Excavations South of St Andrew's Church, Letcombe Regis: Prehistoric, Roman, Anglo-Saxon, and Saxo-Norman Activity

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SUMMARY

An archaeological excavation was conducted by John Moore Heritage Services on part of the site of the former agricultural laboratories at Letcombe Regis, near Wantage, prior to its redevelopment. A complex system of Roman ditches dating from the second to fourth centuries was investigated, and limited prehistoric activity from the Neolithic, Bronze Age, and Iron Age was seen mostly as residual artefacts. Sparse features indicated later activity, including in the Anglo-Saxon period and twelfth to thirteenth centuries.

In October 2007 John Moore Heritage Services carried out an archaeological excavation at the site of the former DOW Agrosciences Laboratories, to the south of St Andrew's church in Letcombe Regis (SU 3797 8634; Fig. 1), a village which was in Berkshire until 1974. The land here slopes up southwards from about 100 m OD to 110 m OD. Some parts of the site were altered by landscaping when the laboratory was established. The geology comprises Cretaceous Sand and Grit in the north with Lower Chalk in the south. The excavation was prompted by a condition of planning permission to redevelop the 5-ha site as a continuing care retirement community, following earlier investigations by the Museum of London Archaeology Service.[1] The excavation uncovered significant Roman use of the site, as well as more limited prehistoric and post-Roman activity.

ARCHAEOLOGICAL AND HISTORICAL CONTEXT

No prehistoric activity was previously known within the boundaries of the site, which is at the foot of the Downs, but Segsbury Camp, an Iron-Age hillfort adjacent to the Ridgeway, is located on high ground *c.*2 km to the south. Little is known about activity in the area during the Roman period, though the Ridgeway remained in use and there is evidence for a Roman road crossing the Segsbury Camp hillfort, which also displayed evidence for re-use in this period.[2] There was a villa at Cornhill Farm, 2 km north.[3] The Anglo-Saxon development of Letcombe Regis is poorly understood, but by the mid eleventh century the estate was held by King Edward the Confessor. Domesday records a well-established and prosperous settlement with a church and five mills, as well as a share in the grazing resources of the Downs to the south. From the twelfth century the main manor was held by a succession of absentee ecclesiastical lords.[4]

1 'Former DOW Agrosciences Site, Letcombe Refis', unpublished MoLAS archaeological impact assessment (2005) and evaluation report (2006).

2 G. Lock, C. Gosden, and P. Daly, *Segsbury Camp. Excavations in 1996 and 1997 at an Iron Age Hillfort on the Oxfordshire Ridgeway*, University of Oxford School of Archaeology Monograph, 61 (Oxford, 2005)

3 MoLAS impact assessment.

4 *VCH Berks.* 4, pp. 223–4.

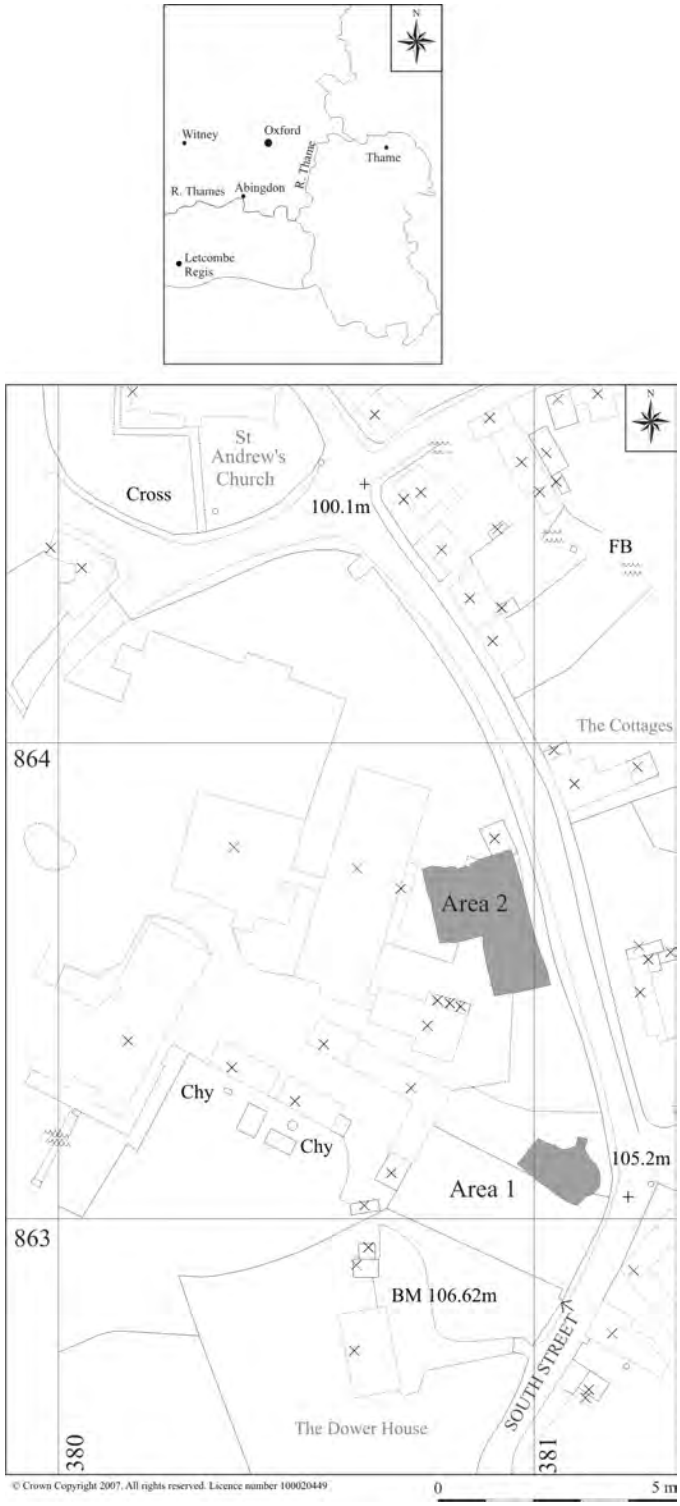

Fig. 1. Site location.
Drawn by E. Fitzsimons.

DISCUSSION OF EXCAVATION RESULTS by DAVID GILBERT, with contributions by HELEN NOAKES

The site was divided into two areas for the purposes of the excavation (Fig. 1). To the north of the existing tennis court an area of 14 m by 7 m was stripped (Area 1), and to the north of this area, 20 m by 5 m was stripped under archaeological supervision (Area 2). The intervening area had previously been landscaped for the laboratories and this had removed any potential archaeological deposits.[5] The areas of investigation centred on earlier MoLAS evaluation trenches that had identified pits and ditches of Romano-British date.[6]

The earliest activity on the site was represented by the residual Neolithic material that was present within a number of features. It would appear that later activity has probably removed all traces of features associated with this period. During the excavation, pit 263 was recorded as a single Neolithic feature, but its figure-of-eight form makes it more probable that it is in fact two pits inter-cutting (though this was not clear in the fill). The eastern portion demonstrably cuts third-century Roman ditch 235 and is itself cut by Anglo-Saxon gully 178. These features showed distinct cut lines and fills with stratified pottery. However, it is certainly possible that pit 263 is in fact a Neolithic pit disturbed by the later activity, although the fill seemed homogeneous throughout. The quantity and condition of the associated flint artefacts suggests that they are unlikely to have move far from their original place of deposition, and the relatively fresh flake debitage suggests that they did not lie around on the surface before re-deposition. The composition of the assemblage is entirely consistent with a late Neolithic pit deposit: a high proportion of burning, retouched tools, a dominance of scrapers, and the inclusion of a polished axe fragment (see lithic assemblage, below). If the figure-of-eight cut is real, as is suggested by the contrasting horizontal layers filling it, one explanation may be that a pit was dug in the fourth century that disturbed a Neolithic pit. This earlier pit was re-excavated completely, as it is far easier to re-dig a pit in chalk than excavate a new one. This re-use of an earlier pit would explain the odd shape and why the Neolithic deposit was incorporated into the Roman lower fills. The animal bone assemblage lends weight to this theory.

