

EVALUATION AND SALVAGE  
RECORDING AT KING'S SCHOOL  
(ST ALBAN'S), WORCESTER

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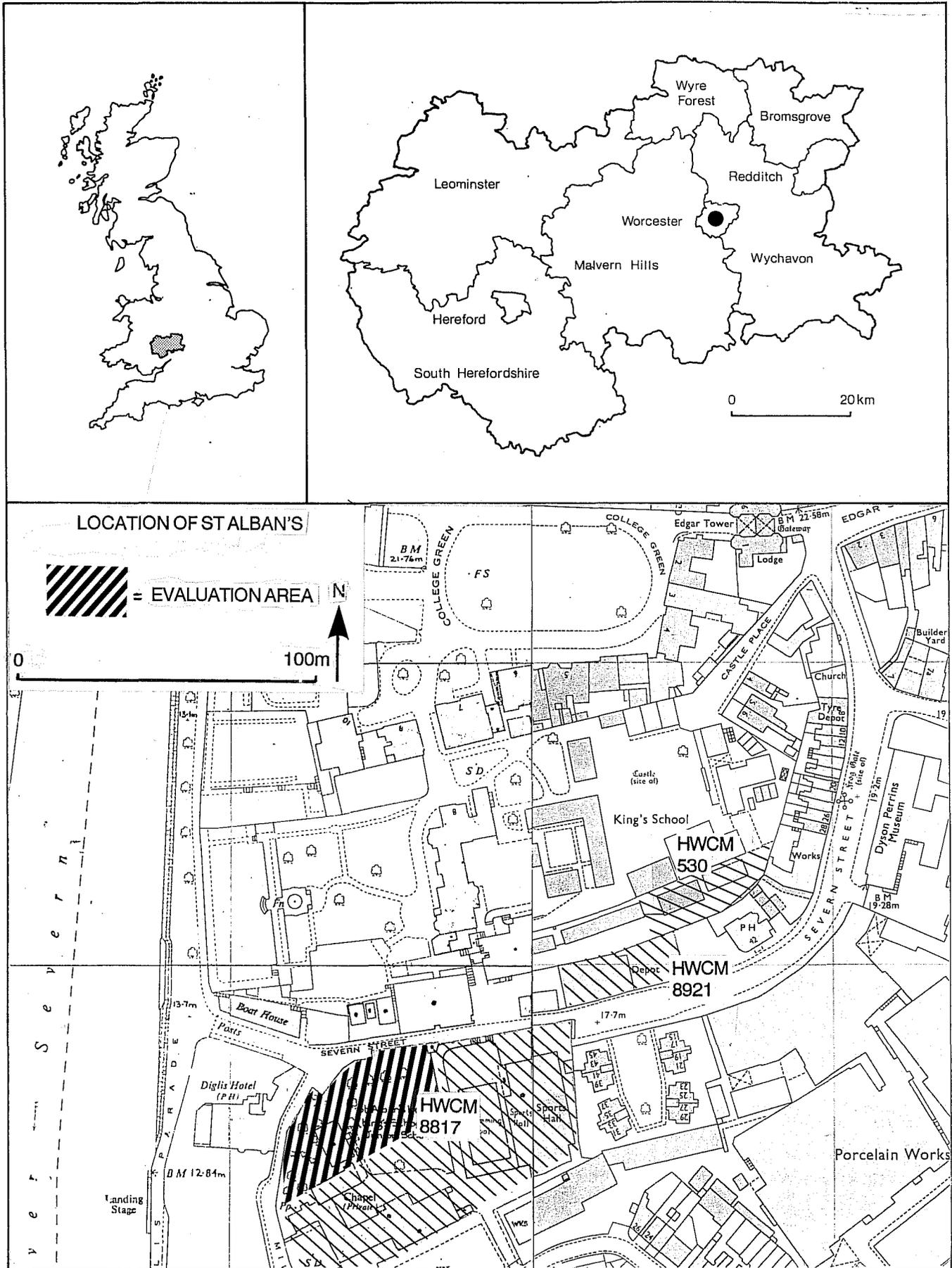
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Report 41

HWCM 8817

FIGURE 1



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# Evaluation and salvage recording at King's School (St Alban's), Worcester (HWCM 8817)

David Wichbold and Duncan L Brown

## 1 Summary

*Evaluation excavation and salvage recording was undertaken at King's School (St Alban's), Worcester, in advance of development. The site is located in private grounds, with Severn Street to the north.*

*The evaluation revealed a layer of post-medieval soil overlying a ground surface of redeposited sand and gravel sloping down to the east and west. Three medieval ovens were cut through a layer sealing a ditch running east to west which was probably Roman in date. Significant quantities of late Saxon pottery were recovered from residual contexts, which may be significant for an understanding of late Saxon settlement in Worcester.*

*Salvage recording during the course of initial groundworks revealed the presence of a heavily truncated inhumation cemetery including at least nine individuals. This is dated to the Roman period, and may be related to an earlier find of a Roman cremation cemetery nearby (Carver 1980, 255).*

## 2 Introduction

Evaluation excavation and salvage recording was undertaken at King's School (St Alban's), Worcester (NGR SO 8495 5426), in advance of development. St Alban's preparatory school lies to the south of the cathedral, south of Severn Street (Fig 1). The site is situated on top of a slight promontory of high ground enclosed by three watercourses, the Severn to the west, the

Frog Brook to the south and a former millstream along the present line of Severn Street. The latter fed a mill on Mill Street (HWCM 10096). Both the evaluation and subsequent salvage recording are reported together as the former was a condition of planning permission together with agreement to the latter.

Worcester lies in the valley of the River Severn, just above its confluence with the Teme. The historic core of the city is situated on the east bank of the river, on a terrace of sand and gravel which rises to a height of c 26m OD (Worcester Terrace, Palmer 1982) overlying Mercian Mudstone (Keuper Marl). Evidence of the earliest settlement dates as far back as the Iron Age and continued, with varying degrees of intensity, through the Roman and medieval periods to the present day (Barker 1969, 9-42).

The site, most of which is grassed over, was previously an orchard (Fig 2), and before that the Diglis bowling green (Fig 3). In 1860 labourers digging for sand nearby found Roman pottery, coins and burnt bones (HWCM 8817; Carver 1980, 255). It is most probable, given that a fine collection of complete Roman vessels was found that this was the site of a Roman cremation cemetery. A circular kiln was also found about 50ft (15.2m) to the south-west of the bowling green (HWCM 8817). Although possibly a medieval tile kiln it is equally likely to have been a Roman pottery kiln (Carver 1980, 255-60).

Excavations to the east of the development site at King's School swimming baths

revealed two parallel ditches, aligned east to west, which were interpreted as Roman defensive features (HWCM 8817). Work in the school grounds further to the east uncovered medieval features and trenches likely to have been associated with Parliamentary earthworks of the Civil War which lay beneath about 1m of topsoil (HWCM 530; Barker 1969, 99-101).

