# The Roman and Early Anglo-Saxon Settlement at Wantage, Oxfordshire
# Excavations at Mill Street, 1993–4

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SUMMARY

*Excavation was undertaken by Cotswold Archaeological Trust in 1993/4 of a site close to previous discoveries of Romano-British material. The excavation revealed activity from the late 1st century through to the early Saxon period. The earliest activity was represented by a number of field boundaries, and by the 2nd century a small timber granary and rectangular, probably domestic, building had been constructed. The latter was demolished sometime after the mid 3rd century, and in the early 4th century a stone structure of square plan was built. The depth of foundation suggests this was of more than one storey and the building is interpreted as a tower granary. In the early Saxon period a number of ditched enclosures were dug on new alignments, and these were sealed by a dumped silt horizon which may relate to the creation of agricultural plots. The evidence for Roman settlement in Wantage is summarised, and it is concluded that the excavation probably lay to the rear of house-plots which fronted onto the Roman road to Frilford and Alchester.*

## INTRODUCTION

In 1993 Bovis Homes applied for outline planning permission for a residential development covering 0.66 ha. of land fronting Mill Street in Wantage. The site had formerly contained a garage and allotments. Wantage is a town famed for its association with King Alfred, although little systematic archaeological work has been undertaken. Accordingly the Vale of White Horse District Council, in line with Government advice,[1] requested that the archaeological importance of the site be evaluated prior to the determination of the outline application. An evaluation strategy prepared on behalf of Bovis Homes by Countryside Planning and Management Ltd, and approved by Oxfordshire County Council, specified that the investigation comprise seven machine-cut trenches, approximately 3% of the site area. The evaluation was undertaken by Wessex Archaeology in June 1993, and it revealed well-preserved

[1] As set out in *Planning Policy Guidance Note 16: Archaeology and Planning* (1990).

Romano-British and early Saxon deposits.[2] Although archaeological deposits were found in all seven trenches, the number and quality of deposits in the S.W. part of the site was much lower than the N. and E. areas. It is likely that a garage forecourt had largely destroyed the levels containing archaeological deposits adjacent to the Mill Street frontage.

When planning permission was subsequently granted for the residential development a condition was attached requiring the excavation of approximately 2,400 m.$^2$ in advance of the start of construction. Cotswold Archaeological Trust was invited to undertake the excavation, which was executed between November 1993 and March 1994.

Following completion of the site works an assessment was made of the main findings and a programme of analysis and research proposed. This strategy was approved by Oxfordshire County Council and analysis commenced in May 1995.

## LOCATION, TOPOGRAPHY AND GEOLOGY

The site is located N. of Mill Street on the W. slopes of the Letcombe Brook, between 89.6 m. O.D. and 85.4 m. O.D. (NGR SU 39588814) (Figs. 1, 2, 3). The Brook itself lies within 100 m. of the E. boundary of the excavation area (Fig. 20). To the E. of the stream the ground slopes gradually upwards towards the centre of the medieval and modern town. To the W. of the site the ground similarly slopes upwards towards Belmont, beyond which there is a further drop into Challow. This topographic variability has been largely determined by processes of erosion and deposition since the Cretaceous period. The formation of the valley of the Letcombe Brook, however, is likely to have been a Pleistocene phenomena caused by the Brook cutting down through soft Cretaceous Chalk and Greensand to flow into the Thames valley. The British Geological survey[3] map identifies the W. part of the excavation site as Upper Greensand and the E. segment as Pleistocene 'Head'. This latter formation, which is a general geological term for Pleistocene colluvial deposits, consisted in the present case of solifluction debris probably relating to the Devensian Late Glacial. It was found over the entire area excavated, and the stratigraphic relationship between the two deposits was demonstrated in the E. part of the excavation area where two test pits showed that about 0.5 m. of chalk marl solifluction overlay the Greensand. All archaeological features lay above the solifluction deposits. The highly calcareous properties of the geological deposits has had a considerable effect on the survival of certain classes of remains including bone and shell.

## EXCAVATION METHODOLOGY

Topsoil was removed by a mechanical excavator using a toothless grading bucket under constant archaeological supervision. This revealed a widespread silt horizon 1002 covering an area of *c.* 700 m$^2$. After cleaning this deposit was sectioned, trial pitted and sampled prior to being removed by machine. The objectives of the excavation were to concentrate on recovering the plan and structural sequence on the site. All pits and post-holes were half-sectioned, and all linear features as a minimum sectioned once by hand. All structural features

[2] M. Heaton, R. Seager Smith and M.J. Allen, *Mill Street, Wantage, Oxfordshire, Archaeological Site Investigations* (Wessex Archaeology Rep. W603, 1993).

[3] 1/50,000 sheet 253.

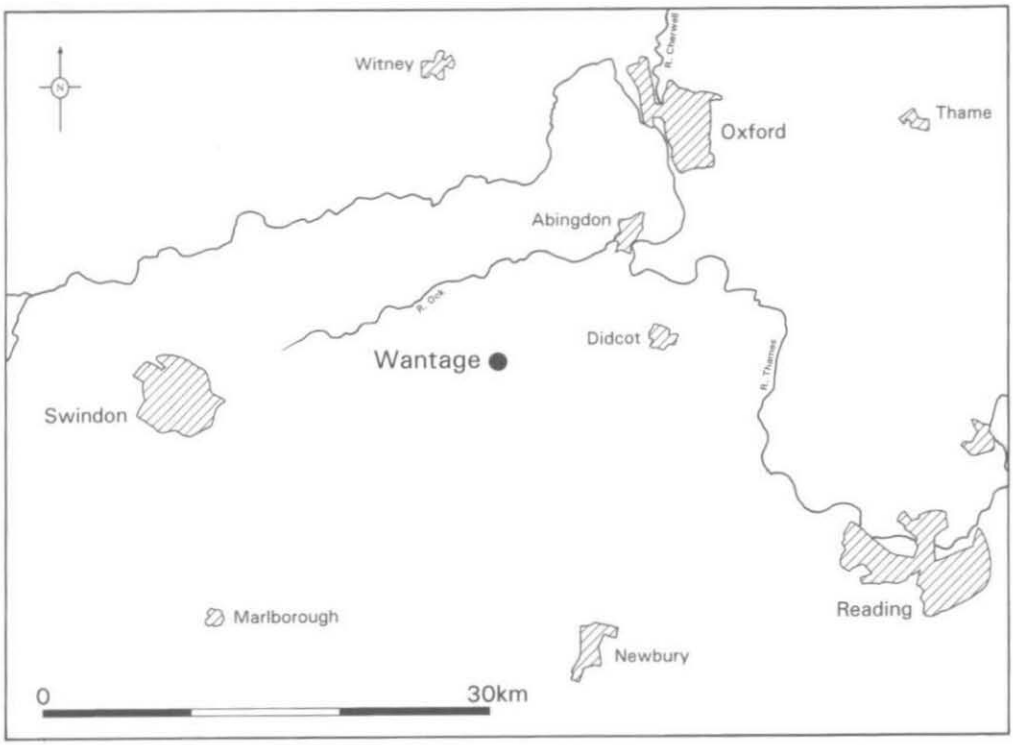



Fig. 1. General location.

were totally excavated. Priority was attached to features which yielded sealed assemblages which could be related to the structural sequence, and those which yielded biological remains of potential palaeoenvironmental interest. A full written, drawn, and photographic record was made.

## EXCAVATION RESULTS

Six periods of activity were identified through stratigraphic relationships, orientation, and a consideration of the dating evidence. They are:

Period 0: residual prehistoric artefacts
Period 1: Flavian–mid 2nd century
Period 2: mid 2nd–mid 3rd/early 4th century
Period 3: mid 3rd/early 4th–late 4th century
Period 4: early Anglo-Saxon (5th–7th century)
Period 5: early Anglo-Saxon (5th–7th century)
Period 6: medieval and post-medieval

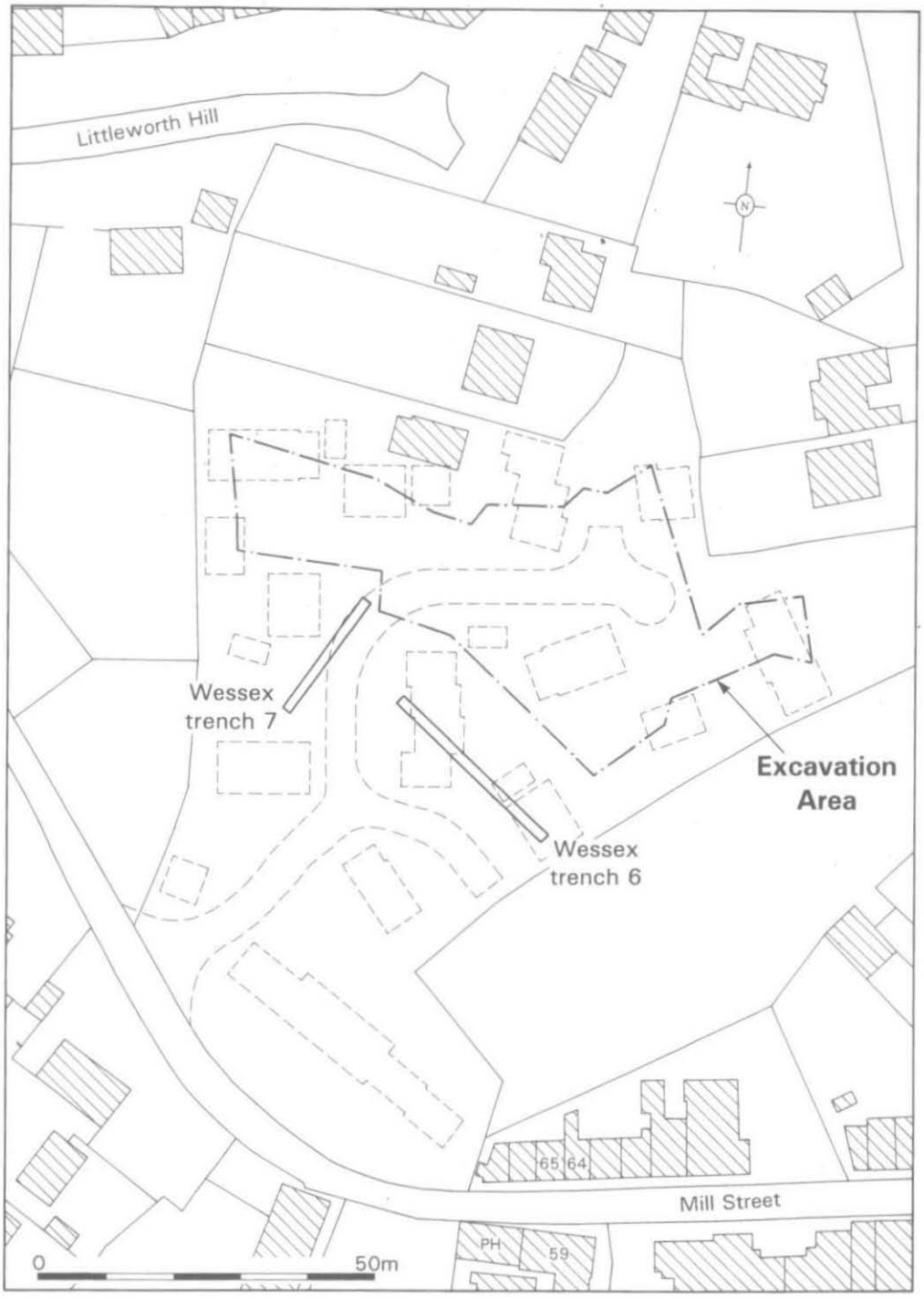



Fig. 2. Location of the Mill Street excavation and evaluation.

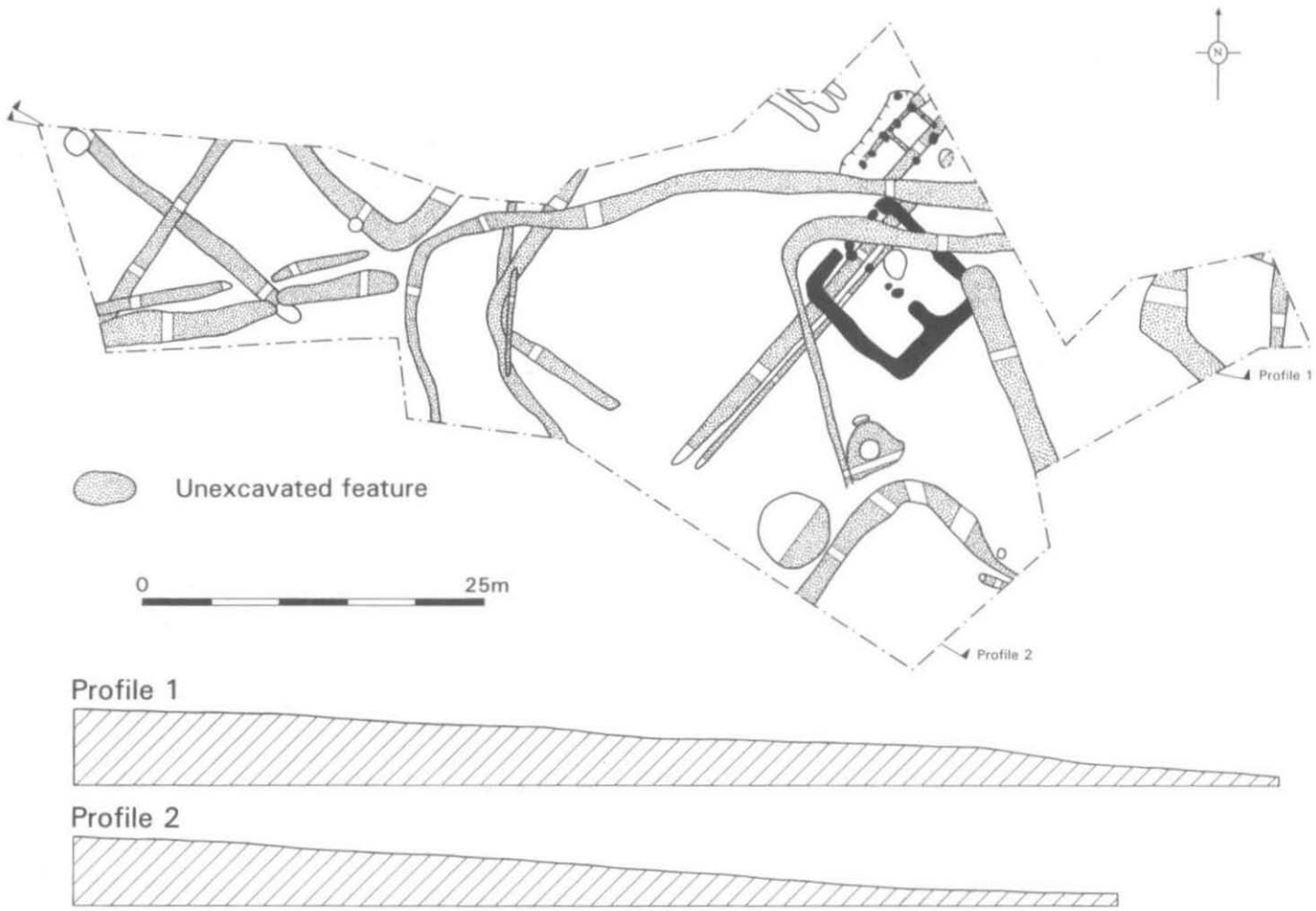



Fig. 3. Excavated features (all periods excluding Period 6).

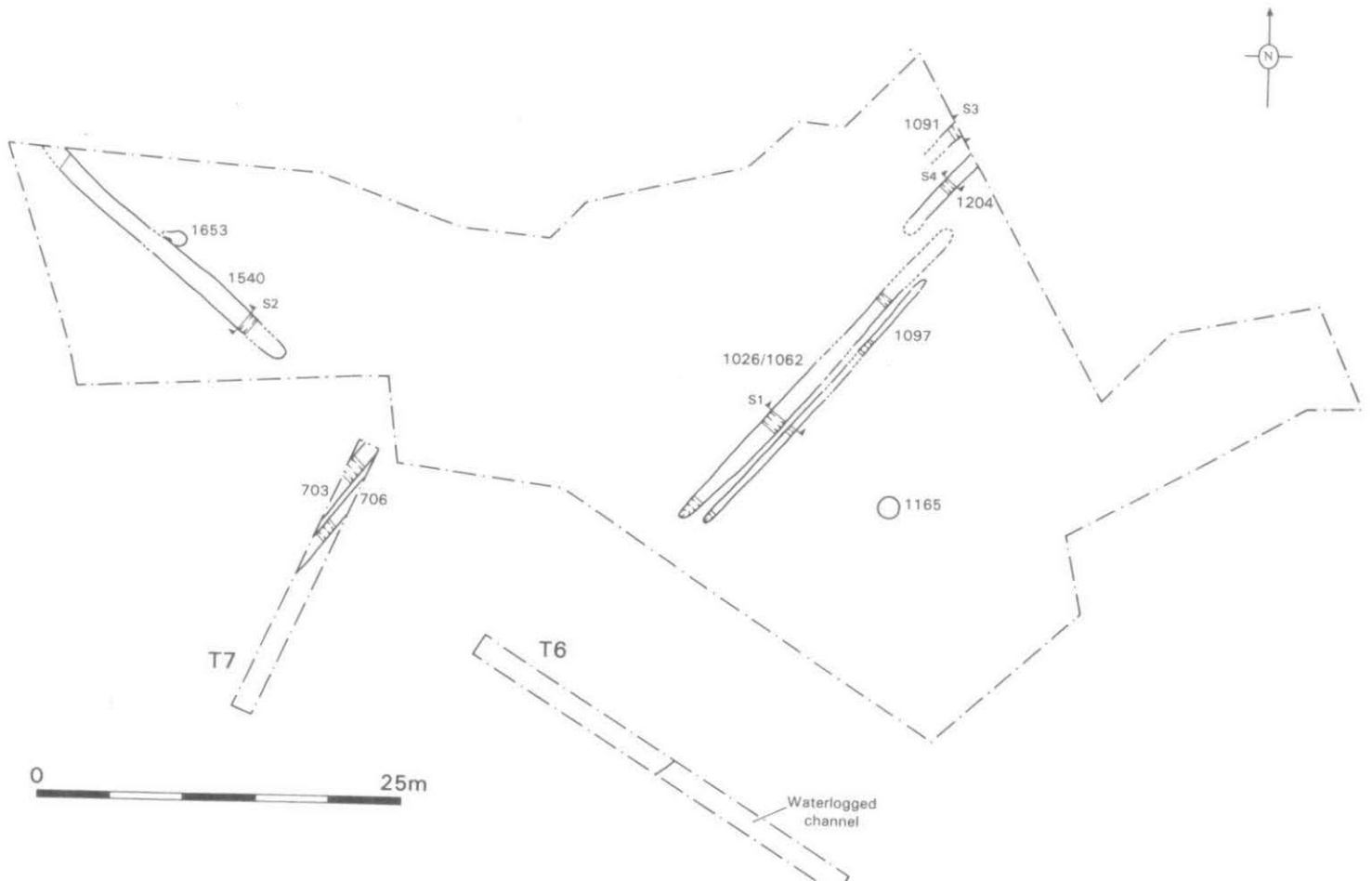



Fig. 4. Period 1.

## PERIOD 0 (PREHISTORIC)

Nine residual flints were recovered, of which one, a small broken scraper, may be of Bronze Age date. The only other prehistoric material consisted of a small amount of middle Iron Age pottery (p. 132) which occurred residually in later contexts.

## PERIOD 1 (FLAVIAN–MID 2ND CENTURY AD)

The earliest Romano-British activity identified comprised six N.E.–S.W. aligned ditches, another ditch aligned N.W.–S.E., and a solitary pit (Fig. 4).

Ditch 1097 ran N.E.–S.W. for a distance of 22 m.; it petered-out to the S.W. due to later ground truncation and to the N.E. was cut by a period 4 ditch and did not reappear beyond (although it had been heavily truncated hereabouts). The ditch was sectioned three times, was *c.* 0.59 m. wide and a maximum of 0.34 m. deep (Fig. 10, S1). Its profile suggests that it had been recut at some stage in its life. The fill contained a small assemblage of pottery, a single fragment of flat *pila* tile, and fragments of plaster which indicate the presence of at least one building in the vicinity prior to the mid 2nd century. Some 0.6 m. to the N.W., and parallel with this ditch lay a second ditch 1026 (Fig. 10, S1). It too petered-out to the S.W., and was cut through to the N.E. by a period 4 feature; as the ditch did not continue N.E. beyond the bounds of the later feature it must have originally terminated at this point. The ditch was sectioned in three places and had a maximum projected width of 0.6 m. and a maximum depth of 0.26 m. It is likely that these ditches were sequential rather than contemporary, and as ditch 1026 was subject to a major recut it is likely to have been the later of the two.

Ditch 1026 was recut by a third ditch 1062 which had a maximum width of 1.09 m., depth of 0.54 m., and a sharply defined profile (Fig. 10, S1). Mollusc evidence (p. 165–6) from the filling (1063) indicates that the primary silt probably accumulated rapidly under wet conditions; thereafter the ditch may have been only seasonally wet although the presence of one mollusc species suggests that the ditch was ultimately linked to a source of running water. As the ditch ran parallel with the Letcombe Brook this source is perhaps more likely to be the stream which joined with the brook to the S. of Mill Street. Indeed in evaluation trench 6 to the S. of the excavation area a broad waterlogged channel filled by a silty clay was found, perhaps a relict channel which joined with this stream (Fig. 4). Other Mollusca point to the generally open environment of the area around the ditch, while the combination of species perhaps suggests arable agriculture. The upper filling of the ditch also produced pottery and 80 fragments of animal bone.

Parallel with and to the N.E. of ditches 1026 and 1097 were two further stretches of ditch. Ditch 1204 ran for a length of 6.2 m. from the edge of excavation to where it had been cut through by a period 4 ditch; as it did not reappear beyond that ditch it must have originally terminated at this point. It was sectioned once and was *c.* 0.62 m. wide and 0.21 m. deep (Fig. 10, S4). Ditch 1091 had been largely destroyed by the terrace and foundations for the Period 2 timber building. It was sectioned once and found to be 1 m. wide and 0.41 m. deep (Fig. 10, S3). It is probable that these two ditches were also sequential.

Ditch 1540 ran from the N.W. corner of the excavation for a length of 21.5 m.; it had a distinct terminal at the S.E. end. This ditch was sectioned twice and was *c.* 1.43 m. wide and 0.6 m. deep (Fig. 10, S2). The ditch has been attributed to this period on the grounds that it was cut by the Period 2 well. Adjacent to this ditch was a drain trench 1653 which survived for a length of only 0.5 m., having been cut away to the W. by a period 2 ditch. The trench ran on a E.–W. alignment, and was filled with clay which supported a slightly concave 20 mm. thick bed of mortar (1554), which may have either served as an open drain or else as a bedding for a ceramic or wooden pipe. The drain appeared to empty at its E. end into a shallow depression, 1 m. in diameter and 0.2 m. deep.

To the S. of ditch 1097 lay pit 1165 which, although heavily truncated by a Period 2 pit, survived to a diameter of 1.49 m. and a depth of 0.26 m.

Two other ditches which may be assigned to this period were found in evaluation trench 7 which lay to the S. of the subsequent excavation area (Fig. 4). The ditches were parallel, aligned N.E.–S.W., and had V-shaped profiles. Ditch 703 was 1 m. wide and 0.6 m. deep, while 706 was 0.98 m. wide and 0.45 m. deep.

### *Finds Evidence*

The fill 1027 of ditch 1026 produced a group of 18 unfeatured sherds. With the exception of one samian sherd, the pieces comprised local grey and white wares which could date to either the later 1st or early 2nd century.

The fill 1098 of ditch 1097 produced just eight sherds and one intrusive post-medieval sherd. The Roman wares include typical 2nd-century jars and beakers.

The fill 1063/1113/403 of the recut ditch 1062 yielded 239 sherds (Fig. 14, 4–8). This group included a wide range of wares with examples of most of the fabrics recorded. Excluding a small amount of obviously intrusive late

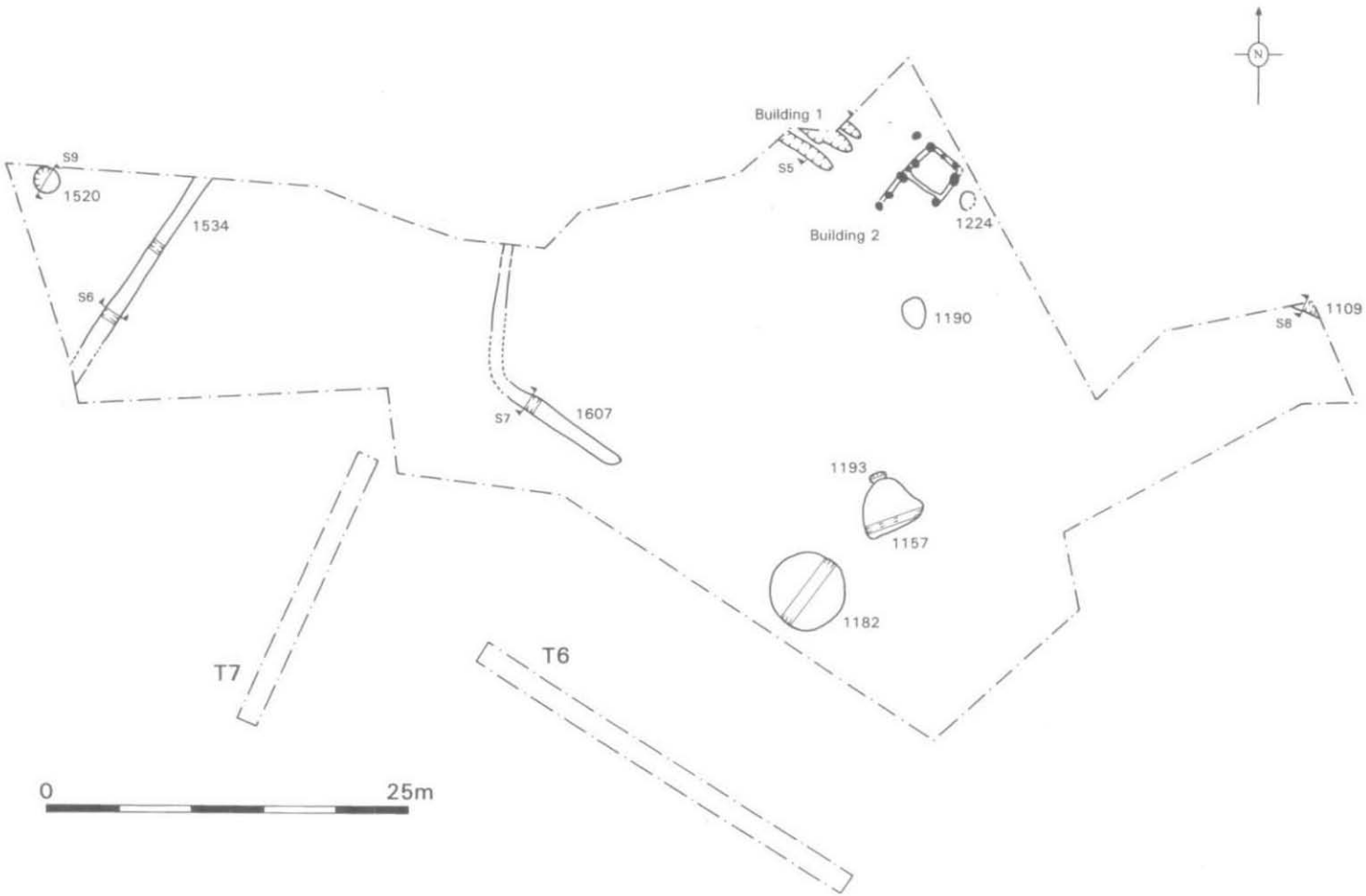



Fig. 5 Period 2.

Roman material, the sherds appear to be forms current in the period *c.* 80–150+. Of particular note were sherds from a mica-slipped bobble beaker, a flat-rimmed BB1 bowl, fine greyware beakers with barbotine dot, or rouletted, decoration, and fine orange wares with red painted decoration. The latest piece which provides a *terminus post quem* for the filling is a BB1 plain-rimmed dish (Fig. 14, 6), a form not current before *c.* 150.[4]

Ditches 1204 and 1091 did not produce any pottery. The fill of ditch 1540 produced 157 sherds, mainly of early to mid 2nd-century currency (excluding a little 4th-century intrusive material). Of particular note was a countersunk handle (fabric R10), a whiteware flagon, a mica-slipped straight-sided dish, part of a greyware cheese-press, and a samian stamp (p.138, no. 6) dated to the Hadrianic to early-Antonine period.

Fill 1166 of pit 1165 produced late 1st to early 2nd-century pottery (Fig. 14, 11–12).

The fill (704; 705) of ditch 703 produced a samian Dr. 30 dated *c.* 70–90 (p. 137, no. 2); a sherd of Iron-Age pottery and a ceramic ?pot lid (Fig. 15, 42) plus another unidentifiable piece (Fig. 15, 43) along with coarsewares with late 1st to 2nd-century currency (Fig. 15, 35). The fill of ditch 706 produced one sherd from a late 1st-century poppy-headed beaker.

### *Discussion*

The ditches indicate land organisation associated with agricultural production. Ditches 1026/1097/1062 lay parallel with the Letcombe Brook, and may have separated a seasonally flooded grazing meadow adjacent to the stream from arable fields further up the slope. No structures lay within the excavation area at this period (unless Building 1 assigned to Period 2 originates in this period), although their existence close by is indicated by the building materials recovered from the fill of ditch 1097. An assessment of the overall pottery and coin assemblage (p. 174) suggests occupation in the vicinity from the Flavian period, and the BB1 plain-rimmed dish indicates that this period continued until at least the middle of the 2nd century.

The pottery from Period 1 indicates a familiarity with Roman eating and drinking habits, exemplified by the imported Dressel 20 oil amphora, and imported and locally made fine tablewares. By the same token, a high proportion of the sherds derive from large storage jars, frequently found in profusion on agricultural establishments.

## PERIOD 2 (MID 2ND–MID 3RD/EARLY 4th CENTURY)

In this period two N.W.–S.E. aligned timber buildings were constructed, accompanied by three ditches, five pits and a well (Fig. 5).

### *Building 1*

Building 1 lay at the N.W. limit of the excavation area and only part of the plan was therefore recovered (Fig. 6). The building was defined by three parallel trenches (1229, 1234 and 1236), with the central and S.W. ones having slight offsets along their S.W. sides (Fig. 10, S5). The trenches were 0.8–1.0 m. wide, varied in depth from 0.16–0.22 m., and defined a total width to the building of 3.8 m.; the length of the structure was in excess of 3.7 m. The plan of the building indicates that it should be interpreted as a granary, the slots housing timber sleeper-beams which supported a raised floor. The offsets to the side of two of the trenches might have been formed by the digging out of the beams during demolition of the building. Finds from the backfilling of the trenches, and therefore to be associated with its demolition, included a coin; pottery; two fragments of stone roofing tile (1234) and a battered stone which might have been used as an anvil (1229; p. 153). Charred plant seeds indicative of crop processing waste, rather than grain storage (pp. 170–1), were recovered from the fill of trench 1236.

[4] N. Holbrook and P.T. Bidwell, *Roman Finds from Exeter* (Exeter Archaeological Rep. 4, 1991), 99.

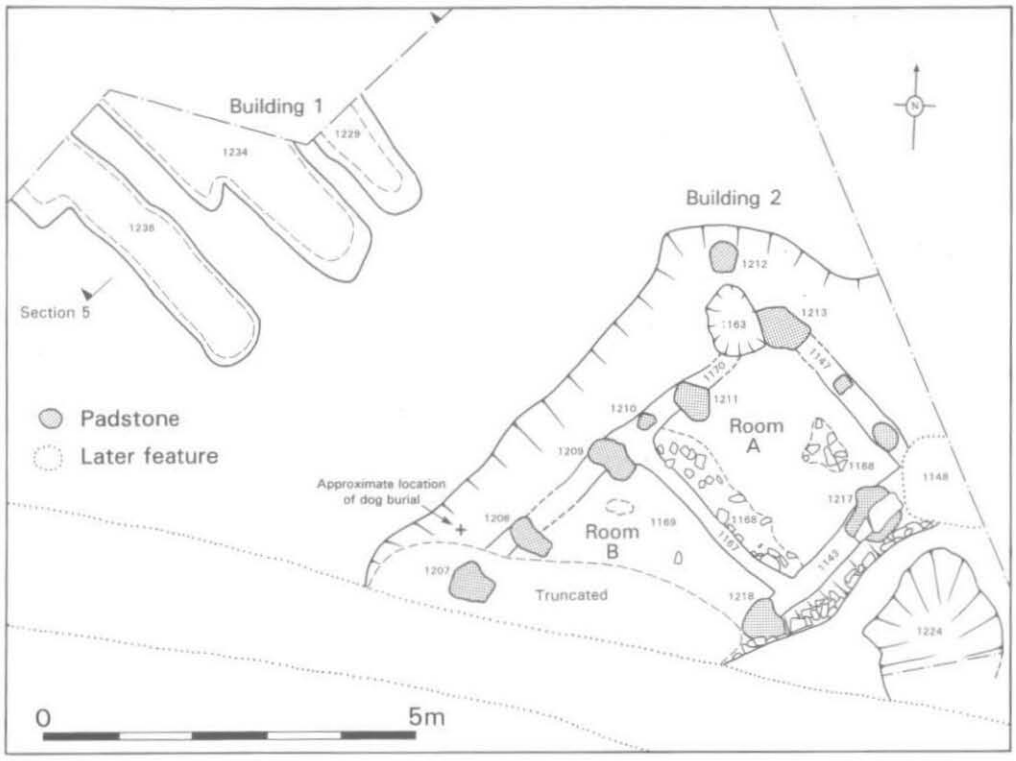



Fig. 6. Buildings 1 and 2.