The Bronze Age may be represented by a single truncated ditch – context number 198 – and the occasional residual sherd located in other features. Although dated by a single sherd, the ditch was cut by two second-century Roman ditches. A few residual sherds of Iron-Age pottery were also present on the site. The excavation recorded no finds of a late Iron-Age to early Roman date. However, sherds of this date are reported as being recovered during the MoLAS evaluation.[7] Considering the large number of sherds recovered during the excavation it is likely that if this pitting was indeed late Iron Age or early Roman it reflects only very limited activity mainly focussed elsewhere.

Roman activity on site appears in both Areas 1 and 2 and is marked by at least three phases. These would appear to start in the second century and continue through the third century into the fourth century. The ditches with second- and third-century material within them would appear to be associated with agricultural practices. Ditches 276 and 278 may also represent a boundary. Agriculture may well have continued in the area into the fourth century, but this period also saw the creation of pits. The sherds of pottery in the upper deposits may be residual from the manuring process of the area. These agricultural practices are represented by a second-century rectilinear field system which was remodelled perhaps in the later second century and again at times in the third to early fourth centuries. For example, ditch 278 would appear to be a re-cut of ditch 274 and possibly ditch 276 shows another slight movement of this boundary.

5 MoLAS, impact assessment.
6 MoLAS, evaluation report.
7 Ibid.

Many ditches appear to be truncated by fourth-century ditch 104. It is likely that this respected an earlier ditch and that the last phase of re-cutting has removed all traces of these previous ditches. It appears that the ditch and gully features became deeper over the course of the Roman period. This may have been due to a localised lowering of the water table in this period, though there is no evidence for this. The size of ditch 104 may also mark the edge of cultivated land from that of a settlement further to the east. Certainly few of the linear ditches appear to enter this area. The second-century gully 221 may indicate that this area was at one time used for agriculture, although it is also possible that this could be a drain for any associated settlement. Ditch 158 may also be a boundary ditch for a settlement. The area would appear to have gone out of agricultural use in the fourth century.

A small second-century enclosure may be represented by east–west ditches 200 and 196, continuing as 186, and ditch 110 and 220. The fact that 186 and 274 do not continue north of ditch 104 suggests that 104 is at least partly a re-cut of an earlier ditch. Ditch 217 to the south of the other roughly east–west ditches may continue further eastwards as part of 274, given the apparent slight change of alignment of the one to the north. Ditches 196 and 200 and ditches 110 and 220 could suggest re-digging of these boundaries. A further phase of activity could be shown by north–south ditches/gullies 176, 223, and 225. Only one pit, number 133, is dated to this period. The third-century ditches seem to indicate a re-modelling of this enclosure, perhaps with the addition of an entrance way. Since the entirety of the ditches was not excavated, other butt ends may not have been found. Again, the non-continuation of the ditches eastwards suggests that the later ditch 104 is a re-cut of an earlier boundary.

Direct evidence for Anglo-Saxon occupation is limited (see pottery report, below), but Domesday Book shows that Letcombe had become a place of significant economic value by the eleventh century (see above). The settlement had a church by that time, probably located near to or on the spot of the twelfth-century church of St Andrews, 100 m north of the site. The alignment of gully 178 might suggest that it curves around the church and perhaps forms some sort of boundary for the settlement. Similar sized gullies were used to mark the boundaries of occupation areas at, for example, the royal hunting lodge at Cheddar, Somerset.[8] It is possible that gully 4 within MoLAS's trench 10 could be a continuation of Anglo-Saxon gully 178, since it cuts a third- to fourth-century Roman pit.[9]

Pits of the twelfth to thirteenth centuries are present in the southern portion of Area 2 and in Area 1. These were presumably for waste disposal, but no other activity of this date was recorded on the site. If the aforementioned gully 174 was a boundary marker for the settlement, it is interesting to note that the pits lie in an area that would have been outside of the habitation area.

There are no deposits of the later Middle Ages or post-medieval period, suggesting that the site continued to be outside the main area of settlement, despite its proximity to the church.

The area was used for agriculture in the early nineteenth century, and it is possible that the two parallel ditches 106 and 204 are part of this activity. However, it may be that the sherds of post-medieval pottery in feature 106 are intrusive and the feature is in fact Roman. The area also appears to have been heavily disturbed by pits in the recent past. This may be associated partly with the building of a new house at Letcombe Manor (on the later laboratory site) in the 1890s.[10]

ARCHAEOLOGICAL RESULTS

All deposits and features were assigned individual context numbers. Context numbers in square brackets indicate features, while numbers in round brackets signify feature fills or deposits of material.

The lowest deposit encountered was the natural geological make up of the site which was chalk (102). Above this was a loosely compacted, dark brownish-black, sandy silt (101), which was littered with debris associated with

8 J. Blair, *Anglo-Saxon Oxfordshire* (Oxford, 1994), p. 110.
9 MoLAS evaluation report.
10 *VCH Berks.* 4, p. 226.

the demolition of the laboratories. The highest deposit was a dark black, silty sand topsoil (100) with a 30 per cent gravel inclusion. This was only observed within Area 1 (next to the tennis court, where the ground had been elevated).

Area 1

In this area a deposit of grey-brown chalky clay-silt (170) overlay the natural (102). This varied between 0.1 m and 0.4 m thick. It contained chunks of limestone and brick.

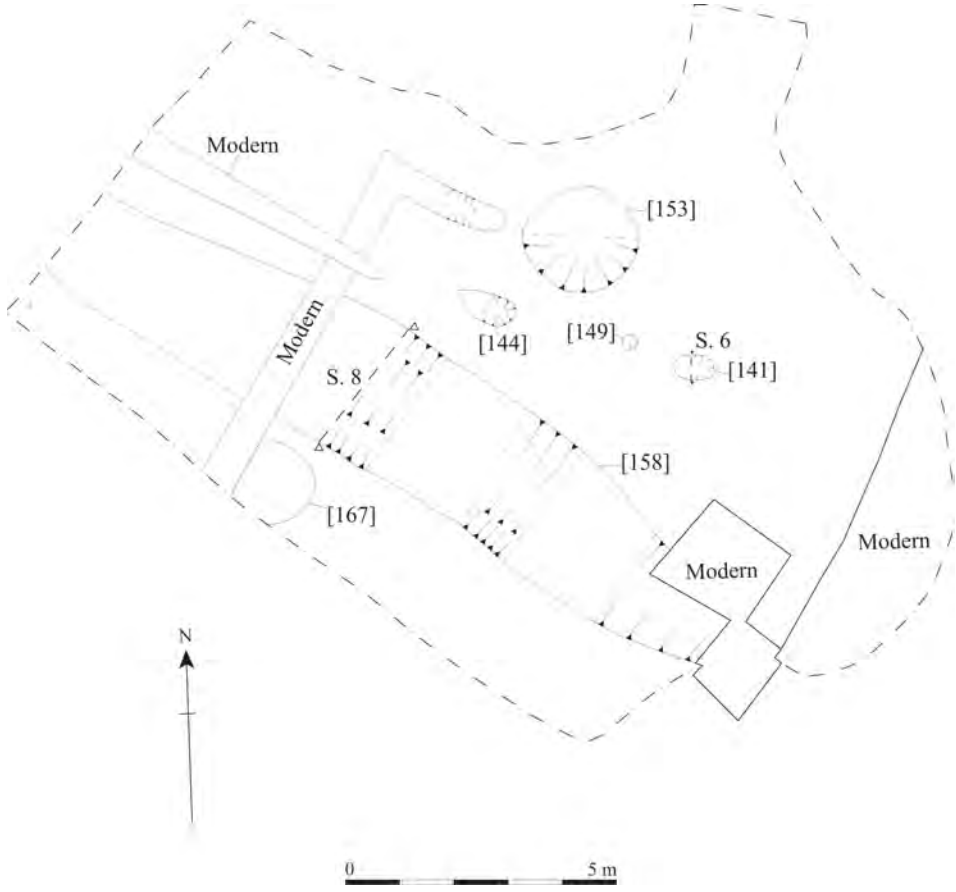

Fig. 2. Area 1: plan of excavation. Drawn by E. Fitzsimons.