Development was intended to create two new classrooms for the school. The wall foundations of the new building were to remove archaeological deposits to a depth of c 1.5m and the floor foundations were to remove archaeological deposits to a depth of c 0.3m. The northern and eastern arms of the wall foundation trench were to be excavated as an evaluation exercise.

The preparatory works, in advance of topsoil stripping, included the excavation of a test pit against the wall of the chapel to assess the depth and solidity of the foundations. A test trench (c 0.6 x 2m) was excavated by machine to a depth of c 1.5m. At a depth of c 0.6m three human skeletons were encountered, aligned east to west. An infant burial (22), slightly disturbed, accompanied that of two adults (23 and 24). These graves were carefully excavated and recorded in advance of the completion of the test pit.

The remainder of the area to be effected by groundworks was then stripped of topsoil to a depth of c 0.3m. At this level in the western part of the site a series of further inhumations, as well as other features were identified, a salvage record was made of these areas. The topsoil stripping identified a difference in the depth of topsoil between the western end of the site at c 0.3m (where the graves were situated) and the eastern end at c 1.0m, a difference which had earlier been noted in section in the evaluation trench. This depth of topsoil is due to the drop in the level of natural subsoil towards the east. Salvage recording was also undertaken of the remaining foundation trenches.

### 3 Aims

The aims of the evaluation were to record archaeological deposits and establish their significance by determining their date, type, extent, state of preservation, vulnerability, documentation, quality of preservation and amenity value.

Assessment of the significance of these deposits and recommendations for their appropriate treatment within the development design were made as a matter of urgency to facilitate the progress of the planning application and subsequent construction.

The salvage recording aimed to record, in as much detail as was allowed, significant archaeological deposits present elsewhere on site, during the course of the programme of groundworks. Both the evaluation and the salvage recording are here presented in a unitary report.

### 4 Method

One 'L' shaped trench (fig 4) following the line of the foundations of the new buildings was excavated by machine and by hand to a depth of 1.5m or higher where the natural ground surface rose up above 1.5m. The trench was aligned east to west and north to south, being 20.5m and 8.4m long respectively and 1m wide. This stage of the excavation was followed by salvage recording of archaeological deposits within the rest of the foundation trenches and the topsoil removed for the laying of floor foundations. This was excavated by machine by the contractors after the removal of a temporary classroom. Finds were collected during excavation from the features and layers for identification and dating. Soil samples were taken from some features and layers for analysis. Recording followed established Archaeology Section practice (HWCC 1990).

## 5 Analysis

A stratigraphic matrix was produced and phased. The finds recovered from each context were examined and a period date was assigned where possible.

Four phases were identified:

Phase 1 Natural deposits

Phase 2 Roman deposits

Phase 3 Medieval deposits

Phase 4 Post-medieval deposits

### Phase 1 Natural deposits

Natural deposits (20) were reached in most of the evaluation trench (fig 5). In the part of the trench aligned east to west a natural layer of gravelly sand overlay a level, compact layer of Mercian Mudstone (Keuper Marl). The part of the trench aligned north to south had a small level layer of Mercian Mudstone at its southern end at 1.5m below the surface.

A single layer (25) cut by the infant burial (22), but containing no finds may represent a buried ground surface above undisturbed deposits. Approximately 1.2m below the surface of undisturbed subsoil in the south-west corner of the site, a layer of almost pure sand was encountered. This layer was traced in the bottom of these machine trenches much of the way across site, and sloped downwards to the north and east. In the north-east corner of the site, a depth of c 2.5m was reached without encountering any of these natural sand and associated gravel deposits.

### Phase 2 Roman deposits

In the evaluation trench the features attributable to the Roman period were a ditch (19; fig 8) aligned east to west, approximately 3m wide, which was at least 0.8m deep. It was backfilled mostly with a sandy gravel which contained two fragments of Roman tile and charcoal lumps. The ground surface sloped away as though truncated to either side of the ditch. This might be associated with further Roman

earthworks. In the part of the trench aligned north to south (fig 9) the remains of a bank of sand (17) was found truncated by later features and ground levelling. A layer of loamy sand (15), that contained only Roman finds, overlay this bank. The bank of sand in turn overlay a stake hole (18) cut into natural.

The sandy gravel layer (12) in the part of the trench aligned east to west sealed the Roman ditch (19) and was comparable to its backfill. It also overlay undisturbed natural deposits on either side of the ditch. No finds were recovered from this layer, but the use of it as part of the backfill of the Roman ditch has led to a phasing in the Roman period.

In the salvage recording area the two features which could best be allocated to the Roman period were the male inhumation (28) and the dog burial (29). The former was a largely complete adult interment, although its feet had been removed by a water pipe-trench (30). The grave was also truncated by a juvenile inhumation (27) which overlay its southern half. A broken pair of copper alloy tweezers (Fig 11) of a Roman type (Cunliffe 1969, 109, fig 42, nos 61-6) were recovered from the grave fill of one or the other of these inhumations, probably the former. Scattered along the water pipe-trench (30) were large numbers of hobnails of Roman type. These may have been derived from the foot of the adult grave (28), or the later grave overlying it (27). Burials containing assemblages of hobnails are quite common in Roman cemeteries (Salway 1981, 705), particularly in the later Roman period.

The dog burial (29) was similarly largely complete and was deposited in a shallow pit, the top of which had been disturbed by a gas pipe-trench (31). The pit also contained sherds of Roman grey ware (HWCC fabric 14), and Oxfordshire white slipped ware (fabric 30). The latter appears to be fragments of a single vessel, perhaps a tall necked jar or flagon, and can be dated c AD 240-400+ (Young 1977). There were also five fragments of iron, some possibly nails.

Of the six other graves identified, the three first discovered in close proximity to the chapel (22, 23 and 24) produced no finds diagnostic of their date. However, it is presumed that these were all related to the Roman cemetery. All three graves were heavily truncated. The infant burial (22) was slightly disturbed by later activity and the edges of the grave could not be clearly identified. The earliest of the adult burials (24) was cut by that of another adult (23), a sewer pipe-trench (38), and was truncated horizontally. In consequence some confusion has arisen over the origins of some bones; skeletal analysis (Appendix 2) has indicated the presence of three adults here, and some bones from the later adult interment have been confused with those of the earlier, while the location of the third adult interment is unknown. However, the alignment of the graves were clearly recognizable, and the edges of the earlier adult interment were well defined. The later adult burial (23) was cut by the foundation trench for the chapel and was horizontally truncated. Although the alignment of the body could be made out, the edges of the grave could not be clearly defined. The head and upper body of this inhumation overlay the lower legs of its predecessor (24). Iron nails of Roman to early post-medieval type were recovered from the fill around the infant burial (22) and the later adult burial (23), while a cow bone was also recovered from the fill around the infant burial.

Two or three further features were interpreted as possibly of Roman date. The cut of a ditch (34) identified in the section of one of the foundation trenches appeared to be of Roman type, with a shovel slot at its base. The base of the ditch cut into natural sand, but contained very few finds, principally animal bone and sandstone. Unfortunately its true width was difficult to ascertain, since it was cut diagonally by the foundation trench, and its eastern edge was obliterated by root disturbance. A further feature in the south-west corner of the area of salvage recording (40) was also identified as potentially of

Roman date, but was not excavated.