*Building 2*

Building 2 lay 3.9 m. S.E. of Building 1 and was on a similar alignment (Fig. 6). It was contained within a slight terrace, up to 1 m. deep on the N.W. (up-slope) side. A small dog had also been buried in the floor of the terrace immediately outside the building (p. 161); this might have been a ritual foundation deposit. The full plan of the building could not be recovered as it had been cut away on the S.W. side by a later ditch, although as it did not continue beyond that ditch its length can be ascertained as between 6.0 and 9.0 m., and it was 3.6 m. wide.

The building was of timber-framed construction, with a series of padstones supporting the main uprights. The padstones were placed in shallow pits which had been cut into the underlying solifluction; the pads were sub-rounded, of a generally uniform size averaging 0.51 m. by 0.46 m., and 0.23 m. thick. As would be expected, the upper surfaces of the padstones all lay at a similar height. The external walls of the building were constructed in shallow, vertical-sided, flat-bottomed, trenches which ran from the edges of the padstones. The trenches varied between 0.29–0.36 m. wide and survived between 80 and 180 mm. deep. The tops of the padstones lay about 80 mm. above the bottom of the wall trenches. In either its original, or rebuilt phase, the building was divided into two rooms by an internal partition 1167, which was both narrower (0.19 m.) and shallower (70 mm.) than the external wall trenches. Wall trench 1167 displayed charcoal staining along its sides, most probably formed by the wattles of a wattle and daub wall. Wall trench 1170 also contained a darker stained fill. The N.W. wall had in excess of five main padstones, with a smaller pad (1210) placed within the wall trench. Two smaller pads, 0.6 m. apart, were placed within the trench for the N.E. wall; it is reasonable to suppose that they supported the uprights for a door.

Little evidence was recovered for internal floor levels. Overlying the base of the terrace within Room A was a 40–50 mm.-thick pale greenish deposit 1168, containing darker loam and stone inclusions, which also continued outside the building up to the edge of excavation. It was cut by the wall trench 1147 for the end of the building. This could

be just a trampled construction surface, although a virtually identical deposit 1169 within Room B overlapped the tops of padstones 1207, 1208 and 1209 and is therefore better regarded as a rough floor surface.

It appears that the N.E. end of the building had either been modified during construction or rebuilt at some stage. Padstone 1217 and pit 1163, which can reasonably be interpreted as a pit dug to extract a padstone, lay a short distance to the rear of the wall trench 1147. It is conceivable that the original N.E. end of the building lay, or was designed to lie, on this line, although in that case the building would seemingly have been open-fronted as no matching wall trench was found. If this was so, it would explain why the possible floor 1168 extended outside the limit of the building in this direction. Equally it is conceivable that there was a change of plan during construction, when a decision was made to extend the frontage by about 0.4 m.

Other possible evidence for reconstruction during the life of the building may be deduced. Padstone 1212 is offset from the main pattern of padstones and may have supported a timber strut or buttress to provide additional support to the N. corner of the building. Trench 1143 for the S.E. wall had been packed on its outer edge with stones (including a fragment of Niedermendig lava millstone) and 3.17 kg. of fragmented wall plaster. It is possible that this packing represented a deliberate re-inforcing of the original wall. The fact that the internal partition 1167 does not run between timber uprights sat upon post pads could also suggest that it is a later addition. Whatever the sequence, the internal dimensions of Room A in its final phase were 2.6 m. by 2.3 m.

### *Ditches, pits and well*

It is conceivable that Buildings 1 and 2 were partly contained within a curvilinear enclosure defined by ditch 1607. It was sectioned once, was *c.* 1.2 m. wide and 0.42 m. deep (Fig. 10, S7). To the S.E. the ditch faded-out due to later truncation. Contained within this possible enclosure was another ditch and five pits. Ditch 1109 was situated in the extreme S.E. corner of the excavation. It was sectioned once, was *c.* 1.4 m. wide and 0.58 m. deep (Fig. 10, S8).

Some 0.6 m. S.E. of Building 2 was a pit 1224 which was packed with flint nodules and stone. Its date, and hence relationship to Building 2, is uncertain. Four other pits were found within the bounds of the possible enclosure. The largest 1182, was *c.* 6 m. in diameter, and excavated to a depth of 0.5 m. It produced a large amount of stone demolition debris, a single fragment of limestone roof tile and a small amount of wall plaster, presumably from a building in the near vicinity. Fragments from two millstones were also recovered. Approximately 3 m. to the N.E. of pit 1182 was pit 1157 which had a maximum diameter of 4 m. This pit was in turn cut by a small oval pit 1193, 0.51 m. deep. To the N. of these pits was flat bottomed pit 1190, which was 1.75 m. wide and 0.27 m. deep.

Up-slope from the buildings in the W. part of the site, and outside the possible enclosure, was a N.E.–S.W. aligned ditch 1534, which was sectioned twice and was *c.* 1 m. wide and 0.4 m. deep (Fig. 10, S6). This cut the Period 1 ditch 1540, as did a stone-lined well 1520. The well was formed from roughly dressed limestone blocks, typically 0.2–0.25 m. wide and 70–100 mm. thick, and had an internal diameter of 0.65 m. (Fig. 10, S9). It was built within a cone 1518 which had been backfilled with rubble and clay 1519; this also produced crop processing residues, a fragment of vessel glass and pottery. The well was hand excavated to a depth of 1.6 m., whereafter health and safety considerations prevented further investigation, although subsequent machine excavation revealed the well to be a further 1 m. deep. The lowest hand-excavated fill was a soft silty clay 1645, which may have accumulated gradually. This was sealed by a deposit of stone, tile and pottery 1644, *c.* 0.2 m. thick, which is likely to represent deliberate backfill; the uppermost fill was a clean loam fill 1521. Pottery from the backfilling of the construction cone, and from the infilling of the shaft itself, suggests that the well may have been in use for as little as one generation.

### *Finds Evidence*

Building 1 (demolition): A coin of 86 (coin 1) was recovered from the filling of trench 1236. Pottery was recovered from the infilling of slots 1236, 1234 and 1229. Types included samian Dr. 35/6, 36 and 37, and Oxfordshire whitewares and mortaria. A single redeposited Iron-Age sherd was also present. The small amount of evidence suggests that Building 1 was demolished sometime after the early 2nd century; it is conceivable that the building should in fact be assigned to Period 1, although there is insufficient material for certainty.

Building 2 (construction and occupation): Possible floor surface 1168/1195 produced just five sherds, two from grog-tempered storage jars. Other deposits associated with Building 2 (1176, 1162, and 1203) produced small quantities of pottery, all of which could date to the first half of the 2nd century.

The filling 1142 of pit 1190 produced a good assemblage of 95 sherds with a diverse range of fabrics (Fig. 14, 9), including two samian Dr. 37 bowls dated to the Hadrianic or early Antonine period (p. 137, no. 7) and *c.* 140–80 (p. 138, no. 11), plus local rough-cast ware. The samian provides a mid 2nd-century *terminus post quem* for the filling.

Pottery from the infilling of the construction cone of the well 1519 produced several well-preserved sherds dating

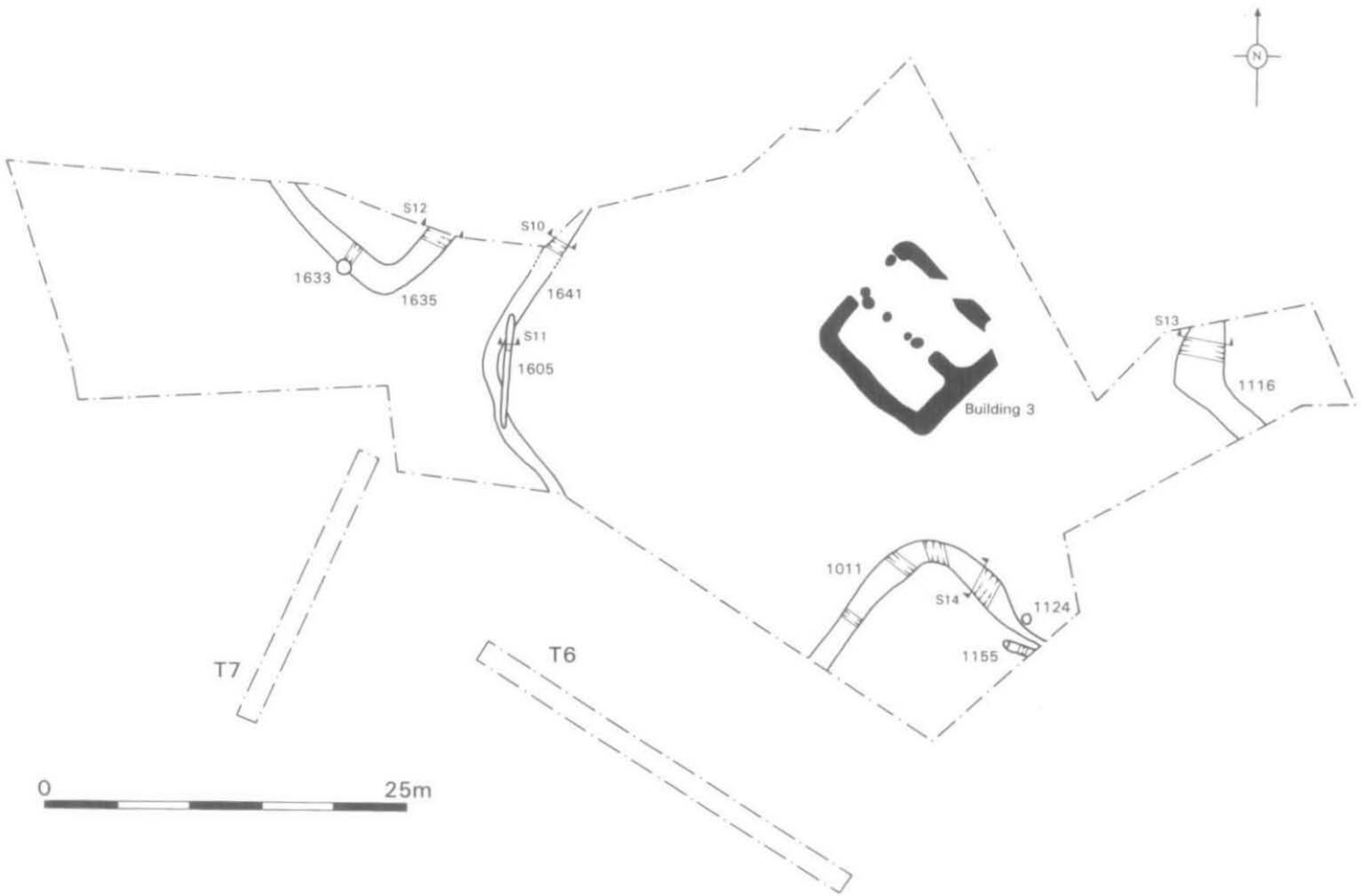



Fig. 7. Period 3.

to the late 1st or early 2nd century, including an oxidised fineware bowl (Fig. 14, 13). The upper filling of the well shaft 1521 contained large sherds, average weight 34 gms., including the base of what is almost certainly a BB1 plain-rimmed dish. This gives a *terminus post quem* of *c.* 150[5] for the infilling of the well.

Ditch 1534 produced 22 sherds broadly dating to the later 2nd to 3rd centuries; and ditch 1607 just four sherds including a samian Dr. 27 of early 2nd-century date. A similarly small group (five sherds only) was recovered from ditch 1109. Of the pits S. of the building, the filling of 1182 produced a coin of 98–9 (coin 3) and 25 sherds which could all date from the 2nd century; pits 1157 and 1193 contained few featured sherds but included 2nd-century wares and a burnt whiteware jar, possibly of 3rd-century currency.

### *Discussion*

Building 1 can be interpreted as a simple timber granary. A comparable structure is recorded from Gorhambury, Herts. (Building 10, dated to the late Iron Age), which was defined by seven trenches 0.7 m. wide and 0.1 m. deep.[6] Similar granaries have also been found at Mucking (Essex) and Whitton (S. Glamorgan), although here the trenches contained vertical posts rather than sleeper-beams.[7] The little dating evidence available allows for the possibility than Building 1 may have originated in Period 1, and that Buildings 1 and 2 never coexisted.

Simple rectangular structures with two or more rooms such as Building 2 are a well attested building-type in Britain, occurring in a variety of different settlement types.[8] Building 2 was evidently timber framed with wattle and daub walls; fragments of limestone tiles from demolition levels (p. 154) testify to its roofing material. There is no reason to doubt the domestic function of the structure, although the very small quantity of plaster recovered from demolition levels suggest that it was not plastered internally (the plaster contained within the packing of wall trench 1143 probably derived from a different structure). Building 2 was constructed at some point in the 2nd century and demolished sometime in the second half of the 3rd or early 4th century (p. 123).

Ditch 1607 may have in part defined an enclosure surrounding both buildings, and Period 3 ditch 1641 which was on a similar, although not an identical, alignment may have been a successor. Ditch 1534 probably served as a similar boundary or enclosure; it contained the well which was perhaps associated with occupation further up the hill and thus outside the excavation area.

## PERIOD 3 (MID 3RD/EARLY 4TH CENTURY–LATE 4TH CENTURY)

In this period Building 2 was demolished, a new stone building (Building 3) constructed, and a number of new ditches dug which may have defined stock enclosures (Fig. 7).

### *Demolition of Building 2*

Overlying the pad stones and wall trenches of Building 2 was a layer of demolition debris 1069/1094/1152, *c.* 0.25 m. thick, which consisted of redeposited solifluction debris with large stones and stone roof tile fragments. It also contained 19.5 kg. of roof tile and small amounts (0.2 kg.) of wall plaster and pottery. Above this was deposit 1034, a clay loam which contained occasional pebbles, fragments of sandstone, 0.4 kg. of plaster, fragments of mortar and an almost complete hexagonal stone roofing tile. It is suggested below (p. 123) that this deposit represents the levelled daub walls of the building.

[5] Holbrook and Bidwell, *Roman Finds from Exeter*, 99.

[6] D.S. Neal, A. Wardle and J. Hunn, *Excavation of the Iron Age, Roman and Medieval Settlement at Gorhambury, St. Albans* (English Heritage Archaeol. Rep. 14, 1990), 29.

[7] P. Morris, *Agricultural Buildings in Roman Britain* (B.A.R. Brit. Ser. 70, 1979), fig. 29, c, d.

[8] R. Hingley, *Rural Settlement in Roman Britain* (1989), 35–7.

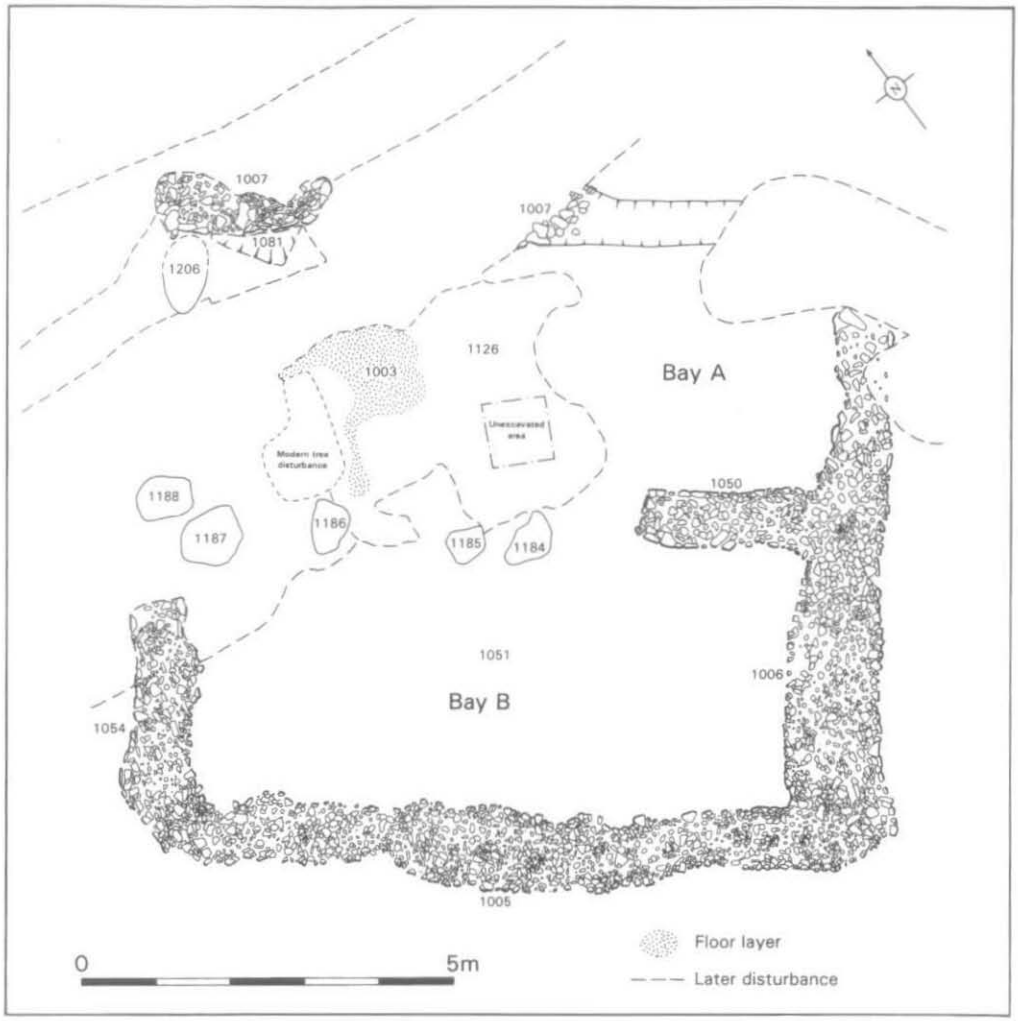



Fig. 8. Building 3.

*Building 3*

This structure was aligned N.W.–S.E. and measured *c.* 10.2 by 9.5 m. externally (Fig. 8). Only the wall foundations, which consisted of uncoursed, unmortared, tightly packed lumps of clunch up to 0.4 m. in diameter, survived; not a single dressed stone had survived later robbing. The foundations were trench-laid, and varied in width from 0.7–1.3 m. Test-pits excavated against the S.W. wall and in the N.W. corner of the building showed that the footings were cut to a depth of 1.3 m. into the solifluction. The interior of the building was split into two equal sized bays (A and B) by an internal partition. The S.E. end of the partition was formed by a 2 m.-long, 0.8 m.-wide stub wall 1050, composed of uncoursed rubble footings; these appeared to be of one build with the external wall 1006, although they were dug to a much shallower depth (0.3 m). The remainder of the partition was defined by four large sub-rounded padstones, 1184-1187, on average 0.71 m. by 0.63 m. in plan and 0.26 m. in depth. The top of the stub wall and the upper surfaces of the padstones all lay at a similar level. There was an entrance, 2.1 m. wide, in the N.W. wall defined by padstones 1188 and 1206 which supported the door jambs.

Within Bay A, and overlying period 2 pit 1190, was a 0.56 m. thick sequence of floors and make-up deposits. The lowest deposit comprised stone rubble up to 0.25 m. thick 1126; this was overlain by a thin surface of crushed chalk 1141 which was roughly level with the upper surface of the padstones. Above this was a further clay make-up deposit 1191 for a second surface comprised of crushed chalk and fine gravel 1127. On top of this was further make-up 1128/1133 beneath a layer of thin angular stone roof tiles (1104) which served as a base for a yellow mortar floor containing crushed tile fragments (1003). This uppermost surface lay 0.24 m. above the top of the padstones. Only a comparatively small area of flooring survived, having been removed by later ditches (and associated intrusion around the entrance of the building) and the effects of ploughing.

Internal deposits within Bay B comprised a trampled clayey loam 1051 which contained a small quantity of stone rubble; a single stone roof tile fragment and a few fragments of tile and wall plaster. The deposit increased in thickness from N.E. to S.W., attaining a maximum depth of 0.22 m. It was cut by the stub wall 1050 and is likely to have been a constructional levelling dump for a surface at the same height as the tops of the padstone partition. All floor levels in this part of the building had been removed by later truncation, and the mixture of pottery recovered from the levelling (which ranged in date from late Roman to post-medieval) indicates that it had been disturbed by later agricultural activity.

### *Ditches*

Curvilinear ditch 1641 replaced the Period 2 ditch 1607 through which it cut. The ditch was sectioned once (Fig. 10, S10), was *c.* 1.1 m. wide and 0.7 m. deep. Ditch 1605, sectioned once, was 8.5 m. long, 0.49 m. wide and just 0.17 m. deep (Fig. 10, S11). It was probably a recut of the corner of ditch 1641.

To the N.W. of ditch 1641 was a corresponding curvilinear ditch 1635, which was sectioned twice, and had been recut to a width of *c.* 1.7 m. and a depth of 0.96 m. (Fig. 10, S12). The fill contained a fragment of quernstone, shale and pottery. These two ditches defined a 6 m. wide track or droveway which led down the hillside from the N.E. before opening out into a larger field. Ditch 1635 was cut by a flat-bottomed, nearly vertical sided pit 1633, which was 0.8 m. wide and 0.5 m. deep.

Further to the S.E. and within the flood plain of the Letcombe Brook were two further curvilinear ditches which may have defined grazing paddocks adjacent to the stream. To the E. of the tower enclosure ditch 1116 was sectioned once, and was 3.1 m. wide and 0.56 m. deep (Fig. 10, S13). To the S. of the tower ditch 1011 was 1.6 m. wide and 0.53 m. deep (Fig. 10, S14) and had cut through, and almost totally removed, an earlier trench on the same course which contained shallow post holes, presumably for a fence. The later ditch petered out to the S. reflecting a later reduction in ground level and was flanked to the N.E. by an external post hole 1124 0.67 m. deep. On the other side was a narrow ditch 1155, 0.48 m. wide and 0.07 m. deep, which contained two post holes, one of which was in the N.W. terminal. Ditch 1011 was sectioned four times and the fill produced a single stone roof tile fragment, a small amount of tile, plaster, pottery, two coins, and 226 animal bone fragments. Molluscan analysis of the ditch fill shows three different zones of activity (p. 166). The lower fill indicates a damp environment, kept free of vegetation. The middle zone indicates a decline in dampness and suggests that the ditch was becoming more shaded, perhaps through the growth of vegetation following the abandonment of the previous agricultural regime. Finally the upper zone suggests a more open environment once again, with evidence of permanently standing, but shallow, water.

### *Finds Evidence*

Building 2 (demolition): layers (1069/1094) produced a small assemblage in a fairly good state of preservation (average weight 24 gms.) which includes a mortarium[9] in production from *c.* 240–300, and colour-coated beakers and disc-necked flagons, along with various grey wares. Deposit 1152 produced 26 sherds with a high average sherd size of 25 gms. The group included Oxfordshire whiteware mortaria and colour-coated ware,[10] BB1 and a greyware flagon/jug with a dished-moulded rim; Fig. 14, 10. These deposits suggest that the demolition of Building 2 occurred in the second half of the 3rd or early 4th century. Pottery from 1034 was distinctly biased towards late 1st and 2nd centuries with a number of distinctive vessels in fabric R7 (Fig. 14, 19–20; Fig. 15, 21–4, 26). Late Roman material was negligible. An explanation for the much earlier date of the pottery from this deposit might be that 1034 represents the demolished daub walls of Building 2: as has been noted at *Verulamium* and *Vindolanda*[11] daub often contains a great deal of pottery, some of it incorporated accidentally but much of it mixed in deliberately as aggregate. If so, the pottery from this deposit would date to the period of construction of Building 2 rather than its demolition.

[9] C.J. Young, *Oxfordshire Roman Pottery* (B.A.R. Brit. Ser. 43, 1977), type M17.

[10] Ibid. type C51.

[11] S.S. Frere, *Verulamium Excatations 1* (1972), 10; P.T. Bidwell, *The Roman Fort of Vindolanda* (English Heritage Archaeol. Rep. 1, 1985), 187.

Building 3 (construction): the foundations of the S.E. wall 1006 produced just two sherds of pottery: one an Oxfordshire colour-coat dating from *c.* 240; the other a rim from a very large Alice Holt storage jar (Fig. 14, 16) probably dating to *c.* 300–50. The make-up deposit 1051/1105 within Bay B produced a chronologically mixed assemblage of some 132 sherds, including a 4th-century Oxfordshire parchment ware bowl (Fig. 14, 17). Odd sherds of Anglo-Saxon, medieval and post-medieval date were also recovered, indicative of the disturbance which this deposit had suffered from later agricultural activity.

The filling 1640/1649 of ditch 1641 produced sherds of Oxfordshire colour-coat along with earlier material. Recut 1605 produced just residual 2nd-century material.

The filling 1583/1541 of ditch 1635 produced pottery spanning from the 1st to 3rd or 4th centuries including Flavian samian and Oxfordshire colour-coat. Also present was a single sherd of late shell-tempered ware and a single sherd from an Anglo-Saxon cooking-pot. The pottery might suggest the ditch had fallen out of use by the early 4th century but was disturbed or still accumulating material at a later date. Pit 1633 cutting ditch 1635 contained just three redeposited sherds.

The filling of ditch 1116 contained much redeposited material, including an Iron-Age sherd along with Oxfordshire colour-slipped wares,[12] mortaria and a greyware lid-seated jar, indicative of filling at some date after the mid 3rd century.

The filling 1056 of ditch 1011 produced four coins dating to 270–90 (×2); 364–375; 364–378 (coins 13; 15; 37; 40) and pottery which included fabric R1 (Fig. 14, 15), Oxfordshire colour-coat, Oxfordshire parchment ware, nine sherds of late shell-tempered ware and a single Anglo-Saxon piece.

### *Discussion*

It is not possible to demonstrate whether the construction of Building 3 directly followed the demolition of Building 2, or whether there was a hiatus between the two events. If the former, the pottery from the foundations of Building 3 suggests this happened in the early 4th century.

The depth to which the foundations were dug, and the almost square plan, suggests that Building 3 should be interpreted as a tower granary of two or more storeys. Comparable structures are recorded from a variety of settlement types in Roman Britain. At the villa of Gorhambury, Herts., Building 28 (dated *c.* 100–175) was 6.4 m. by 5.8 m. externally, with wall footings dug to a depth of 0.75 m. External buttresses provided further support for the walls, and there was a 2 m.-wide entrance porch.[13] Tower granaries are also known from the small town of Godmanchester, where they were originally attached to the *mansio* but subsequently became free standing,[14] and the major towns of Silchester and Colchester. At Silchester[15] Boon has reasonably presumed that a number of small, square structures with thick walls visible on the town plan should be interpreted thus. At Colchester a 2nd-century example with external buttresses has been excavated at Culver Street.[16]

The 2 m.-wide entrance in the N.W. wall of the Wantage granary would have been sufficient to allow carts to back in, perhaps beneath a loading or unloading jetty on the second floor. It is possible that there may have been some form of ?flagged hardstanding in this area which was subsequently robbed out, thus explaining the later disturbance around the entrance.

The granary stood on a slight break in slope on the hillside, above the area prone to seasonal flooding of the Letcombe Brook. The ditches attributed to this phase provide further evidence for the agricultural regime, with the droveways and paddocks suggestive of a mixed economy.

It is difficult to assess exactly how long this period lasted, although the pottery and coins point to the ditches not being completely infilled before the last quarter of the 4th century. Indeed the odd sherd of Anglo-Saxon pottery from the upper filling demonstrates that they remained as visible depressions into the post-Roman period.

[12] Young op. cit. note 9, type WC3.

[13] Neal et al. op. cit. note 6, 48.

[14] H.J.M. Green, 'Roman Godmanchester', in W. Rodwell and T. Rowley (eds.), *Small Towns of Roman Britain* (B.A.R. Brit. Ser. 15, 1975), 198, 207.

[15] G.C. Boon, *Silchester: the Roman Town of Calleva* (1974), 256–7.

[16] P. Crummy, *Excavations at Culver Street, the Gilberd School, and other Sites in Colchester, 1971–85* (Colchester Archaeol. Rep. 6, 1992), 108 (building 125).

## PERIOD 4 (EARLY ANGLO-SAXON, 5TH–7TH CENTURY)

In this period the tower was demolished, and a series of ditches cut on a markedly different alignment to that utilised in the preceding periods (Fig. 9).

### *Demolition of Building 3*

The walls of the building were completely robbed of all upper courses, with only the undressed foundations remaining. Even these were robbed from a length of the N.E. wall 1007 where evidence for a robber trench was recovered (Fig. 8). A possible robber pit 1081 was also found adjacent to the N.E. wall. The area around the entrance of the building had been disturbed by a wide, shallow intrusion which may be either associated with robbing or else related to the digging of ditch 1076.

### *Ditches*

All of the ditches assigned to this period were on a differing alignment from those of Periods 1–3. Curvilinear ditch 1068/1567 was *c.* 1 m. wide and 0.5 m. deep (Fig. 10, S15) and aligned approximately E.–W. before it turned S. To the S. was a parallel ditch 1076/1150, which was *c.* 1 m. wide and 0.5 m. deep (Fig. 10, S16). The two ditches defined a probable track or droveway, 2 m. wide, which led W. into a large paddock, 27 m. wide. It seems likely that there were upcast banks on the outside of these ditches, thus accounting for the slight gap visible between these ditches and other field boundaries which adjoined them. To the E. of the main field smaller enclosures were defined by ditch 1134, 1.2 m. wide (Fig. 10, S17), which deepened to the S.E. to facilitate drainage, and possibly ditch 1114. This ditch produced no dating evidence, but is tentatively ascribed to this Period on the basis of its N.-S. alignment. It was sectioned once and was *c.* 0.75 m. wide and 0.37 m. deep (Fig. 10, S18). Both ditches 1076 and 1134 cut through the foundations of the Period 3 tower, and the filling of the latter contained large amounts of stone derived from the foundations.

To the W. of ditch 1068/1567 were two parallel interrupted ditches. These were aligned N.E.–S.W. and continued the general alignment of ditch 1068 before it turned to the S. Ditch 1542 was sectioned once, was *c.* 1.32 m. wide and 0.32 m. deep (Fig. 10, S19) with a terminal at both ends. After a gap it continued to the S.W. as 1661. This latter ditch, sectioned once, was *c.* 2 m. wide and 0.5 m. deep. It is probable that the causeway between these two ditches was originally wider, but erosion at the terminals had subsequently reduced it to a mere 0.5 m. In this case the corresponding ditches 1611/1582 to the N. might represent a later replacement. Ditch 1611 was sectioned once, was *c.* 1.2 m. wide and 0.2 m. deep with terminals at both ends (Fig. 10, S20). After a 3 m. wide causeway, it continued to the W. as ditch 1582.

### *Finds Evidence*

Fill 1082 of ?robber pit 1081 produced an illegible 3rd–4th century coin and an issue of 364–78 (coins 39; 52).

Dating for this phase is dependent upon a consideration of the date of the infilling of the ditches, and the overlying dumped silt horizon which is discussed in the next section (p. 128). It is argued there that there is unlikely to have been a significant gap between the digging of these ditches and their infilling, in which case this phase should be attributed to the early Anglo-Saxon period.

## PERIOD 5 (EARLY ANGLO-SAXON, 5TH–7TH CENTURY)

With the exception of ditch 1068 all the period 4 ditches were infilled with homogeneous brown clay-loam. Ditch 1068 showed evidence for a little slumping of the edges beneath the main fill, but the distinct impression gained is of the deliberate backfilling of these ditches with material imported from elsewhere, rather than gradual infilling through natural silting action (as seems to have been the case with the Period 3 ditches which had greyer, more silty fills). Given the lack of erosion/natural silting, or evidence for considerable recutting, there is unlikely to have been a significant time gap (in the sense of centuries) between their digging and infilling.