Roman Features

A large ditch [158] over 13.6 m in length was recorded. It was flat based with 60° sides and orientated north-west to south-east. This ditch was 2.60 m wide and 0.72 m deep, and filled with three separate fills (155, 156, and 157) – see Fig. 4, section 8. The primary fill (157) was light grey, sandy clay, *c.*0.18 m thick, and contained third- to fourth-century Roman pottery and animal bone. This fill was not seen in all sections, perhaps because of the narrowing of the ditch towards its south-eastern end (suggestive of a terminus). The secondary fill (156) was grey, sandy clay, *c.*0.30 m thick. Within this context was found animal bone, Roman pottery, and an iron object, believed to be a steelyard. This deposit was seen in all sections. The upper fill (155), also viewed within all sections, was a dark-grey, sandy clay, *c.*0.24 m thick; it contained pottery, animal bone, and metal.

Ditch 158 was heavily truncated by modern activity, including a steel tank, which cut the ditch at its south-eastern end, and services.

A large pit circular in plan and 1.90 m in diameter [153] was also excavated. This had previously been identified within the MoLAS evaluation. It was excavated to a depth of 0.08 m, and was filled with a loosely compacted, grey sandy clay (154) which contained third- to fourth-century Roman pottery, an iron nail, and animal bone.

Medieval Features
Two pits were located. The first [144] was sub-oval, 0.52 m by 0.94 m in plan and 0.05 m deep. It was filled with a loosely compacted, dark grey, sandy clay (145), which contained thirteenth-century pottery and animal bones. The second pit [141] was oval, 0.54 m by 0.85 m in plan and 0.04 m deep. It was filled with a loosely compacted, dark blackish-grey, sandy clay (142), which contained thirteenth-century pottery and animal bone – see Fig. 4, section 6.

Post-Medieval Features
A single pit containing seventeenth-century pottery was recorded [167]. It was 1.28 m in diameter, filled with a loosely compacted, dark grey, sandy clay (168). This pit was left unexcavated.

Modern Features
Several modern features were seen in the area including a pit and service trenches.

Undated Features
A small pit or posthole was also located [149]. It was 0.3 m in diameter, and filled with a loosely compacted, brownish-grey, sandy clay (150), 0.06 m thick.

Area 2

Phase 1: Possible Prehistoric Features
A small ditch or gully [198] was recorded aligned roughly east–west on the west side of the area. It was 0.7 m wide and 0.3 m deep and had a 'U'-shaped profile. It was filled with a grey-brown, silty clay (197) that contained mid to late Bronze-Age pottery, flint, and animal bone. It had been truncated by two Roman ditches [196, 200] (Fig. 4, section 11).

Phase 2: Roman Features (Approximately Second Century)
The majority of features associated with this phase are ditches or gullies, but one pit was also recorded.

The first ditch [217] was roughly aligned east–west on the west side of the site. It was at least 3.20 m long, 0.54 m wide and 0.26 m deep with a flat based and steep sides at 60 degrees. This was filled by a loosely compacted, grey, sandy clay deposit (216) which contained both pottery and animal bone. It is cut by the later third-century ditch [276].

A second ditch [196] ran parallel to ditch 217. It was 0.85 m wide and 0.24 m deep, with a flat bottom. The primary fill was 0.1 m thick, consisting of grey-brown, silty clay (236). This was overlain by a grey-brown, silty clay (195), which was 0.09 m thick. It had a later third-century re-cutting [238] slightly to the south of the original line (Fig. 4, sections 10 and 11). It was also cut by another Roman ditch [255] aligned roughly north–south.

A third ditch [200] was parallel and just to the north of 196, although it appeared to curve north-east at its eastern end. It was 0.15 m deep and 0.7 m wide, with a 'U'-shaped profile. It was filled by light grey-brown, silty clay (199). Although no finds were associated with this feature, it has been assigned a second-century date because it is cut by third-century ditches.

Ditch 186 was 1.34 m wide, 0.56 m deep, aligned north-east to south-west and had a flat base and steep 60° sides. The fill was a light grey-brown clayey-silt (185). There were no finds associated with this feature, but it has been assigned to this phase because it has been truncated by later third- and fourth-century ditches. It is a possible south-easterly extension of ditch 200 (Fig. 3).

Further to the north was a west–east-aligned ditch [206] in the extreme north-west corner of the area. It was 0.15 m deep, 0.46 m wide, 3.3 m long and filled by a loosely compacted, grey-brown, silty clay (205) that contained a single second-century sherd of pottery. This feature had been heavily truncated by later activity.

Another ditch [110], roughly 1 m wide and aligned roughly east–west, lies to the north-east of ditches 200 and 196. The primary fill (113) was a yellow, clayey-silt, 0.30 m thick. Above this was a yellowish-cream clayey silt (112), 0.25 m thick, followed by an orange or mid brown silty clay (111) that was 0.24 m thick and contained second-century pottery.

This ditch was cut by a later fourth-century ditch [104], but a smaller gully (221) appears on the eastern side of this feature roughly continuing the line of ditch 110. This gully may be contemporary with 110, and is was approximately 0.4 m wide and, though not excavated, contained a heavy dark grey clay.

Cutting ditch 110 was a shallow gully [220] aligned north-west to south-east. It was 0.11 m deep, 0.40 m wide, and ran for 1.35 m before it disappeared under the baulk. It was filled with a dark grey sandy clay (219) that contained bone and second-century pottery. It was itself cut by two further gullies.

These two north–south-aligned gullies are also dated to this phase. Gully 223 was a shallow, 0.08 m deep linear feature, which disappeared into the north baulk; it contained a grey, sandy clay (222) with second-century pottery. Next to this was another gully [225] that was filled by a 0.22-m thick grey clay deposit (224). It was 0.80 m wide and cut both earlier features 110 and 220.

A third gully [176] on the same alignment was located just to the south. It was 0.06 m deep and 0.48 m wide. It was filled with a grey, sandy clay (175), which contained bone and second-century Roman pottery. It was cut by 178/229 and terminated just before the section.