Three further inhumations exactly aligned with those already discussed may also be of Roman date, but were heavily disturbed. Fifteen sherds of medieval pottery were recovered close to these graves, but it is likely that these are intrusive due to intense truncation and heavy disturbance of the graves by root and animal activity. Their alignment with the other graves justifies their assignment to the Roman period. One (26) was a heavily disturbed and truncated grave containing a juvenile for which few bones were left *in situ*. An iron nail, possibly a coffin nail and three sherds of medieval unglazed Worcester-type pottery (fabric 55) were recovered in association with this burial, although the edges of the grave were poorly defined and the pottery probably intrusive.

Overlying grave 28 was a heavily disturbed juvenile interment (27), of which only the lower jaw and leg bones were excavated *in situ*. Again the feature was poorly defined due to truncation and disturbance. One iron nail, one sherd of Roman grey ware (fabric 14), ten sherds of medieval pottery (including fabrics 55, 56, 64.3 and 69), and one piece of medieval tile were recovered close to the body, none of which is likely to be associated with its burial.

South of grave 26 was another adult male interment (33) which was largely undisturbed, although the skull and upper right arm were missing. No finds were made in association with the body itself, but in the disturbed area above and around the body were two sherds of medieval pottery, and additional fragments of bone. The heavy truncation of, and disturbance above, this burial meant that the grave-cut was not visible above the level of the bones themselves. The removal of the skull may be because skulls tend to be the highest bone in normal interments which makes its removal likely during truncation.

A single Roman coin was found in a

medieval oven (9). This is a memorial antoninianus of the emperor Claudius II Gothicus (AD 268-70) struck almost immediately after his death in AD 270 by his younger brother, Quintillus, who succeeded him (RIC V, 266; W A Seaby pers comm).

Obv *DIVO CLAVDIO*  
his radiate head right

Rev *CONSECRATIO*  
eagle left with head turned right

These coins are very numerous on Romano-British sites and not only the authentic coins (as this one appears to be) but many contemporary copies were made and distributed all over the western provinces.

Roman pottery recovered from the site was nearly all residual in later contexts. Twelve sherds of coarse wares and eleven of fine wares were recovered. The coarse wares comprised eight sherds of Severn Valley ware (HWCC fabric 12), three of grey wares (fabrics 14 and 15) and one of wheelmade Malvernian ware (fabric 19). The fine wares comprised two sherds of samian ware (fabric 43), and nine sherds of Oxfordshire white-slipped ware (fabric 30).

### Phase 3 Medieval deposits

Twenty-three sherds of late Saxon or early medieval pottery were recovered from residual contexts, mainly in the evaluation trench. There were three sherds of Stamford type ware (fabric 46), sixteen sherds of Stafford type ware (fabric 48), three sherds of Cotswolds unglazed ware (fabric 57) and a single sherd of sandy limestone tempered ware (fabric 58), probably from the Avon valley in Somerset. All of these may be dated from the 10th to 11th or early 12th century (V Buteux pers comm).

One early medieval feature (2) was cut across the southern end of the part of the trench aligned north to south and was sealed by an extensive layer (3). Both of these contained only a single sherd of late Saxon pottery,

although the layer also contained medieval tile.

In the machine and hand dug trench four features were later medieval in date. Three of these were in one area of the evaluation trench. All three (7, 9 and 10) were some sort of oven, with remains of baked clay on the sides. They were also all very weathered. It is not possible to say what their use was, although as the clay was not very highly baked it would indicate that the temperatures reached were not great. This and the lack of any associated waste material would rule out their interpretation as pottery or lime kilns. Bread, malting or corn drying ovens would seem to be a more likely option, for which relatively low temperatures are required and durable waste products are minimal.

Although no other features could firmly be assigned to the medieval period, there was a significant amount of disturbance beneath the present topsoil containing significant quantities of medieval pottery. Although this deposit does not indicate any specific function, it is clear that there was significant activity of this date on the site.

Two pits of uncertain function are dated here to the medieval period. The first (32) may in fact be a tree root hole. Since it contained human bone, in addition to iron slag and two sherds of medieval pottery, it may have disturbed yet another grave which was outside the area of investigation. Another pit (39) of uncertain function, just to the west of this, is also assigned to the medieval period.

A total of 69 sherds of medieval pottery were recovered from the site. These included 22 sherds of unglazed Worcester-type ware (fabric 55), 27 sherds of unglazed Malvernian ware (fabric 56), fourteen sherds of glazed sandy wares (fabric 64), mainly from Worcester, five sherds of glazed Malvernian fabric (Malvern Chase; fabric 69) and a single unidentified sherd.

#### Phase 4 Post-medieval deposits

The first stage of the evaluation produced very little in the way of post-medieval material. Over all of the site there was a deep deposit of topsoil (1) with very little variation within. The topsoil varied in depth from 0.8m in the west of the evaluation trench to 0.5m in the middle and down to 0.8m in the east. This was due to the levelling of the site by the dumping of the topsoil on top of an undulating artificially created surface beneath. The only variation in the topsoil was a small area of pebbling 0.2m beneath the surface at the southern end of the evaluation trench.

A total of ten features of post-medieval date were recorded during the salvage recording. These included three pipe trenches of modern date (30, 31 and 38), and a pit (41), perhaps representing recent tree root removal of one of the mature trees shown on the Ordnance Survey map of 1886 (Fig 2).

Other features likely to be of 19th century date included the foundation trench for the school chapel, and three features (35-7) aligned approximately north to south, filled with humic soil. These pits resembled deep cultivation trenches, perhaps forming part of a garden in the grounds of the chapel.

Another feature, identified following initial topsoil stripping but which could not be further defined was a ditch (42) aligned east to west, containing several large green and red keuper sandstone masonry blocks with associated mortar, abundant pebbles and occasional 18th century pottery. Although intersected by foundation trenches its distinctive fill could not be detected at depth in their sections. It is therefore likely that this feature was fairly shallow. The constituents which identified it suggest that it may have had a drainage function.

#### 6 Discussion

The discovery of a layer of good quality sand c 1.2m deep below present ground level

indicates why this area has in the past been used for sand extraction. The shelving layer of naturally deposited sand may act as a useful guide to the topography of this area in the Roman period. This sloped gently upwards from the west to c 1.0m deep in the centre of the examined area but dropped away sharply to the east. The date by which more than c 2.5m of subsoil had built up in the north-east corner of the site is uncertain.

A total of seven heavily truncated inhumations aligned east to west and a dog-burial were recovered in the south-west corner of the site. Human bone recovered from these and other cut features represented a minimum of twelve individuals in this area (see Appendix 2). A few finds of Roman pottery, and a pair of Roman tweezers were found in association with these burials. However heavy truncation and disturbance had introduced medieval pottery into close proximity to the badly disturbed graves.