Directly overlying the foundations of the demolished tower, and apparently sealing the ditches was a layer of dark greyish-brown sandy silt 1002/1034, which covered an area of *c.* 35 × 25 m. (Fig. 9). The deposit was of variable

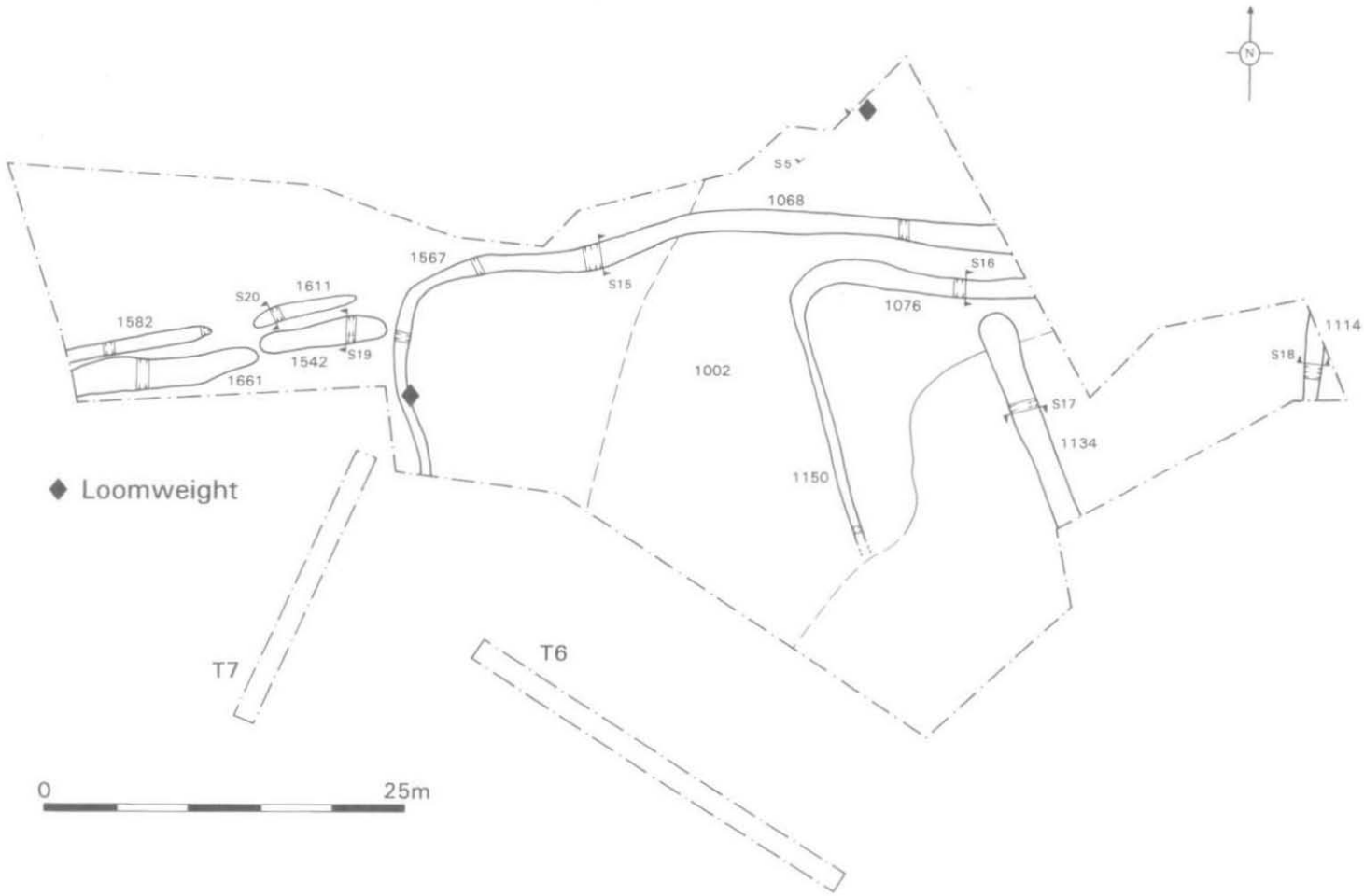



Fig. 9. Periods 4 and 5.

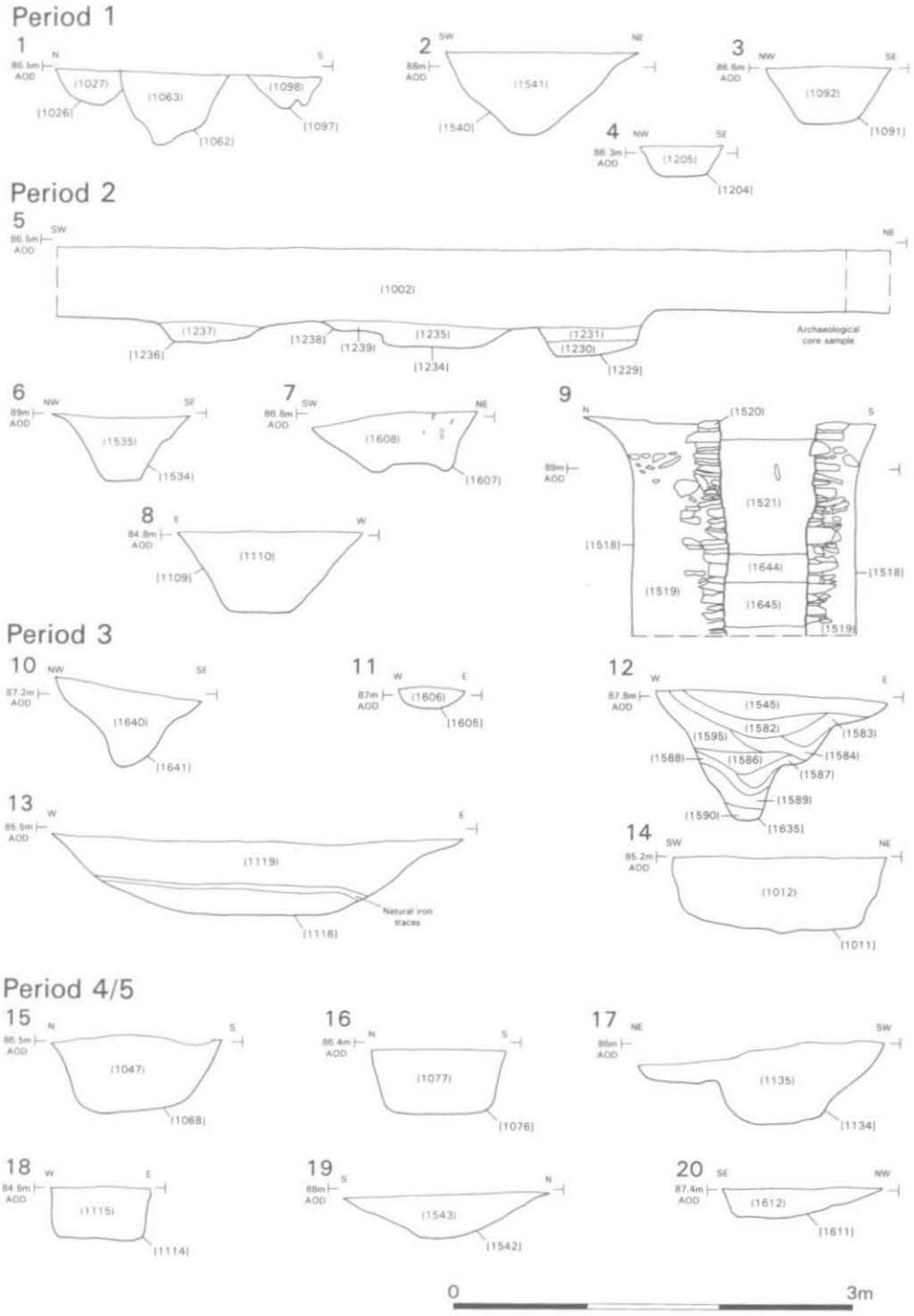



Fig. 10. Sections.

thickness, petering out on the slopes to the S.W. and S.E., and attaining a maximum depth of 0.57 m. in the N.W. corner of the excavation area (Fig. 10, S5). Here the deposit infilled a slight terrace on the sloping hillside, and was thus more protected from erosion through later agriculture which presumably led to its denudation elsewhere on the site. Visually this deposit was very similar to those infilling the Period 4 ditches, and is quite probably one and the same deposit. It contained a wide chronological range of pottery of Roman, Anglo-Saxon, medieval and post-medieval date, reflecting its position directly beneath the topsoil, together with Roman coins, a brooch spring, a lead spindle-whorl and 227 animal bone fragments. The deposit was sampled through a combination of test pitting, sectioning and sampling for geoarchaeological analysis; thereafter it was mechanically removed.

Two concentrations of Anglo-Saxon loomweights were recovered (Fig. 9). Fragments of six annular loomweights (including one complete example) accompanied by 23 sherds from a single Anglo-Saxon vessel were recovered from the remnants of a deposit overlying infilled ditch 1567. They lay directly below the topsoil and were most probably originally contained within a deposit comparable to 1002 which had hereabouts been almost entirely removed by later agricultural activity. Fragments of a further six annular loomweights (of which four were complete) were recovered about 50 mm. below the surface of deposit 107 (= 1002) during the evaluation. The loomweights were concentrated, with three lying directly in a line, and it is probable that they were still attached to a rope when they were discarded. Eight sherds of Anglo-Saxon pottery were associated with the loomweights, a higher density than found elsewhere in the test-pitting of deposit 1002, plus a possible Anglo-Saxon bronze pin (Fig. 17, 2). These concentrations of Anglo-Saxon artefacts presumably result from discrete dumps within the overall deposition of the horizon, which contained predominantly residual late Roman material.

The precise derivation of this deposit is not fully certain. The average potsherd weight was similar throughout Periods 1–3, but the assemblage from the silt deposit was generally more abraded than most of the previous material. This could be due to its transportation onto the site during manuring using largely late Roman midden material cleared from another part of the settlement. Alternatively, it could be due to destructive agricultural processes from which sherds, for example in the earlier ditch fills, may have been more protected. Micromorphological and sedimentological analyses (p. 166–9) confirm that this deposit is likely to be the product of a single episode of dumping rather than a gradual accumulation. The low phosphate readings testify to a lack of faecal material and that the animal bones became incorporated within it following the removal of flesh. Overall an interpretation as a redeposited midden, cleared from elsewhere in the settlement and dumped here seems most probable. The material might have been associated with the creation of agricultural plots.

### *Finds Evidence*

The filling of ditch 1068/1567 produced shell-tempered pottery datable to the last quarter of the 4th century. The uppermost fill of the ditch or base of the overlying silt horizon contained six Anglo-Saxon loomweights (Fig. 16, 1), a large concentration of sherds from a single Anglo-Saxon vessel (Fig. 15, 37) and a coin of 388–402 (coin 50). A sherd from a second Anglo-Saxon vessel and a single sherd of intrusive 12–13th century pottery was also recovered from elsewhere in the ditch.

The fill 1077/1151 of ditch 1076/1150 produced late-Roman material including shell-tempered ware, plus one sherd of Anglo-Saxon and one sherd of (intrusive) medieval pottery.

Ditch 1542 produced a small quantity of 4th-century wares from fill 1543, although the corresponding ditch 1661 contained mainly redeposited 2nd-century sherds (Fig. 15, 28). Amongst these was a handmade greyware sherd with limestone inclusions which might conceivably be post-Roman.

Ditch 1134 produced coins of 364–78 and an illegible late 3rd-century issue (coins 18; 42) and a good 4th-century assemblage including a handmade bossed dish (Fig. 15, 36) which may also be of post-Roman date.

Silt horizon 1002/1034 produced the following coins: 364–75; 352–60; 98–117 plus two intrusive post-medieval issues (coins 4; 32; 38; 63; 65). It also yielded 160 sherds of pottery, of which 142 were Roman; 5 Anglo-Saxon and 13 medieval/post-medieval (Fig. 14, 14; Fig. 15, 38). In addition a further eight sherds of Anglo-Saxon pottery were found in association with the loomweights (Fig. 16, 2) recovered in the evaluation (108).

### *Discussion*

It is evident that the early Anglo-Saxon settlement at Wantage was not centred around the excavation area, but presumably lay further to the N. or W. Indeed it may be wrong to visualise a nucleated focus to the settlement given the evidence for widely spaced houses set within field systems recovered from the few Anglo-Saxon settlement sites excavated on any scale in Oxfordshire. By the 5th–7th century the Roman tower granary had been demolished and the area given over to agricultural production, with the ditched tracks and paddocks indicative of a pastoral element to the local economy. This pattern of

landscape organisation was subsequently obliterated by the dumping of midden waste over the site, perhaps associated with market gardening or the like. There is no evidence for late-Saxon activity on the site, and evidence from elsewhere indicates that the focus of settlement had probably shifted to the E. of the Letcombe Brook by this time (p. 176).

### PERIOD 6 (MEDIEVAL/POST MEDIEVAL)

Sealing the loam deposit 1002/1034 was topsoil 1001, removed by machine. Several tree holes and animal burrows were apparent and much of the S.W. part of the site had been subject to tree root disturbance with a hedgeline damaging much of the site beyond the limit of excavation. A total of 29 medieval potsherds and 3 medieval coins were recovered. A late 17th–early 18th century pit was excavated in the N.E. corner of the site. A series of post settings were apparent over the W. part of the site which are considered to be post-medieval or later. Within the confines of the excavation area they formed no appreciable pattern. Modern pits, a modern horse burial and a field drain were also found.

## THE FINDS

### COINS by PETER GUEST

A total of 65 coins was recovered, of which 56 could be identified in detail (58 coins were Roman; 3 medieval, and 4 post-medieval). Table 1 catalogues the coins in detail, while Table 2 summarises the Roman coins against the main coin periods. This information is shown as a histogram in Fig. 11. Although the total is small, certain peaks in the numismatic record are apparent and it is clear that the late 3rd century and the middle decades of the 4th century produced relatively high levels of coin loss. This is a common characteristic of Romano-British sites and until recently any examination of site finds would have equated these peaks with periods of increased activity. The realisation that coin-loss histograms do little more than reflect the supply of coins into Britain during the Roman period, however, has resulted in the study of site finds becoming increasingly sophisticated over the last few years. Richard Reece[17] has proposed that only by comparing a series of coins against the overall British mean can we begin to make statements regarding 'relative' coin loss and use.

Based upon current work by Reece, Fig. 12 attempts to make exactly such a comparison. Here the chronological profile of the Mill Street material is compared to the British mean of coin loss (represented by the x-axis on the graph). This modified process of analysis indicates that except for the early 2nd century, coin loss at Mill Street was consistently below the 'normal' Romano-British level for the first three centuries AD. Only the years after 330 saw an increase in the number of coins lost on the site, especially during the Valentinianic Period 19 (364–78). Fig. 12 also represents the coins from three other Romano-British sites that have similar profiles to the Wantage list. No two sites are exactly alike, but all possess the same obvious characteristics as Wantage. Two of these sites are rural settlements (Sapperton and Dorn), while the third is a large town, possibly a *civitas* capital (Ilchester). Dorn and Ilchester are situated in the S.W. of England (Gloucestershire and Somerset), from the same general area as Wantage. All three sites experienced the same restricted supply and/or use of coins at the end of the 4th century. Although a regional explanation for this pattern seems enticing at first glance, it is somewhat undermined by Sapperton's location in Lincolnshire.

Despite the advantages of the methodology shown on Fig. 12, an unfortunate drawback with such diagrams is that they are only able to depict a series of deviations from an artificially created mean rather than presenting the actual numbers of coins lost. In order to overcome this problem the four coin lists are presented in terms of coins per thousand on Fig. 13. The most obvious feature of this diagram is the large peak of coins struck during the years 364–78 (period 19). Although it is not unusual for rural sites in Roman Britain to produce a large number of coins from these years, it is a little surprising that they outnumber coins from the earlier period covering 330 to 340.

This pattern of coin loss suggests that the 4th century was a period of growth and prosperity for the settlement at Wantage, although the relative scarcity of the latest coins to enter Roman Britain implies a decline between 380–90. In other respects the coin list from Wantage deviates from those of the three other sites that are superficially similar. This is most noticeable for the years 69 to 117 which produce significantly more coins at Wantage than the

[17] R. Reece, 'British Sites and their Roman Coins', *Antiquity*, lxvii (1993), 863–9.

TABLE 1. THE COIN LIST

*First to Third Century*

| *No.* | *Context* | *Phase* | *Obverse* | *Denomination* | *Date* | *Reference* | *Remarks* |
|---|---|---|---|---|---|---|---|
| 1 | 1237 | 2 | DOMITIAN | dupondius | 86 | RIC 323a | |
| 2 | 1502 | 6 | Flavian emp. | as | 69-96 | | reverse illegible |
| 3 | 1181 | 2 | TRAJAN | dupondius | 98-99 | RIC 385/6 | |
| 4 | 1002 | 5 | TRAJAN | sestertius | 98-117 | | reverse illegible |
| 5 | US | — | TRAJAN | dupondius | 103-111 | RIC 539 | |
| 6 | 1073 | 6 | HADRIAN | as | 134-38 | RIC 846 | |
| 7 | US | — | GORDIAN III? | radiate | 240-44 | | Romae Aeternae – Rome |
| 8 | 1048 | — | GALLIENVS | radiate | 260-68 | Cunetio 1359 | Dianae Cons Aug Rome – //E |
| 9 | 1079 | 6 | VICTORINVS | radiate | 268-70 | Elmer 732/3 | Salus Aug – mint II |
| 10 | 1502 | 6 | VICTORINVS | radiate | 268-270 | | Salus? |
| 11 | US | — | VICTORINVS | radiate | 268-270 | Elmer 697 | Salus Aug – mint I |
| 12 | 1502 | 6 | CLAVDIVS II | radiate | 268-270 | Cunetio 2242 | Spes Publica – Milan |
| 13 | 1056 | 3 | | radiate | 270-290 | | |
| 14 | US | — | | barb. radiate | 270-290 | | as Pax |
| 15 | 1056 | 3 | | barb. radiate | 270-290 | | |
| 16 | US | — | | barb. radiate | 270-290 | | as Divus Claudius – altar |
| 17 | US | — | | | late 3rd | | |
| 18 | 1135 | 5 | | | late 3rd | | |

*Fourth Century*

| *No.* | *Cont.* | *Phase* | *Reverse type* | *Date* | *Obverse type* | *Mint* | *Ref.* | *Remarks* |
|---|---|---|---|---|---|---|---|---|
| 19 | US | — | GENIO POPVLI ROMANI | 302-3 | Diocletian | Trier | RIC 519a | S/F//ITR |
| 20 | 1001 | 6 | Victory on prow | 330-40 | Constantinopolis | | | |
| 21 | US | — | as Wolf & twins | 330-40 | Urbs Roma | | barbarous copy | |
| 22 | US | — | Wolf & twins | 332-3 | Urbs Roma | Trier | RIC 542 | TR&P |
| 23 | US | — | GORIA EXERCITVS (1) | 335-40 | | | | |
| 24 | US | — | GORIA EXERCITVS (1) | 340 | Constans | Trier | RIC 103 | TRScrescent |
| 25 | 1502 | 6 | VICTORIA AVGG QNN | 347-48 | | Trier | HK 137/8 | M/[TRP] |
| 26 | US | — | VICTORIA AVGG QNN | 347-48 | | Trier | | palm//- |
| 27 | 1178 | — | FEL TEMP REPARATIO (Phoenix 1) | 348-50 | | Trier | | TR[?] |
| 28 | US | — | as Fel Temp Reparatio (Phoenix) | 348-50 | | | | barbarous copy |
| 29 | US | — | FEL TEMP REPARATIO (falling horseman) | 352-60 | | | | |
| 30 | US | — | FEL TEMP REPARATIO (falling horseman) | 352-60 | | | | |
| 31 | 1502 | 6 | as Fel Temp Reparatio (falling horseman) | 352-60 | | | | barbarous copy |
| 32 | 1002 | 5 | as Fel Temp Reparatio (falling horseman) | 352-60 | | | | barbarous copy |
| 33 | 1001 | 6 | as Fel Temp Reparatio (falling horseman) | 352-60 | | | | barbarous copy |
| 34 | US | — | as Fel Temp Reparatio (falling horseman) | 352-60 | | | | barbarous copy |
| 35 | US | — | SECVRITAS REIPVBLICAE | 364-67 | | Aquileia | CK 998/9 | *crescent/-/ [SMAQP] |
| 36 | US | — | SECVRITAS REIPVBLICAE | 364-67 | Valens | Aquileia | CK 987 | chi-rho/-/ [SMAQP] |
| 37 | 1056 | 3 | SECVRITAS REIPVBLICAE | 364-75 | | Lyons/ Arles | | OF/I//[?] |

| *No.* | *Cont.* | *Phase* | *Reverse type* | *Date* | *Obverse type* | *Mint* | *Ref.* | *Remarks* |
|---|---|---|---|---|---|---|---|---|
| 38 | 1002 | 5 | GLORIA ROMANORVM (8) | 364-75 | Valentinian I | Lyons? | | |
| 39 | 1082 | 4 | SECVRITAS REIPVBLICAE | 364-78 | | | | |
| 40 | 1056 | 3 | SECVRITAS REIPVBLICAE | 364-78 | Valentinian I | | | hole pierced towards edge of flan |
| 41 | US | — | GLORIA ROMANORVM (8) | 364-78 | | | | |
| 42 | 1135 | 5 | GLORIA ROMANRVM (8) | 364-78 | | | | |
| 43 | 1073 | 6 | GLORIA ROMANRVM (8) | 364-78 | Valens | | | |
| 44 | US | — | SECVRITAS REIPVBLICAE | 364-75 | Valens | Aquileia | CK 1015 | SMAQS |
| 45 | US | — | SECVRITAS REIPVBLICAE | 364-75 | Valens | Lyons | CK 348 | OF S/I// LVGP* |
| 46 | US | — | GLORIA ROMANRVM (8) | 367-75 | Gratian | Rome | CK 723 | SMLeafRP |
| 47 | US | — | SPES ROMANORVM (1) | 378-88 | Magnus Maximus? | | | |
| 48 | US | — | VICTORIA AVGGG (1) | 388-92 | Theodosius | Lyons | CK 391 | LVGP |
| 49 | US | — | VICTORIA AVGGG (1) | 388-95 | Arcadius | Arles | CK 566/9 | SCON |
| 50 | 1637 | 5 | SALVS REIPVBLICAE (2) | 388-402 | | | | |
| 51 | 1502 | 6 | VICTORIA AVGGG (1) | 394-402 | Honorius | | | |
| 52 | 1082 | 4 | | 3rd-4th | | | | illegible |
| 53 | US | — | | 3rd-4th | | | | illegible |
| 54 | 1502 | 6 | | 3rd-4th | | | | illegible |
| 55 | 1001 | 6 | | 3rd-4th | | | | illegible |
| 56 | 1048 | — | | 4th | | | | illegible |
| 57 | 1502 | 6 | | 4th | | | | hole pierced towards edge of flan |
| 58 | US | — | | late 4th | | | | poss. Valentinianic |

*Post-Roman and Other Coins*

| *No.* | *Context* | *Obverse type* | *Date* | *Denomination* | *Mint* | *Reference* |
|---|---|---|---|---|---|---|
| 59 | 1502 | EDWARD I | 1280-1 | halfpenny | London | |
| 60 | US | EDWARD III | 1344-51 | halfpenny | London | |
| 61 | 1502 | EDWARD III | 1396-77 | penny | York | |
| 62 | 1001 | CHARLES II | 1672-79 | farthing | | Seaby 3394 |
| 63 | 1002 | GEORGE III | 1805-6 | penny | Irish type | Seaby 6620 |
| 64 | 1001 | GEORGE III | 1806-7 | penny | | Seaby 3780 |
| 65 | 1002 | VICTORIA | 1885-1901 | penny | | Seaby 3961 |

other sites. Therefore the numismatic evidence hints at an earlier period of activity at Wantage beginning in the later 1st century and ending only a few decades later.

## THE POTTERY by JANE TIMBY

### *Introduction*

The excavation resulted in the recovery of approximately 3,000 sherds of pottery, 58 kg. in weight, ranging in date from the Iron Age through to the post-medieval period. In this report the assemblage

TABLE 2. LIST OF ROMAN COINS BY PERIOD

| Period | Date | No. of coins | coins per 1000 |
|---|---|---|---|
| 1 | up to 41 | 0 | 0 |
| 2 | 41–54 | 0 | 0 |
| 3 | 54–68 | 0 | 0 |
| 4 | 68–96 | 2 | 40 |
| 5 | 96–117 | 3 | 60 |
| 6 | 117–138 | 1 | 20 |
| 7 | 138–161 | 0 | 0 |
| 8 | 161–180 | 0 | 0 |
| 9 | 180–192 | 0 | 0 |
| 10 | 193–222 | 0 | 0 |
| 11 | 222–235 | 0 | 0 |
| 12 | 235–260 | 1 | 20 |
| 13 | 260–275 | 5 | 100 |
| 14 | 275–296 | 5 | 100 |
| 15 | 296–317 | 1 | 20 |
| 16 | 317–330 | 0 | 0 |
| 17 | 330–348 | 7 | 140 |
| 18 | 348–364 | 8 | 160 |
| 19 | 364–378 | 12 | 240 |
| 20 | 378–388 | 1 | 20 |
| 21 | 388–402 | 4 | 80 |
| | 3rd century | 1 | |
| | 4th century | 3 | |
| | 3rd/4th centuries | 4 | |

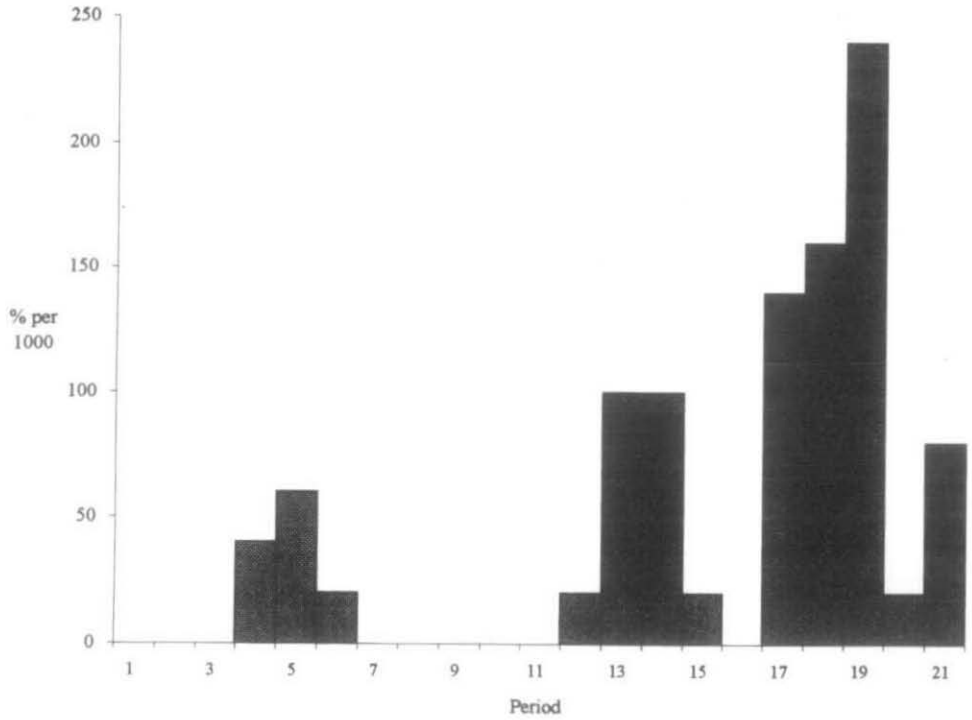



Fig. 11. Coin Histogram.

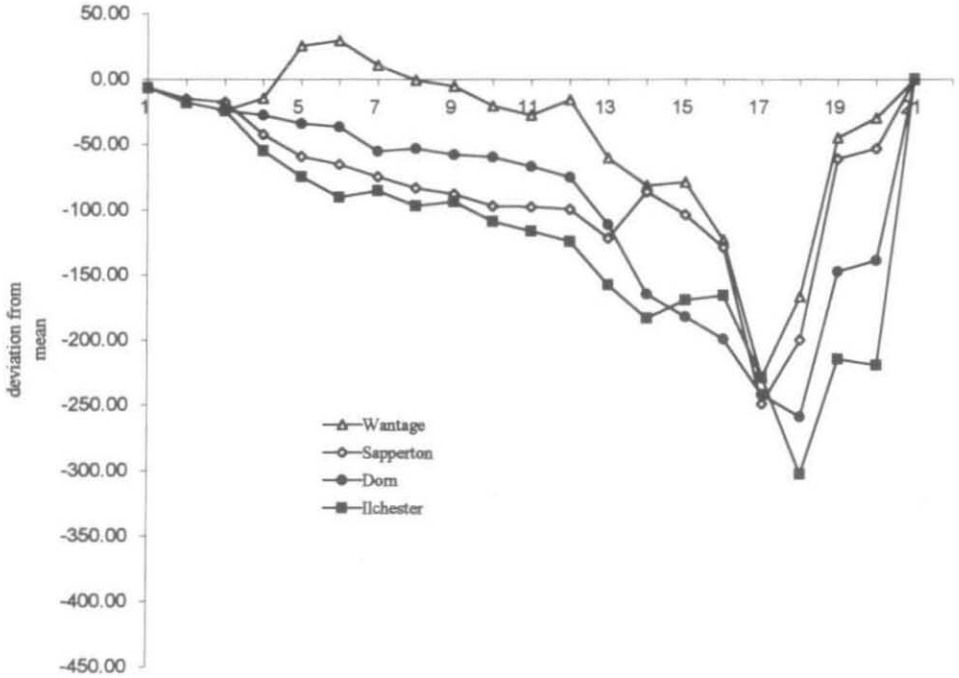



Fig. 12. Comparison of coins from four sites against the British mean.

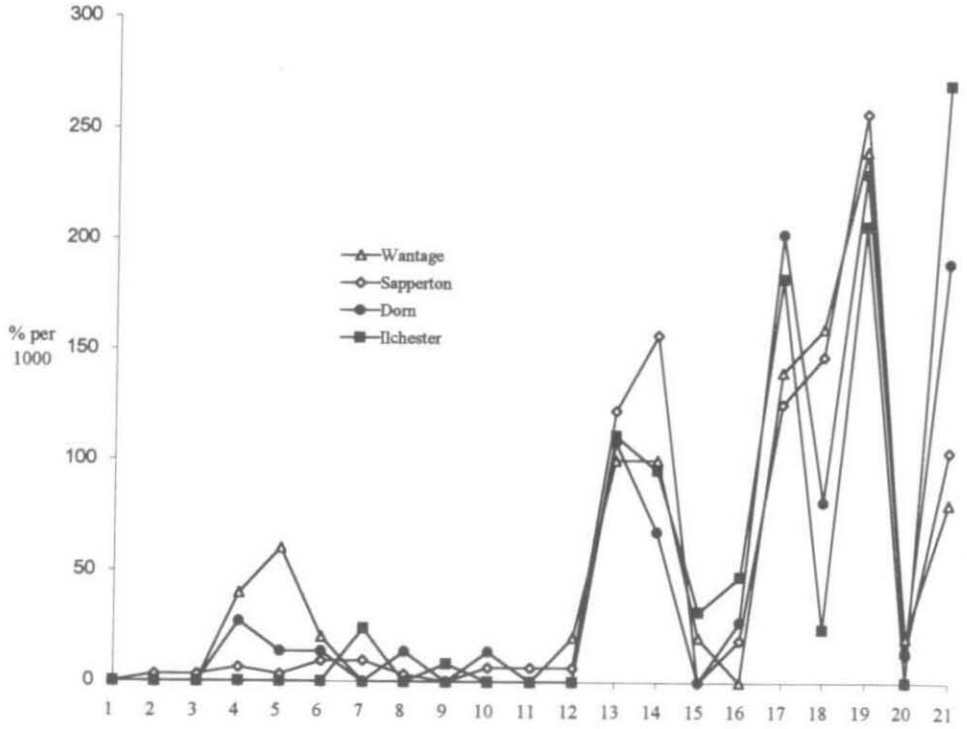



Fig. 13. Comparison of four coin histograms.

is reviewed chronologically, discussing the general range of wares present, and setting them within a regional context. The stamped and decorated samian is reported on separately by Brenda Dickinson. A selection of representative forms have been illustrated (Figs. 14–15). The assemblage is quantified by sherd number, sherd weight, and EVE in Table 3.

A small number of Iron-Age sherds were recovered redeposited in Roman features. Two decorated sherds were present, one with ring-and-dot decoration (Fig. 14, 3) and a rim from a large wide-mouthed bowl, with a shallow tooled, diagonal line decoration on the upper zone (Fig. 14, 1). Other featured sherds include two joining rimsherds from a bowl (Fig. 14, 2).