Close to these gullies was a sub-oval pit [133] that measured 0.7 m by 0.45 m in plan. It was 0.1 m deep, with a

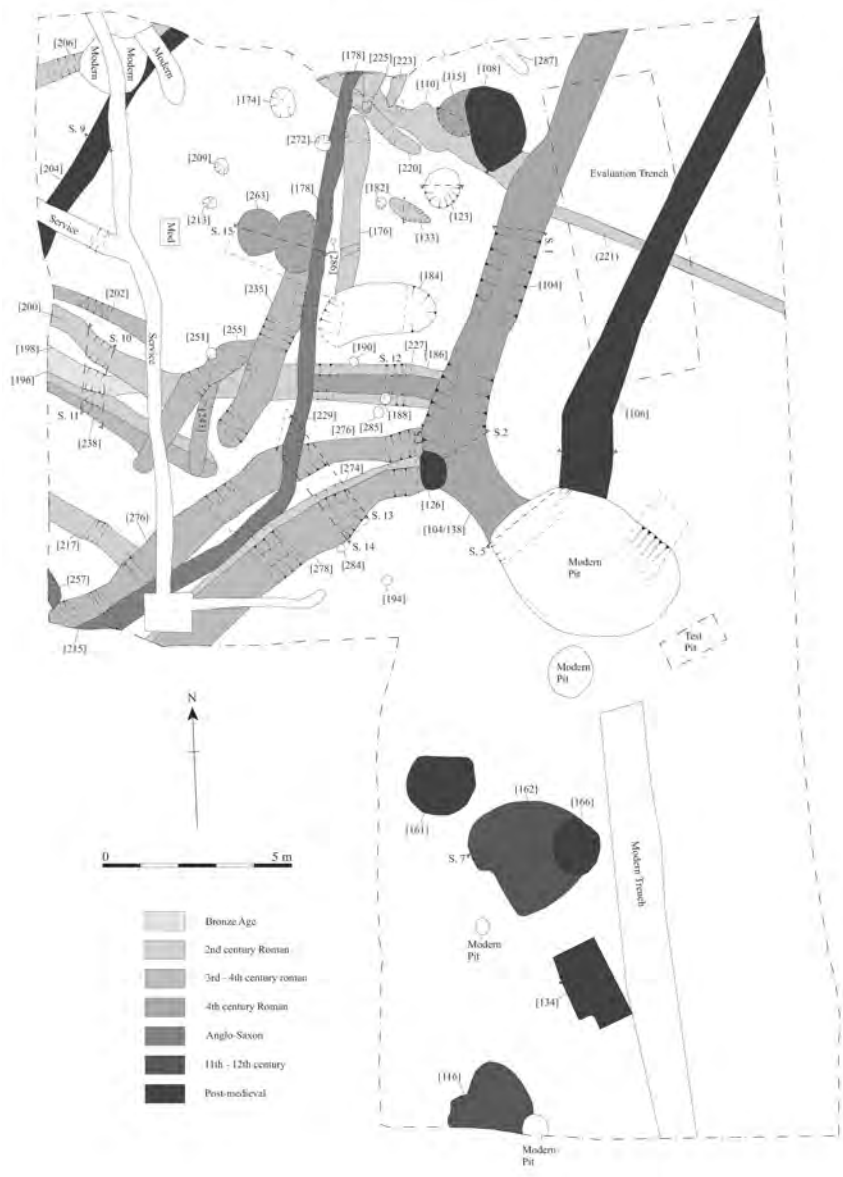

Fig. 3. Area 2: plan of excavation. Drawn by author.

flat base and near vertical sides. It was filled with a dark grey-black sandy clay (132) that was 0.02 m thick. This was overlain by a 0.08-m thick deposit of brown-grey sandy clay (131) that contained second-century Roman pottery.

To the south-west of the site a ditch [274] was recorded aligned north-east to south-west. It had been cut by several later features, and indeed ditch [278] may be a later re-cutting of this feature. Due to the fact that it had been so heavily truncated, its full dimensions cannot be given. It had a rounded base (Fig. 4, sections 13 and 14).

A gully [287] aligned roughly south-east to north-west was located in the far north of the area. It was unexcavated, but its alignment and position may suggest a Roman date, possibly second century.

Phase 3: Roman Features (Approximately Third to Fourth Centuries)

A later third-century re-cutting [238] of ditch 196 was slightly to the east of the original line (Fig. 4, Section 10). It was a 0.38 m wide, 0.18 m deep with a 'U'-shaped profiled, and contained a light grey-brown, silty clay (237).

A shallow parallel ditch [202] lay just to the west. It was 0.16 m deep, 0.38 m wide, and 'U'-shaped in profile. It was filled with a loosely compacted, grey, sandy clay (201) that contained third-century pottery and animal bone, as well as metal objects.

At right angles to these two ditches was a third ditch [235]. It was 0.16 m deep, 1.10 m wide, and had a 'U'-shaped profile. It was filled with greyish-brown, silty clay (234) that contained third-century pottery. It cut ditches 186 and 255 (Fig. 4, section 12).

Curvilinear ditch 255 is presumed to be of third-century date. This is because it cuts second- and third-century ditches 200, 196, 186, and 238, and is itself cut by a third-century feature [235]. It is 0.7 m wide, 0.28 m deep, and filled with a loose brown clay-silt (254). It also cuts a short narrow ditch [243]; this was 0.5 m wide and 0.22m deep with a 'V'-shaped profile. It was filled with a reddish-brown silt (242). It also cut the earlier ditches 196, 186, and 238.

Ditch 186 displays a later re-cutting [227] that was 0.76 m wide and 0.32 m deep. This ran down the centre of the earlier ditch and had a 'U'-shaped profile. It was filled with a greyish brown silty clay (226) that contained third-century Roman pottery. It was cut by ditches 104 and 235.

To the immediate south of these ditches were a further two curvilinear ditches that ran almost parallel. The first ditch [278] was over 8 m long; its width varied between 0.6 m and 1 m. The depth was 0.36 m and the profile was a flattened 'U'-shape. The fill (277/279) was a medium grey sandy clay that contained some second-century or later Roman pottery. This may be residual as ditch 278 cuts the earlier Roman ditch [274] along its entire length, and may be a re-cutting of this earlier ditch (Fig 4, section 3).

The second of the parallel ditches [129/276] was 0.84 m wide, 0.72 m deep, and flat-based, with steep 60° sides (Fig 4, section 2). It was filled with a grey-brown silty clay (130/275) that contained third- to fourth-century pottery and animal bone. Ditch 129/276 cut ditch 217 and is cut by ditch 104 and gully 178/215/229.

Phase 4: Roman Features (Approximately Fourth Century)

The main feature of this phase was a large curvilinear ditch [104/124/138] roughly orientated north–south; it had a flat base with steep sides, almost 'V'-shaped in profile (Fig. 4, section 1). The primary fill (105) was a loosely compacted greyish-brown silty clay 0.05 m thick, which contained both fourth-century Roman pottery and animal bone. Above this was a light brown-grey silty clay 0.5 m deep (103/121/125), containing pottery and animal bone. This ditch was truncated near its eastern terminal by a modern pit [118/146] – see Fig. 4, section 5)

A circular pit [115] 1.3 m in diameter and 0.22 m deep cut through second-century ditch 110. It was filled with a loosely compacted, brownish-grey silty clay (114) that contained fourth-century pottery. It was in-turn truncated by a post-medieval pit [108].

A large 'figure-of-eight' pit [263] was recorded. It was 0.7 m deep, 1.50 m wide, and had a length of 2.20 m. The eastern portion of the pit cut the third-century Roman ditch [235] and was itself cut by Anglo-Saxon gully 178. The primary fill of the pit was a loosely compacted dark beige-brown silty clay (262). It was 0.14 m thick and included frequent deposits of flint flakes, nodules, animal bones, a polished stone axe, and one sherd of fourth-century Roman pottery. Above this was a light greyish-yellow chalky clay (261), 0.15 m thick, that contained animal bone. Overlying this was a layer of dark black-brown silty clay (260) 0.15 m thick. It included large chunks of charcoal, bone, and flint. The excavator thought that the concentration of charcoal seemed to represent a layer of burning within the feature. However, no associated scorching of the pit edge was recorded. This layer was overlain by another of light yellow-brown silty clay (259) 0.17 m thick. It contained flint, pottery (lost), and animal bone. The upper layer consisted of compacted dark grey-brown silty clay (258). It was 0.26 m thick and contained animal bone and residual second-century Roman pottery. The excavator commented that the 'fill from the lower layers seemed to undermine the natural, suggesting a bell-shaped profile', but this is not seen on the drawn section (Fig. 4, section 15).