The best preserved grave was a largely complete adult interment (28). Its feet had been removed by a water pipe-trench, scattered along which were found a number of hobnails of Roman type. Burials with assemblages of hobnails are quite common in Roman cemeteries (Salway 1981, 705), particularly in the later Roman period. A broken pair of copper alloy tweezers (Fig 11) of a Roman type (Cunliffe 1969, 109, fig 42, nos 61-6) were recovered from the grave fill.

Of the three graves closest to the chapel, the infant burial (22) was slightly disturbed by later activity and the edges of the grave could not be clearly identified. The earliest of the adult burials (24) was cut by a sewer pipe-trench and another adult (23) which overlay its lower legs, and was in turn cut by the foundation trench for the chapel; both were horizontally truncated. In consequence some confusion has arisen over the origins of some bones; however skeletal analysis (Appendix 2) has indicated the presence of a third adult.

The other inhumations, exactly aligned with those already discussed were very heavily

disturbed and truncated. Overlying the first adult grave (28) was another juvenile interment (27), of which only the lower jaw and leg bones were excavated *in situ*. The next was a juvenile interment (26) for which few bones were left *in situ*. South of this was another adult male interment (33) which remained largely *in situ*, although the skull and upper right arm were missing. The grave for this was not visible above the level of the bones themselves.

The dog burial (29) was similarly largely complete and was deposited in a shallow pit, the top of which had been disturbed by a gas pipe-trench. The pit also contained sherds of Roman grey ware (fabric 14), and Oxfordshire white slipped ware (fabric 30). The latter appears to be several fragments of a single vessel, perhaps a tall necked jar or flagon, and can be dated c AD 240-400+ (Young 1977). There were also five fragments of iron, some possibly nails.

Other Roman activity included a ditch (19) aligned east to west and a truncated bank of sand (17). The latter appeared at a depth of c 1.1m from the present ground surface and was at least c 0.4m high and appeared to run perpendicular to the ditch. Both of these features represent boundaries of some sort; the ditch may represent the northern limit of the cemetery, or a subdivision within it.

The presence of a known Roman cremation cemetery nearby in 1860 (Carver 1980, 255) has led to the conclusion that this was a Roman inhumation cemetery. The relatively limited evidence provided by so few disturbed burials cannot help significantly with details of population makeup and pathology. However, the relatively small number and wide spacing of graves present in a discreet area indicates that this may have been a relatively low-intensity area within a graveyard, perhaps on the fringes of a larger cemetery.

The interment of a dog in a Roman cemetery is unusual, although some are known (Merrifield 1987, 67, 70). The dog is

understood to have been an acceptable sacrifice to the deities of the underworld. However, the east to west alignment of these graves with the head to the west, and the minimal evidence of grave goods is compatible with Christian practice.

It is possible that the burials discussed above may all be of medieval rather than Roman date. However, the character of medieval deposits encountered during the evaluation include areas of low intensity burnt clay representing an activity such as baking, which are not usually to be associated with burial. It is clear that a significant amount of truncation of the burials has taken place to reduce graves which originally would have been a metre or more deep, to shallow scoops in the subsoil. A concentration of medieval pottery in the layer immediately above these graves may explain the presence of sherds of this date close to the most heavily disturbed bodies, and as a consequence they may be discounted as intrusive.

It is possible that some of the truncation is of medieval date. Further truncation is likely in association with the construction of the Diglis Bowling Green (fig 3). Natural erosion and colluviation may also have added to the levelling, while sand extraction may have cut back the sides of this ridge to form a terrace. In consequence shallower graves than those represented here may have been completely removed by truncation, while others further up or down the natural slope of the sand ridge, may have been totally removed by erosion, sand extraction or levelling. This would have left this relatively small number of graves in a pocket of survival in what was once a more extensive cemetery.

The focus of the Roman town at Worcester was thought to lie beneath the site of the castle, the cathedral and St Helen's Church (Barker 1969), although recent work at Deansway may indicate that it extended further to the north (Charles Mundy pers comm). This cemetery, by Roman law (Collingwood and Richmond 1969, 166), must lie beyond the boundaries of the town

to the south. The association of this site with a known cremation cemetery might indicate the presence of a large cemetery to the west of the main Gloucester road out of Worcester. This cannot spread far to the north without impinging on the postulated southern boundary of the town (somewhere beneath the later castle?), and may not have crossed the dip in the sand ridge now represented by Severn Street, where there had been a medieval, and possibly earlier, water-course. To the south it is limited by the presence of the low-lying Diglis basin, supposed to have been a pool or marsh perhaps used as a harbour in the Roman period (Carver 1980, 21). No trace of Roman activity was identified to the west of Mill Street in the grounds of the Diglis Hotel (Brown 1990). However, erosion and land reclamation have effected the course of the river here, so the true westward extent of the cemetery is unlikely to be ascertained in this area.

The recovery of such relatively large quantities of late Saxon or Saxo-Norman pottery is significant in terms of the limited number of earlier finds of this date in Worcester. Late Saxon pottery is known from the excavations at Sidbury (Morris 1978) and Deansway (Victoria Buteux pers comm), but very few other finds have been reported. It may be that a plot of late Saxon pottery from sites where it is known may give us information about the organisation of the late Saxon *burh*.

## 7 Conclusions

The evaluation demonstrated that the area of development at St Alban's contained archaeological deposits of potential significance. These related to some medieval activity including ovens possibly for baking, to late Saxon or Saxo-Norman finds and to some Roman activity, the most significant feature being a Roman ditch.

Salvage recording during the course of initial groundworks revealed the presence of a

heavily truncated inhumation cemetery including at least twelve individuals. This is dated to the Roman period, and may be related to an earlier find of a Roman cremation cemetery nearby. A large Roman cemetery in this area may help to define the extent and nature of the Roman town of Worcester.

## 8 Acknowledgements

Thanks are due to the King's School, in particular Mr Gilligan the Bursar and Clerk to the Governors, the Clerk of Works and to the Headmaster for their help and cooperation. Simon Woodiwiss coordinated the evaluation and edited the report. Ruth Bruniges processed the finds and together with Robert Burrows and Nigel Topping provided invaluable assistance on site. Paul Godbehere assisted in preparation of the illustrations, and with surveying. Thanks are also due to Clare de Rouffignac for processing the environmental samples and to Dominic Perring. Particular thanks to the site agent and the various contractors without whose help and cooperation the salvage recording would not have been possible.

## 9 Abbreviations

Numbers prefixed with "HWCM" are the primary reference numbers used by the Hereford and Worcester County Sites and Monuments Record.