Fabrics were varied but included calcined flint-tempered and sandy wares, the latter including one variant with a distinctive glauconitic grains, suggesting a source from the Lower Greensand deposits. The sherds probably date to the middle Iron-Age period, although it is difficult to be certain with such a small group. The style is more typical of the region to the S. of Wantage, rather than the Thames Valley, with vessels similar to those from Wantage falling within the St Catharine's Hill–Worthy Down style.[18]

### *Roman*

Roman wares accounted for 96% of the overall assemblage with sherds dating from the later 1st, to at least the later 4th century. Many of the fabrics, particularly the grog-tempered storage jars and the fairly fine sandy greywares, are relatively long-lived. The majority of the fabrics can be considered local, although exact sources cannot be identified at present. The fine grey, oxidized orange and whitewares belong to an early Roman industry probably based in the Oxfordshire area, the origins of which are currently little understood. The forms include a distinctive range of fine tablewares, often with painted, or barbotine decoration. Most 1st and 2nd-century sites in the Gloucestershire, Oxfordshire, N. Wiltshire area were receiving these wares, for example Dorchester-on-Thames,[19] Abingdon,[20] Bourton-on-the-Water,[21] with a very small number getting further afield, for example Gloucester[22] and Kingscote.[23] All the kilns cited by Young[24] which are better known for their later Roman products also apparently produced these typologically earlier forms, in particular those at Boarshill.[25] Identical vessels found at Wanborough, and other sites in Wiltshire, may come from the same source(s), or may reflect the N. movement of potters into the Oxfordshire region, producing these distinctive decorated pots. Vessels were clearly in production by the early 2nd century, and it is more than likely that some date to the later 1st century, but how far back is uncertain.

Recently evidence has come to light of a fineware industry in the Abingdon area producing thin-walled beakers in the pre-Flavian period.[26] The wares were being distributed locally with examples at Dorchester-on-Thames,[27] Silchester,[28] and Denchworth Road, Wantage.[29] It may be significant, therefore, that there were no examples from Mill Street, suggesting that occupation at this site is more likely to date to after the pre-Flavian period.

[18] As defined by B.W. Cunliffe, *Iron Age Communities in Britain* (3rd edn. 1991), 82.

[19] S.S. Frere, 'Excavations at Dorchester-on-Thames, 1962', *Archaeol. Jnl.* 119 (1964), 114–40; 'Excavations at Dorchester-on-Thames, 1963', *Archaeol Jnl.* 141 (1984), 91–174.

[20] J.R. Timby, 'Report on Selected Pottery Groups', in T.G. Allen, *Excavations at Abingdon Vineyard* (forth.).

[21] C. Renfrew, *Bourton-on-the-Water Roman Settlement* (1976).

[22] Unpublished.

[23] J.R. Timby, *Kingscote: A Roman Estate Centre in the Cotswolds* (forth.).

[24] op. cit. note 9, *passim*.

[25] E. Harris and C.J. Young, 'The Overdale kiln site at Boar's Hill, near Oxford', *Oxoniensia*, xxxix (1974), 12–25.

[26] Timby op. cit. note 20.

[27] Frere, *Dorchester 1962*, fig. 12, 9, 15, 16; J.R. Timby, 'The pottery', in L. Torrance and T. Durden, 'Fieldwork at St. Birrinus Primary School, Dorchester-on-Thames, Oxon.', *Oxoniensia* (forth.).

[28] J.R. Timby, in M. Fulford, *Excavations at Silchester Basilica* (forth.), fabric S16.

[29] J.R. Timby, 'Pottery', in C. Bateman, *Land off Denchworth Road, Wantage, Archaeological Evaluation* (CAT TS Rep. 96336, 1996).

TABLE 3. POTTERY QUANTIFIED BY SHERD NUMBER, SHERD WEIGHT, AND EVE.

| | *Period* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *1* | | | *2* | | | *3* | | | *5* | | |
| *Fabric* | *No* | *Wt* | *Ev* | *No* | *Wt* | *Ev* | *No* | *Wt* | *Ev* | *No* | *Wt* | *Ev* |
| Iron Age | — | — | — | 3 | 47 | 0 | 4 | 109 | 0 | 2 | 30 | 0 |
| Roman | | | | | | | | | | | | |
| A1 | 4 | 509 | 0 | 1 | 10 | 0 | 4 | 343 | 0 | 5 | 464 | 50 |
| A2 | — | — | — | 1 | 47 | 0 | — | — | — | — | — | — |
| SAM | 11 | 183 | 20 | 16 | 96 | 23 | 11 | 200 | 62 | 70 | 725 | 99 |
| FW1 | 14 | 140 | 20 | 2 | 24 | 5 | 1 | 6 | 0 | 15 | 151 | 22 |
| FW2 | — | — | — | — | — | — | — | — | — | 1 | 7 | 0 |
| FW3 | — | — | — | — | — | — | 1 | 6 | 0 | 1 | 6 | 13 |
| FW4 | — | — | — | 1 | 8 | 0 | — | — | — | — | — | — |
| R1 | 130 | 2036 | 334 | 228 | 3037 | 558 | 185 | 3205 | 288 | 459 | 6992 | 695 |
| R2 | 39 | 1026 | 39 | 79 | 1082 | 58 | 24 | 548 | 42 | 161 | 2830 | 262 |
| R3 | 34 | 582 | 19 | 28 | 204 | 24 | 10 | 78 | 65 | 34 | 381 | 65 |
| R4 | 14 | 302 | 29 | 29 | 692 | 9 | 8 | 106 | 13 | 69 | 1094 | 112 |
| R5 | 1 | 5 | 0 | 5 | 74 | 0 | 1 | 7 | 0 | 2 | 18 | 0 |
| R6 | — | — | — | 1 | 14 | 7 | 13 | 200 | 18 | — | — | — |
| R7 | 13 | 312 | 39 | 23 | 377 | 20 | 11 | 252 | 21 | 39 | 616 | 127 |
| R8 | 2 | 80 | 10 | — | — | — | — | — | — | 2 | 20 | 0 |
| R9 | — | — | — | — | — | — | 2 | 400 | 10 | 1 | 20 | 10 |
| R10 | 2 | 20 | 0 | 3 | 180 | 0 | — | — | — | 2 | 81 | 20 |
| OX1 | 1 | 16 | 0 | — | 37 | 14 | — | — | — | 5 | 64 | 0 |
| OX2 | 1 | 14 | 26 | 21 | 141 | 27 | 4 | 28 | 7 | 16 | 101 | 58 |
| OX3 | 1 | 16 | 0 | — | — | — | — | — | — | | 28 | 24 |
| OX4 | 26 | 222 | 0 | 4 | 34 | 14 | 2 | 30 | 5 | 5 | 47 | 9 |
| W1 | 47 | 490 | 0 | 27 | 500 | 47 | 4 | 38 | 14 | 14 | 178 | 0 |
| W2 | 2 | 17 | 0 | 13 | 181 | 6 | 2 | 26 | 0 | 15 | 338 | 107 |
| W3 | — | — | — | 3 | 39 | 8 | 1 | 4 | 0 | 5 | 72 | 0 |
| G1 | 58 | 2067 | 36 | 79 | 2773 | 94 | 50 | 2124 | 42 | 128 | 4751 | 60 |
| G2 | 4 | 100 | 0 | 3 | 128 | 0 | 1 | 42 | 0 | 12 | 358 | 61 |
| G3 | 8 | 452 | 8 | 22 | 688 | 5 | 9 | 234 | 0 | 29 | 1693 | 13 |
| G4 | 1 | 9 | 0 | 16 | 210 | 0 | 1 | 12 | 0 | — | — | — |
| G5 | — | — | — | — | — | — | — | — | — | — | — | — |
| GS | 2 | 62 | 0 | 4 | 53 | 20 | 3 | 71 | 10 | 6 | 139 | 20 |
| BB1 | 9 | 128 | 28 | 29 | 471 | 64 | 34 | 601 | 63 | 166 | 1015 | 195 |
| OXCC | 3 | 36 | 0 | 9 | 75 | 0 | 52 | 777 | 79 | 84 | 1091 | 73 |
| OXPA | — | — | — | — | — | — | 6 | 329 | 33 | — | — | — |
| M1 | — | — | — | 4 | 75 | 0 | 11 | 404 | 34 | 7 | 406 | 8 |
| M2 | 1 | 10 | 0 | — | — | — | 2 | 59 | 0 | 5 | 223 | 0 |
| M3 | 1 | 20 | 0 | — | — | — | — | — | — | 2 | 28 | 0 |
| M4 | — | — | — | — | — | — | 1 | 35 | 10 | 1 | 20 | 55 |
| Q1 | 5 | 45 | 0 | 4 | 53 | 0 | 3 | 21 | 0 | 20 | 393 | 125 |
| H1 | — | — | — | 1 | 5 | 0 | 1 | 2 | 0 | 14 | 223 | 20 |
| H2 | — | — | — | 2 | 9 | 0 | 13 | 112 | 8 | 6 | 102 | 10 |
| Other | 3 | 32 | 0 | 2 | 18 | 3 | 6 | 48 | 0 | 23 | 376 | 75 |
| Saxon | — | — | — | 6 | 53 | 0 | 5 | 52 | 6 | 51 | 867 | 52 |
| Med. | — | — | — | — | — | — | 4 | 66 | 0 | 25 | 548 | 62 |
| P-Med. | 1 | 10 | 0 | — | — | — | 4 | 40 | 6 | 15 | 141 | 10 |
| TOTAL | 438 | 8941 | 608 | 669 | 11435 | 1006 | 494 | 10615 | 836 | 1520 | 26657 | 2512 |

Other early wares found at Wantage include a number of mica-slipped wares, mainly curved-wall dishes and beakers. Again these are likely to be products of a local fineware industry. A recently investigated kiln at Nuneham Courtney[30] produced glazed, mica-slipped and roughcast wares in the 2nd century. A single imported sherd from a Gallo-Belgic *terra nigra* curved-wall dish[31] is probably an early post-conquest import. A number of similar vessels have been recorded from the general area and may be associated with the postulated military presence at Dorchester-on-Thames.[32] A small quantity of samian (S. and Central Gaulish) was also reaching the site along with S. Spanish (Dressel 20) and Italian (Dressel 2–4) amphorae.

Also featuring from the early-Roman period are the distinctive black sandy wares (fabric R7), which are less easy to trace. The vessels display a particularly 'native' character (Fig. 14, 5, 14, 19–20; Fig. 15, 21–4, 26). The ware is not known from sites to the N.,[33] and it is assumed at present that it is a very localised industry, possibly based to the S. of Wantage in the Berkshire Downs, where few sites of this date have been published. Vessels can be parallelled with material of comparable date from Abingdon.[34]

The assemblage from the later-Roman period contains the usual range of products, local greywares, grog-tempered storage jars, local colour-coated wares, Dorset BB1, and the ubiquitous late 4th-century shell-tempered wares. Also present is a single sherd of Nene Valley colour-coat and a small number of sherds from the Alice Holt kilns, Surrey.

### *Anglo-Saxon*

At least 62 sherds of Anglo-Saxon date were recovered from the site of which 23 derived from a single vessel (Fig. 15, 37). Most of the sherds belong to the grass- or organic-tempered tradition, generally current between the 5th–8th centuries. A single stamped sherd (Fig. 15, 39) was recovered. It is impossible to determine continuity on the site from the late-Roman period, although it should be noted that at other Anglo-Saxon sites in Oxfordshire, notably Dorchester-on-Thames[35] and Shakenoak,[36] it is suggested that organic-tempered wares did not appear until the 6th century. Recently excavated material from the Basingstoke area might, however, provisionally suggest such wares in 5th-century contexts to the S. of the Ridgeway.[37] In the immediate post-Roman period, handmade sandy wares have been found in the Dorchester area.[38] A 6th-century date for the organic tradition has been proposed at Abingdon.[39] In addition to the sites mentioned above, many other sites in the Wantage region, particularly along the S. bank of the Thames, have produced comparable wares, notably North Stoke,[40] Berinsfield, Frilford, Wallingford, Minster Lovell, Eynsham,[41] Ashbury and Bishopstone,[42] to mention but a few. Two pottery kilns, probably of early to mid Saxon date (6th–7th century), excavated at Purwell Farm, Cassington, were producing both limestone-tempered and organic-tempered wares, apparently together.[43] Stamp-decorated wares have been found at Abingdon[44] and Sutton Courtenay,[45] which may also date from the 6th century.

[30] P. Booth, A. Boyle and G.D. Keevil, 'A Romano-British Kiln Site at Lower Farm, Nuneham Courtney, and other sites on the Didcot to Oxford and Wootton to Abingdon Water Mains, Oxfordshire', *Oxoniensia*, lvii (1993), 87–217.

[31] C.F.C. Hawkes and M.R. Hull, *Camulodunum* (Res. Rep. Soc. Antiq. London 14, 1947), pl. xlix, type 16.

[32] T. Rowley, 'Alchester and Dorchester on Thames', in Rodwell and Rowley op. cit. note 14, 118.

[33] P. Booth *pers. comm.*

[34] Timby op. cit. note 20.

[35] Frere, *Dorchester 1962*.

[36] F. Berisfield, 'The Anglo-Saxon Pottery', in A.C.C. Brodribb, A.R. Hands and D.R. Walker, *Excavations at Shakenoak III* (1972), 57.

[37] J.R. Timby, *The Pottery from Riverdene, Bassingstoke, Hants.* (forth.).

[38] Frere, *Dorchester 1962*, 147–9.

[39] M. Avery and D. Brown, 'Saxon Features at Abingdon', *Oxoniensia*, xxxvii (1972), 80; G.D. Keevil, 'An Anglo-Saxon site at Audlett Drive, Abingdon, Oxon.', *Oxoniensia*, lvii (1992), 55–79.

[40] S. Ford and A. Hazell, 'Prehistoric and Anglo-Saxon Settlement Patterns at North Stoke, Oxon.', *Oxoniensia*, liv (1989), 7–24; S. Ford and A. Hazell, 'Trial Trenching of a Saxon Pottery Scatter at North Stoke, South Oxon. 1988', *Oxoniensia*, lv (1990), 167–8.

[41] All cited by S.C. Hawkes, 'The Early Saxon Period', in G. Briggs, J. Cook and T. Rowley (eds.), *The Archaeology of the Oxford Region* (1986), 64–108.

[42] J.R. Timby, *Pottery from the Ashbury-Bishopstone Pipeline* (Thames Valley Archaeological Services Rep., 1993).

[43] B.V. Arthur and E.M. Jope, 'Early Saxon Pottery Kilns at Purwell Farm, Cassington, Oxfordshire', *Medieval Archaeology*, 6–7 (1963), 1–14.

[44] Avery and Brown op. cit. note 39, 79; Keevil op. cit. note 39, fig. 6, 13.

[45] E.T. Leeds, 'A Saxon Village at Sutton Courtenay, Berkshire', *Archaeologia*, xcii (1947), pl. xxii.

The Wantage sherds may, therefore, in the lack of any other evidence, indicate 6th–7th-century activity in the vicinity of the site. The absence of other handmade ceramic material of potentially earlier date does not necessarily indicate a break in use/occupation between the later 4th–5th centuries; many of the later Roman wares could have continued in use. Of particular note in this context is a dish with a knobbed handle (Fig. 15, 36). Similar vessels have been found at Appleford,[46] Silchester[47] and associated with Saxon sherds at Dorchester-on-Thames.[48]

### *Medieval*

A total of 29 sherds of medieval pottery was recorded from the site in a range of wares. Most distinctive are plain, handmade cooking-pots in a flint and sand-tempered fabric[49] dating to the late 12th–13th centuries. Other cooking-pots occurred in a plain, sandy, handmade ware; a smooth soapy limestone-tempered ware; and a very coarse angular, flint-tempered ware which may reflect a slightly earlier date in the 11th–12th centuries. At least one glazed jug is present in the style of the Brill-Boarstall potters, Bucks. (Fig. 15, 41), probably dating to the 13th century.

### *Post-Medieval*

A small quantity (20 sherds) of post-medieval wares were present from the topsoil, or disturbances into some of the Roman features. These mainly comprised stonewares, slip decorated and glazed red earthenwares dating to the 18–19th centuries.

### *The stamped and decorated samian* by BRENDA DICKINSON

1. Form 29 rim, burnt, S. Gaulish. Early Flavian. Context 1545 (ditch 1635), Period 2.

2. Form 30, S. Gaulish, in the style of Germanus i, *c.* 70–90. Context 704 (ditch 703), Period 1.

3. OF.RVFNI on form 15/17 or 18: Rufinus iii of La Graufesenque, Die 3a. The potter occasionally stamped the pre-Flavian cup, form 24, but this particular stamp always seems to be Flavian. It is noted from Castleford, Malton and Newstead. *c.* 70–90. Unstratified.

4. Form 37, S. Gaulish, *c.* 90–110. Unstratified.

5. Form 37, Central Gaulish, in the style of Drusus i (X-3) of Les Martres-de-Veyre, *c.* 100–20. Context 1034 (silt 1002), Period 5.

6. TARVILLV[·F] on form 18/31 or 31: Tarvillus of Lezoux, Die 2a. The only dating evidence for this potter so far comes from his forms, which belong to the Hadrianic and early-Antonine ranges. Context 1517 (ditch 1540), Period 1.

7. Form 37, Central Gaulish, Hadrianic or early Antonine. Context 1142 (pit 1190), Period 2.

8. Form 37, Central Gaulish, grooved for riveting. Hadrianic or early Antonine. Context 1583 (ditch 1635), Period 3.

9. Form 37, burnt Central Gaulish, *c.* 125–45. Unstratified.

10. [·] PATERATIOF on form 33: Pateratus of Lezoux, Die 1a.[50] This stamp was also used on forms 18/31, 27 and

[46] J. Hinchcliffe and R. Thomas, 'Archaeological Investigations at Appleford', *Oxoniensia*, xlv (1980), fig. 32, 91.
[47] Unpublished in Reading Museum.
[48] Frere, *Dorchester 1962*, fig. 21, 20.
[49] J.R. Fairbrother, *Faccombe Netherton* (British Museum Occ. Pap. 74, 1990), Fabric Group 1C/D, equating with Vince Newbury fabric B and Oxford fabric AJ.
[50] N. Walke, *Das römische Donaukastell Straubing-Sorviodurum* (Limesforschungen 3, 1965), taf. 43, 277.

81, none of which were made in Lezoux after *c.* 160. There are two examples in a group of samian from a pottery shop at Castleford destroyed by fire in the 140s, *c.* 135–55. Context 1140, period 6.

11. Form 37, Central Gaulish, in the style of Cinnamus ii, *c.* 140–80. Joining sherds from contexts 1051, 1058 and 1142, Period 2.

12. Form 37, Central Gaulish, in the style of Do(v)eccus i, *c.* 165–200. Context 1118 (ditch 1011) period 3.

## *Description of the forms and fabrics*

The following fabrics were examined using a ×20 microscope. Several types identified during the initial analysis were subsequently amalgamated and the fabrics accordingly renumbered.

### *Iron Age*

Most of the Iron-Age sherds had slightly different fabric compositions. The main types include a sandy ware, a sand and limestone-tempered ware, and a flint-tempered ware.

*Fabric IA1*: A pale orange-brown ware with a medium grey core. A common frequency of fine quartz sand in a slightly micaceous paste, rare fine limestone, and occasional organic matter. The quartz grains include a number of reddish-brown grains, similar to fabric IA3.
*Form*: Two rimsherds from a bowl with a simple rim (Fig. 14, 2) (1503/1585).

*Fabric IA2*: Glauconitic sandy ware. A brownish-grey ware, with a moderate frequency of fine dark grey-black rounded iron grains. The finely micaceous paste has a very sandy texture with rare red iron grains. Some sherds show sparse inclusions of flint and organic matter.
*Form*: Decorated bodysherd (Fig. 14, 3) probably from a bowl. Other thick-walled handmade sherds also occur. At least two sherds derive from Period 5 layers, and it is possible that a similar indistinguishable fabric also occurred in the Anglo-Saxon period.

*Fabric IA3*: Sand and limestone-tempered ware. A moderately hard fabric with a red-brown exterior, and a dark grey core and interior surface. The slightly micaceous paste has a sandy texture. The fine sandy matrix contains a sparse scatter of irregularly sized limestone ranging from fine up to 5 mm. in size and a scatter of red-brown iron. Several of the surface quartz grains are reddish-brown in colour.
*Form*: Handmade thick-walled sherds.

*Fabric IA4*: A black ware with a reddish-brown to grey core. The paste contains a moderate frequency of finely crushed flint temper fragments up to 1 mm. in size.
*Form*: Bowl with a burnished finish and decorated with diagonal burnished lines (Fig. 14, 1).

### *Roman*

#### *Amphora*

*Fabric A1*: S. Spanish Dressel 20.[51]

*Fabric A2*: Dressel 2–4.[52] Single redeposited sherd (205).

[51] D.P.S. Peacock and D.W. Williams, *Amphorae and the Roman Economy* (1986), Class 25.
[52] Ibid. Class 10.

*Finewares*

*Samian (SAM)*

Forms: A wide range of plain forms including Dr. types 27, 33, 18/31, 31, 35/36. The decorated and stamped sherds are reported upon separately (p.137–8). At least two vessels had repair rivet holes. A number of the sherds were burnt, notably from contexts 306, 1533, 1545 and 1503.

*Fabric FW1*: Oxidized mica-dusted ware. A fine, hard, orange ware containing a sparse to moderate frequency of well-sorted, rounded, quartz and sparse red iron. The clay matrix contains some fine mica. One or both surfaces are covered in a golden micaceous slip.
*Forms*: Curved-wall dishes, beakers, both plain and 'bobble' decorated varieties. One sherd from a closed form, possibly a beaker has a plain unslipped orange exterior and an internal mica slip.
*Date*: Late 1st/first half 2nd century.
*Source*: Mica-slipped wares were produced in small quantities at the Little Farm kiln site, Nuneham Courtney, Oxon.[53] The Wantage examples although likely to be from a 'local' source do not exactly match with the Little Farm fabric and it is probable that other producers were experimenting with similar finewares in the region.

*Fabric FW2*: A hard, fine orange fabric with a brownish-red matt surface colour-coat over clay pellet roughcasting. The fabric is analogous to one produced at the Nuneham Courtney kiln site.[54] FW2b: A plain version without the colour-coat.
*Form*: Beakers.
*Date*: Production of this ware is thought to date to the second half of the 2nd century from its occurrence with other dated types, although the forms might suggest a slightly earlier date.[55]

*Fabric FW3*: Cologne colour-coated ware.

*Fabric FW4*: Gallo-Belgic *Terra Nigra Form*: Single sherd from a *Camulodunum* type 16 platter.[56]

*Local wares: Greywares*

*Fabric R1*: A medium to dark blue-grey, well-fired ware with a lighter grey core. The finely micaceous paste contains fine quartz sand not macroscopically visible, and occasional dark grey iron grains. The exterior surface is frequently burnished.
*Forms*: Jars, jugs, beakers, flanged bowls, flat-rim dishes and lids (Fig. 14, 4, 7, 8, 10, 12, 15; Fig. 15, 28).
*Source*: This fabric falls into the range of reduced wares produced by the Oxfordshire kilns,[57] including the recently discovered kiln at Nuneham Courtney.[58] Reduced wares were made throughout the Roman period, the fabrics not perceptibly changing.

*Fabric R2*: A hard, grey, sandy fabric, slightly coarser than R1, with a slightly granular appearance.
*Form*: Jars (Fig. 14, 11), bowls, lids, beakers and a cheese press.

*Fabric R3*: A very fine version of R1. Blue-grey, fine sandy ware, occasionally with a white slip.
*Forms*: Hemispherical bowls, poppy-head beakers, everted-rim globular beakers and shallow dishes. Frequently decorated with barbotine dots, or trailed designs, rouletting or painted motifs (Fig. 14, 9; Fig. 15, 25, 30).

*Fabric R4*: Very hard, granular sandy ware with a dark grey surface and a red-brown/grey internal core. Slightly soapy feel. The finely micaceous paste contains a moderate frequency of ill-sorted, rounded quartz sand, both brown and clear grains, up to 1 mm. in diameter. Source unknown.
*Forms*: Mainly jars, some with burnished line decoration (Fig. 15, 27), and occasional straight-sided dishes.

[53] Booth et al. op. cit. note 30, 138.
[54] Ibid. fabric F59.
[55] Ibid. 140.
[56] Hawkes and Hull op. cit. note 31, pl. xlix.
[57] Young op. cit. note 9, 202 ff.
[58] Booth et al. op. cit. note 30, 148–51.

*Fabric R5*: A hard, sandy ware with a dark grey exterior, pink interior and dark brown core. The paste contains a moderate frequency of fine, rounded, well-sorted quartz sand, with a scatter of fine red iron grains. The surfaces have a fine granular appearance.
*Forms*: Closed vessels, mainly jars (Fig. 14, 18).

*Fabric R6*: A hard, black ware with a common frequency of moderately well-sorted, rounded quartz sand in a finely micaceous clay. Some vessels have a partial white slip, and a burnished finish. Smooth soapy surfaces.
*Forms*: Straight-sided dish.

*Fabric R7*: A black ware with a brown, or grey core of medium hardness (i.e. scratch with a finger-nail). A moderately fine, sandy fabric with occasional red-brown ferruginous grains and a moderate scatter of rounded dark brown inclusions, probably glauconite, suggesting a clay source from the Lower Greensand series.
*Forms*: Wheelmade vessels, mainly carinated, cordoned bowls and platters with burnished line decoration, (Fig. 14, 5, 14, 19–20; Fig. 15, 21–4).

*Fabric R8*: Extremely hard, granular well-fired fabric. Dark grey interior surface, brown to cream exterior, light grey-white core. Moderate frequency of fine to medium, rounded to sub-angular quartz sand, the individual grains just macroscopically visible. Fine dark grey iron grains. Probably related to fabric W1.
*Forms*: Large jars (Fig. 15, 34).

*Fabric R9*: A pale grey, fine sandy textured ware with a light core. The paste is finely micaceous, with a common frequency of fine, well-sorted quartz sand.
*Forms*: Large storage jars, occasionally with a partial dark grey slip, and incised wavy-line decoration (Fig. 14, 16).
*Source*: Probably a product of the Alice Holt potteries.[59]

*Fabric R10*: Fabric as R1, but with a moderate scatter of white limestone inclusions.
*Forms*: Wheelmade jars.

*Oxidized wares*

*Fabric OX1*: A fine orange ware with a sandy texture. The fabric contains fine quartz sand with a few larger grains, sparse iron and rare voids with a calcareous lining.
*Form*: Flagon.

*Fabric OX2*: A finer version of OX1. Smooth dark orange surfaces.
*Forms*: Beakers with everted rims, and occasionally white painted decoration, bowls, lids and flagons.

*Fabric OX3*: Hard, pink granular sandy ware.
*Forms*: Beaker.

*Fabric OX4*: A hard, sandy ware. The rim area is a dark purplish brown giving way to an orange exterior and core with a paler interior. The paste contains a sparse to moderate frequency of moderately well-sorted quartz sand and red iron, the latter in irregular sizes with occasional large grains up to 3 mm. resembling a ferruginous sandstone.
*Forms*: Jars, bowls.

*Fabric W1*: Very hard, granular cream fabric occasionally with a greyish exterior. The paste contains a common frequency of rounded to sub-angular quartz sand, and rare red iron grains. Related to fabric R8.
*Forms*: Jars.

*Fabric W2*: Oxfordshire medium to fine sandy whiteware.[60]
*Forms*: Flagons.

*Fabric W3*: Very fine, hard whiteware with a greyish inner core. No visible inclusions apart from occasional rounded quartz grains and fine red iron.
*Forms*: Flagons.

[59] M.A.B. Lyne and R.S. Jeffries, *The Alice Holt/Farnham Pottery Industry* (Counc. Brit. Archaeol. Rep. 30, 1979).
[60] Young op. cit. note 9, 93 ff.

*Late Roman Oxfordshire wares*

*Fabric OXCC*: Oxfordshire colour-coated ware.[61]
*Forms*: Young types C42 variant, C45, C51, C84, beakers (Fig. 15, 29), disc-mouthed flagons.

*Fabric OXPA*: Oxfordshire parchment ware.[62]
*Forms*: Young types P24, P27 (Fig. 14, 17).

*Fabric OXWS*: Oxfordshire white-slipped ware.[63]

*Fabric M1*: Oxfordshire whiteware mortaria Young types M17, M22.

*Fabric M2*: Oxfordshire colour-coated mortaria.

*Fabric M4*: Oxfordshire white-slipped mortaria.

*Other Mortaria*

*Fabric M3*: A hard, pink sandy ware with a light brownish exterior wash. The interior surface has coarse sub-angular quartz trituration grits up to 4 mm. in size.

*Other Coarsewares*

*Fabric G1*: A grey, black, or brown smooth soapy ware with a slightly lumpy texture. The fine textured paste contains a moderate to common frequency of rounded to sub-angular grog/clay pellets of various shades; grey, black and brown. Occasional visible rounded quartz grains.
*Forms*: Handmade storage jars, occasionally with burnished lattice decoration.
*Source*: A long lived fabric well-known in the Oxfordshire area throughout the Roman period, probably local.

*Fabric G2*: A hard, light-medium grey, handmade ware, well-fired. The fabric contains a sparse scatter of rounded quartz sand, and rounded dark grey clay pellets/grog up to 1.5 mm. in size. Probably related to, or a variant of, Savernake ware.
*Forms*: Large jars.

*Fabric G3*: Savernake ware, Wiltshire.[64]
*Forms*: Large storage jars.

*Fabric G4*: A moderately, hard ware with black surfaces, and a reddish-orange core, with a grey inner core. The paste contains a scatter of sub-angular to rounded grog/clay pellets, fine red-brown, rounded, iron grains and fine quartz sand.
*Forms*: Closed wheelmade jars.
*Source*: Possibly a variant belonging to the Savernake industry.

*Fabric G5*: Late pink grogged ware.[65]
*Form*: Large closed form.

*Fabric QJ*: Fine oxidized sandy ware with a white surface slip.
*Forms*: Jars, flagons (Fig. 15, 35).

[61] Ibid. 123 ff.
[62] Ibid. 80 ff.
[63] Ibid. 117 ff.
[64] F.K. Annable, 'A Romano-British Pottery in Savernake Forest, Kilns 1–2', *Wiltshire Archaeol. Natural Hist. Mag.*, 58 (1961), 142–55.
[65] P.M. Booth and S. Green, 'The Nature and Distribution of Certain Pink, Grog-Tempered Vessels', *Jnl. Roman Pottery Studies*, 2 (1989), 77–84.

*Fabric H1*: An oxidized, light orange-brown ware with a dark grey core. The fabric contains a sparse frequency of fine limestone/fossil shell.
*Form*: Closed form.

*Fabric H2*: Late shell-tempered ware.
*Forms*: Jars.

*Fabric GS1*: Hard, grey ware with a lighter grey interior and core. A finely micaceous, sandy fabric containing a common frequency of quartz sand, sparse rounded grog/clay pellets, and rare blackened organic matter.
*Forms*: Wheelmade everted rim jars.

*BB1*: S.E. Dorset black-burnished ware.
*Forms*: Mainly plain-rimmed dishes, flat-rimmed bowls and dishes, cooking-pots and conical flanged bowls.

*Fabric SVW*: Severn Valley ware.[66]
*Form*: Flared-rim jar.

*Anglo-Saxon*

*Fabric Sx1*: A black, dark grey, or occasionally red-brown, or orange handmade ware. The finely micaceous clay contains a moderate frequency of organic material. The presence of some grain/seed and other irregular impressions in amongst more linear forms might suggest the use of threshing debris.
*Forms*: Simple, everted rim cooking-pots, some with a roughly burnished finish (Fig. 15, 37–8, 40). An unstratified sherd with a complex stamped decorative scheme was also recovered (Fig. 15, 39).

*Fabric Sx2*: Black ware with a sandy texture and a sparse frequency of organic matter.
*Forms*: Handmade, closed forms with a highly burnished finish.

*Fabric Sx3*: A dark grey ware with a sparse to moderate frequency of ill-sorted rounded quartz sand ranging from very fine to 1 mm. in size. In addition, the paste contains a sparse scatter of rounded white limestone/chalk, ranging from fine specks up to 2–3 mm. in size.
*Forms*: Handmade closed forms with a cursorily smoothed exterior.

*Fabric Sx4/IA*: Moderately fine sandy ware with brown surfaces, and a medium grey core. The paste is finely micaceous with a scatter of ill-sorted rounded quartz sand.
*Forms*: Single sherd with a well-burnished interior suggesting an open form.
*Date*: In the absence of any featured pieces in this fabric it is uncertain whether it should date to the Iron Age or Saxon period.