Phase 5: Anglo-Saxon Features

The main feature of this phase was a 0.3-m deep, 0.5-m wide, 17-m long gully [178/215/229] that ran north–south for 12 m before turning west. It contained a grey-yellow, silty clay (177/228). It cut across several earlier Roman ditches. Early Anglo-Saxon pottery was found within the fill as well a residual Roman material.

A small shallow pit or gully [257] cut into the earlier Roman ditch [276] in the extreme south-west corner of

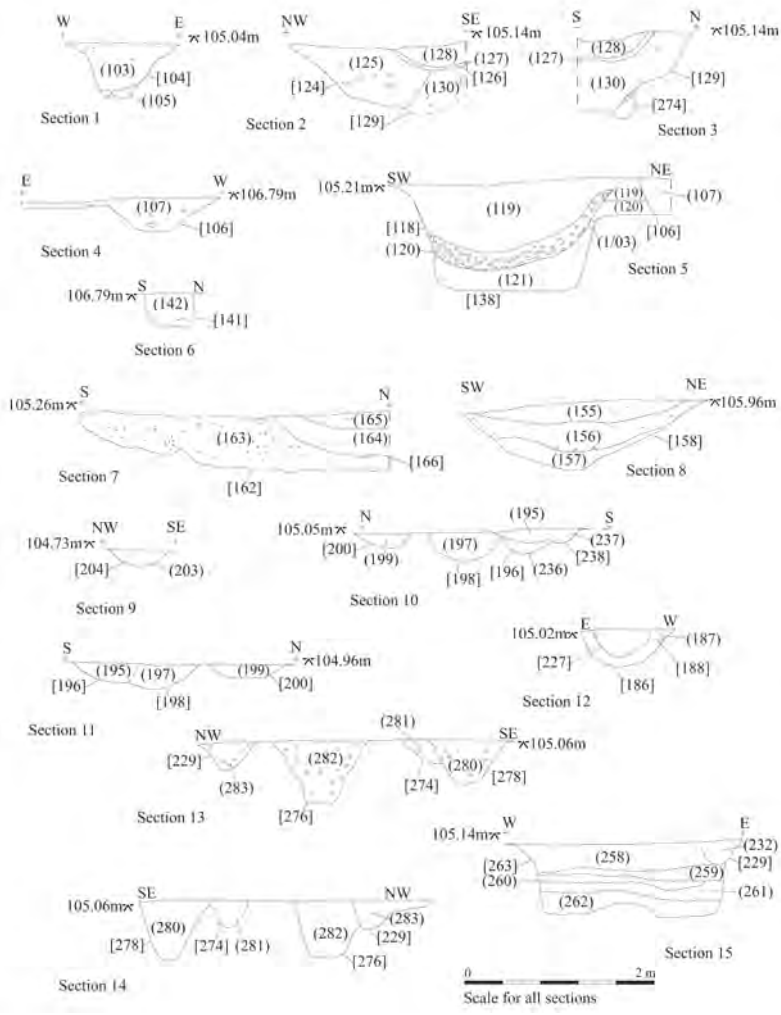

Fig. 4. Sections. Drawn by E. Fitzsimons.

the area. It was 0.28 m deep, with a 'U'-shaped profile, filled with a grey sandy clay (256), which had early Anglo-Saxon pottery and bones within it.

Phase 6: Medieval Features

A large irregular pit [162] was located in the south of the site. It was 3.22 m wide and 0.64 m deep. It was filled with a dark blackish-brown clay-silt (163), which contained twelfth- to thirteenth-century pottery. This was cut on the east side by a later pit [166] (Fig. 4, section 7)

To the south of this was a second irregular pit [116]. It measured 2.40 m by 1.60 m, was 0.35 m deep and filled by a loosely compacted dark brownish-black silty clay (117) which contained twelfth- to thirteenth-century pottery and animal bone.

Phase 7: Post-Medieval Features

A north–south-aligned ditch [204] was located in the north-western part of the excavated area. It was 0.14 m deep, 0.63 m wide, 4m long, and 'U'-shaped in profile (Fig. 4, section 9). It was filled by a dark grey-brown, silty clay (203), containing pottery, bone, and CBM.

Roughly parallel and 13 m to the east was a second post-medieval ditch [106]. This was curvilinear in plan, 0.36 m deep, 2.10 m wide, and over 8.50 m long; 7.5 m of its length was located within the MoLAS evaluation trench. The ditch had a flat base and steep 60º sides. It was filled with a loosely compacted, mid-greyish brown, silty clay (107), 0.36 m thick. This contained pottery, animal bone, and post-medieval materials. It is cut near it southern terminal by a modern pit.

A large pit [108] to the east of the site was 2.20 m in diameter, and 0.2 m deep. It was filled with a loosely compacted, dark, grey-black, silty clay (109) and contained post-medieval pottery. This pit cut an earlier one.

Three other post-medieval pits were recorded. The first [161] was oval-shaped, 0.36 m in depth, 1.78 m in diameter. Its lowest fill was a loosely compacted, brownish-grey, silty clay (160) 0.25 m thick. This contained pottery and animal bones. Above this was (159), a loose, black-brown, silty clay, 0.1 m in thickness, containing both pottery and bone.

A second pit [166] was 1.18 m by 0.40 m wide. It contained a light yellow mortar based layer (164), 0.44 m thick. Above this was a brownish-grey, clay-silt (165), 0.18 m deep (Fig. 4, section 7). This pit cut through an earlier medieval pit [162]. The third pit [134] was square with a shallow base; it contained a dark grey clay (135) 0.18 m thick, with post-medieval pottery and glass.

Undated Features

Several pits were noted in the excavated area. A large sub-oval cut [184] truncated the terminal of second-century ditch 176. This cut was 0.1 m deep, 0.6 m wide, flat-based and sub-circular in plan. The fills at either end of the feature were different, probably indicating that it was in fact two inter-cutting pits. The northern end contained grey sandy clay (183) with the remains of a wooden post. The southern end had a reddish-brown, silty clay fill (233) with no finds. It is probably modern in date due to the condition of an associated wooden post.

A second pit [126] was circular, 0.40 m wide, 0.17 m deep and filled with a loosely compacted black charcoal-rich deposit (127), which was without finds. This pit cut through the top of ditches 104/124, 129/276 and 278, and was fourth-century or later.

Another pit [174] near the north edge of the area was sub-circular, roughly 0.63 m in diameter, 0.18 m deep, and filled with (173), a greyish-brown, sandy clay.

Pit [123], to the south-east of the above, was a shallow, circular feature that was 0.94 m diameter, 0.21 m deep, and contained a mid-yellow-brown silty clay (122) with flint inclusions.

A number of small circular features within the area have been interpreted by the excavator as either post holes, or tree/root holes, due to the lack of any finds within them and their shallowness. The shallow depth of these features is probably due to the severe truncation of deposits caused by modern activity.

The first [209], in the north-west quadrant of the area, was a circular feature, 0.07 m deep and 0.45 m in diameter. It contained a grey sandy clay (208) and animal bone. Near to this was a second feature [213]; this was 0.06 m deep, 0.30 m wide, filled with dark grey-brown silty clay (212), with no finds. Five metres to the east was the third feature [182] filled with a brown-grey sandy clay (181) 0.06 m deep, 0.30 m diameter, with no finds. Another feature [251], 4 m south of [213], was filled with a dark grey-brown silty clay (250); it was 0.2 m deep and 0.3 m wide, and contained no finds. It was cut into Roman ditch 255.