HWCC - Hereford and Worcester County Council

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## Appendix 1: Archive

The archive consists of:

- 44 Context records AS1
- 4 Photographic records AS3
- 31 Context finds sheets AS8
- 10 Scale drawings
- 3 Boxes of finds
- 10 Boxes of human bone

All primary records and finds are kept at:

Archaeology Section  
Hereford and Worcester County Council  
Tetbury Drive  
Warndon  
Worcester WR4 9LS

Tel Worcester (0905) 58608

A security copy of the archive has been placed at:

Hereford and Worcester County Museum  
Hartlebury Castle  
Hartlebury  
Near Kidderminster  
Worcestershire DY11 7XZ

Tel Hartlebury (0299) 250416

## Appendix 2: The human skeletal remains

by Christine Osborne BTech, MSc

The ten assemblages in this group represent at least twelve individuals (this figure does not include the unstratified bone which is listed at the end of the skeletal inventory and represents the remains of at least two adults and one immature individual), although the ditch (34) contains only animal bone. Burial 24 contains the remains of at least three individuals: there are two right humeri, two left and two right radii and one left and three right ulnae. It is possible that some of these arm bones belong to the skeleton in burial 23 as it cuts burial 24 and the only arm bone present is one left radius. However, it is not possible to confirm this from examination of the bones. Burial 28 contains the remains of two individuals. Although overlaid by burial 27, the skeleton in the latter is that of an individual aged less than 16 years and the bones from the two skeletons in burial 28 are of adults. Burial 38 contains the bones of one adult and a pair of tibiae from a very young child.

The general condition of the bones is rather poor and the skeletons are incomplete which limits the amount of information obtained. For example, the ageing of adult skeletons can be problematical even when they are reasonably complete and in a good enough condition to allow a number of different ageing criteria to be used. In this group only two adult skeletons (of which there are eight) could be assigned a more specific age range. The skeleton in burial 23 is that of a middle-aged/old adult and one of the individuals in burial 24 is of a young adult. These terms represent fairly broad age ranges ie "young" indicating adults thought to be in their 20s and early 30s, "middle-aged" suggesting those in their late 30s and 40s, and "old" indicating individuals of over 50 years in age. There are four immature individuals within this group. Immature skeletons are aged from the different stages of tooth development and eruption (assuming that the dentition is present) and the length of

complete longbones. Slightly older immatures can be assigned an age range based upon the different stages of epiphyseal union. The nature and condition of the immature skeletons in this group meant that only burial 22 (a child of 4 years  $\pm$  12 months) could be aged. Burials 26 and 27 could only be aged as less than 16 years and the immature skeleton in trench 38 could only be said to be that of a very young child, perhaps representing elements of burial 22.

Due mainly to the poor condition of the bone only four of the eight adults could be sexed. Burial 23, the young adult in burial 24, one of the individuals in burial 28 and burial 33 are all thought to be male. It is not possible to sex immature individuals as the characteristics of sexual dimorphism only develop during puberty.

The poor condition of the material also meant that very few measurements were possible. Measurements are usually used to calculate various indices which are used in comparisons both within and between groups. They are also used to calculate stature, and this was possible for just two of the adults. Stature is calculated from the lengths of complete longbones, and as these calculations differ for males and females, sex has first to be established. The young male in burial 24 had a stature of 1.74m 39.4mm (5'8.45" 1.55") and the male in burial 28 had a stature of 1.70m 39.4mm (5'6.9" 1.55").

In the skeletal inventory (which follows this piece of text and contains more detailed information about each individual skeleton) the dentition is recorded using the following formula for permanent teeth:-

**maxilla**

right: 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 :left

-----

right: 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 :left

**mandible**

where 1 = medial incisor  
 2 = lateral incisor  
 3 = canine  
 4 = 1st premolar  
 5 = 2nd premolar  
 6 = 1st molar  
 7 = 2nd molar  
 8 = 3rd molar

The deciduous dentition is recorded using the following:-

**maxilla**

right side: e d c b a a b c d e :left side

-----

right side: e d c b a a b c d e :left side

**mandible**

where a = medial incisor  
 b = lateral incisor  
 c = canine  
 d = 1st molar  
 e = 2nd molar

Any *ante mortem* and/or *post mortem* tooth loss, along with the presence of carious lesions and abscesses, and different stages of tooth development are recorded using the following notation (other dental anomalies are recorded separately):-

X = *ante mortem* loss  
 / = *post mortem* loss  
 A = abscess  
 C = caries  
 U = unerupted  
 O = erupting  
 NP = not present  
 - = tooth & socket lost *post mortem*

Five of the individuals in this group had at least some surviving dentition. Burial 23 and one of the individuals in burial 28 had lost teeth *ante mortem* but only burial 23 demonstrated carious lesions and abscesses.

It is quite likely that some pathology has been lost due to the poor condition of the material. Those pathological lesions which have survived have been described in detail in the skeletal inventory and are only briefly commented upon here.

Burial 33 displays the thickening and remodelling of bone associated with old healed fractures on its right tibia and two right ribs.

Cervical vertebrae 2-6 (inclusive) of burial 23 are fused together (although there is no excessive bone production) and the dens of the axis (cervical 2) is bent slightly in a posterior direction though there is no sign of any fracture, and the atlas (cervical 1) and superior apophyseal joints of the axis are unaffected. It may be that this is degenerative or developmental in nature.

The rest of the pathological lesions are degenerative in nature (seen in burial 33 and on one of the ulnae in burial 24) caused either by the effects of ageing or by trauma. It manifests itself on the bone in the form of bony lipping, wear and pitting.

## Skeletal Inventory

### Burial 22

Skull  
 Mandible  
 4 cervical vertebrae  
 2 thoracic vertebrae and 8 arches and 3 bodies  
 Both clavicles  
 6 left, 3 right ribs and fragments  
 Right humerus  
 Right radius  
 1 fragment of ulna  
 Right innominate  
 Both femora

Also adult skull fragments

### Dentition

e--d-e-b-a--a-b--e--d--e  
 R ----- L  
 6 e d c b a a b c d e 6  
 1

### Loose teeth:

Deciduous - 3 incisors, 2 canines, 2 upper molars

Permanent - 1 premolar crown, 1 molar (roots just starting to develop), 1 canine crown, 1 incisor crown.

Age: 4 years  $\pm$  12 months

## Burial 23

### Skull

7 cervical vertebrae  
 4 thoracic vertebrae  
 2 sacral segments and fragments  
 Right clavicle  
 Both scapulae  
 Rib fragments  
 Left radius  
 1 left carpal  
 Both innominates

### Dentition

A A  
 C C NP  
 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8  
 R ----- L  
 8 7 6 5 4 3 2 1 1 2 3 4 5 7 8

There is a large carious lesion around the mesial crown/neck of maxillary right 8 and a gross lesion affecting all but the mesial crown and root of maxillary right 7. The same two teeth each have an abscess around their buccal roots. There is a slight amount of calculus around the teeth.

Age: Middle-aged/old adult

Sex: Male

**Pathology:** Cervical vertebrae 2 to 6 (inclusive) are fused together at both the bodies and apophyseal joints though there is no excessive bone production. The dens of the axis (cervical 2) is pushed slightly in a posterior direction though there is no sign of any fracture. Also, the atlas (cervical 1) and the superior apophyseal joints of the axis are unaffected. Unfortunately the base of the skull is missing. The inferior body of cervical 6 and the superior body of cervical 7 is pitted and worn with lipping around the rim. It may be that this is degenerative in nature, or it may be developmental.

The skull has a lesion of about 5mm diameter perforating the occipital bone just to the right of the occipital protuberance. The edges are smooth and there is no sign of healing on the surrounding bone. It is not *post mortem* damage and may be an accessory foramen.