*Medieval*

*M1*: Plain sandy ware. *Form*: Handmade cooking-pot.
*M2*: Brill-Boarstall type ware with a partial, green speckled glaze. *Form*: Strap-handled jugs (Fig. 15, 41).
*M3*: Smooth clay containing coarse angular flint, quartz sand and iron.
*M4*: Smooth soapy handmade ware with a limestone temper. *Form*: Cooking-pot.
*M5*: Sandy handmade ware with sparse flint (= Newbury fabric B). *Form*: Cooking-pot.
*M6*: An orange, sandy ware with inclusions of chalk and flint. *Form*: Unglazed pitcher with a thumbed base.

*Post-Medieval*

*PM1*: Slip decorated ware.
*PM2*: Glazed red earthenwares.
*PM3*: Stonewares.
*PM4*: Surrey–Hampshire border ware.
*PM5*: Other miscellaneous wares.

[66] P.V. Webster, 'Severn Valley Ware: a Preliminary Study', *Trans. Bristol Gloucestershire Archaeol. Soc.* 94 (1976), 18–46.

## *Illustrated Sherds* (Figs. 14–15)

*Iron Age*

1. Large wide-mouthed bowl with a burnished finish, and lightly tooled diagonal line decoration. Fabric IA4. Context 1519 (well 1520), Period 2.

2. Two joining rimsherds from an Iron Age vessel, fabric IA1. The vessel has a smoothed, but matt finish. Contexts 1503/1585 (ditch 1635), Period 3.

3. Bodysherd, fabric IA2, decorated with a line of ring-and-dot stamps bordered by a single double line. Context 206 (ditch 1116), Period 3.

*Roman*

4. Substantial part of a whole jar, fabric R1, dark grey surfaces with a red-brown core. Decorated in the shoulder area, the upper zone being composed of diagonal burnished lines, the lower zone incised vertical lines. The vessel is burnished in the upper part. Context 1113 (ditch 1062), Period 1.

5. Carinated dish, dark grey in colour with a burnished interior. Fabric R7. Context 1113 (ditch 1062), Period 1.

6. Plain-rimmed BB1 dish, decorated with an incised lattice. Context 1113 (ditch 1062), Period 1.

7. Necked bowl decorated with a burnished lattice. Fabric R1. Context 1113 (ditch 1062), Period 1.

8. Necked bowl with burnishing below the neck and on the upper body. Fabric R1. Context 1113 (ditch 1062), Period 1.

9. Jar with a flared cordoned rim. Fine grey ware, with a burnished exterior, fabric R3. Context 1142 (pit 1190), Period 2.

10. Moulded rim jug, similar to Young[67] type R9/10, in a fine grey ware, fabric R1. Context 1152, Period 3.

11. Dark grey, carinated jar with an everted rim and cordoned neck. Decorated with vertical lightly impressed lines which have a reddish tinge, possibly deliberately coloured. Fabric R2. Context 1166 (pit 1165), Period 1.

12. Pale brown, carinated jar, fabric R1. Context 1166 (pit 1165), Period 1.

13. Hemispherical bowl in a fine orange sandy ware, fabric OX2. Context 1519 (well 1520), Period 2.

14. Small straight-sided, low carinated bowl, cordoned below the rim. Orange-brown in colour, with a burnished finish and diagonal burnished lines. Fabric R7. Trial pit 205/235 (= 1002), Period 5.

15. Base from a closed form in fine grey ware, fabric R1. The base has an incised X on the underside cut after firing, and three notches on one edge, possibly a batch mark. Context 1012 (ditch 1011), Period 3.

16. Alice-Holt storage jar rim.[68] Worn dark blue-grey slip on the rim and exterior. Fabric R9. Context 1006, Period 3.

17. Hemispherical parchment bowl with red painted decoration, similar to Young[69] type P27, a fairly uncommon type. Context 1051, Period 3.

[67] Young op. cit. note 9.
[68] Lyne and Jeffries op. cit. note 59, type 1C.5, dated by them *c.* 300–50.
[69] Young op. cit. note 9.

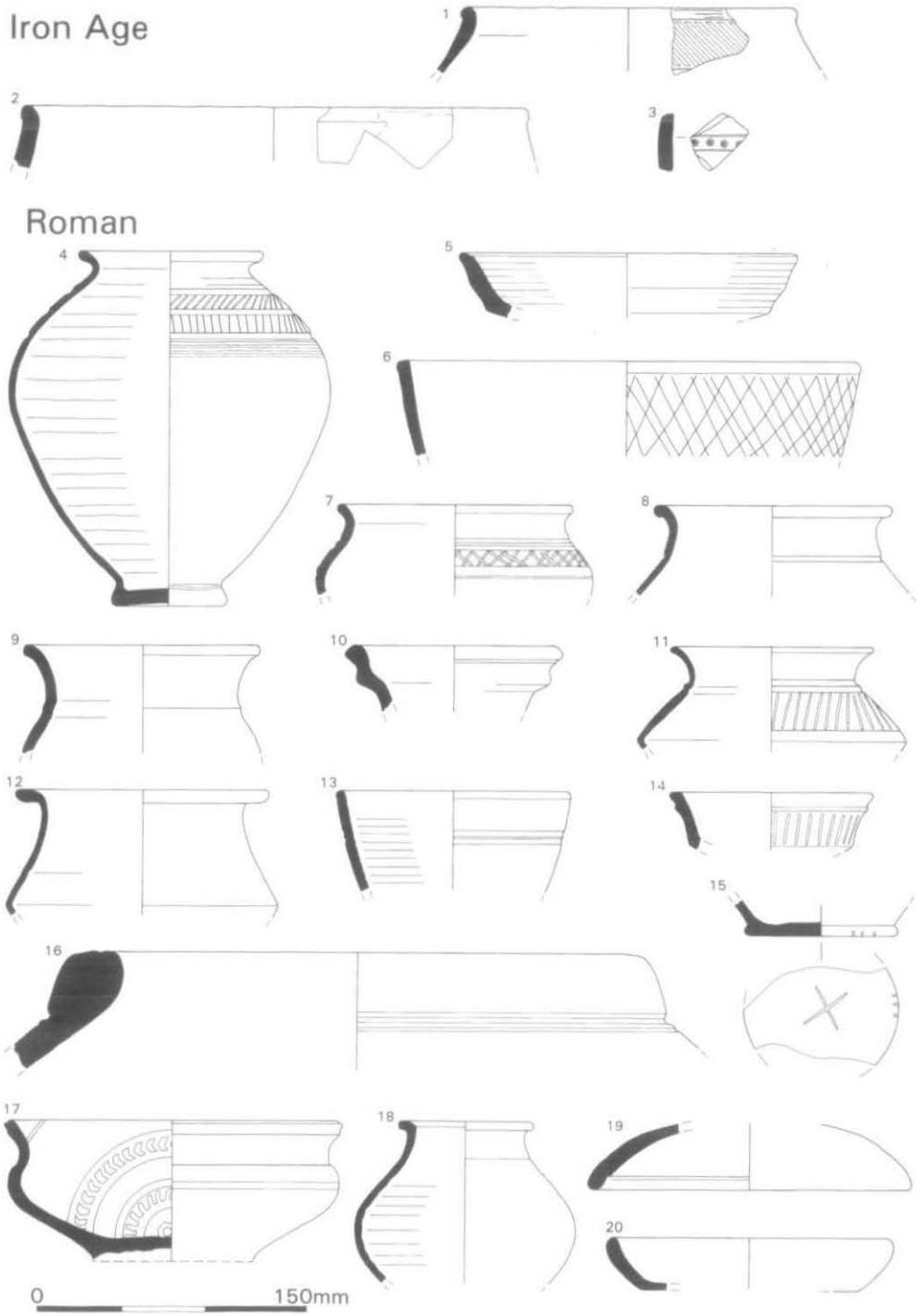



Fig. 14. Pottery vessels 1–20.

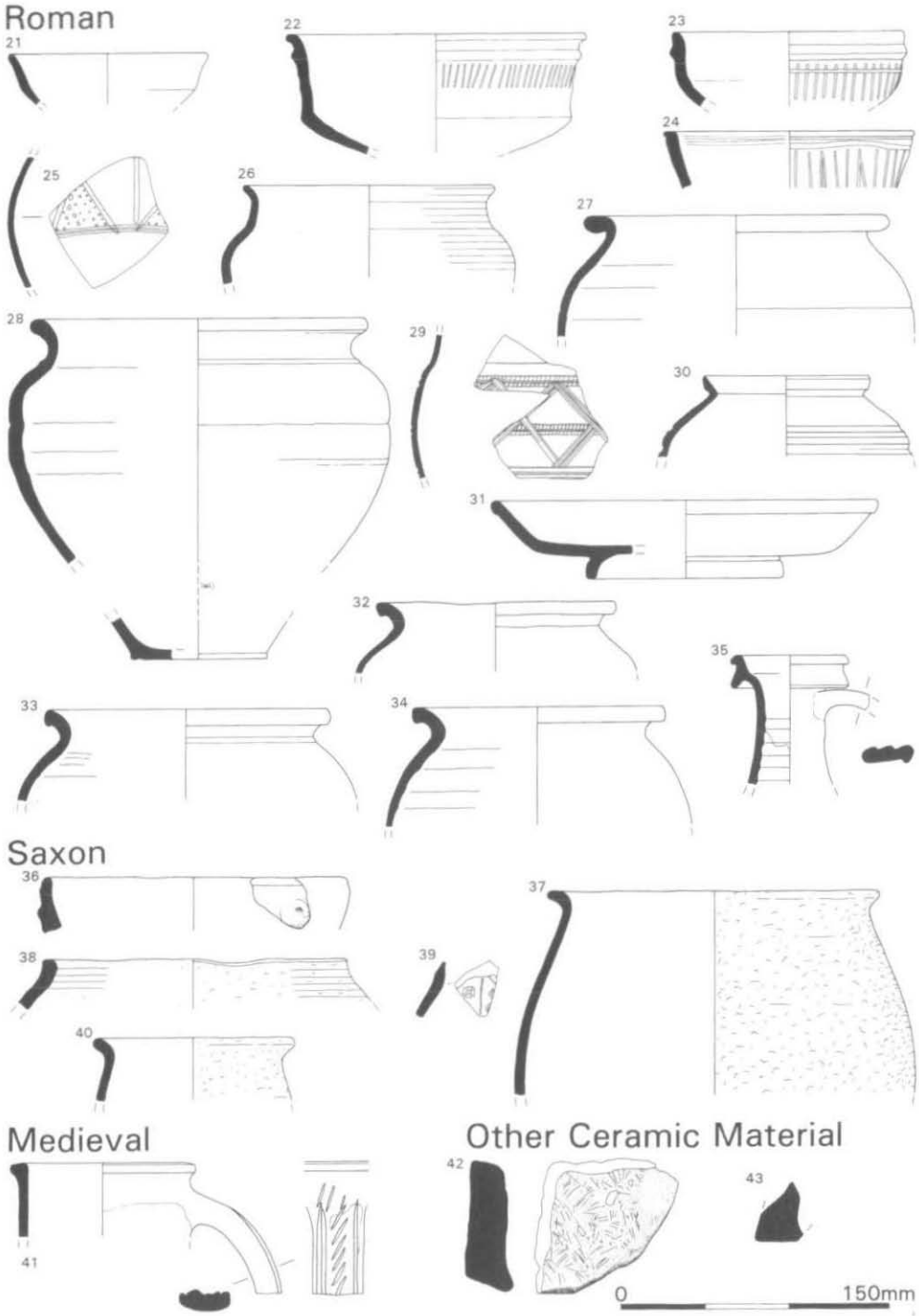



Fig. 15. Pottery vessels 21–43.

18. Globular jar with a flat rim, dark grey in colour with a pinkish interior. Sooted exterior. Fabric R5. Context 1031 (= 1002), Period 5.

19. Lid, grey fabric R7. Context 1034, Period 3.

20. Curved-wall dish, dark grey in colour. Fabric R7. Context 1034, Period 3.

21. Slackly carinated bowl, dark grey in colour. Fabric R7. Context 1034, Period 3.

22. Carinated bowl with a cordon immediately below the rim. Dark grey fabric decorated with burnished diagonal lines. Fabric R7. Context 1034, Period 3.

23. Dark grey hemispherical bowl with a roughly burnished exterior. Decorated with vertical burnished lines below the rim. Fabric R7. Context 1034, Period 3.

24. Dark grey hemispherical bowl with a collared rim. Decorated with vertical burnished lines. Fabric R7. Context 1034, Period 3.

25. Bodysherd from a globular beaker, grey-orange in colour. Decorated with white painted lines and barbotine dots. Fabric R3. Context 1034, Period 3.

26. Two joining sherds from a dark grey, flared rim globular-bodied bowl with a burnished exterior. Fabric R7. Context 1034, Period 3.

27. Large jar in dark grey ware, fabric R4. Context 1034, Period 3.

28. Large jar/bowl which although wheel-turned is fairly crude, suggesting perhaps slow wheel technology. Fabric R1. Context 1662 (ditch 1661), Period 5.

29. Two joining beaker bodysherds showing a dark brown barbotine lattice applied to the surface of a colour-coated rouletted beaker. Fabric OXCC. Context 1148, Period 6.

30. Large globular beaker with a sharply everted rim. Fabric R3. Unstratified.

31. Dish with a footring imitating samian Dr. 31. Fabric OX2. Unstratified.

32. Dark grey jar, slightly warped, fabric R14. Unstratified.

33. Dark grey jar, fabric R6/8. Unstratified.

34. Necked jar with a slightly hooked rim. Fabric R8. Unstratified.

35. Pulley-wheel flagon, in a hard fired, orange fabric with a blue-grey core. Thin creamish white exterior slip. Fabric Q1. Context 705 (ditch 703), Period 1.

*Anglo-Saxon*

36. Small handmade greyware dish with an applied boss. Variant of R1 with a scatter of fine sub-angular quartz sand. Context 1135 (ditch 1134), Period 5.

37. Handmade urn with an everted rim. Grey-brown smoothed exterior with a blackened interior and core. Fabric Sx1. Context 1568 (ditch 1567), Period 5.

38. Handmade urn with a slightly irregular surface. Brownish exterior with a black interior and core. The external surface and the inner face of the rim have a roughly burnished finish. Fabric Sx1. Context 502 (= 1002), Period 5.

39. Bodysherd from the shoulder of an urn in a bright orange fabric with a dark grey core. The sherd is decorated with impressed comb dots delineating zones which are filled with stamp impressions. Two stamp types are visible, one a segmented rosette, the other a cross-in-square. Fabric Sx1. Context 1073, Period 6.

40. Handmade cooking-pot. Black in colour with smooth surfaces. Fabric Sx1. Unstratified

*Medieval*

41. Partially glazed jug with a strap handle. Brill-Boarstall type ware (fabric M2). Unstratified.

*Other ceramic material*

42. Part of a flat ceramic disc made from glauconitic clay containing large fragments of limestone and occasional flint gravel. The ?upper surface is covered with straw/grass impressions, although little of this appears to have been incorporated into the clay body. Context 704 (ditch 703), Period 1.

43. Unidentified triangular fragment made from a very fine micaceous clay, light orange-brown in colour and containing sparse limestone and organic inclusions. Context 704 (ditch 703), Period 1.

## FIRED-CLAY LOOMWEIGHTS by JANE TIMBY

Twelve annular clay loomweights, of which five were complete, were recovered. They occurred in two concentrations (p. 128). The rings are fairly standardised in size, averaging 120–140 mm. in diameter, with central holes 45–50 mm. diameter, and a thickness of *c.* 45–50 mm. The examples appeared to be fired at a moderately low temperature in a bonfire or clamp kiln, resulting in an uneven orange and dark grey surface colouring. None of the pieces showed any signs of wear from suspension cords, or similar, attesting to their use.

Loomweights are commonly found on early Anglo-Saxon domestic sites. Several dozen examples were found within a sunken-featured building at Swindon Old Town associated with charred timber, possibly a loom.[70] Comparable examples were also found associated with sunken-featured buildings at Sutton Courtenay.[71] Two loomweights are illustrated; details of the remainder can be found in the archive.

### *Fabrics*

Three fabrics could broadly be defined, all likely to be local clays used with minimum preparation:

Fabric 1: finely micaceous, oxidized clay containing fine rounded chalk, rare flint and sparse organic matter.

Fabric 2: very lightweight porous fabric, pale orange in colour with no obvious tempering material.

Fabric 3: finely micaceous clay with a common to moderate frequency of coarsely chopped organic material.

[70] L.E. Webster and J. Cherry, 'Medieval Britain in 1976', *Medieval Archaeology*, 21 (1977), 214.
[71] E.T. Leeds, 'A Saxon Village near Sutton Coutenay, Berkshire', *Archaeologia*, lxxiii (1923), pl. xxvi.

*Illustrated Pieces* (Fig. 16)

1. Complete annular loomweight. Fabric 1. Diameter 115–120 mm., central hole 50 mm., thickness 45–50 mm. Context 1672 (top of ditch 1567), Period 5.

2. Complete slightly elliptical 'annular' loomweight. Fabric 3. Diameter 120-135 mm., central hole 50–60 mm., thickness 45–55 mm. Context 107 (= 1002), Period 5.

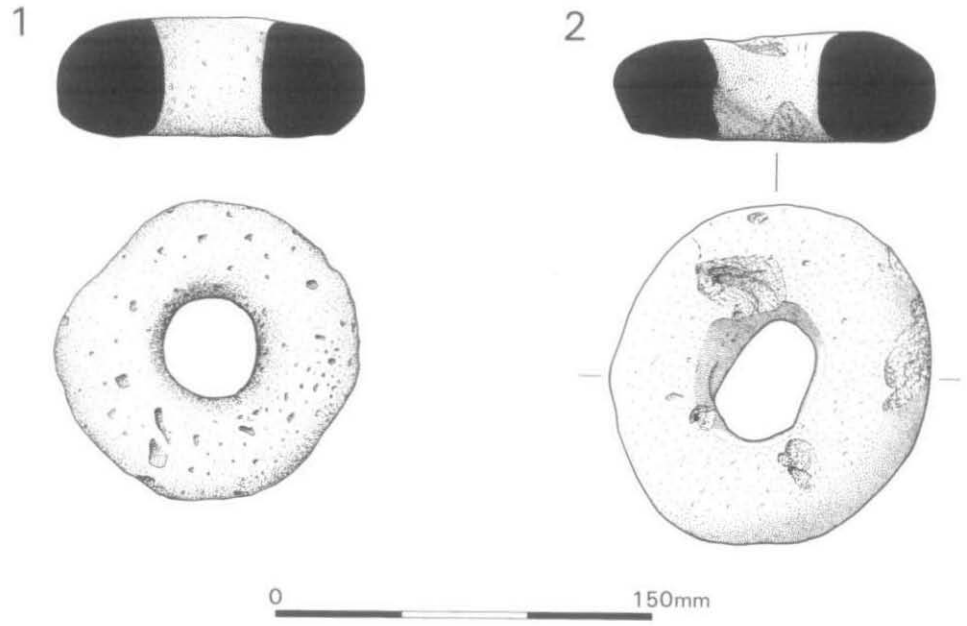



Fig. 16. Fired-clay loomweights.

METALWORK by LINDA VINER

A total of 91 items of metalwork were recovered from the excavation (58 nails and 33 objects). Only 8 of the objects are reported here as most of the rest is representative of post-medieval domestic household waste. In addition there are small fragments of copper alloy, lead and iron of unknown function. A full description is deposited with the archive. In the absence of analytical data to distinguish between different metals, all objects are described as being of copper alloy, iron, pewter or lead.

The vast majority of the metalwork and virtually all the unstratified finds were recovered through the controlled use of a metal detector. Indeed, excluding nails, 42% of the total assemblage was derived from unstratified levels, with objects ranging in date from 2nd century through to medieval and post-medieval/modern debris.

The condition of the metalwork varied, but overall could be summarised as poor to medium, with

corrosion of iron objects, and encrustation on the copper alloy. A number were submitted for investigative conservation, with two objects reported here (nos. 1, 4) receiving additional treatment.

Objects, irrespective of material, are ascribed to functional groupings according to the classification system established by Nina Crummy.[72]

## *Illustrated Pieces* (Fig. 17)

*Objects of personal adornment or dress*

1. Disc brooch – copper alloy. Circular disc brooch with finely-lobed edge and prominent central boss with surrounding bands of finely engraved decoration. Heavily encrusted when first discovered, discrete cleaning has revealed a sequence of elaborate and finely-executed mouldings. The pin is held on a bar between two lugs, with a short catchplate. The conical centre rising from a slightly dished centre is topped by a small flange and knob. There is no trace of gilding, although investigative conservation has revealed traces of a tin or tin-lead alloy which may have been used as surface decoration. The type is one common to the 2nd century with comparable examples recorded from Wroxeter,[73] Gadebridge Park,[74] and Colchester.[75] Diameter 38 mm. Unstratified.

2. Pin – copper alloy. Pin. Length 142 mm., with faceted, cuboid head and a round collar on the shank *c.* 15 mm. below the head. The shank is circular in cross-section, tapering to a point. The pin appears to be an uncommon type; no exact parallels have been found although it does share broad similarities with an Anglo-Saxon pin from Leagrave, Bedfordshire.[76] The presence of the collar on the pin is suggestive of Anglo-Saxon rather than Roman date.[77] Context 108 (= 1002), Period 5.

3. Ring – copper alloy. Possible finger ring, of copper alloy with 14 mm. internal diameter, ovoid in cross-section 2 mm. wide and 1 mm. thick. Excavations at the Roman temple complex at Uley, Gloucestershire, produced over 50 examples of copper alloy rings.[78] The example from Wantage is comparable with their Class I, characterised as probably cast, with varied cross-sections, and evidence of cold working. They are generally of flimsy construction, and it is suggested that they were possibly bought as trinkets on temple sites. Context 504, not attributable to period.

Not Illustrated. Brooch spring – copper alloy. Spring mechanism for a Roman brooch masked by corrosion and encrustation. Length of cross-piece 22 mm., with a minimum of 4 turns to the spring. The pin survives to a length of 7 mm. Context 1031 (= 1002), Period 5.

*Objects for written communication*

4. Seal box – enamelled copper alloy. Complete. Cleaning revealed the outline of the upper face, decorated with a series of fields, the outer circle inset with a light blue enamel with white inset designs, enclosing a heart-shaped motif. The greyish appearance of the object, in conjunction with the nature of the corrosion products, would suggest that the metal may be a debased silver, alloyed probably with lead and/or tin. A small fragment of cord fibre was found at the side of the box, perhaps associated with use. Such seal boxes with enamelled lids belong to the 2nd or 3rd

[72] N. Crummy, *The Roman Small Finds from Excavations in Colchester 1971–9* (Colchester Archaeol. Rep. 2 1983); idem, *The post-Roman Small Finds from Excavations in Colchester 1971–85* (Colchester Archaeol. Rep. 5, 1988).

[73] J.P. Bushe-Fox, *Third Report on the Excavations on the Site of the Roman Town at Wroxeter, Shropshire, in 1914* (Res. Rep. Soc. Antiq. London 4, 1916), 25, pl. 16, 12.

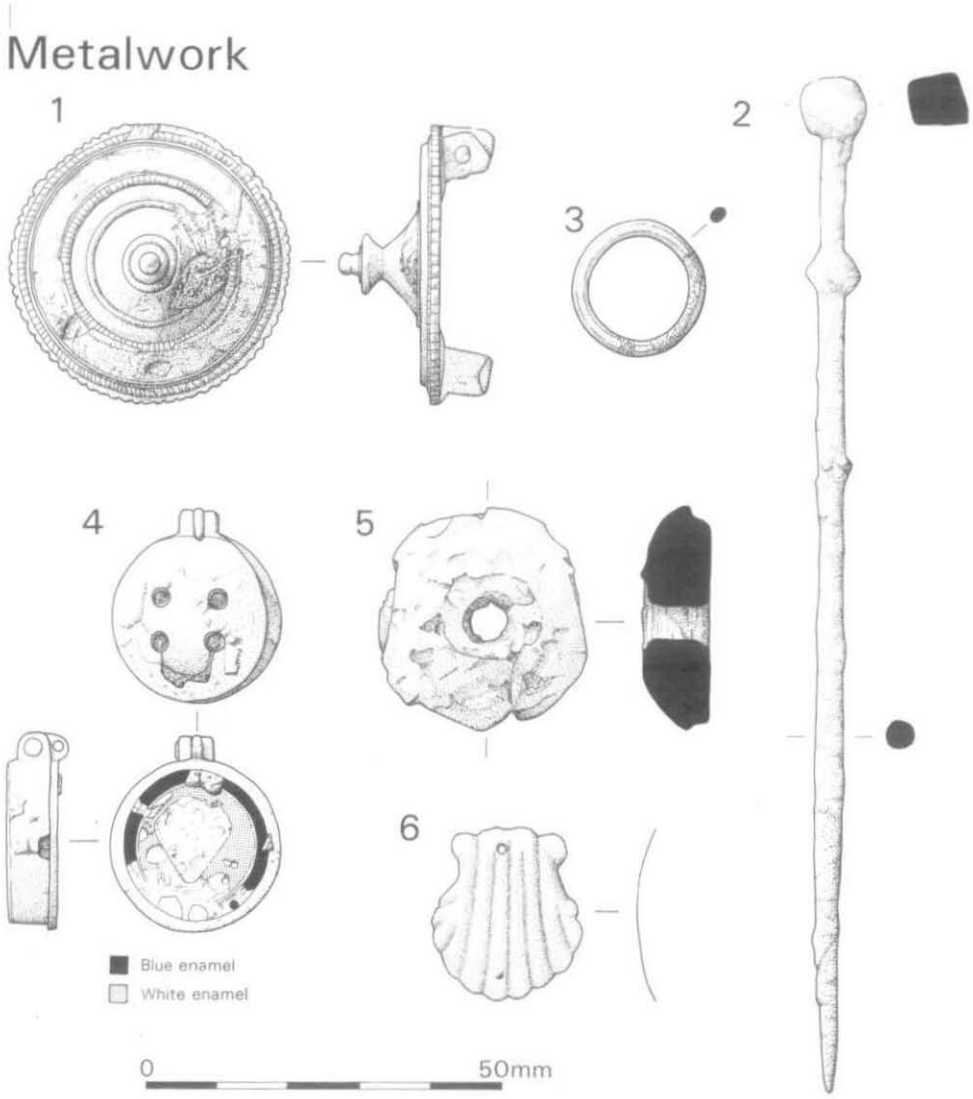
[74] D.S. Neal, *The Excavation of the Roman Villa in Gadebridge Park, Hemel Hempstead, 1963–8* (Res. Rep. Soc. Antiq. London 31, 1974), 128, fig. 55, 29.

[75] Crummy, *Colchester Roman Small Finds*, fig. 14, 85.

[76] R. Jessup, *Anglo-Saxon Jewellery* (1974), pl. 1, 1.

[77] J. Davies *pers. comm.*

[78] Discussed in detail by J. Bayley and A. Woodward, 'Rings', in A. Woodward and P. Leach (eds.), *The Uley Shrines: Excavation of a Ritual Complex on West Hill, Uley, Gloucestershire: 1977–9* (English Heritage Archaeol. Rep. 17, 1993), 136.



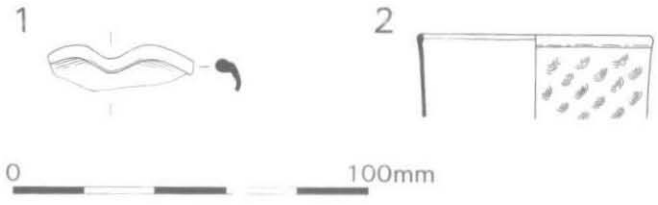




Fig. 17. Metalwork and glass.

century, with manufacture ceasing in the late 3rd century. Diameter 23 mm. The lid protrudes slightly over the base, and is held in place by wire between two lugs on the base. Unstratified.

*Objects used in manufacture or working of textiles*

5. Spindlewhorl – lead. Flat base with domed upper surface and central perforation. Diameter 30 mm., height 8 mm. Context 1002, Period 5.

*Fasteners and Fittings*

Not Illustrated. Plug – lead. Lead plug, incomplete, for repairing pottery. ?Roman. T-shaped, length 16 mm. Unstratified.

*Objects associated with religious beliefs and practices*

6. Scallop shell – ?pewter. Scallop shell in thin sheet metal, copper alloyed with lead/tin, ?pewter. The scallop was the first pilgrim design to be devised by a shrine in the West and was specifically associated with medieval pilgrimages to the shrine of St James de Compostella at Santiago in N. Spain from as early as the beginning of the 12th century. A small hole punched through the metal at the top would have served to sew the badge to the pilgrim's hat or coat. Actual scallop shells and representations in pewter, silver and jet are recorded from a number of sites.[79] Unstratified.

*Nails*

A total of 58 nails were recovered and a simple classification system based on physical characteristics of the head and shank devised to record each nail. All fall within Type 1 characterised by Manning.[80] Type 1 nails have square-sectioned shank, with tapering stem and circular or rectangular heads. The head is usually flattened or distorted (i.e. ovoid/sub-rectangular) by hammering. Manning sub-divided Type 1 nails on the basis of length, Type 1a having a length greater than 150 mm., Type 1b with a length less than 150 mm. On that basis only one nail would be classified as Type 1a, all the others conforming to the smaller Type 1b. These would have a wider general usefulness particularly in timber clad buildings (Building 2), and the fact that just under half of the nails recovered from the site are from contexts associated with Building 2, together with the presence of five nails with wood staining within the corrosion products, lends weight to the structural use for many of the nails recovered from the site.

GLASS by LINDA VINER (Fig. 17)

1. Fragment from a spouted jug, with rolled rim edge, fire-rounded and manipulated to form a pouring spout. There is insufficient to indicate the shape of the body, but it is most likely to have been globular. The form is found throughout the Roman period, but was most popular during the 1st–3rd centuries. Context 1056 (ditch 1011), Period 3.

2. Cup or beaker. Translucent, lightly-tinted, yellow/brown glass, bubble free, glossy on both interior and exterior surfaces, with a fire-rounded rim. The decoration comprises a diamond lattice pattern in low relief. The exterior surface is very rounded and smoothed and would perhaps suggest optic-blown decoration rather than cut. This process of manufacture involves first taking a gather of glass and blowing it into a mould with a pattern in it, so that the pattern expands as the vessel is free blown to produce a design in low relief. If this is the process used for the manufacture of this particular fragment, it is unusual, the most common pattern being one of shallow close-set ribs.[81] A small convex body fragment from Uley[82] in colourless, bubbly glass of 4th-century date is the closest parallel in

[79] Salisbury: B. Spenser, *Pilgrim Souvenirs and Secular Badges* (Salisbury Museum Medieval Catalogue Part 2, 1990), 41–3; Winchester: B. Spenser, 'Pilgrims' Badges', in M. Biddle (ed.), *Object and Economy in Medieval Winchester* (Winchester Stud. 7ii, 1990), 801, nos. 2481–2; and London: G. Egan and F. Pritchard, *Dress Accessories c. 1150–1450* (Medieval Finds from Excavations in London 3, 1991), 200.

[80] W.H. Manning, *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum* (1985), 134–5, fig. 32.

[81] H.E.M. Cool and J. Price, *Roman Vessel Glass from Excavations in Colchester, 1971–85* (Colchester Archaeol. Rep. 8, 1995), 8.

[82] J. Price, 'Vessel Glass' in Woodward and Leach op. cit. note 78, fig. 158, 10.

form found to date, with cut (?) decoration. The colour and quality of the fragment from Wantage, however, is more appropriate to a 1st–early 2nd-century date. Context 1521 (well 1520), Period 2.

3. Not Illustrated. Window glass, blue-green. Matt/glossy with granular surface probably left by the mould. 1st to 2nd century. Context 1056 (ditch 1011), Period 3.

## STONE OBJECTS by FIONA ROE

There are 16 objects of worked stone from the excavation, the most notable pieces of which come from two or more probable millstones recovered from the fill of Period 2 pit 1182. One was made from Niedermendig lava, with a pecked face, probably the reworking of a worn grinding surface. Only a small segment now survives, but the probable diameter was between 66.5 and 76 cm., with a depth of 8.1 cm. A second possible millstone fragment is made from Millstone Grit. It is now both weathered and burnt, but a probable grinding surface survives, and the depth of 12.6 cm. seems appropriate for a millstone. A third millstone fragment, again from lava, came from the packing of Period 2 wall trench 1143. It had a diameter of about 75 cm., but was only 4 or 5 cm. in thickness, and so may have been well worn before it was discarded. The only other pieces of lava from the site are two unstratified fragments. The presence of the Niedermendig lava and the Millstone Grit in Wantage, both bulky materials requiring relatively long distance transportation, suggests a fairly high status occupation at the site, at least in the 2nd–3rd centuries.