Cut into ditch 186 was a possible posthole [190] 0.05 m deep and 0.3m wide. It was filled with a grey-brown silty clay (189). Also cut into this ditch was a second small pit [188] that was oval in plan and measured 0.5 m by 0.2 m. It was 0.1 m deep and was filled with a dark blackish brown clay-silt (187). Another possible posthole [272] was cut into gully [178]; it was 0.3 m wide and 0.1 m deep and contained a greyish-brown silty clay (271).

Several presumed modern feature were unexcavated. All were circular in plan. The first [194] was 0.2 m in diameter; the second [284] 0.2 m in diameter; and the third [285] 0.25 m in diameter.

THE POTTERY by PAUL BOOTH

The excavation produced 543 sherds (5.16 kg) of pottery ranging in date from the middle Bronze Age to the post-medieval period, deriving from some 61 separate contexts, plus a little unstratified material (Tables 1 and 2). The majority of the pottery is of Roman date. All the pottery was scanned rapidly for the purposes of providing dating information. It was quantified by sherd count and weight by major period within each context group, with notes made of significant fabrics and vessel forms. The pottery was in moderate condition. The sherds were not particularly abraded and surface preservation was reasonably good. However, average sherd size (weight) was not particularly impressive, at 9.5 g. There was little variation in the average sherd weight of the material from different major periods.

Prehistoric

The small prehistoric assemblage includes sherds in flint-tempered, shell-tempered, and sand-tempered fabrics, the first of these accounting for the majority of the material. The most diagnostic material comprised fairly thin-walled, well-finished flint-tempered sherds almost certainly from globular urns of middle Bronze-Age date. Such sherds came from contexts 187, 226, and 228, but of these only 226 is likely to have been of Bronze-Age date. Other flint-

Table 1. Letcombe Regis: pottery quantities (no. sherds/weight) by context and period

Context	Pre-historic	Roman	Medieval	Post-medieval	TOTAL	Context date	Comment
US		10/97	2/24	2/81	14/202		
101		5/19		2/20	7/39	17C+	
103	2/6?	9/70			11/76	240–400	pre sherds ?IA
105		7/54			7/54	240–400	
106		48/468		2/29	50/497	18C+	
107		95/922	5/30	1/2	101/954	19C	
109			1/18	2/28	3/46	17C+	
111		2/7			2/7	2C+	
114		1/3			1/3	3–4C?	
117		5/39	79/711		84/750	late 12-early 13C	
119		3/45	8/88	33/261	44/394	17–19C	
121		7/66	2/13	11/138	20/217	17–19C	
125		4/31			4/31	240–400	
130		2/37			2/37	240–400	
131		1/10			1/10	2C+	
134				1/16	1/16	17C+	
136			1/40		1/40	12–13C	
139				1/2	1/2	18C+	
142		1/17			1/17	270–400?	
143			11/97		11/97	12–13C	
145			1/6		1/6	12–13C	
148				1/7	1/7	17C+	
154		8/50			8/50	240–400	
156		12/126			12/126	240–400	
157		3/16			3/16	3–4C?	
159				1/4	1/4	17C+	
160		1/4	3/55	1/24	5/83	17C+	
163			3/25		3/25	12–13C	
168			1/5	1/24	2/29	17C+	
175		4/32			4/32	2C+	
177		17/102	1/2*		18/104	EAS	
187	2/34	1/9			3/42	3–4C?	pre sherds MBA, 1?Globular Urn
195		5/38			5/38	2C+	
197	7/98				7/98	M-LBA	
201		3/18			3/18	late 3–4C	
203		9/81			9/81	3–4C	
205		3/23			3/23	2C+	
210		1/3			1/3	3–4C	
214		10/80	4/14*		14/94	EAS?	Organic tempered
216		10/78			10/78	2C+	
219		3/57			3/57	2C+	
222		4/11			4/11	2C+	
224		1/6			1/6	2C+	
226	3/40	1/3			4/43	3–4C	pre rim sherd with pre-firing hole, poss Globular Urn.

228	5/21	6/98			11/119	240–400	pre incl flint- and shell-tempered
231		1/1			1/1	2C+?	
232		4/47			4/47	240–400	
234		13/176			13/176	240–400	
244		1/42			1/42	240–400	
248			2/20*		2/20	EAS	Organic tempered
253		1/3			1/3	240–400	
256			1/10*		1/10	EAS?	
258		2/35			2/35	2C+	
260		1/5			1/5	240–400	
262		1/32			1/32	4C?	
264		1/17			1/17	3–4C?	
273		2/7			2/7	mid 3–4C	
276		2/4			2/4	240–400	
277		1/2			1/2	2C+	
280		3/64			3/64	late 3–4C	
282		2/14			2/14	2C+	
283	1/14	2/5			3/19	240–400	pre sherd MIA?
Totals	20/213	339/3154	8/46* & 117/1112	59/636	543/5161		

tempered sherds came from context 197, but were less diagnostic and can only be assigned a general middle-late Bronze-Age date range. Single sand-tempered sherds of probable Iron-Age date came from contexts 103 and 283, but were again residual. Despite its partly redeposited character, however, the middle Bronze-Age pottery is quite significant and the globular urn fragments add to a growing body of evidence for material of this type in the region.

Roman

The Roman pottery comprised a little over 60% of the total assemblage by both sherd count and weight. Late Iron-Age to early Roman material was conspicuous by its absence and it is clear that the pottery represents Roman activity only from the second century onwards. Some 13 context groups, mostly small (producing a total of 39 sherds, 314 g), were dated second century or later, while 116 sherds (1,119 g) came from context groups dated mostly to the mid third century or later. As would be expected in this region, this dating is based mostly on the presence of later Roman products of the Oxford industry.

The overall range of fabrics and forms was relatively limited. Six sherds of Central Gaulish samian ware were the only imports. Extra-regional material consisted of a few sherds of black-burnished ware (OA fabric B11), occasional pieces of late Roman shell-tempered ware (OA fabric C11), and a single sherd of probable New Forest colour-coated ware (OA fabric F53). The remainder of the pottery consisted largely of coarse wares from the Oxford potteries and/or more local (unknown) sources whose products are not clearly differentiated from the Oxford ones, with moderately sand-tempered reduced fabrics (OA fabric R30) the most common.

Table 2. Summary of pottery quantities by period

Period	No. sherds	Weight (g)
Prehistoric	20	213
Roman	339	3154
Anglo-Saxon	8	46
Medieval	117	1112
Post-medieval	59	636
Total	543	5161

Oxford colour-coated wares (OA fabric F51) amounted to only 23 sherds (6.8% of the Roman total), many of them small, and other Oxford products (white wares and white ware and red colour-coated ware mortaria) were only represented by occasional sherds. Based on assessment of the fine and specialist ware component, therefore, the assemblage appears to be a relatively low status one, but it is quite small so this judgement needs to be treated with caution.

It is notable that a large proportion of the Roman material occurred in mixed deposits such as contexts 106 and 107. Both of these contained post-medieval pottery and 107 also produced a few medieval sherds. It is possible that the later material was intrusive in these contexts, in which case it is interesting that neither Roman group was particularly late in date (both might be assigned to the later second or early third century), but at present it has been assumed that the Roman material in these groups is residual.