### **Burial 24**

2 lumbar vertebrae  
left clavicle  
Left scapula  
Fragment of rib  
2 right humeri  
2 left and 2 right radii  
1 left and 3 right ulnae  
3 right carpals  
2 left and 4 right metacarpals  
6 hand phalanges  
Right innominate  
1 pair of femora  
Right patella

There are the remains of at least three individuals here. All are adult and one is a young adult male.

### **Pathology**

One of the right ulnae has degenerative lipping around the medial rim of the olecranon.

### **Burial 26**

A few fragments of vertebra  
Right clavicle  
A distal fragment of tibia  
A distal fragment of fibula (possibly the left)  
3 left, 1 right and 1 unsided tarsal  
1 metatarsal

The fragments of distal tibia and fibula have unfused epiphyses.

**Age:** < 16 years

**Burial 27**

Fragments of skull  
2 fragment of atlas (first cervical vertebra)  
Right clavicle  
Fragments of humerus, radius and ulna  
Left innominate  
Right femur  
Right tibia  
Fragments of fibula  
1 right tarsal  
1 proximal and 1 distal tibia ephiphysis  
Animal bone

Age: < 16 years

**Burial 28**

Skull  
Mandible  
Fragments of lumbar vertebrae and sacrum  
Both clavicles  
Left scapula  
Fragments of rib  
Both humeri  
Both radii  
Both ulnae  
1 metacarpal  
1 hand phalanx  
Both innominates  
Both femora  
Both patellae  
Both tibiae  
Both fibulae  
2 right tarsals  
1 right metatarsal  
Animal bone

Also (but not associated with the above)  
1 fragment of left innominate  
Proximal left femur  
All adult  
4 small cervical vertebrae

1 mandible with the following dentition:-

R ----- L  
8 X 6 5-4-3-2-1-1-2-3-4 5 6 X 8

and 3 loose premolars, 3 incisors and 2 canines.

**Dentition of main skeleton**

NP  
8 X 6 5 4 3 2 1 1-2-3-4-5-6-7-8-  
R ----- L  
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

Loose teeth:- 2 premolars, 1 incisor, 1 canine

Age: Adult  
Sex: Male

### Pit 32

A few fragments of skull  
 1 cervical vertebra  
 Left humerus  
 Fragments of radius  
 1 left metacarpal  
 Left tibia and distal end of right

#### Dentition

8-7-6-5-4-3-2-1-1-2 3 4 5 6 7 8  
 R ----- L  
 8-7-6-5-4-3-2-1-1-2-3-4-5-6-7-8-

Loose teeth:- 1 upper molar, 2 premolar, 1 incisor.

Age: Adult  
 Sex: ?

### Burial 33

3 cervical vertebrae  
 7 thoracic vertebrae  
 4 lumbar vertebrae  
 Sacrum  
 Left clavicle  
 Both scapulae  
 5 right ribs and fragments  
 Left humerus  
 Both radii  
 Both ulnae  
 2 left and 4 right carpals  
 5 left and 4 right metacarpals  
 Both innominates  
 Both femora  
 Both tibiae  
 Both fibulae  
 1 left and 5 right tarsals  
 1 left and 2 right metatarsals

Age: Adult  
 Sex: Male

**Pathology:** The proximal half of the right tibia is missing, but in the remaining distal portion there is an area of thickening of the shaft which is probably the result of an old healed fracture. Only a very distal fragment of the right fibula remains so it is not possible to see if this bone was also affected.

The left innominate has some slight roughening and pitting around the surviving areas of acetabular rim.

Two right ribs have an area of thickening and remodelling along their shafts which are also probably the result of old healed fractures.

The sacrum is broken with only the spine and right apophyseal joint surviving. However, the latter has severe bony lipping along the lateral rim and this is matched with lipping on the inferior right apophyseal joint of lumbar 5.

**Ditch 34**

Animal bone

**Pipe trench 38**

1 fragment of skull  
Proximal fragment of left femur

Also 1 left and 1 right tibia (from a very young child)

Age: Adult  
Sex: ?

**Unstratified**

Proximal half of left ulna  
1 left clavicle and 1 other  
Skull fragments  
1 mandible

R ----- L  
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

The right half of another mandible

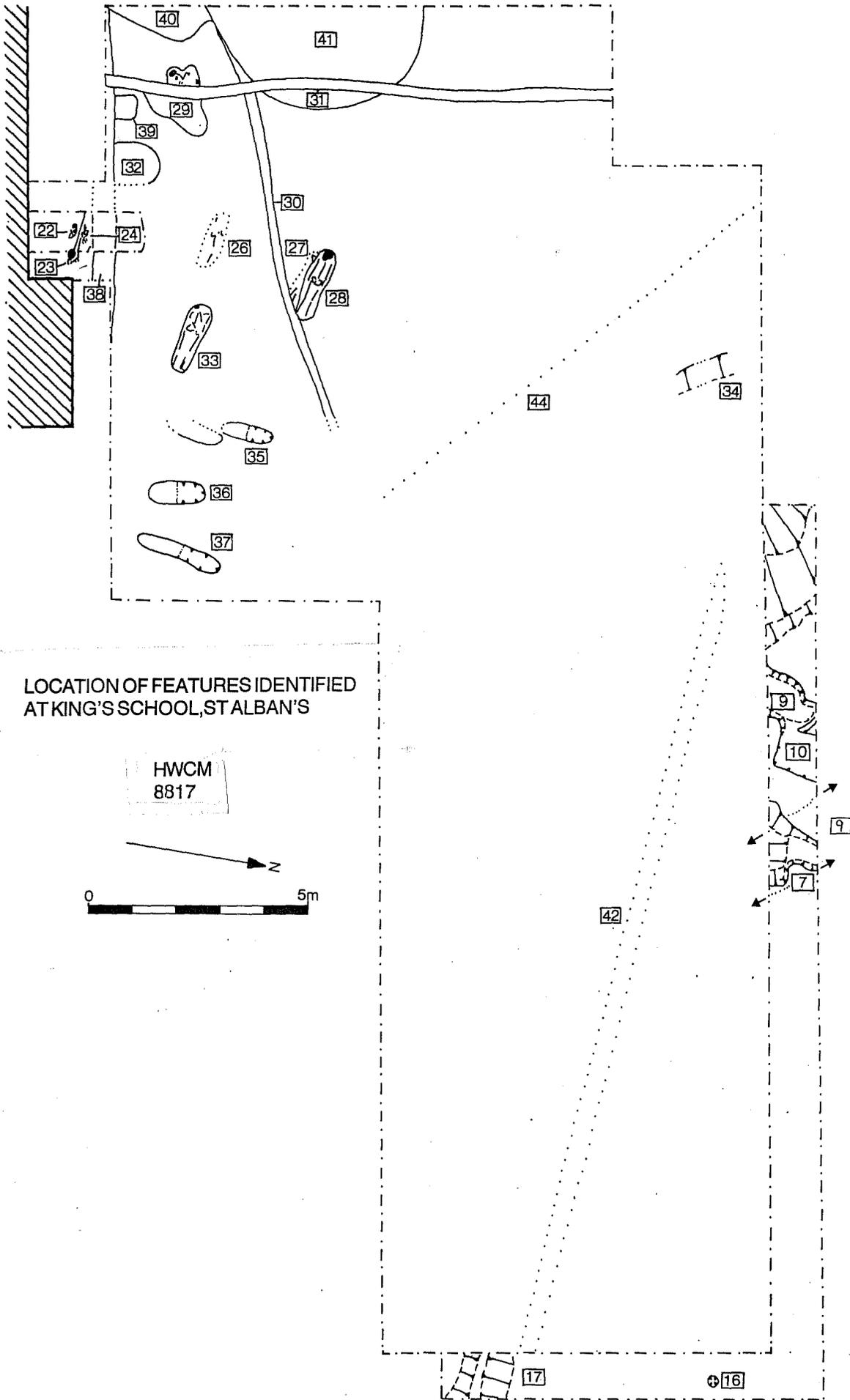
R ----- L  
8 7 6 5 4 3 2-1-1-2-3-4-5-6-7-8