Accumulating evidence shows that Roman millstones are considerably more common than was previously thought,[83] particularly on larger sites, though currently no overall survey has been carried out. There is therefore a difficulty in defining the criteria by which a millstone may be differentiated from a rotary quern. It appears that many Roman millstones have a diameter of around 75 cm., this being for instance the average size of a group of millstones from Kenchester.[84] Some may be even larger, as was claimed for some Gloucestershire millstones.[85] Thicknesses appear to be variable, and must depend to some extent on the degree of wear. At Barton Court Farm, Abingdon, it was estimated that a pair of millstones of probable Millstone Grit weighed about 150 kg. each.[86] It seems clear that stones of this size would have needed to be worked by mechanical means. There is some evidence for Roman watermills in this country,[87] and though it is of variable quality the list of sites includes a 2nd-century timber-framed mill on the Little Stour at Ickham in Kent.[88] At Mill Street the Letcombe Brook runs to the E. of the site, so that a Roman water-powered mill here seems more than a possibility.

The five quern fragments from Wantage are all made from Upper Old Red Sandstone, either quartz conglomerate or pebbly sandstone acquired from the Forest of Dean or S. Wales. None comes from a context earlier than Period 3, which produced a burnt fragment from the fill of ditch 1635. Another burnt fragment came from the Period 5 fill of ditch 1661. The remaining three rotary quern fragments are all made from quartz conglomerate, and come from either a Period 6 post hole packing or are unstratified. They probably all belong to the same rotary quern, and could be almost any date, since the Upper Old Red sandstone had a long period of use.

Two small rubbers made from stone roofing tile are also undatable, since they are a universal type, and the period 6 context is uninformative. There is one fragment of shale from the fill of Period 3 ditch 1635. From Building 1 there is part of a small boulder of chert with a slightly concave working area which has been well battered, suggesting use as an anvil. Finally, a fragment of iron ore came from the Period 3 demolition spread 1069.

The grinding equipment from Mill Street can be seen to fit into a wider picture, with comparable finds from other sites in the region of Wantage. The Upper Old Red Sandstone from the Welsh borders was the most widely used quern material, occurring frequently at sites in Gloucestershire, Oxfordshire and at least as far E. as Reading.[89] Local

[83] O. Wikander, 'Archaeological evidence for early Water Mills: an interim report', *History of Technology*, 10 (1985), 163.

[84] T. Wilmott and S.P.Q. Rahtz, 'An Iron Age and Roman settlement outside Kenchester (*Magnis*), Herefordshire. Excavations 1977–1979', *Trans. Woolhope Naturalists Field Club*, 45 part 1 (1985; pub. 1988), 153.

[85] A.D. McWhirr, *Roman Gloucestershire* (1981), 103.

[86] D. Miles (ed.), *Archaeology at Barton Court Farm, Abingdon, Oxon.* (Counc. Brit. Archaeol. Res. Rep. 50, 1984), 47.

[87] Wilkander op. cit. note 83.

[88] R.J. Spain, 'The Second Century Romano-British Watermill at Ickham, Kent', *History of Technology*, 9 (1984), 143–80.

[89] J. Moore and D. Jennings, *Reading Business Park: a Bronze Age Landscape* (Thames Valley Landscapes: The Kennet Valley 1, 1982), 97.

sites where it has been recorded from Roman contexts include Abingdon Vineyard,[90] Gravelly Guy[91] and Old Shifford Farm.[92] The Niedermendig lava could have been shipped up the Thames without due trouble, and so also occurs at several local sites such as Abingdon Vineyard,[93] Barton Court Farm[94] and Old Shifford Farm.[95] Millstone Grit however has been confirmed less frequently this far to the S. of the source area, though it has been recorded again at Reading Business Park[96] and also at Asthall, Oxon.[97] The cost of transporting Millstone Grit by road from Derbyshire or the Sheffield area would probably have been considerable, and so the Upper Old Red Sandstone must generally have been preferred as a quern or millstone material.

*Catalogue* (none illustrated)

1. Burnt and weathered lump with one possible worn surface; depth of *c.* 12.6 cm. suggests a millstone. Millstone Grit. Context 1178 (pit 1182), Period 2.

2. Two large fitting fragments, with a pitted working surface; depth of *c.* 8.1 cm. and probable diameter of between 66.5 and 76 cm. suggests a millstone. Niedermendig Lava. Context 1178; (pit 1182), Period 2.

3. Weathered fragment from probable millstone; depth from 4.1–5.6 cm., diameter of *c.* 75 cm. Niedermendig Lava. Context 1144 (wall trench 1143), Period 2.

4. Fragment upper stone rotary quern, could belong with no. 7; worn grinding surface, roughly tooled upper surface and circumference; diameter *c.* 40 cm.; depth at rim 5 cm., at hole 5.4 cm. Upper Old Red Sandstone, quartz conglomerate. Context 1557, Period 6.

5. Two small fragments. Niedermendig Lava. Trial pit 205/255 (= 1002), Period 5.

6. Almost half lower stone of rotary quern, diameter *c.* 40 cm.; depth at spindle hole 11.5 cm., and at rim *c.* 5.7 cm.; probable bottom half of nos. 4 and 7. Upper Old Red Sandstone quartz conglomerate. Unstratified.

7. Fragment, probably upper rotary quern, could belong with no. 4; depth at hole 6.4 cm. Upper Old Red Sandstone quartz conglomerate. Unstratified.

8. Burnt fragment, probably from a rotary quern, depth 6.5 cm. Upper Old Red Sandstone, pebbly sandstone. Context 1545 (ditch 1635), Period 3.

9. Burnt fragment of rotary quern with one worked surface; depth 5.6 cm. Upper Old Red Sandstone, pebbly sandstone. Context 1662 (ditch 1661), Period 4.

10. Two fragments of roofing tile re-used as rubbers or smoothers. Corallian; Pusey Flags. Context 109 (= 1002), Period 5.

11. Fragment with battered surface. Chert, probably from Drift. Context 1158 (pit 1157), Period 2.

12. Part of a boulder with one battered surface which appears to have been used as an anvil. Chert, probably from Drift. Context 1232 (= fill of 1229), Period 2.

[90] T.G. Allen op. cit. note 20.
[91] G. Lambrick, T.G. Allen and F. Healy, *Gravelly Guy, Stanton Harcourt: the Development of a Prehistoric and Romano-British landscape* (Thames Valley Landscapes, forth.).
[92] G. Hey, 'Iron Age and Roman Settlement at Old Shifford Farm, Standlake', *Oxoniensia*, lx (1995), 145.
[93] Allen op. cit. note 20.
[94] Miles op. cit. note 86, fiche 5:A13.
[95] Hey op. cit. note 92, 145.
[96] Moore and Jennings op. cit. note 89, 97.
[97] P. Booth forthcoming report on excavations.

13. Fragment of iron ore. Context 1069, Period 3.

14. Fragment of shale. Context 1545 (ditch 1635), Period 3.

## FLINT by GRAEME WALKER

Nine residual pieces of flint were recovered, five of which were struck and the others burnt. At least one of the pieces, a broken scraper, may be of Bronze-Age date. A full catalogue exists in archive.

## BUILDING STONE by FIONA ROE

Forty-three fragments of limestone roofing tile have been catalogued, full details of which can be found in the archive. Three of these show part of the hexagonal shape typical of Roman roofing tile (1034 and 1152). Most of this tile, amounting to 37 fragments, came from Period 3 demolition spread 1069 from Building 2. There are more pieces from Period 2 contexts, two of these from the backfilling of trench 1234 of Building 1, and two more from the fill of pit 1182. It is evident that either Building 2 or a nearby structure was roofed with limestone tiles. Further tile fragments were used in Building 3 as make-up for mortar floor 1003 (p. 123).

These tiles are made from two different varieties of Jurassic limestone, both of which are likely to have come from the Corallian of Oxfordshire. Some are made from a relatively coarse, shelly and oolitic limestone, while for others a finer-grained limestone was used, consisting of smaller shell fragments in a sandy matrix. Both these varieties of limestone can be found in the Pusey Flags, a localised division of the Corallian, which can be seen in the Buckland-Pusey area.[98] There were once quarries for stone tiles at the Slat Pit, near Buckland, and also in workings near Pusey,[99] both almost completely filled in by 1995. However, both varieties of stone can be seen built into walls in Pusey itself, and the village is only some 10.5 km. (6.5 miles) from the site, a not too inconvenient distance for heavy loads of tilestones to be transported by oxcart.

The Pusey Flags are just one of many localised occurrences of flaggy Jurassic stone which, like the Stonesfield slates, could be used for roofing. Other local sites with Jurassic tilestones, which could prove to be more Pusey Flags, include Barton Court Farm[100] and Roughground Farm near Lechlade,[101] while further finds from Roman sites in the vicinity of Pusey or Buckland could be expected.

There are only 4 small pieces of tufa from Mill Street, all very fragmentary and lacking signs of working. None is earlier than Period 3 and the exact source is not known, though it can be presumed to be fairly local. This tufa may be all that now remains of another roofing material, which has also been recorded in use at the Shakenoak Roman villa.[102] These were not, however, the only two roofing materials employed at Mill Street, since ceramic tiles were also found.

## TILE by ALAN THOMAS

A total of 32.97 kg. of tile was recovered from the excavation, most of which (nearly 20 kg.) came from the demolition levels of Building 2. This included substantial parts of at least 3 *tegulae* and a single fragment of *imbrex*. As this building appears to have been roofed with stone (p. 121), these ceramic tiles may have been reused within the structure for another purpose, or else have been a repair to the roof. Elsewhere nearly 5 kg. occurred within the Period 5 silt accumulation (1002) and a further 4.6 kg. residually in modern or unstratified contexts. The rest of the tile occurred in small quantities. *Tegula* was the predominant type represented,

[98] W.J. Arkell, 'A Map of the Corallian Beds between Marcham and Faringdon, Berkshire', *Proc. Geol. Assoc.*, 50 (1939), 493.

[99] W.J. Arkell, *The Geology of Oxford* (1947), 86.

[100] Miles op. cit. note 86, fiche 5C:6.

[101] T.G. Allen, T.C. Darvill, L.S. Green and M.U. Jones, *Excavations at Roughground Farm, Lechlade, Gloucestershire* (Thames Valley Landscapes: Cotswold Water Park 1, 1993), 168.

[102] A.C.C. Brodribb, A.R. Hands and D.R. Walker, *Excavations at Shakenoak Farm, near Wilcote, Oxfordshire, Part I, Sites A & D* (1968), 36.

with only a couple of fragments of *imbrex* and possible flat (*pila*) tile. No box tile was present. Given the small quantity of tile, fabric analysis has not been considered worthwhile. A full catalogue exists in the archive.

MORTAR by ALAN THOMAS

A total of only just over 2 kg. of mortar was recovered from a total of 4 contexts. Approximately 730 g. derived from the fill of the Period 1 ditches and the remaining fragments from the Period 5 soil accumulation. None was recovered from contexts associated with Buildings 1–3.

WALL PLASTER by ALAN THOMAS

A total of 12.5 kg. of wall plaster was recovered from the excavation. Most of this was in small fragments, and apart from occasional linear bands no decoration could be discerned. Approximately 5.66 kg. derived from deposits associated with Building 2 (mostly from packing 1144 of wall trench 1143) and a further 1.99 kg. was recovered from Period 4 ditches which cut through the same building. A full catalogue exists in archive.

## ENVIRONMENTAL EVIDENCE

ANIMAL BONE by MARK MALTBY

### *Methods of Analysis*

Animal bones were identified by the author and each fragment was recorded as a separate entry in the main animal bone archive. Only the bones assigned to Periods 1–5 were fully recorded, and summaries of identifications of bones assigned to Period 6 are available in the archive. The main archive includes data about species, anatomy, side of body, fragmentation, preservation, ageing, butchery and pathology. A separate metrical archive was also produced employing measurements recommended by von den Driesch.[103] Ageing of mandibles of cattle, sheep/goat and pig adapted the system devised by Grant.[104] The coding system was adapted from the one devised by Jones *et al.*[105]

### *Preservation of the Bones*

The surface condition of most of the bones was sound. However, both surface erosion and damage resulting from gnawing were observed on many of the bones (Table 4). The highest percentage of eroded fragments was found in Period 5 deposits, indicating that many of the bones were shallowly buried and perhaps supporting the suggestion that many had been redeposited. Gnawed fragments were found in consistently high percentages in all periods. These observations record partial damage. Many more bones will have been destroyed completely and more fragile parts of the skeleton are likely to be under-represented in all species. Very few burnt or ivoried fragments were recovered. The Period 2 assemblage appears to have suffered the least damage from

[103] A. von den Driesch, *A Guide to the Measurement of Animal Bones from Archaeological Sites* (Harvard University: Peabody Museum Bulletin 1, 1976).

[104] A. Grant, 'The Use of Tooth Wear as a Guide to the Age of Domestic Ungulates', in B. Wilson, C. Grigson and S. Payne (eds.), *Ageing and Sexing Animal Bones from Archaeological Sites* (B.A.R. Brit. Ser. 109, 1982), 91–108.

[105] R. Jones, S. Wall, A. Locker, J. Coy and M. Maltby, *Computer-Based Osteometry Data Capture User Manual (1)* (Ancient Monuments Lab. Rep. 3342, no date).

TABLE 4. ANIMAL BONES – PRESERVATION INDICATORS

| | *Period* | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *1* | | *2* | | *3* | | *5* | |
| | F | % | F | % | F | % | F | % |
| Eroded | 6 | 9 | 4 | 3 | 5 | 3 | 31 | 18 |
| Gnawed | 24 | 38 | 29 | 24 | 48 | 30 | 54 | 31 |
| Ivoried | 4 | 6 | 2 | 2 | 3 | 2 | 1 | .6 |
| Burnt | 1 | 2 | 2 | 2 | 1 | .6 | 0 | 0 |
| Loose Teeth | 8 | | 10 | | 24 | | 22 | |
| Total* | 64 | | 119 | | 159 | | 174 | |

* Total excludes loose teeth and articulated bones

erosion and gnawing, perhaps indicative of the fact that a lower proportion of the bones was found in ditches in this period.

## *Assemblage Size*

A total of 121 animal bone fragments were found in Period 1 deposits of which 80 was found in the fill of ditch 1062.

Three hundred and nine fragments were recovered from Period 2 contexts, 210 of which were associated with Building 2. Buried next to this building were 84 bones of a skeleton of a small dog. Layers associated with the demolition of the building produced a further 72 fragments. Thirty one fragments were obtained from Building 2, 15 from well 1520 and 18 from ditch 1109. A further 52 fragments were recovered from various pits.

Three hundred and forty six fragments were recovered from Period 3 levels, 65 of which came from the demolition levels of Building 2 and 226 of which came from the infilling of ditch 1011. Other probable stock enclosure ditches produced 36 fragments.

A total of 326 fragments, of which silt horizon 1002 contributed 227, came from Period 5 contexts. The remainder were found in small quantities in seven of the ditches. Most, if not all, of the bones are likely to have originally been deposited in the Roman period.

The total assemblage of 1102 fragments is a relatively small one covering a period of at least 300 years. It allows only for basic conclusions about the nature of the exploitation of animals on the settlement. However, the sample is large enough to make comparisons with results from other Romano-British sites.

## *Species Representation*

The assemblage was dominated by the bones of cattle and sheep/goat (Table 5). Fragments of the former were found in the greatest quantities in all but the small Period 1 assemblage. Although the increase in the percentage of cattle bones may indicate greater importance in the consumption of beef, other factors could also account for this increase. Factors such as variations in disposal strategies in different parts of the settlement, preservation and recovery standards can all cause changes in species representation. Larger samples are needed to confirm that there was a genuine change in the meat diet at this settlement.

There is little doubt, however, that cattle would have supplied the most meat. Comparisons with assemblages of cattle and sheep/goat are fraught with difficulties because of the better preservation of cattle bones, the fragmentation of their carcasses into more components and the better chance of recovery of their smaller bones. Sheep/goat skeletons are likely to have suffered greater loss as indicated by the particularly poor representation of the small bones of the lower limbs (Table 6). Estimates of minimum numbers of individuals tended to increase the proportion of sheep/goat, although cattle still were the best represented in Periods 3 and 5. However, it must be emphasised that sample sizes were small throughout. The sheep/goat assemblage was dominated by sheep. Of the bones specifically identified, 38 belonged to sheep compared with a single identification of a goat metatarsal from Period 5. If one allows for the likelihood of the relatively poor preservation of their bones in comparison with cattle, they were probably the species

TABLE 5. SPECIES REPRESENTED IN ANIMAL BONE ASSEMBLAGES (FRAGMENTS)

| | *Period* | | | | |
|---|---|---|---|---|---|
| | *1* | *2* | *3* | *5* | *Total* |
| Cattle | 25 | 61 | 91 | 94 | 271 |
| Sheep/Goat | 43 | 46 | 62 | 70 | 221 |
| Pig | 3 | 10 | 16 | 10 | 39 |
| Horse | 1 | 7 | 12 | 16 | 36 |
| Dog | | 89* | 2 | 6 | 97 |
| Red Deer | | | 1 | 1 | 2 |
| Roe Deer | | | 1 | | 1 |
| Hare | | | 2 | | 2 |
| Badger | 1 | | | | 1 |
| Domestic Fowl | 1 | 2 | 6 | 2 | 11 |
| Goose species | | | | 1 | 1 |
| Duck species | | | 1 | | 1 |
| Heron | | | | 1 | 1 |
| Raven | | 1 | | | 1 |
| Large Mammal | 19 | 62 | 95 | 77 | 253 |
| Sheep-sized Mammal | 23 | 24 | 40 | 37 | 124 |
| Unidentified Mammal | 5 | 7 | 16 | 10 | 38 |
| Unidentified Bird | | | 1 | 1 | 2 |
| Total Identified | 74 | 216 | 194 | 201 | 685 |
| Total Unidentified | 47 | 93 | 152 | 125 | 417 |
| *Overall Total* | 121 | 309 | 346 | 326 | 1102 |
| Sheep | 9 | 4 | 14 | 11 | 38 |
| Goat | | | | 1 | 1 |

* includes 84 bones from one skeleton

exploited in the greatest numbers throughout the life of the settlement. Sheep/goat bones tend to be better represented on rural compared with urban and military sites in the Romano-British period.[106]

Pig bones were relatively poorly represented throughout and particularly in the Period 1 deposits (Table 5). Overall the ratio of sheep/goat to pig was 85 : 15, a low proportion of pig comparable with many other rural sites of this period.[107] The percentage of horse bones increased in each period and the species was found in comparable numbers to pig. The ratio of cattle to horse was 88 : 12, representing quite a high proportion of horse and again characteristic of a rural as opposed to an urban assemblage of this period.[108]

Apart from the relatively complete skeleton from Period 2, dog bones were found only in small numbers. Wild mammals were represented by one or two bones of red deer, roe deer, hare and badger.

Only fifteen bird bones were identified. Most belonged to domestic fowl but a single bone each of duck, goose, heron and raven were recorded.

[106] A. King, 'Animal Bones and the Dietary Identity of Military and Civilian Groups in Roman Britain, Germany and Gaul', in T. Blagg and A. King (eds.), *Military and Civilian in Roman Britain: Cultural Relationships in a Frontier Province* (B.A.R. Brit. Ser. 136, 1984), 187–218.

[107] M. Maltby, 'The Meat Supply in Roman Dorchester and Winchester', in A. Hall and H. Kenward (eds.), *Urban-rural Connexions: Perspectives from Environmental Archaeology* (Symposia of the Association for Environmental Archaeology 12, 1994).

[108] Ibid. 92.

TABLE 6. ANATOMICAL REPRESENTATION OF CATTLE AND SHEEP/GOAT (FRAGMENTS)

| | *Cattle* | | | | | *Sheep/Goat* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *(Period)* | *1* | *2* | *3* | *5* | *Total* | *1* | *2* | *3* | *5* | *Total* |
| Skull | 1 | 7 | 9 | 5 | 22 | 1 | 2 | 3 | 1 | 7 |
| Mandible | 4 | 10 | 10 | 11 | 35 | 5 | 4 | 13 | 11 | 33 |
| Hyoid | | | | | | | 1 | | | 1 |
| Loose Teeth | 3 | 4 | 11 | 8 | 26 | 5 | 4 | 8 | 9 | 26 |
| Scapula | 5 | 4 | 17 | 11 | 37 | 2 | | 3 | 2 | 7 |
| Humerus | 1 | 2 | 2 | 4 | 9 | 2 | 3 | 2 | 1 | 8 |
| Radius | 2 | 2 | 4 | 2 | 10 | 6 | 6 | 4 | 1 | 17 |
| Ulna | 1 | 2 | 1 | 1 | | 5 | | 1 | | 1 |
| Pelvis | | 1 | 4 | 9 | 14 | | 1 | 4 | 5 | 10 |
| Femur | 2 | 1 | 4 | 5 | 12 | 2 | | 3 | 2 | 7 |
| Patella | | | | | | | 1 | | | 1 |
| Tibia | 1 | 2 | 5 | 5 | 13 | 5 | 6 | 5 | 13 | 29 |
| Carpals | | 1 | 1 | 3 | 5 | | | | | |
| Calcaneus | 1 | 4 | 2 | 1 | 8 | | | | | |
| Astragalus | | 2 | 3 | 1 | 6 | | | | | |
| Centroquartal | | | 1 | 1 | 2 | | | | | |
| Metacarpal | | 5 | | 8 | 13 | 5 | 10 | 6 | 7 | 28 |
| Metatarsal | 1 | 4 | 3 | 6 | 14 | 7 | 4 | 8 | 11 | 30 |
| Metapodial | | 1 | 2 | | 3 | | | | | |
| 1st Phalanx | | 4 | 8 | 4 | 16 | 1 | | | 4 | 5 |
| 2nd Phalanx | | 2 | 2 | 2 | 6 | | | | | |
| 3rd Phalanx | 1 | | | 1 | 2 | | | | | |
| Ribs | | 1 | 1 | | 2 | 1 | | | 1 | 2 |
| Atlas | | | 1 | 1 | 2 | | 1 | | | 1 |
| Axis | | | | | | | 1 | | 2 | 3 |
| Cervical vert. | | | | 2 | 2 | | 2 | | | 2 |
| Thoracic vert. | 1 | | | 2 | 3 | 1 | | | | 1 |
| Lumbar vert. | | | | 1 | 1 | | | 2 | | 2 |
| Sacral vert. | 1 | 2 | | | 3 | | | | | |
| *Total* | 25 | 61 | 91 | 94 | 271 | 43 | 46 | 62 | 70 | 221 |
| Minimum No. individuals | 2 | 3 | 8 | 5 | | 4 | 5 | 5 | 4 | |

Unidentified fragments were divided by size where possible. Apart from Period 1, large mammal fragments comfortably outnumbered those of sheep-sized mammal, supporting the results from the identified portion of the assemblage. Again, preservation and recovery factors may have biased these categories towards the retrieval of large mammal fragments.

## *The Cattle Assemblage*

The cattle assemblage did not contain an even representation of different skeletal elements (Table 6). This is not unusual and results from a combination of identifiability, retrieval, preservation, fragmentation and carcass disposal factors.

The major limb bones were relatively evenly represented in the fragment counts apart from the low numbers of ulna, which is a smaller and more fragile element than the others. Phalanges, carpals and tarsals are also underrepresented probably due to the same factors. Only dorsal ends of ribs and substantial portions of the body of vertebrae were identified to species, which partially accounts for their low numbers, although poor preservation due to their destruction by dog gnawing is also likely to have been a major factor. Rib shafts and small pieces of vertebrae are included in the large mammal category.

Scapulae were the most commonly identified element, particularly in Periods 3–5. This cannot be explained simply by invoking high fragmentation or good survival factors. The evidence suggests that shoulders of beef were processed

and subsequently deposited in greater quantities than limb bones, at least in the part of the settlement excavated. Several fairly complete scapulae were recovered and although there were no definite holes in the blades to indicate that they were hung on hooks, it could be that these joints had been preserved by salting or smoking.

Mandibles and skull fragments were also well represented. In the latter case, this may be the result of high fragmentation of skulls. Mandibles survive well but again it is possible that they were also processed more commonly in this part of the settlement than major limb bones.

Processing of cattle carcasses has often resulted in the uneven representation and distribution of their bones on Romano-British sites. The best examples have been found on urban sites[109] but it has also been observed on some rural settlements.[110] The activities of specialist butchers particularly in towns processing large numbers of carcasses seems to have been the major cause of these uneven patterns.

Ageing evidence for cattle was limited by the fragmentary nature of the mandibles and by the actions of dogs that had destroyed much of the epiphysial fusion data. Only six mandibles produced toothwear evidence. Three (one from Period 1; two from Period 3) belonged to adult animals over four years of age. The others (two from Period 1; one from Period 3) belonged to immature cattle that had only two of their three molars in wear and were probably between two and four years old at death. Other adult animals were represented by limb bones but both neonatal and juvenile animals were represented in small numbers. Most cattle represented on Romano-British sites are adult, with a tendency for more immature cattle to be represented on rural sites.[111]

Butchery practices on cattle carcasses vary on different types of Romano-British settlement.[112] Butchery marks were observed on 51 cattle fragments, of which 37 were chop marks and 14 were fine incisions. Details of these are available in the archive. Dismemberment and sometimes filleting using a cleaver or a heavy blade became the normal methods of butchery on most Romano-British sites. However, knives were still used on some sites, particularly on rural sites such as Owslebury, Hants., continuing traditional forms of butchery.[113] The incidence of knife cuts at Wantage is higher than on urban sites where comparable data are available. Five scapulae bore axial knife cuts on the lateral aspect of the blade made during filleting. In five other cases, however, this operation was achieved using a heavier blade running along the spine. The latter method is much more common on urban sites, although it was also recorded at Owslebury.[114] The presence of these alternative methods on the same site is interesting, although its significance is unclear. There is no clear chronological pattern. Perhaps different tools were used to fillet uncooked and preserved meat from the shoulder.

Other knife cuts were found on two first phalanges, probably made during the initial stages of skinning. Three mandibles also bore knife cuts. Two of these cuts (Period 1 and Period 5) were found on the lateral aspect of the ramus and were made when the jaw was disarticulated from the skull. Similar marks have been observed commonly on Iron Age specimens and the practice continued into the Roman period at Owslebury. They were rarely encountered in urban deposits in Winchester.[115] A superficial chop mark located in the same position was found on a Period 5 mandible at Wantage. Such marks have been found both in urban and rural samples, although on urban sites chop marks are more often located on the posterior aspect of the ramus.

Other knife cuts were found at the base of a horn core and on the shafts of a femur, metacarpal and metatarsal. Chop marks were more commonly encountered, however and included chop marks through the articular surfaces of scapulae, pelves, proximal femur, distal humeri, and sacrum made during disjointing. Superficial chop marks were found on several vertebrae, limb bones and tarsals.

Many of the butchery marks have parallels on other Roman sites but some types commonly encountered in some urban and military assemblages are rare or absent in the Wantage sample. For example, none of the upper limb bones had been split axially and there was only one possible example of an upper limb bone shaft (a tibia from Period 3) that had been filleted by drawing a blade along the surface of the bone. Such techniques have been found commonly on some sites in towns such as Cirencester, Winchester and Dorchester.[116] These appear to have been made by specialist butchers and the limited evidence available suggests that their techniques were not commonly adapted on smaller settlements.

[109] e.g. M. Maltby, 'Animal Bones and the Romano-British Economy', in C. Grigson and J. Clutton-Brock (eds.), *Animals and Archaeology 4: Husbandry in Europe* (B.A.R. Int. Ser. 227, 1984), 125–38; Maltby op. cit. note 107.

[110] M. Maltby, 'Animal Bone', in P. Fasham and G. Keevil with D. Coe (eds.), *Brighton Hill South (Hatch Warren): an Iron Age Farmstead and Deserted Medieval Village in Hampshire* (Wessex Archaeology Report 7, 1995), 55.

[111] Maltby op. cit. note 107.

[112] M. Maltby, 'Urban-Rural Variations in the Butchering of Cattle in Romano-British Hampshire', in D. Serjeantson and T. Waldron (eds.), *Diets and Crafts in Towns* (B.A.R. Brit. Ser. 199, 1989), 75–106; Maltby op. cit. note 107.

[113] Maltby, *Urban-Rural Variations, passim.*

[114] Ibid.

[115] Ibid.

[116] Ibid.; Maltby op. cit. note 107.

Measurements were taken on 28 cattle bones and the details stored in the metrical archive. Withers heights were estimated from the greatest lengths of three metapodials. The estimates were 111, 118 and 122 cm. These are small by modern standards but typical of the size of cattle represented in other contemporary sites in the area. Breadth measurements of cattle limb bones can indicate the relative abundance of male and female animals represented, the broader specimens usually representing males. The sample at Wantage is small but does include a number of broad metapodials, astragali and tibiae. There does not appear to be a bias towards females as encountered on a number of urban sites.[117] This may reflect meat trading patterns or could imply that male animals were often kept as working animals before slaughter at Wantage.

Three distal metapodials bore evidence of splaying of the distal articulation accompanied by distortion of the articular surface and extra growth of bone in one case. Three first phalanges also bore evidence of distortion around the proximal articular surface. Such pathology has sometimes been attributed to the effects of ploughing but other causes can also be invoked.

## *The Sheep/Goat Assemblage*

Sheep/goat bones suffered more severely from the effects of poor survival and retrieval than those of cattle. No carpals, tarsals, second and third phalanges were recovered and other small bones such as the patella and first phalanges were found only rarely. Larger but fragile bones such as the vertebrae, ribs, scapula, ulna and femur were recorded less frequently than denser bones such as the mandible, metapodials and tibia (Table 6). The biases are typical of scavenged assemblages and indicate quite severe bone loss. Minimum number estimates obtained from the best preserved bones suggest that sheep may have been at least as commonly eaten as cattle and were probably exploited in greater numbers.

Sheep/goat mandibles survived relatively well and produced better evidence for mortality rates than those of cattle, as 24 survived with some cheek teeth still attached. Tooth eruption and wear stages were recorded using Grant's[118] system and details of these are stored in the archive. A summary of this information is given in Table 7, where the mandibles are divided into seven development stages.

Only one neonatal mortality was recovered (Stages 1–2). This may be a factor of poor preservation. Two limb

TABLE 7. SUMMARY OF SHEEP/GOAT MANDIBULAR AGEING DATA

| | *Period* | | | | |
|---|---|---|---|---|---|
| *Stage* | *1* | *2* | *3* | *5* | *Total* |
| 1 | | | | | |
| 2 | | | 1 | | 1 |
| 3 | 3 | 1 | | 1 | 5 |
| 4 | 1 | 1 | 3 | 2 | 7 |
| 5 | | 1 | 2 | 1 | 4 |
| 6 | 1 | | 2 | 3 | 6 |
| 7 | | | 1 | | 1 |
| *Total* | 5 | 3 | 9 | 7 | 24 |

Stage 1 = deciduous 4th premolar (d4) not in wear
Stage 2 = d4 in wear; 1st molar (M1) not in wear
Stage 3 = M1 in wear; 2nd molar (M2) not in wear
Stage 4 = M2 in wear; 3rd molar (M3) not in wear
Stage 5 = M3 in wear; M1 not in heavy wear (< Grant stage h)
Stage 6 = M1 in heavy wear; M2 not in heavy wear
Stage 7 = M1 and M2 in heavy wear

[117] Maltby op. cit. note 107.
[118] Grant op. cit. note 104.

bones also belonged to newborn animals. Five mandibles were at Stage 3, three of which from Period 1. These represent lambs probably killed in their first year. A number of Iron Age sites have produced evidence of a marked peak of slaughter of lambs at this stage of development. Generally, fewer animals appear to have been killed at this age during the Romano-British period and this trend may be apparent in this small sample.

A number of Romano-British assemblages have evidence for peaks of slaughter of sheep aged between 18 and 24 months (Stage 4) and in some cases at Stage 5 (*c.* 2–4 years old). Mortalities at Stage 4 were also well represented at Wantage and represent immature sheep slaughtered for meat. Older sheep (Stages 6–7) indicate animals kept for secondary products, especially wool, and for breeding prior to slaughter. These were, however, outnumbered by mandibles of immature sheep, indicating that wool production was not the principal factor in their exploitation. These conclusions assume that we have a representative cross-section of the flocks exploited.

There was one example each of a horned and hornless skull. Hornless sheep seem to have been introduced into southern England in the early Roman period but their relative frequency varies between sites. The presence of a hornless specimen in a Period 1 context at Wantage suggests that some of this type of sheep were consumed there from its earliest phase.

Measurements were possible on 28 sheep/goat bones. Withers heights were estimated from the greatest lengths of six sheep metapodials. Four of these belonged to animals about 55–57 cm. high but two were from larger animals of 61 and 68 cm. The largest (Period 3) was unusually large for this period. Generally, there was quite a range in size of sheep represented, suggesting sheep of different types were being exploited.

Only ten observations of butchery were made. Three vertebrae had been chopped through during segmentation of the vertebral column, removal of the ribcage or separation from the skull. The distal ends of a scapula and a femur had also been chopped through. A skull had been chopped through the frontal to remove the brain. Knife cuts were found on the shafts of three tibiae and a radius indicative of filleting.