Anglo-Saxon

Only eight sherds (46 g) of Anglo-Saxon pottery were identified. These came from four contexts (177, 214, 248, and 256). The tiny fragment from context 177 may have been intrusive in a late Roman context group, and the four small sherds in 214 were also associated with late Roman pottery. In the other two contexts the Anglo-Saxon pottery was not associated with other material. In all cases the fabrics were organic-tempered. The significance of organic-tempered vis-à-vis sand-tempered pottery in this period has been much debated, with the balance of opinion in favour of a later introduction for the organic-tempered material. On this basis it is unlikely that these sherds would date before the sixth century AD, but the present assemblage has no other diagnostic characteristics that allow further refinement of date. The association with late Roman pottery, potentially in two out of four cases, is interesting and reflects a common regional pattern. It is unclear, however, if this evidence can be taken to support a suggestion of any kind of continuity of activity from the late Roman period, particularly in view of the potential date of the Anglo-Saxon sherds already discussed.

Medieval

The medieval pottery contrasts with the Roman material in comprising for the most part a very restricted group of fabrics, forms, and chronology. The fabrics are almost entirely local/regional coarse wares in sand- or flint and sand-tempered fabrics, and the few rims are mostly of cooking pots (7), with a single dish. A tiny Brill-Boarstall sherd is almost the only glazed piece. Over 67% of the sherds (64% by weight) came from a single context group, 117, which can be dated quite closely to the late twelfth to thirteenth century. The great majority of the remaining material is potentially quite consistent with this date range, though the individual groups are much smaller and some of the pottery is residual in post-medieval contexts.

Post-Medieval

The post-medieval pottery comprises a typical range of material dominated by glazed red earthenwares, but was not examined in any detail. An overall date range from the seventeenth century onwards is indicated. The most notable individual piece was a base fragment from a scalloped tin-glazed earthenware bowl with a 'Nevers blue' glaze, dated to the late seventeenth or early eighteenth century, from context 119.

THE LITHIC ASSEMBLAGE by HUGO ANDERSON-WHYMARK

Excavations at Letcombe Regis yielded a total of 68 struck flints, one fragmentary stone axe, and six pieces (56 g) of burnt unworked flint (Table 3). Approximately half of the struck flint (37 pieces) and the stone axe were recovered from pit 263/229. The flint from pit 263/229 is in fresh condition and can be considered as contemporary with the feature; the flint has been dated to the late Neolithic on the basis of technological attributes. The remaining 31 flints were recovered from 15 archaeological contexts, with a maximum of 5 flints recovered from any single context. These flints are broadly contemporary with the assemblage from pit 263/229, but a few blades may date from the Mesolithic or early Neolithic. These flints exhibit moderate to heavy post-depositional edge-damage indicating they represent residual finds in later archaeological features; these features mostly date from the Roman period.

Methodology

The artefacts were catalogued according to broad artefact/debitage type; general condition was noted, and dating attempted where possible. Retouched pieces were classified according to standard morphological descriptions.[11] Additional information was recorded on condition (degree of edge-damage and cortication), and the state of the artefact (burnt, broken, or visibly utilised). Unworked burnt flint was quantified by weight and number.

[11] H. Bamford, *Briar Hill: Excavation 1974–1978*, Northampton Development Corporation Monograph, 3 (Northampton, 1985), pp. 72–7; F. Healy, *The Anglo-Saxon Cemetery at Spong Hill, North Elmham. Part VI, Occupation during the Seventh to Second Millennia BC*, Norfolk Archaeological Unit (Gressenhall, 1988), pp. 48–9; P. Bradley, 'The Worked Flint', in A. Barclay and C. Halpin, *Excavations at Barrow Hills, Radley, Oxfordshire*, Thames Valley Landscapes Monograph, 11 (1999), pp. 211–27; C. Butler, *Prehistoric Flintwork* (Stroud, 2005).

Table 3. The flint assemblage from Letcombe Regis by feature and context

	Other Contexts	Pit 263/229					Pit 263/229 Total	**Grand Total**
Category Type		228	258	260	261	262		
Flake	21	2				23	25	46
Blade	4			1		1	2	6
Bladelet	1							1
Blade-like	2			1			1	3
Irregular waste	2		1	1			2	4
End scraper	1							1
End and side scraper						3	3	3
Other scraper				1		2	3	3
Retouched flake						1	1	1
Axe (fragment)						1	1	1
Grand total	31	2	1	4		31	38	69
Burnt unworked flint No./Wt (g)	5/46 g				1/ 10 g		1/ 10 g	6/ 56 g
No. of burnt flints (%)	2 (6.5)			1 (25)		3 (9.7)	4 (10.5)	6 (8.7)
No. of broken flints (%)	5 (16.1)			1 (25)		9 (29)	10 (26.3)	15 (21.7)
No. of retouched flints (%)	1 (3)			1 (25)		7 (22.6)	8 (21.1)	9 (13)

Raw Material

The raw material included flint probably collected from at least two different sources. The most common flint was a mid to dark brown colour with grey cherty inclusions and a *c*.5-mm thick relatively unabraded white cortex. This flint was of reasonable flaking quality and free from thermal faults. This raw material originates directly from the chalk and is available to the south of the excavation. The second raw material is similar in colour, but exhibits an abraded cortex and the flint contains thermal fractures. This flint can be collected from river gravels on, or close to, the chalk region to the south.

The Assemblage

The assemblage will be discussed in relation to the assemblage from pit 263/229 and the other archaeological contexts.

Pit 263/229

Pit 263/229 yielded 37 struck flints and a stone axe from four fills, but the majority of pieces (31, including the axe) were recovered from the primary fill (262). The artefact assemblage from the pit was probably larger than the number of pieces considered, since only approximately three-quarters of the feature was excavated. The absence of small flakes and micro-debitage from the assemblage may be explained by the fact that sieving was not undertaken, or by the Roman re-cutting of a Neolithic pit (see discussion, above). Un-retouched flint flakes dominate the assemblage and suggest a flake-orientated industry. The flakes are of relatively broad and thick proportions, but have been struck with some degree of care. Several flakes exhibit platform-edge abrasion and the majority appear to have been detached using a soft-hammer percussor, such as antler. In addition to the flakes, two blades were present; one of these blades may represent an accidental bi-product of the flake industry, but the other exhibits the scars of earlier blade removals on the dorsal surface, indicating it was struck from a core aimed at blade production. Approximately half of the un-retouched flakes exhibit edge damage consistent with use. A refitting exercise was undertaken, but despite the presence of several flakes apparently from the same core, no refits could be made. The flake morphology and the reduction strategies employed are characteristic of later Neolithic industries.[12]

[12] M.W. Pitts and R.M Jacobi, 'Some Aspects of Change in Flaked Stone Industries of the Mesolithic and Neolithic in Southern Britain', *Journal of Archaeological Science*, 6 (1979), pp. 163–77; S. Ford, 'Chronological and Functional Aspects of Flint Assemblages', in A.G. Brown and M.R. Edmonds (eds.), *Lithic Analysis and Later British Prehistory*, BAR BS, 162 (1987), pp. 67–81.

Retouched tools form a relatively high proportion of the assemblage at 21.1% of the total (eight tools). This total is dominated by scrapers, including three end and side forms, a large scraper on thermally fractured blank measuring 89 mm by 72 mm and 25 mm thick, and two burnt and broken scraper fragments of unidentifiable form. The scrapers generally exhibit heavy use-wear, including clusters of step fractures along the working edge. An edge retouched flake exhibits abrupt backing retouch along the right-hand side and use-damage along the left-hand side. The proximal end is broken and exhibits slight retouch possibly forming a segmented flake tool.