Proximal half of right humerus, the proximal half of a left and fragments  
Distal half of a left tibia and fragments  
1 right calcaneus  
1 left talus  
1 manubrium  
1 sternum  
2 left scapulae  
3 right ribs  
2 thoracic vertebrae  
Fragments of fibula  
1 premolar tooth  
1 proximal tibia fragment (immature)  
1 distal femur fragment (immature)  
Animal bone

The remain here represent at least three individuals, one of which is immature.







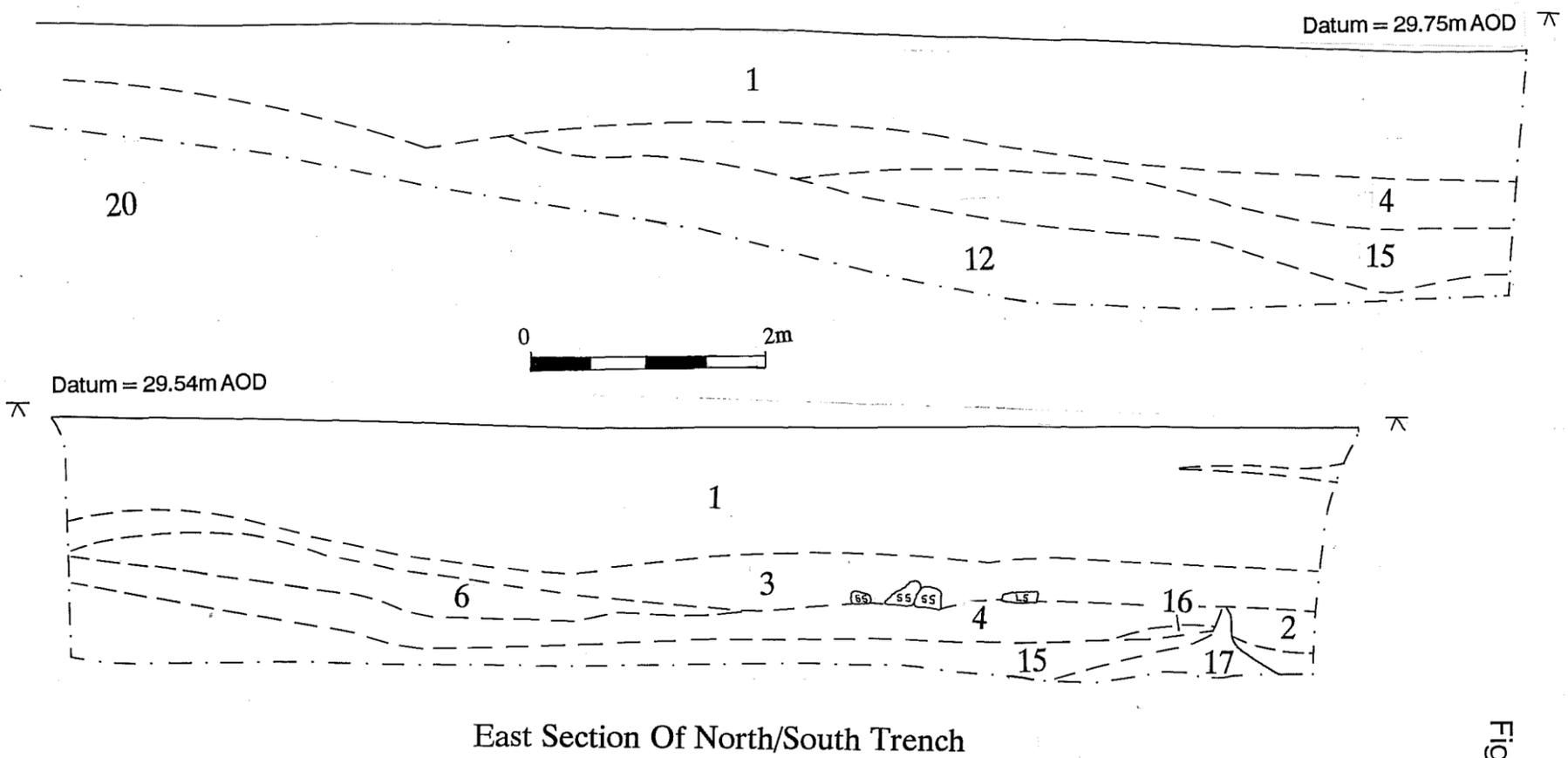
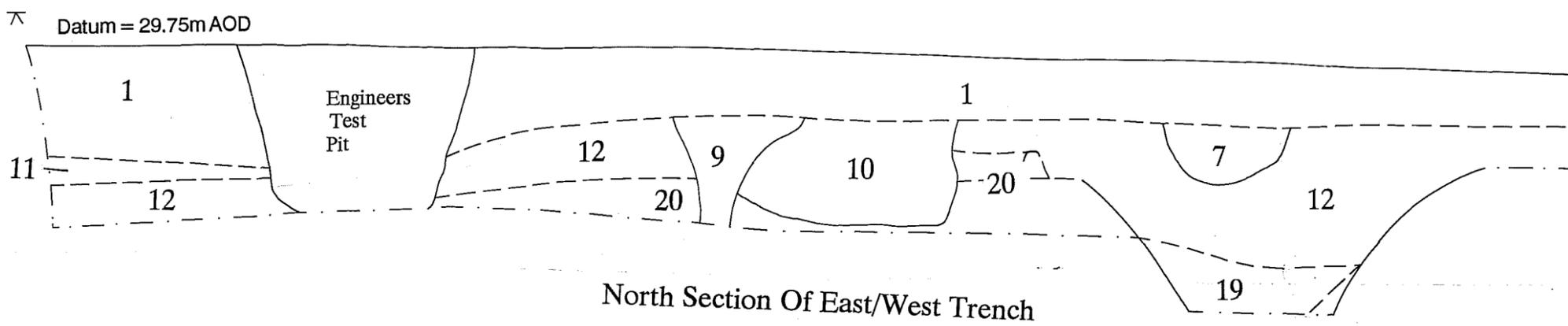
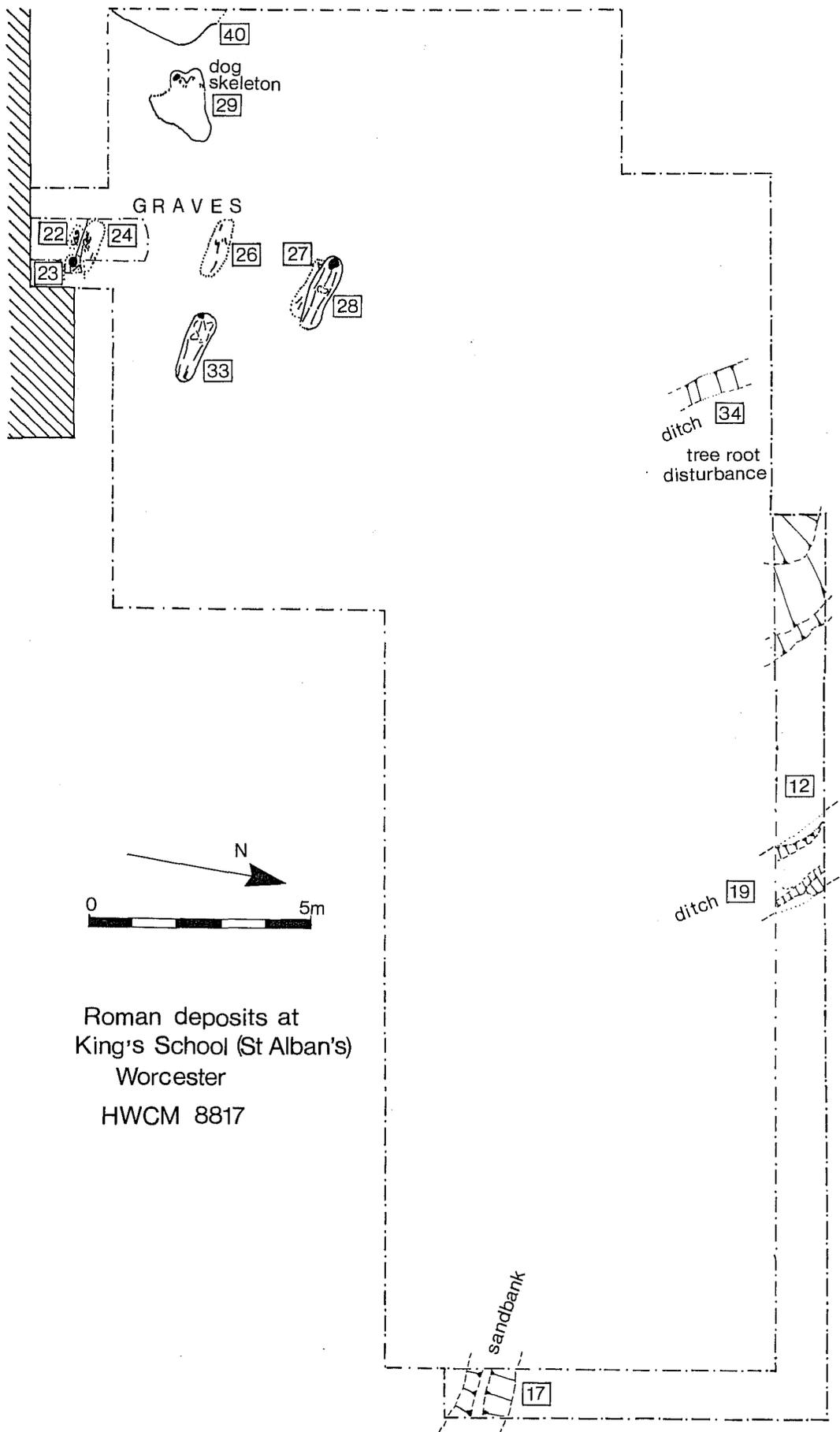
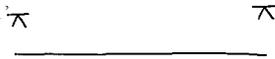