### *Other Domestic Mammals*

Skull, mandible and loose teeth were the best represented pig elements but the sample of 39 fragments were too small to detect significant trends in anatomical representation, other than to note that small and more fragile elements were poorly represented (Table 8).

Four jaws with surviving cheek teeth all belonged to pigs probably killed in their second year and none of the few limb bones with surviving fusion points belonged to adult animals. Evidence for high levels of immature slaughter is usually found in pig assemblages because they are exploited solely for their meat and the species can endure quite high levels of immature mortalities.

Only one pig bone could be measured and only one butchery mark was observed – a knife cut on a tarsal. A lateral metapodial bore evidence of a healed fracture.

The scattered and relatively fragmentary nature of the horse remains suggests their bodies were not usually buried and gnaw marks indicated that their carcasses were often accessible to dogs. There is, however, no clear evidence for human consumption of horse-flesh, as none of the 29 bones bore evidence of butchery. This contrasts with the cattle assemblage, where 21% of the bones had evidence of butchery. Although they may not have been eaten, the presence of horse bones in some numbers testifies to their presence at the settlement, probably as working animals. Adult animals were represented by a number of limb bones and teeth, although two unfused epiphyses also indicated the deaths of immature horses. Seven horse bones were measured but none were complete enough to provide estimates of height.

Most (84) of the dog bones belonged to the skeleton of an adult male buried outside Building 2. This may have been a ritual offering. Missing bones, mainly from the lower limbs and tail (Table 8) may simply reflect retrieval bias, although it is just possible that these had been removed with the skin. However, the skull and mandibles were present and there was no evidence for skinning on these or on other bones.

Several bones bore abnormalities. The most severe pathology had resulted in the sacrum fusing cranially with the last lumbar vertebra, which was also out of alignment. Two thoracic vertebrae had distorted articular surfaces where they joined the ribs and corresponding abnormalities were observed on the ribs. The left femur had extra bone growth on its distal articular surface. No clear causes for these abnormalities were apparent.

Nine bones of the skeleton were measured. Greatest lengths of the five major limb bones provided shoulder height estimates using Harcourt's[119] conversion factors. These indicated that the dog had a shoulder height of 31–35 cm. and was towards the lower end of the size range of dogs of this date.[120] A radius from a Period 5 context belonged

[119] R. Harcourt, 'The Dog in Prehistoric and Early Historic Britain', *Jnl. Archaeological Science*, 1 (1974), 151–76.
[120] Ibid.

TABLE 8. ANATOMICAL REPRESENTATION OF PIG, HORSE AND DOG (FRAGMENTS)

| | *Pig* | | | | | *Horse* | | | | | *Dog* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *(Period)* | *1* | *2* | *3* | *5* | *Total* | *1* | *2* | *3* | *5* | *Total* | *2* | *3* | *5* | *Total* |
| Skull | | 1 | 3 | 2 | 6 | | 1 | | 1 | 2 | 1 | | 3 | 4 |
| Mandible | | 2 | 2 | 1 | 5 | 1 | | | | 1 | 3* | | 1 | 4 |
| Hyoid | | | | | | | | | | | 1 | | | 1 |
| Loose Teeth | | 2 | 1 | 1 | 4 | | | 3 | 4 | 7 | | 1 | | 1 |
| Scapula | | | | | | | | 1 | | 1 | 2 | | 1 | 3 |
| Humerus | | | | 1 | 1 | | 1 | 2 | | 3 | 3* | | | 3 |
| Radius | 1 | | | | 1 | | | 2 | | 2 | 3* | 1 | 1 | 5 |
| Ulna | | 1 | 1 | 1 | 3 | | | | 1 | 1 | 3* | | | 3 |
| Pelvis | | | 1 | | 1 | | | 1 | 3 | 4 | 2 | | | 2 |
| Femur | 1 | | 1 | | 2 | | 1 | 1 | | 2 | 2 | | | 2 |
| Tibia | | | 1 | 2 | 3 | | | 2 | | 2 | 2 | | | 2 |
| Fibula | | | | | | | | | | | 2 | | | 2 |
| Calcaneus | | | 1 | | 1 | | | | | | | | | |
| Astragalus | | | 1 | | 1 | | | | 2 | 2 | 1 | | | 1 |
| Other tarsals | | | 1 | | 1 | | | | 2 | 2 | | | | |
| Metacarpals | 1 | | | | 1 | | | | | | | | | |
| Metatarsals | | 1 | 1 | | 2 | | | | | | | | | |
| Metapodials | | | | 1 | 1 | | | | 2 | 2 | 5 | | | 5 |
| Lat. Metapodials | | 1 | 2 | | 3 | | 2 | | | 2 | | | | |
| 1st Phalanx | | 1 | | 1 | 2 | | | | | | 1 | | | 1 |
| Ribs | | 1 | | | 1 | | | | | | 26 | | | 26 |
| Costal cart. | | | | | | | | | | | 1 | | | 1 |
| Sternebrae | | | | | | | | | | | 1 | | | 1 |
| Atlas | | | | | | | | | | | 1 | | | 1 |
| Axis | | | | | | | | | | | 1 | | | 1 |
| Cervical vert. | | | | | | | 1 | | | 1 | 5 | | | 5 |
| Thoracic vert. | | | | | | | | | | | 13 | | | 13 |
| Lumbar vert. | | | | | | | 1 | | 1 | 2 | 8* | | | 8 |
| Sacral vert. | | | | | | | | | | | 1 | | | 1 |
| Baculum | | | | | | | | | | | 1 | | | 1 |
| *Total* | 3 | 10 | 16 | 10 | 39 | 1 | 7 | 12 | 16 | 36 | 89 | 2 | 6 | 97 |

* includes one bone not in articulated skeleton

to a smaller dog of *c.* 28 cm. Immature dogs were represented by a mandible and a humerus with an unfused distal epiphysis, both from Period 2. The few other dog bones belonged to adults. Three skull bones from the Period 5 silt deposit (1002) could have been from the same animal.

## *Other Species*

Wild mammals were poorly represented (Table 5). Red deer was represented by a metacarpal fragment and an antler tine, roe deer by a metacarpal. A hare pelvis and femur and a badger radius were also identified. No evidence of butchery was found on any of these specimens.

Fifteen bird bones included 11 from domestic fowl. Domestic fowl have been found consistently on Romano-British sites but are generally rarer on rural than on urban sites. Villa sites tend to produce a higher percentage of this species than other rural settlements and this assemblage fits into that pattern. A tibiotarsus bore a knife cut at its distal end where the feet had been removed. Another tibiotarsus belonged to a hen in lay. Six bones were measured and these indicated that the birds were of a typical small size found on other Romano-British sites.

Four other species of bird were each represented by a single bone (Table 5). Domestic goose bones are rarely found

on Romano-British settlements and it is perhaps significant that the specimen from Wantage belonged to Period 5. Raven bones have been found on a large number of Roman sites; bones of heron are rarer but not unknown.[121]

### *Conclusions*

The excavations produced a relatively small assemblage but one which provided several interesting results. Similarities and differences in species representation, butchery practices, slaughter patterns and the size of the animals exploited have been noted. In many respects the assemblage from Wantage shows traits that fall between the extremes of urban assemblages and non-villa rural assemblages. It lacks evidence for the large-scale organisation of meat acquisition and processing evident from urban sites but has a slightly richer and more diverse assemblage than many rural sites.

## MOLLUSCS OF ECONOMIC RELEVANCE by KEITH WILKINSON

During the course of excavations a total of 133 quantifiable marine bivalve shell fragments were recovered. These were from a variety of contexts, from all archaeological phases and consisted for the most part of *Ostrea edulis* (edible oyster). The minimum number of individuals – which was calculated by taking the maximum number of upper or lower valves found in each context – for all contexts totalled 83. In addition a single valve of *Mytilus edulis* (edible mussel) was found in context (1051). Both species are found in coastal waters, and therefore at a considerable distance from the site, suggesting that some sort of trade network existed between the site and either the S.E. or S. coast. In addition to these marine species, examples of the edible land snail *Helix pomatia* were found in three contexts from the latest phase of the site (period 6). Its presence in these deposits may be as a result of discarded food waste or as a natural death assemblage. If the latter is correct it is perhaps significant that it is only found in the last phase as it was introduced by the Romans, farmed in this country and then escaped into the wild to colonise S. areas.

## THE LOCAL PALAEOENVIRONMENT by JENNI HEATHCOTE, CHRIS STEVENS, and KEITH WILKINSON[122]

### *Introduction*

The excavation at Mill Street provided an opportunity to sample a rural historic site for a variety of biological and sedimentological analyses that have more commonly been applied to prehistoric sites; namely molluscan analysis, 'soil' micromorphology and sedimentology, alongside the more common technique of studying plant macrofossil remains. These analyses have been used to answer specific questions posed by the excavations concerning:

a. the nature of the local landscape during the period of occupation of the site;
b. the evidence for Anglo-Saxon activity within post-Roman deposits;
c. the properties of sediments pre-dating Roman activity, and
d. the nature of the Roman agricultural economy.

The majority of sediments encountered during the excavations were highly calcareous, and therefore molluscan shells were preserved in large numbers. No waterlogged deposits were found, despite the

[121] A. Parker, 'The Birds of Roman Britain', *Oxford Jnl. Archaeol.*, 7 (1988), 197–226.

[122] Institute of Archaeology, University College London (JH); MacDonald Institute of Archaeological Research, Cambridge University (CS); CAT (KW).

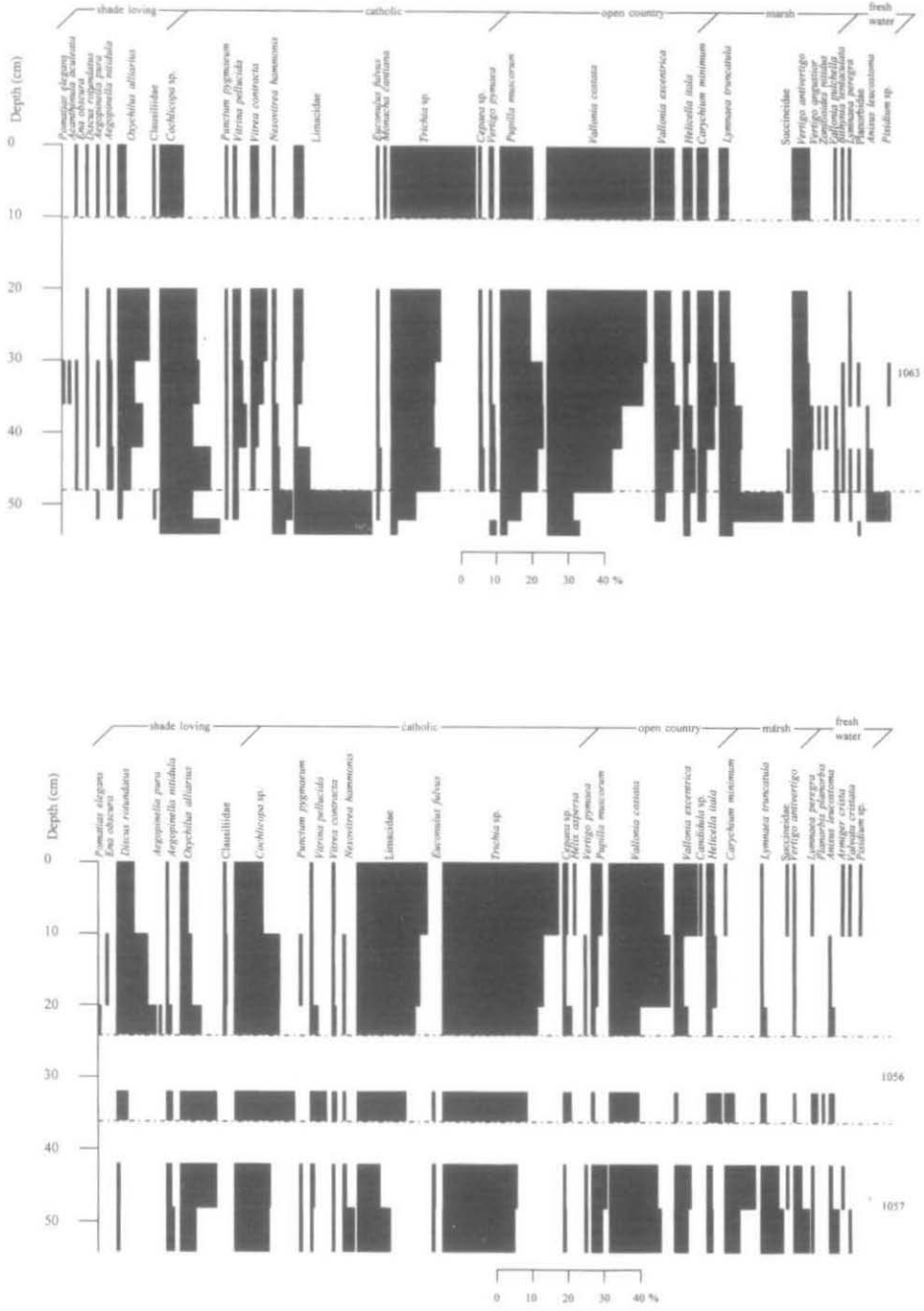



Fig. 18. Mollusc diagrams of ditches 1062 and 1011.

proximity of the E. part of the site to the Letcombe Brook, and consequently botanical remains that could have aided in reconstructing the contemporary environment were only found as charred macrofossils.

The following sections detail investigations into the four archaeological questions detailed above. Each section represents a synthesis of the various analyses applied to answer the particular problem, while a resume of the analytical methodology is presented at the first mention of each technique.

### *a. The nature of the site environment during the Roman period* by KEITH WILKINSON

This question has primarily been addressed through molluscan analysis of the fills of ditches 1062 and 1011. The former is attributed to Period 1 and was infilled around the middle of the 2nd century, while the latter (Period 3) was infilled in the late 4th century.

Mollusc samples were taken as a continuous column through each ditch profile as samples of between 4 and 10 cm. thickness. They were subsequently processed following the methodology of Evans,[123] and all quantifiable shell fragments of greater than 0.5 mm. removed and identified. The results of the analysis are represented as percentage histograms in Fig. 18.

*2nd-century environment (ditch 1062)*

Seven mollusc samples from this ditch were studied of which the basal two were from the underlying solifluction deposits. The assemblages from the latter are typically restricted,[124] and are dominated by the Limacidae (slugs), *Cochlicopa*, and *Vallonia costata*. The conditions indicated are of open terrain, although the presence of several individuals of marsh and fresh water dwelling species – especially in the upper sample – may indicate small scale pooling. Indeed the most abundant species of this kind in the sample, *Lymnaea truncatula*, *Vertigo antivertigo*, and *Anisus leucostoma* all prefer damp muddy conditions rather than permanent water. The morphology of the sediments indicates similar conditions, as there are distinct iron-stained bands in the periglacial profile which probably formed during phases of evaporation. A few shade loving species not normally found in Late glacial deposits are also found in the upper sample, but these have probably been incorporated from later sediments as a result of bioturbation processes.

Mollusc shells recovered from sampling ditch profiles are likely to derive from both inside (autochthonous) and outside (allochthonous) the feature. This second mode of incorporation occurs as a result of erosion of ditch sides or adjacent contemporary soils. In the case of the present deposits the components can be separated relatively easily and therefore a picture built up of environments both inside and outside the ditch. The mollusc assemblages change little through the profile and are everywhere dominated by *Trichia hispida* and *Vallonia costata* which are both probably allochthonous. There is a trend for an increasing number of the latter upwards through the profile, which is probably indicative of increased erosion of the contemporary soil rather than environmental change. Conditions outside the ditch are therefore likely to have been open throughout its depositional history, while the presence of significant numbers of *Pupilla muscorum* – a species which lives on bare earth and in disturbed ground – perhaps indicates arable agriculture. Indeed Evans[125] sees the *Pupilla muscorum*/*Vallonia costata* association as being indicative of instability and therefore arable cultivation.

The shade loving, marsh, fresh water, and many of the catholic species identified are likely to have lived actually within the ditch (autochthonous component) taking advantage of the damp and relatively dark conditions. All are present in relatively small proportions, but this is true of the shade lovers in particular. Neither the diversity nor the proportion of shade lovers in the profile changes except in the sample between 20–30 cms. where species diversity falls, and yet there is no decline in proportion of the group because of an increase in number of *Oxychilus alliarius*. However, this species in common with *Vitrea contracta* – which also expands in proportion at this point – is carnivorous[126] and may therefore be reacting to increasing prey rather than a change of environment within the ditch. The fresh water and marsh components also have the lowest diversity in the sample from 20–30 cms., although there is a marked decline upwards in both from the base of the Roman fills. The fresh water species in particular decline in diversity, with species indicative of more persistent water such as *Bithynia tentaculata* and the Planorbidae dying out completely. The marsh dwelling component follows a similar pattern, with *Lymnaea truncatula* – the species in this group most sensitive to drying – declining the fastest. Therefore the picture of the ditch interior during the mid 2nd

[123] J.G. Evans, *Land Snails in Archaeology* (1972).

[124] M.P. Kerney, 'Late Glacial Deposits on the Chalk of South-East England', *Philosophical Trans. Royal Soc. London*, 246 (1963), 203–54; Evans op. cit. note 123.

[125] J.G. Evans, 'An Approach to the Interpretation of Dry Ground and Wet Ground Molluscan Taxocenes from Central Southern England', in D.R. Harris and K.D. Thomas (eds.), *Modelling Ecological Change* (1991), 81.

[126] M.P. Kerney and R.A.D. Cameron, *A Field Guide to the Land Snails of Britain and North-West Europe* (1979).

century is of light vegetation, that while not excavated for drainage certainly contained water for much of the year, and indeed must have been ultimately linked to a stream to allow for migration of *Bithynia tentaculata*. However, as sediment eroded into the ditch the relative water level fell, although long vegetation and occasional puddles remained, until at a point in time corresponding with deposits between 20–30 cm. when the longer vegetation was also reduced. This latter may have been caused by ploughing over the ditch, or simply greater erosion of adjacent material. In the top-most sample there is further evidence for a return to previous conditions including a minor re-expansion of fresh water species.

*Late 4th-century environment (ditch 1011)*

The molluscan assemblages identified from fills of the late 4th-century ditch 1011 are only broadly similar to the example discussed above and there is considerable evidence of change through the profile. The assemblages are dominated by *Trichia hispida*, with lower numbers of *Vallonia costata* and the Limacidae, which again probably indicate open conditions. The changes to the molluscan assemblage generally follow context boundaries and therefore three mollusc zones exist. The bottom zone is characterised by a higher species diversity than elsewhere in the profile and fewer *Trichia hispida*. There is also a considerable number of marsh species including *Carychium minimum*, *Lymnaea truncatula*, and *Vertigo antivertigo*, which along with the few fresh water species present suggest a damp environment of pools and mud, there being no indication of permanent water. Shade loving species in the lower zone are few in number and mainly consist of the carnivorous Zonitids *Oxychilus alliarius* and *Aegopinella nitidula*. Therefore these may not indicate the presence of long vegetation in the ditch, but instead the availability of suitable food, which if correct would suggest that the ditch was kept artificially free of vegetation. The allochthonous part of the assemblage is also diverse and could be indicative of either arable or pastoral conditions.

The middle zone assemblage is represented by two samples, one from context 1056 and one from 1057. There is evidence of a considerable change to the environment from that represented in the bottom zone, firstly in a reduction in the proportion of open country species, secondly an increase in the shade lover *Discus rotundatus*, and thirdly a contraction in the number of marsh dwellers. The former of these is perhaps the most significant and suggests that areas around the ditch were becoming more shaded, perhaps because a previous agricultural system had been abandoned. The ditch itself also appears to have become more shaded, while evidence for dampness declines.

The assemblages from the upper zone suggest that conditions inside the ditch rapidly became more open and proportions of shade lovers such as *Discus rotundatus* and *Oxychilus alliarius* decline. *Trichia hispida* and *Vallonia costata* expand indicating that the area around the ditch was open once more, while increasing numbers of *Pupilla muscorum* may indicate areas of unvegetated, disturbed land. Marsh and fresh water species remain at low levels except in the top most sample where there is a re-expansion in both. This combined with the evidence for an increasingly open environment may be as a result of overland flow of rain water from adjacent arable fields collecting in the ditches as for the first time there is evidence of permanently standing water in the form of *Valvata cristata* and to a lesser extent *Armiger crista*. Also in the topmost samples individuals of the Roman-introduced species *Helix aspersa* and *Candidula* sp. were found.

Molluscan evidence from the two ditch profiles suggests that conditions outside the ditches were open throughout their respective depositional histories (with one possible exception). However, the authocthonous changes indicate that considerable changes took place in the ditch micro environments and which are likely to be the result of human action. For example alterations to water level could be as a result of adjacent agriculture and drainage, as well as relative raising of the ditch level through sediment accumulation. Similarly the amount of shade present in the ditch seems to have been controlled when adjacent land was in intensive use (as is the case in the lower zone of the ditch) and allowed to grow back when this was abandoned, as in the middle zone 1011. Thus these results may provide surrogate data for the nature of surrounding land-use in the Roman period, suggesting the only non-intensive phase was during accumulation of certain 4th-century deposits.

## *b. The nature of dumped deposit 1002* by JENNI HEATHCOTE and KEITH WILKINSON

Overlying the infilled Period 4 ditches was a poorly sorted deposit (1002), up to 0.5 m. thick, which survived over an area of approximately 700 sq. m. This deposit contained Anglo-Saxon and Roman artefacts. A single monolith for sedimentological analysis and a Kubiena tin for micromorphological study were taken to investigate the deposits. The samples were taken from the N.E. corner of the excavation, close to where a concentration of Anglo-Saxon loomweights had been found in the evaluation (p. 128). The analyses detailed below were carried out to determine how the deposit formed, and from what source material.

*i. Micromorphology*

*Sample 1 – Deposit 1002 over periglacial solifluction*

The sample was taken from the base of a deposit rich in ceramic and bone fragments and the upper part of the underlying periglacial solifluction deposit (field description). The horizon was thought to be infilling a slight terrace, possibly with domestic refuse. The objectives of the micromorphological analysis were as follows:

a. to determine whether the field interpretation of the mode of deposition is valid.
b. to determine the types of cultural material present in the sediment.
c. to determine whether the sediment contains coprolitic material, perhaps indicating that it was a rubbish disposal area.
d. to determine whether there are any indications of soil formation. Magnetic susceptibility data suggest some form of stable horizon is present immediately overlying the solifluction – this was not present visually in the field.

The major process evident throughout the sample is bioturbation. A high degree of biological activity by soil fauna has taken place as can be seen by the excremental fabric (fine crumb peds) and high porosity of the material in Microfabric 1A (see Appendix 2) (Fig. 19). This activity is corroborated by the large number of biogenic calcite granules found throughout the sample indicating an active earthworm (or slug) population. Microfabric 1B represents areas of less extensively biologically re-worked material. There is no evidence for a boundary between these deposits but this may be due to the effects of bioturbation.

It is likely that the material represents waste deposits as the sample contains fragments of abraded pottery or burnt clay, grains of Egyptian blue and, if the hypothesis of formation is correct, by-products of glass or Egyptian blue manufacture in the form of amorphous/cryptorystalline pedofeatures (AP). Egyptian blue is a material produced by heating a mixture of powdered silica and calcium carbonate with a copper compound (as either an oxide, carbonate or as filings) and a flux of potash or common salt, to a temperature of 800–850°C.[127] It must be present as a result of a manufacturing process as it has only been found in a 'natural' state on Vesuvius.[128] The morphology and distribution of the fragments suggests that manufacture may have taken place close to the site as they represent an unrefined and intermediary stage of Egyptian blue processing. The degree of grinding of the silica affects the rate of reaction and if only coarsely ground will produce a granular mixture which can be further refined by re-grinding and re-firing. This former state is consistent with the form in which the Egyptian blue is found at Mill Street. Though only two grains of Egyptian blue are found in Sample 1 several more are found randomly distributed throughout the reworked solifluction deposit of Sample 2.

There is no evidence of coprolitic material within the deposits and this is consistent with the low phosphorus concentrations determined in the laboratory (p. 168).

The final question posed of the material was whether there was any indication of soil formation immediately overlying the periglacial solifluction, as a stable horizon had been suggested by the sharp increase in magnetic susceptibility measurements at this point in the stratigraphy though no evidence was present visually (p. 168). In thin section there was no indication of any reason for this increased reading, either in terms of inclusions or as a stable surface. Though the results of pedogenic processes are observable in the deposits as ped/pore formation and bioturbation, these phenomena are seen throughout the thin sections.

*ii. Sedimentology* (Fig. 19)

A suite of sedimentological techniques were applied to a single 20 cm. monolith sample taken from adjacent to the micromorphological sample discussed above. This sample encompassed most of deposit 1002 and its contact with the underlying solifluction deposits. The aims of the sedimentological analysis were the same as those of the micromorphology.

Volume magnetic susceptibility readings were taken throughout the sample profile at 1 cm. intervals using a Bartington MS2 magnetic susceptibility meter with a MS2C sensor. The readings produced vary between 5–20 SI units $\times 10^{-5}$, which are not high for sediments of anthropogenic origin.[129] A further reason for the low readings is the bedrock geology – and hence parent material for the deposits on the site – which comprises base rich chalk and greensand of low magnetic enhancement.[130] Nevertheless, values through the monolith tend to increase to reach a maximum at 12 cm. of 20 SI units $\times 10^{-5}$, and then swiftly decline. Initially this peak was thought to represent a former occupation surface below deposit 1002 (i.e. the peak corresponds to the interface between this deposit and solifluction) not visible during the excavation. However, the micromorphological data suggests that this in fact is not the case. It therefore seems more likely that the peak is the result of the presence of ceramic fragments

[127] F. Mazzi and A. Pabst, 'Re-Examination of Cuprorivaite', *The American Mineralogist*, 47 (1962), 409–11; W.T. Chase, 'Egyptian Blue as a Pigment and Ceramic Material', in R.H. Brill (ed.), *Science and Archaeology* (1971), 80–90.

[128] Mazzi and Pabst, op. cit. note 127, *passim*.

[129] E.g. see K.N. Wilkinson, 'Investigations of Past Erosional and Sedimentological Processes at the Roman and Byzantine site of Sparta', *Pubs. Institute Archaeology*, 4 (1993), 9–24.

[130] M.S. Tite, 'The Influence of Geology on the Magnetic Susceptibility of Soils on Archaeological Sites', *Archaeometry*, 14 (1972), 229–36.

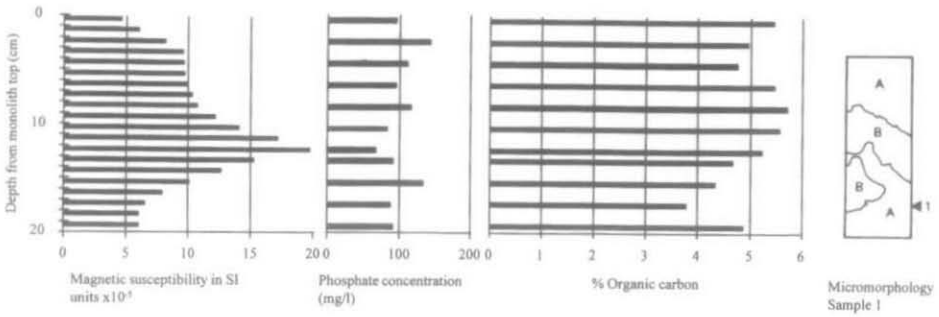



Fig. 19. Sedimentary properties of micromorphological sample 1.

('micro-artefacts')[131] in higher concentrations at this particular level (ceramic material, being composed of fired clay contains high concentrations of ferrimagnetic iron causing high susceptibility).[132] This view is further supported by phosphate measurements made on sub-samples at 2 cm. intervals which show no peak at 12 cm. where phosphate concentrations are in fact at their lowest. Indeed phosphate concentrations are low throughout (ranging from 70–130 mg/l (or PPM) ) further confirming the interpretation of the micromorphological data that there is little incorporated faecal material. As with the phosphate concentration loss-on-ignition measurements – made by heating sub-samples at 2 cm. intervals to 550°C and determining the weight loss – are reasonably constant throughout, ranging from 3.8–5.6% organic carbon. Particle size analysis (using sieve techniques for sand-sized material and a SEDIGRAPH for silt/clay fraction) of two sub-samples from the deposit and the underlying solifluction indicate that although on average the former is coarser both are of comparable particle size distribution. Using the sorting index of Folk and Ward,[133] both sub-samples are 'very poorly sorted', a result that in this case indicates deposition through colluvial erosion or deliberate human action.

With the exception of the magnetic susceptibility data the most striking feature of the sedimentological data is its uniformity. This further confirms that the deposit is homogeneous as also indicated by the micromorphological analysis.

*iii. Conclusion*

Deposit 1002 contains a mixture of pedogenically affected periglacial solifluction deposit and material containing fragmentary anthropogenically-derived material in the form of pottery/burnt clay and grains of Egyptian blue. The location of the deposits, together with their morphology and inclusions suggests that they probably represent waste deposits of some kind. These seem to mainly have comprised discarded food waste and ceramics rather than faecal material, while the low phosphate readings suggest that bones may have become incorporated in the deposits following removal of flesh. Whether the sampled deposit is in its primary location, or whether they have eroded from nearby cannot be determined from the data, but the lack of any internal structure argues for deposition during a single episode. There is no evidence for the presence of any occupation surface within the deposits.

## *c. The properties of sediments pre-dating Building 3* by JENNI HEATHCOTE and KEITH WILKINSON

During the excavation of the Building 3 (Period 3) a series of sections were inserted through deposit 1051. No trace of a floor was noted in this part of the building, the poorly sorted calcareous deposit 1051 most probably acting as make-up for a floor which had been truncated through later agricultural activity. This make-up deposit and underlying

[131] R.C. Dunnell and J.K. Stein, 'Theoretical Issues in the Interpretation of Micro Artefacts', *Geoarchaeology*, 1 (1989), 31–42.

[132] R. Thompson and F. Oldfield, *Environmental Magnetism* (1986).

[133] R.L. Folk and W.C. Ward, 'Brazos River Bar: a Study in the Significance of Grain Size Parameters', *Jnl. Sedimentary Petrology*, 27 (1957), 3–26.

solifluction deposits were sampled for micromophological (sample 2) and sedimentological analysis to determine whether there was any evidence for prior archaeological activity or land surfaces.

*i. Micromorphology*

Two distinct Microfabrics are noted in the sample – 2A and 2B. However, bioturbation is evident throughout the sample through the channel-like pores and the occurrence of biogenic calcite granules. The soil faunal activity is not as high as was seen in areas of Sample 1, there being virtually no fine crumb peds present. The similarity of structure and basic components between Sample 2 and Microfabric 1B suggests that it represents moderately biologically-worked periglacial solifluction deposits. Though both Microfabrics of Sample 2 are solifluction material they represent two stages of accumulation. Microfabric 2A (context 1051) is probably reworked as it shows similar inclusions of cultural material to Sample 1 that comes from a different area and phase of the site. Microfabric 2B indicates a former solifluction accumulation, although it is not possible to determine whether this is relatively *in situ* or has undergone an earlier stage of reworking.

Both Microfabrics show no signs of compaction (although this may have been overprinted by subsequent bioturbation), crusting or allochthonous construction materials that might be expected from floor layers,[134] while Microfabric 2B contains relatively high quantities of charred organic material that suggest proximity to a former surface where burning has occurred.

*ii. Sedimentology*

Magnetic susceptibility is low throughout the profile (0.5–3 SI units $\times 10^{-5}$) suggesting low human impact and no evidence for either a palaeosol or an occupation surface. The readings do increase slightly below 16 cm. (Microfabric 2B) and coincides with the presence of iron staining interpreted as being caused by fluctuating groundwater near a former ground surface. At the very top of this horizon and at the interface with the overlying re-worked solifluction there is a phosphate peak of 400 mg/l (from values that are otherwise around 50–120 mg/l). This peak could provide evidence for a horizon of more intensive human activity prior to construction of the building, while slightly higher phosphate values either side of the peak may represent transported material from the same level.

*iii. Conclusions*

The evidence discussed above suggest that the majority of the sampled deposits (context 1051) are of reworked solifluction consistent with the archaeological interpretation of the layer as make-up for a floor associated with the stone building. However, there is possible phosphate evidence for a surface of some sort below 1051, while micromorphological data suggests re-working of burnt material from this surface. The most likely explanation for the results is the presence of a palaeo land surface relating to either Period 1 or 2.

## *d. The Roman agricultural economy* by CHRIS STEVENS

This topic was addressed through the examination of the only three bulk samples that proved on examination to contain carbonized, macroremains. The samples had originally been wet sieved through a 0.5 mm. mesh. The dried residues were scanned for carbonized plant remains using a low powered stereo-binocular microscope. The sorted remains were then identified by comparison with a modern reference collection and quantified.

