.0m deep).

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