Figure 6



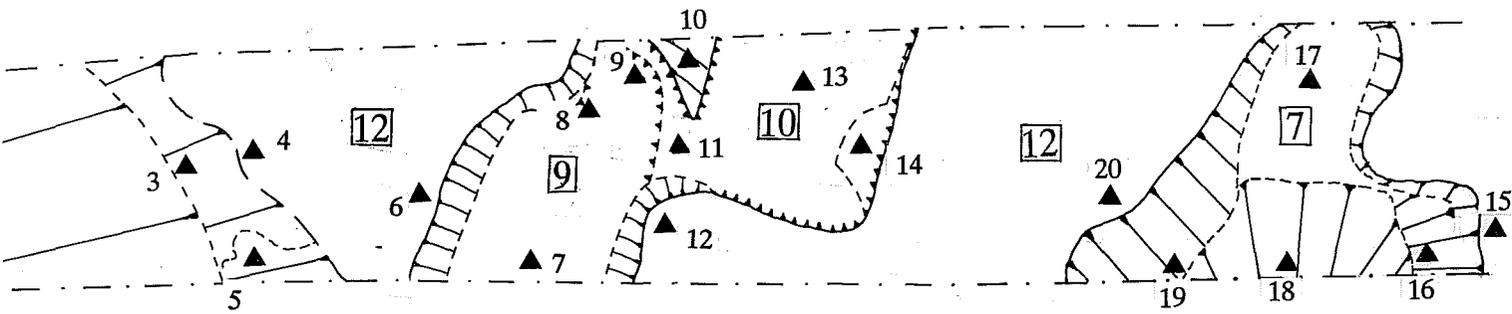
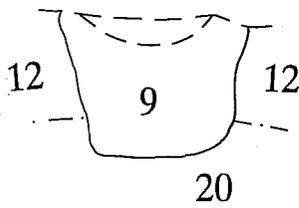
Roman deposits at  
King's School (St Alban's)  
Worcester  
HWCM 8817

Datum = 29.75m AOD



1

Section Through Oven/Kiln (9)



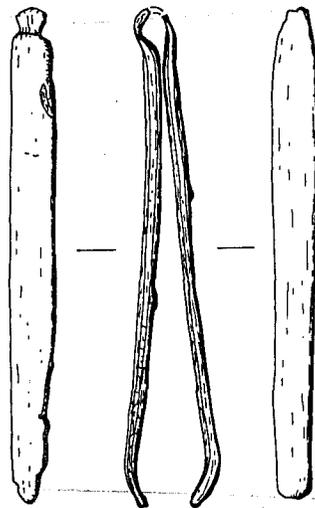
- 8.81
- 8.51
- 8.43
- 8.23
- 8.36
- 8.82

0 2m



Excavation Ovens (7) (9) - (10) In E-W Section Of Evaluation Trench

HWCM 8817 King's School, (St Albans) Worcester



ROMANTWEEZERS FROM GRAVE (28)

1:1

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