All three samples came from features ascribed to Periods 2–3: the infilling (1237) of one of the beam trenches (1236) of the Period 2 timber granary (Building 1); the final fill (1521) of the Period 2 stoned-lined well 1520, and the filling (1119) of Period 3 ditch 1116 (Table 9). Preservation of carbonized plant material was generally poor, with the single exception of seeds of corn gromwell, *Lithospermum arvense* – the preservation of which may have been favoured by its high mineral content.[135] All the samples contained some cereal remains, including grains and chaff from glume

[134] M.A. Courty, P. Goldberg and R.I. Macphail, *Soils and Micromorphology in Archaeology* (1989).

[135] M. Jones, 'The Plant Remains', in M. Parrington, *The Excavation of an Iron Age Settlement, Bronze Age Ring-Ditches and Roman Features at Ashville Trading Estate, Abingdon (Oxfordshire) 1974–76* (Counc. Brit. Archaeol. Res. Rep. 28, 1978), 101.

TABLE 9. CARBONIZED PLANT REMAINS RECOVERED FROM SELECT SAMPLES

| Context | 1237 | 1521 | 1119 |
|---|---|---|---|
| Feature | Possible Granary | Well | Ditch |
| Volume (litres) | 12 | 12 | 6 |
| Species | | | |
| *Rumex* sp. | — | 1 | — |
| *Rumex* cf. *crispus* | 1 | — | — |
| *Vicia/Lathyrus* sp. | 6 | 16 | 1 |
| *Vicia sativa* | — | 2 cf. | — |
| *Vicia* sp. | — | 3 cf. | — |
| *Lathyrus* sp. | 1 | — | — |
| *Medicago lupulina* | 2 | — | — |
| *Medicago/Trifolium* sp. | 1 | 1 | — |
| *Lithospermum arvense* | 5 | 11 | — |
| *Tripleurospermum inodorum* | — | 1 | — |
| *Lolium/Festuca* sp. | 1 | — | — |
| Poaceae indet. | 4 | 3 | — |
| *Poa* sp. | 1 | — | — |
| *Avena* sp. | — | — | 3 |
| Seed indet (<2.5 mm) | 2 | — | — |
| Cereals | | | |
| *Hordeum* sp. (hulled) | — | — | 4 |
| *Hordeum* sp. (undiff.) | — | 2 | — |
| *Triticum* undiff. (grains) | 15 | 1 | 9 |
| *T. dicoccum/spelta* (spikelet forks) | 2 | 1 | — |
| *T. dicoccum/spelta* (grains) | 5 | 1 | — |
| *T. dicoccum/spelta* (glume bases) | 31 | 2 | 1 |
| *T. spelta* (glume bases) | 1 | 3 | — |
| *T. aestivocompactum* | — | — | 9 |
| Cereals undiff. (grains) | 24 | 14 | 14 |
| Cereal (undiff.) rhachis | — | 1 | — |
| Cereals undiff. (culm nodes) | 2 | — | — |
| Cereals undiff. (culm internodes) | — | 1 | — |
| Root/Tuber (indet) | 1 | — | — |

wheats – *Triticum spelta/dicoccum* (identified to *T. spelta* where suitably preserved glume bases allowed further identification), hulled barley – *Hordeum sp.*, and bread/club wheat – *Triticum aestivocompactum*, as well as fragments of straw nodes and internodes. Otherwise the samples did not produce a wide range of plant species, which may in part be due to crop processing procedures, as in general the seeds of larger seeded species, such as vetches – *Vicia/Lathyrus*, oats – *Avena sp.*, field gromwell – *Lithospermum arvense* dominated the samples suggesting a 'winnowing' out of finer seeded species. Seeds of curled dock – *Rumex crispus*, meadow grass – *Poa sp.*, medick/clover – *Medicago/Trifolium sp.*, fescue/rye grass – *Festuca/Lolium sp.*, and scentless mayweed – *Tripleurospermum inodorum*, were also present in the samples, albeit in low quantities.

The high proportion of glume bases to cereal grains – especially given the lower chances of preservation of the former – suggests that the samples from the well (1521) and granary Building 1 (1237) at least were probably derived from crop processing waste, rather than the stored cereal product. The higher proportion of larger seeded species also suggests that such crops are more likely to have been threshed, winnowed and fine sieved elsewhere, prior to pounding, hand-sorting and removal of the glume bases, through further sieving and winnowing.[136] The sample from

[136] See G. Hillman, 'Reconstructing crop husbandry practices from charred pant remains: the application of ethnograhic models from Turkey', in R. Mercer (ed.), *Farming Practices in British Prehistory* (1981), 142.

the enclosure ditch 1116 contains few remains of glume wheat, and more of free-threshing cereals, *Triticum aestivocompactum* and *Hordeum* sp., there are also fewer weed seeds in the sample.

The assemblages would all seem to suggest that they are ultimately derived from agriculture on light, dry soils particularly from evidence for the presence of *Lithospermum arvense*, *Vicia sativa*, *Medicago lupulina*, *Tripleurospermum inodorum* and *Vicia tetrasperma*. The former species are more common on calcareous soils, while the latter two largely inhabit acidic soils. The other species present cover a wide range of ecological habitats, but given the geological and pedological location of the site (see above) this species list is nevertheless unsurprising. The absence, however, of certain large seeded species – brome grass – *Bromus sp.*, Pheasants eye – *Adonis annua*, and Wild Carrot – *Daucus carota* – which would probably have been common upon the chalk downs to the S., may suggest that the crops did not derive from this location, although in turn the absence of species indicative of wet ground precludes the possibility of a derivation in the Thames floodplain.

The normally large quantities of leguminous species, vetches, clover and medick, seen within samples of this date from other sites in the region, have been associated with declining availability of soil nitrogen, possibly as a result of more intensive arable production seen within the period.[137] However, in the present case the evidence is inconclusive in this respect given the small sample recovered.

Given the low number of samples where carbonized plant remains were preserved, and their low density within them, it is difficult to draw any firm conclusions. The sample from the granary would not seem to represent the burning of grain swept out following episodes of storage, but rather crop processing waste, although of course this does not preclude the possible interpreted function of this building. The assemblages from the other two features would seem to suggest a similar origin, while the low density of such remains is likely to be the result of re-working processes.

## DISCUSSION

### *Prehistoric Activity*

The occurrence in later deposits of a small assemblage of flint artefacts and middle Iron-Age pottery testifies to prehistoric activity in the immediate vicinity of the excavation area. A few residual potsherds of the same date have also been found in an evaluation to the S. of Mill Street in 1995.[138] No evidence has yet come to light for any Late Pre-Roman Iron-Age occupation around the town, and the apparent absence of material of this date on a site which has both middle Iron-Age and Roman occupation is seemingly matched in the religious centre at Frilford, 9 km. to the N.E.[139]

### *Morphology*

The presence of Roman settlement at Wantage need occasion no surprise, the site lying at the junction of two routeways. To the N.E. lay the Roman road (Margary[140] route 64) which ran from a junction with Akeman Street at Alchester via Oxford and a crossing of the Ock at Frilford, and thence on a straight alignment to Grove just N. of Wantage. This alignment has been projected S.W. into the town on Fig. 20, and closely corresponds to the sightings of road metalling made in excavations in the 1960s around Denchworth Road (Fig. 20, 7541; 7941). No trace of the road has come to light to the S. of Wantage. It is conceivable that it terminated here; alternatively it may have proceeded over the Downs towards the town of

[137] Jones op. cit. note 135, 109; M. Jones, 'The Development of Crop Husbandry', in M. Jones and G. Dimbleby (eds.), *The Environment of Man: The Iron Age to the Saxon Period* (B.A.R. Brit. Ser. 87, 1981), 95–127.

[138] A. Thomas, *Land South of Mill Street, Wantage, Oxfordshire, Archaeological Evaluation* (CAT TS Rep. 95233, 1995).

[139] B.C. Burnham and J.S. Wacher, *The 'Small Towns' of Roman Britain* (1990), 178–81.

[140] I.D. Margary, *Roman Roads in Britain* (2nd edn. 1967).

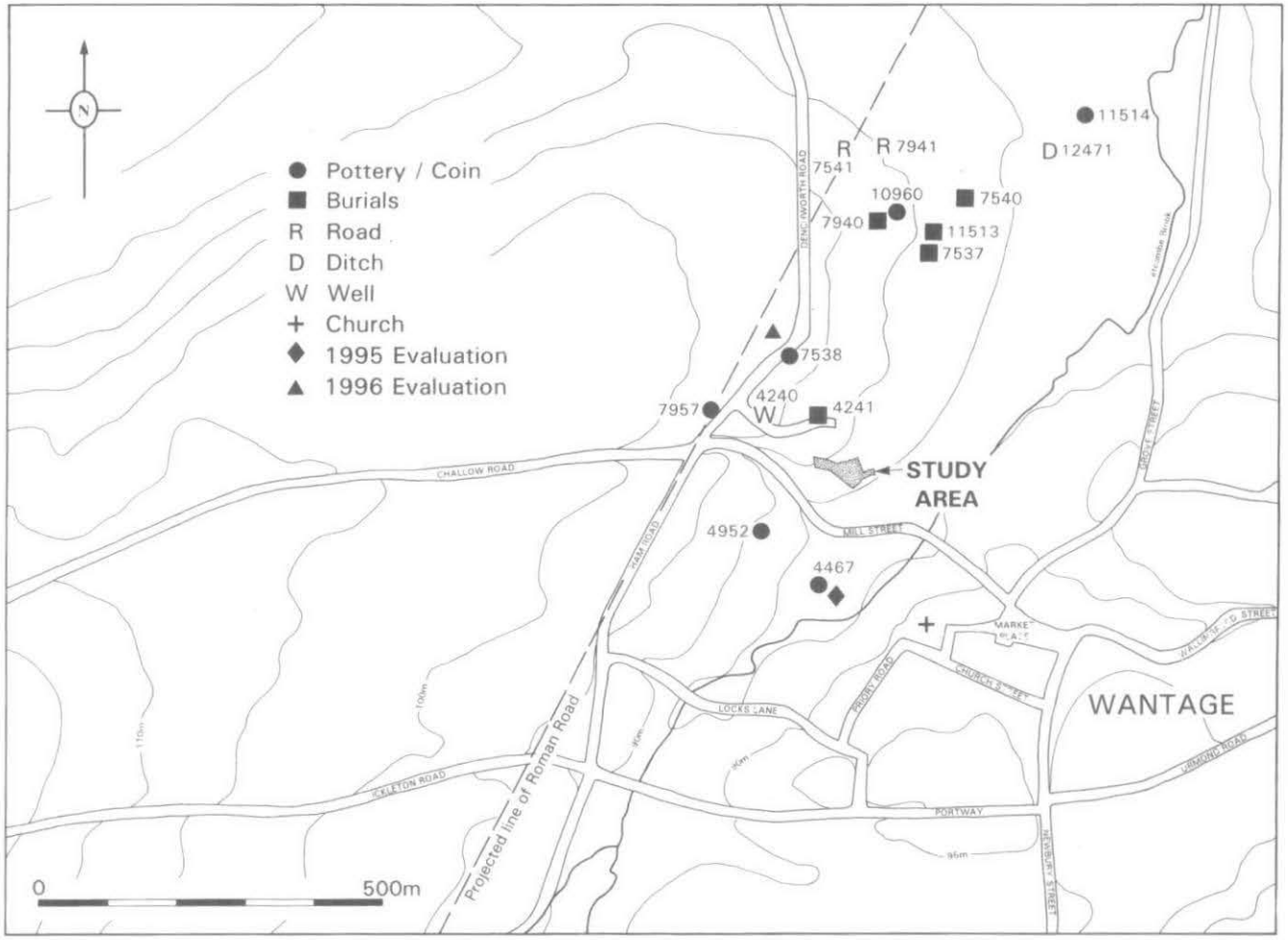



Fig. 20. Excavation site in relation to other find-spots of Roman material (see Appendix 1 for key).

Mildenhall (*Cunetio*), as Lambrick[141] suggested. A possible course for such a route has been suggested via the spur of high ground above Letcombe, Hackpen Hill and into the Lambourn valley,[142] although no direct evidence exists.

Wantage also lay on the line of the pre-Roman trackway known as the Icknield Way which ran below the ridge of the Downs, close to the junction between the chalk and less permeable geologies. This important route connected the Wessex Downlands with the Chilterns and East Anglia. Wantage thus lay at the junction of a pre-Roman trackway and a Roman road. The evidence for the date of construction of the latter derives from the settlements founded upon it. The Roman origins of Frilford are poorly understood although 1st-century material is recorded;[143] the material from Mill Street points to occupation in the vicinity from the Flavian period (p. 174).

Evidence for the morphology of the settlement derives from the scatter of stray finds and observations plotted on Fig. 20 which cover most of the area now known as Belmont. If it is assumed that the settlement developed in ribbon fashion along the road to Frilford in the manner typical of roadside establishments, then the excavation site would have lain about 200 m. to the rear of the extrapolated line of the road frontage. The flood plain of the Letcombe brook to the E. of the site would have formed a natural limit to expansion in this direction. Smith[144] in his analysis of roadside settlements has shown that rectilinear, often contiguous houseplots arranged on both sides of the road is the norm, and with one exception these plots did not extend more than 50 m. back from the road. The Mill Street excavation has therefore most probably examined a tract of agricultural land to the rear of the plots. Evidence for such field systems is not particularly common elsewhere, due to a lack of investigation in these backland areas. At Ilchester, Somerset, excavation of the extra-mural suburb fronting the Fosse Way to the S. of the walled town examined an area extending back from the road for a distance of about 140 m. Here, to the rear of the plots which extended for about 50 m. from the road, lay fencelines, ditched paddocks, pits and a timber building interpreted by the excavator as a barn.[145] The evidence recovered at this site is of a similar character to that found at Mill Street. Agricultural plots and field systems extending back from a road frontage have also been suggested at the small town of Godmanchester, Cambs., where the evidence is largely derived from aerial photographs.[146]

To the S. of the excavation area an evaluation in 1995[147] (Fig. 20) revealed a number of ditches containing 2nd to 3rd-century pottery indicative of similar agricultural activity. Elsewhere the spread of recorded findspots of pottery and coins gives some impression of the extent of the settlement. Wells and ditches have also been found on a number of occasions. An evaluation off Denchworth Road in 1996[148] (Fig. 20) found that one ditch was infilled in the late 1st or early 2nd century. The majority of other pits and ditches dated to the 2nd or early 3rd century, with a midden deposit sealing these features containing late 3rd or early 4th-century pottery. No evidence for later activity was recovered.

Of particular note is the identification of Romano-British burials N. of the excavated area, where at least 20 graves, some containing 4th-century pottery, are known. Most are recorded

[141] G. Lambrick, 'Some Old Roads of North Berkshire', *Oxoniensia*, xxxiv (1970), 93.
[142] A. Rosevear, *Ancient Roads across the Vale of White Horse* (1993), 7.
[143] Burnham and Wacher op. cit. note 139, 182.
[144] R.F. Smith, *Roadside Settlements in Lowland Roman Britain* (B.A.R. Brit. Ser. 157, 1987), 30–1.
[145] P. Leach, *Ilchester vol. 1: Excavations 1974–1975* (1982), 60–91.
[146] Green op. cit. note 14, 190.
[147] Thomas op. cit. note 138.
[148] Bateman op. cit. note 29.

as aligned N.N.E.–S.S.W. with heads to the S. and two as N.–S. One of the latter lies *c.* 50 m. to the N.W. of the excavation area and is recorded with the head to the N. The recorded burials lie between 100 m. and 200 m. S.E. of the projected road line, and it is reasonable to presume that they represent small private cemeteries to the rear of individual houseplots, a common occurrence in roadside settlements.[149]

*Chronology*

The coarse pottery from the excavation points to occupation in the vicinity from the Flavian period (p. 134–6), a date which gains some support from the absence of pre-Flavian samian (p. 137–8). The coin analysis also demonstrates an upsurge in coin loss from the later 1st century (p. 129–31). The pottery is consistent with occupation right through the Roman period, with shell-tempered wares datable to the last quarter of the 4th century being represented. The coin analysis, although drawing on a small sample, shows a peak of loss in the period 364–78 with a relative sparsity of issues datable to 380–90 (p. 129). The majority of these coins came from the topsoil (and were recovered by controlled use of a metal detector). It is probable that they had been disturbed from the dumped silt deposit 1002, which it is suggested represents a redeposited midden cleared from elsewhere in the settlement in the early Anglo-Saxon period. The relative scarcity of the latest Theodosian issues might therefore be a reflection of the pattern of loss nearer the main focus of the settlement.

*Economy and Status*

It is probable that the settlement at Wantage served a variety of functions, and it may not be useful to seek a pre-eminent one. Its location at the junction of two routeways suggests that transport was an important consideration, both to facilitate access to the settlement and to enable the inhabitants to exploit the commercial opportunities which through-traffic provided. It is reasonable to suppose that the settlement acted as a local market centre for surrounding rural establishments, and in his analysis of the distribution of such sites amongst the S.E. Dobunni Hingley[150] seeks to demonstrate that these centres were spaced at 10–20 km. intervals to fulfil precisely this function. The neighbouring centres were Frilford and Abingdon to the N., Dorchester-on-Thames to the W. and Speen to the S. of the Downs. Survey work in the Vale of White Horse[151] and on the Berkshire Downs[152] has begun to elucidate the settlement pattern in these areas, and has demonstrated greater evidence for villas and hierarchy of settlement than had previously been thought. Certainly Wantage attained sufficient status and prosperity to be able to attract imported fineware pottery and amphorae from as early as the late 1st century (p. 134).

Many small centres developed enhanced economic or specialist roles, although the excavation has recovered little evidence for industrial production. The micromorphological studies

[149] Smith op. cit. note 144, 117–19.

[150] Hingley op. cit. note 8, 112–14.

[151] D. Miles, 'Confusion in the Countryside: Some Comments from the Upper Thames Region', in D. Miles (ed.), *The Romano-British Countryside* (B.A.R. Brit. Ser. 103, 1982), 65.

[152] V. Gaffney and M. Tingle, *The Maddle Farm Project: an Integrated Survey of Prehistoric and Roman Landscapes on the Berkshire Downs* (B.A.R. Brit. Ser. 200, 1989), 89–94, 239–44.

have revealed traces of Egyptian Blue which is a product of glass making (p. 167); it is impossible to assess what level this activity may have been conducted upon, however, and it need not attain the status of industry. Some pottery recovered from the site is probably locally made,[153] although whether in the immediate vicinity of the settlement is unclear at present. The principal evidence recovered by the excavation is for agricultural production, with a mixed economy indicated. The poor preservation of plant macrofossils means there is little useful information on the types of crop being grown, although better information derives from the animal bone assemblage. Maltby's analysis demonstrates that the site has a slightly richer and more diverse assemblage than that found on many rural sites, although its lacks the evidence for large-scale meat organisation found in some of the major towns (p. 163). The stone granary (Building 3) is not much larger than those found on villa sites such as Gorhambury, and so may have had an entirely local use rather than there being a need to regard it as a centre for the collection of the *annona*. Some of the millstone fragments recovered suggest a mechanical mill nearby, perhaps even a watermill on the Letcombe Brook (p. 152).

*Early Anglo-Saxon*

The excavation has not established whether there was any continuity of occupation and settlement between the latest phase of Roman activity and the earliest Anglo-Saxon one. Certainly the granary was completely robbed of its building stone before the ditched enclosures were dug, and these were on a completely different alignment to that utilised throughout the Roman occupation. The ditches indicate the establishment of new patterns of land organisation associated with agricultural production, although a greater area would need to be examined before useful discussion can be made of this topic.

The presence of early Anglo-Saxon occupation in the vicinity of the Roman settlement is not unusual in the regional context. Anglo-Saxon material has been recovered from a number of neighbouring Roman settlements, including 5th-century burials from Frilford.[154] Grass-tempered pottery has been recovered from a number of villas around Frilford,[155] as well as the villa at Frogmore Brook near Stanford-in-the-Vale to the W.[156] and the settlement at Knighton Bushes on the Berkshire Downs to the S.[157] Pagan Anglo-Saxon burials have also been found in the vicinity,[158] including a recently discovered small 5th-century cemetery at West Hendred, 5 km. W. of Wantage.[159]

*Late Saxon*

The excavation has demonstrated Anglo-Saxon activity to the W. of the Letcombe Brook, although no evidence of late-Saxon occupation was recovered. Famously, Bishop Asser

[153] For instance fabric R7 (p. 135–6).
[154] Burnham and Wacher op. cit. note 139, 183.
[155] Hingley op. cit. note 8, fig. 56.
[156] Miles op. cit. note 151, 63.
[157] Gaffney and Tingle op. cit .note 152, 123.
[158] J. Steane, 'Commentary to Accompany Distribution Maps of the Archaeology of Oxfordshire', in G. Briggs, J. Cook and T. Rowley (eds.), *The Archaeology of the Oxford Region* (1986), map 11.
[159] H. Hamerow, 'An Anglo-Saxon Cemetery near West Hendred, Oxon.', in W. Filmer-Sankey (ed.), *Anglo-Saxon Studies in History and Archaeology 6* (1993), 113–23.

recorded that King Alfred was born in a royal residence at Wantage in 849. The location of this palace has been the subject of considerable speculation, much of it based on a rather ambiguous identification of the palace site, close to the excavation area, by the 18th-century cleric Dr. Francis Wise.[160] Moreover, the reference to Alfred's birthplace has recently been subjected to considerable doubt.[161] There are other documentary references to Wantage in *c.* 880 and 955 (as *Waneting* in the *Cartularium Saxonicum*) and in *c.* 894 (as *Uuanating* in Asser's Life of King Alfred). A stream is referred to as *Wanotingc broc* in 956, and as *Wanetincg* and *Waneting* in 958 (*Cartularium Saxonicum*). Ethelred summoned a council here in 990 and the Witan in 997. The settlement may have suffered during the major Danish raid on Berkshire in 1006,[162] although by the time of Domesday it possessed a mill and a minster church.[163] It is likely that the minster lay in the vicinity of the present church, which although of 13th-century date[164] had two other churches standing in the churchyard until 1850. The smaller had a Norman doorway, and during demolition a fragment of an ornamented cross shaft of 9th-century type was recovered.[165] This may be the same fragment recorded by Greening Lamborne on the window-sill in the S. porch of the church.[166] The only other archaeological evidence for late-Saxon activity is some unprovenanced coins from the area.[167] It is probable therefore that by the late-Saxon period the focus of settlement had moved about 100 m. E. to the opposite side of the Letcombe Brook from the area of the Roman settlement. This shift in focus might be testimony to a period of abandonment or greatly reduced occupation in Wantage after the early Anglo-Saxon period. The documentary sources chart the subsequent rise of the town to prominence thereafter.

*Acknowledgements*

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[160] F. Wise, *A Letter to Dr. Mead concerning some Antiquities in Berkshire* (1738), 51.

[161] A.P. Smyth, 'Unmasking Alfred's False Biographer', *British Archaeol.*, 7 (Sept. 1995), 9.

[162] A. Gibbons and E.C. Davey, *Wantage Past and Present* (1901), 34–5.

[163] R. Forster, K. Rodwell, R. Squires and H. Turner, 'Wantage', in K. Rodwell (ed.), *Historic Towns in Oxfordshire* (Oxfordshire Archaeol. Unit Survey 3, 1975), 163.

[164] N. Pevsner, *The Buildings of England, Berkshire* (1966), 252.

[165] Forster et al. op. cit. note 163, 163; G. Astill, 'The Towns of Berkshire', in J. Haslam (ed.), *Anglo-Saxon Towns in Southern England* (1984), 67.

[166] E.A. Greening Lamborne, 'The Wantage Crosses', *Berkshire Archaeol. Jnl.*, 41 (1937), 122 records 'a fragment of sculptured stone carved with a pattern of interlaced strap-work which is the characteristic ornament of the Anglo-Saxon period'.

[167] Forster et al. op. cit. note 163.

grateful to Carolyn Heighway and the Editor for commenting upon a draft of the text. The project archive and finds have been deposited with Oxfordshire Museum Service under the accession no. 1993:45.

## APPENDIX 1: GAZETTEER ENTRIES PLOTTED ON FIG. 20

The following information is derived from the Oxfordshire Sites and Monuments Records, to which the numbers refer.

4240: Stone-lined well, 1.8 m. in diameter, found during groundworks in 1972. Fill contained forepart of a horse and a large Roman bowl.

4241: Skeleton in N.–S. grave (head to the N.).

4467: Roman pottery found in 1974.

4952: Extensive Roman pottery scatter found during construction in 1976.

7537: Skeletons and Roman pottery recovered in 1958.

7538: Coin of House of Valentinian.

7540: 14 grave cuts, aligned N.N.E.–S.S.W. revealed during building work in 1968. Heads to the S. Probable Romano-British.

7541: Excavation in 1965–8 revealed several sections of Roman road. Large quantity of Roman pottery and 4th-century coins ranging from Licinius I to Gratian.

7940: Roman pottery. Skeleton in topsoil. Several more skeletons recovered in 1950 along with 4th-century pottery. A further inhumation and a stone-lined well containing partial horse burial in the lower fill.

7941: Excavation by Wantage Field Club may have located edge of Roman road, although this is not certain. 2nd to 4th-century pottery and 4th-century coins recovered.

7957: Roman coins found in 1856.

10960: Coins of Hadrian and Valentinian I.

11513: Two inhumation burials found in 1975 and 1978. One aligned N.–S., extended and with Roman pottery in the grave fill.

11514: Coin Valentinian I, 367–75, found 1978.

12471: Small excavation in advance of a housing estate *c.* 1975 found a ?Roman ditch.

## APPENDIX 2: MICROMORPHOLOGY METHODOLOGY AND SAMPLE DESCRIPTION by JENNI HEATHCOTE

### *Methodology*

Samples for micromorphological analysis were initially impregnated with Crystic resin to produce consolidated blocks from which two duplicate sets of thin sections were manufactured. The dimensions of Sample 1 (silt deposit 1002) were 17 × 7 cm. (length × width) and of Sample 2 (periglacial solifluction and floor make-up 1051) 7.5 × 6 cm. The thin sections were analyzed using a polarising-light microscope for pedological and sedimentological microfeatures in

order to assess the likely formation and post-depositional histories of the deposits. Sub-microscopic analytical techniques were employed to target specific problems presented by the material which could not be resolved using the polarising-light microscope. Counts of cultural material were undertaken over the whole area of the thin sections to identify the types present and to assess their distribution within the deposits. Descriptions of thin sections follow the terminology of Bullock et al.[168] and are presented together with the interpretations of the pedofeatures observed. Wherever possible, micromorphological descriptions of the deposits are related to the sedimentary properties determined by other methods (magnetic susceptibility, soil phosphorus concentrations and percentage of organic carbon).

## *Description of Micromorphological Sample 1*

Two types of microstructure are observed in the sample, though their arrangement does not honour the boundary between periglacial solifluction and context 1002 proposed in the field description (Fig. 19). Microfabric 1A consists of small, clearly defined crumb and granular peds separated by compound packing voids with a high porosity of approximately 45%. Microfabric 1B is more dense, with a total porosity of approximately 30%, and consists of larger, partially isolated, sub-angular blocky peds. The peds contain voids in the form of channels, and are separated by planar voids or cracks.

The texture, mineralogy, pedofeatures and organic composition of the soil constituents are similar in both microfabric types, the two categories of material being distinguished only by the nature of their organisation.

*Texture*: moderately well sorted medium to fine sandy silt consisting of sub-angular and sub-rounded grains.

*Inorganic components*: the mineralogy is dominated by quartz in the sand-sized and calcium carbonate in the form of micrite/microsparite in the silt-sized fractions. These minerals comprise 85% of the mineralogy, the remaining 15% being (in decreasing order of abundance) glauconite, shell (calcite), chert, sparite, bone (apatite) and fossiliferous limestone, randomly distributed throughout the sample. Mineral weathering is only observed in glauconite and occurs as variable degrees (partial to complete) of colour alteration from green to orange in some of the grains. This indicates oxidation of the glauconite with goethite pseudomorphs (red-orange grains) being the end product of weathering.[169] The clay-sized fraction consists of very small quantities (<10%) of organo-mineral material dispersed through the deposit.

*Organic components*: the total organic content is low, calculated by visual assessment to be approximately 5% of the deposit. This is consistent with the quantified content provided by loss on ignition analysis. The organics present are all finely comminuted and highly weathered, with less than 2% of the fragments either large enough or with a degree of preservation enabling cellular structure to be recognised. Carbonized fragments dominate the organic residues and these are randomly distributed throughout the sample.

*Pedofeatures*: there are two main categories of pedofeature, crystalline (CP) and cryptocrystalline/amorphous (*AP*). Crystalline pedofeatures are composed of calcium carbonate and may be subdivided further according to their internal morphology and size of the compositional crystals and will be referred to as *CP#1* and CP#2. Both types of pedofeature are distributed throughout the groundmass and show no preferential areas of accumulation within the material.

CP#1 consist of spherical to ovoid carbonate nodules with sharp boundaries and smooth surfaces. The nodules are composed of sparite crystals showing a radial arrangement which defines their internal structure. Nodules range from 350 μm. to 750 μm. with occasional specimens larger than 1 mm.

CP#2 consist of round, ovoid and occasionally linear concentrations of calcium carbonate with distinct, smooth edges. They are ubiquitous in the sample and represent approximately 15% of the total area of the thin section. The features range from 0.3 mm. to 5 mm. and show an open porphyric distribution throughout the deposit. The internal structure has two components, an outer rim of dense micrite and very fine microsparite enclosing a well developed crumb-like arrangement of micrite and microsparite which exhibits a high degree of porosity (~ 45%). In rare instances, fragments of a degraded cellular structure can be recognised as microsparite pseudomorphs, but these are always coexistent with the crumb structure. The cell pseudomorphs occupy less

[168] P. Bullock, N. Fedoroff, A. Jongerius, G.J. Stoops and T. Tursina, *Handbook for Soil Thin Section Description* (1985).
[169] R.G. Wolff, 'X-ray and Chemistry Study of Weathering Glauconite', *American Mineralogist*, 52 (1967), 1129–38.

than 5% of the total area of these features. In two instances, faint traces of organic tissue can be recognised within pedofeatures which otherwise exhibit the central concept of CP#2.

AP are rounded, 1.0–2.5 mm. long, show distinct boundaries and consist of microclasts embedded in a matrix composed of a pale yellowish-brown to colourless (PPL) amorphous material which is isotropic to very weakly birefringent (faint streaks of white interference colours can be seen in localised areas under XPL). The following categories of microclast are present:

mineral grains – sub-rounded, sand-sized quartz and glauconite grains. These show the same size range and degree of weathering as the grains present in the groundmass. Rare, random individual microsparite crystals are also present dispersed through the matrix and it is these that give the impression of weak birefringence to the matrix.

bone – well preserved fragments showing no evidence of weathering or burning.

phytoliths – moderately well preserved biogenic silica bodies derived from plants. They are colourless (PPL), isotropic (XPL) and can be recognised only in PPL due to the slightly higher relief than the surrounding matrix.

spherulites – average diameter 15 μm. Spherulites are almost indistinguishable from the surrounding matrix in PPL but are readily recognised in XPL due to the high order white interference colours and the characteristic central black cross of extinction. They are present as individual inclusions and as closely associated clusters in a framboidal arrangement. They are not thought to be the same as spherulites derived from many herbivore excrements[170] though their provenance cannot be determined.

Mineral grains are present in all of the AP. Spherulites are observed in 80% of them, whilst phytoliths and bone fragments are present in approximately 30% of cases, though they have never been observed together in the same pedofeature. The distribution of the pedofeatures appears to be random throughout the soil, and though there is a slight increase in concentration in one area of the sample this is not coincident with any other change in soil material.

*Artefacts*: occasional, rounded fragments of pottery/burnt clay are distributed through the material, a single large fragment (2 cm. × 0.5 cm.) and six smaller fragments (average size 0.75 cm.).

*Anomalous minerals*: two sand-sized, sub-angular grains of a mineral presenting problems for identification are present. The mineral shows vivid-blue/lilac-rose/colourless pleochroism (PPL) and is almost isotropic in XPL. No axial figures could be obtained. SEM EDAX analysis of the grains indicates an elemental composition involving calcium, copper and silica.[171] The elemental composition in conjunction with the optical properties suggest the grains are either a manufactured material known as 'Egyptian blue'[172] or its naturally occurring mineral analogue, cuprorivaite,[173] both of which have the composition $CaCuSi_4O_{10}$. It is most likely that the grains are of the manufactured form as the only provenance known for the natural mineral analogue, cuprorivaite, is from Vesuvius.[174]

Descriptions of micromorphological sample 2 are in the site archive and available as a typescript report.

[170] M. Canti *pers. comm.*
[171] Ibid.
[172] A. Pabst, 'Structures of some Tetragonal Sheet Silicates', *Acta Crystal*, 12 (1959), 733–9.
[173] Mazzi and Pabst op. cit. note 127.
[174] Ibid.