The axe is neatly worked with gently tapering sides and a rounded butt. The tool is lenticular in section and the blade end is broken. The form of the axe is relatively regular except for a large flake scar on one side of the artefact that represents a knapping error on the roughing out. Despite this irregularity, the tool was finished with a high polish, removing most of the minor scars; the larger scar was only slightly polished. The axe also exhibits slight pecking on the surface resulting from reuse, possibly as a processing tool. The blade end has been broken by a transverse blow and further flake was removed along the edge of the artefact. It is notable that the polished surface of the axe and original flake scars exhibit a dark glossy patina, whilst the break is much lighter in colour. This surface colouration may have resulted from burning prior to breakage and deposition. The burning of axes is a recurrent theme in late Neolithic, and particularly Grooved Ware, contexts, and at Clifton Quarry (Worcs.) at least five flint and stone axes were burnt before deposition. [13]

Other Contexts

A total of 31 flints were recovered from 15 archaeological contexts located across the excavation area. The flake debitage is of broadly similar technological characteristics to the material from pit 263/229 and may be of comparable date. It is notable that four blades and a bladelet were recovered, as this may indicate the presence of a few flints from an earlier blade-orientated industry of the Mesolithic or early Neolithic date. The only retouched tool was an end scraper that was manufactured by the application of minimal retouch to the distal end of a flake; this tool is not datable. The small numbers of redeposited flints indicate that there was not an extensive scatter of flint in the topsoil and subsoil.

Conclusions

The flint from Letcombe Regis mainly dates from the late Neolithic, but a few of the residual flints may date from the Mesolithic or early Neolithic. The flint assemblage in pit 263/229 is relatively typical of later Neolithic pit deposits as it contains a large proportion of retouched tools, particularly scrapers, among relatively fresh flake debitage, including numerous utilised flakes. The inclusion of an axe fragment is also characteristic of pit deposits, particularly those with Peterborough Ware or Grooved Ware associations. The residual flints in the Roman and later contexts represent a low density background scatter and suggest that the pit was not associated with extensive spread of flint in the topsoil or subsoil. This may indicate that the material in the pit and scatter of flint results from a brief period activity, perhaps occupation, in the late Neolithic.

ANIMAL BONE by CLARE INGREM

An assemblage of animal bone was recovered from the excavations. The majority of the material came from features dated to the Roman period (second to fourth centuries AD) and a small amount from a seventeenth-century ditch.

Methods

All bone fragments over 10 mm were examined, with the number of potentially identifiable and unidentifiable bones being counted for each context to provide a basic NISP (Number of Identified Specimens Present). The number of bones or teeth that could provide metrical, ageing or sexing information was recorded, and the presence of gnaw marks was noted.

Table 4. Condition of the bone (number of bags)

Condition	Roman	17th century	Total
2	15	1	16
3	1		1
Total	16	1	17

[13] Personal communication from R. Jackson.

Condition of the Bone

In order to estimate the potential of an assemblage to provide taphonomic information, the condition of the bone in each bag is graded on a scale of 1 to 5. That assigned to '1' is deemed to be in excellent condition, demonstrating little post-depositional damage, while bone material classed as '5' has suffered severe surface erosion and can be identified only as 'bone'. The condition of the bone recovered from Letcombe Regis is given in Table 4 and shows that most of the assemblage is in good (grade 2) condition.

Table 5. Taxa representation (NISP)

	Roman	**17th century**	**Total**
Cattle	62	3	65
Sheep/goat	29	8	37
Pig	46	3	49
Horse	1		1
Dog	1		1
Deer	2		2
Galliform	4		4
Indeterminate bird	1		1
Small mammal		1	1
Unidentifiable	251	33	284
Total	397	48	445
Total identifiable	146	14	160
% identifiable	37	29	36

Data

The assemblage recovered from Roman deposits contains 146 identifiable specimens and is comprised almost entirely of domestic animals, with cattle most numerous followed by pig and then caprines. Horse and dog are both represented by single specimens. Birds are represented by four bones belonging to Galliform (probably domestic fowl) and a single goose (*Anser anser*) radius.

Taxa representation varies according to feature type. The ditch deposits are made up almost entirely of cattle and caprine bones, and the single pit is dominated by pig (Table 6). The primary fill of the pit contains a relatively high frequency of major limb bones belonging to pig, including eight scapulae, several red deer (*Cervus elaphus*) antler fragments that probably represent a single specimen, and a roe deer (*Capreolus capreolus*) femur. Forty-eight specimens of animal bone came from a seventeenth-century ditch but only fourteen are identifiable and almost all belong to domestic taxa with the exception of one fragment that belongs to a small mammal, probably hare (*Lepus europaeus*).

Table 6. Taxa representation in Roman features (NISP)

	Ditch	**Gully**	**Pit**	**Total**
Cattle	53	6	3	62
Sheep/goat	27	1	1	29
Pig	4		42	46
Horse	1			1
Dog	1			1
Galliform	4			4
Anser anser	1			1
Deer			2	2
Total	91	7	48	146

General information

A number of specimens from Roman deposits could provide metrical and ageing data (Table 4), with a total of 13 measurable bones and seven mandible or loose teeth that offer ageing information. Four pig canines indicate the presence of at least two boars and two sows. Evidence for gnawing, probably by dogs, and burning was observed. In addition, a pig fibula from context 214 appears to have been worked. Seventeenth-century deposits produced three sheep/goat bones, which could provide metrical data.

Table 7. General information (NISP)

	Roman	17th century	Total
Measurable			
Cattle	6		6
Sheep/goat	3	3	6
Pig	4		4
Ageable			
Cattle	2		2
Sheep/goat	3		3
Pig	2		2
Sexable			
Pig	4		4

Discussion

It is generally accepted that the relative frequency of the major domesticates (cattle, caprines, and pig) vary according to settlement type and degree of 'Romanization'.[14] High frequencies of sheep/goat are commonly found on native rural sites, while military and other more 'Romanized' settlements tend to display higher frequencies of cattle and pig.[15] More recently it has been suggested that differences in taxa ratio indicate not only changes in dietary choice but also reflect shifts in animal husbandry which occurred in response to wider economic intensification and social change.[16]

The assemblage from Letcombe Regis is relatively small compared to larger samples of animal bone that have been recovered from contemporary sites in southern Britain,[17] but the predominance of cattle and pig suggests a considerable degree of 'Romanization'.

Taxa representation is also known to vary according to feature type as a result of differential disposal practices and taphonomic bias, with caprines and pig often better represented in pits than ditches.[18] This is clearly the case in respect of pig whose remains dominate the single pit excavated at Letcombe Regis, whilst cattle display a high frequency in the ditches. Whether the pit deposit represents a single event or the remains of several meals is uncertain, but the predominance of major meat-bearing bones indicates the availability of good quality joints of pork, while the virtual absence of caprine bones suggests that in some instances pig meat may have been

[14] A. King, 'Food Production and Consumption – Meat', in R.F.J. Jones (ed.), *Britain in the Roman Period: Recent Trends, V* (Sheffield, 1991) pp. 15–20; A. King, 'A Comparative Survey of Bone Assemblages from Roman Sites in Britain', *Bulletin of the Institute of Archaeology*, 15 (1978), pp. 207–32.

[15] King, 'A Comparative Survey of Bone Assemblages'.

[16] Ibid.

[17] A. Grant, 'Animal Bones', in R. Bradley, 'Rescue Excavation in Dorchester-on-Thames', *Oxoniensia*, 43 (1978), pp. 32–6; M. Maltby, 'The Animal Bones from the 1974, 1975 and 1978 Excavations', in M. Fulford, *Silchester: Excavations on the Defences 1974–80*, Britannia Monograph, 5 (1984), pp. 199–207; C. Ingrem, 'The Animal Bone', in M. Fulford et al., *Life and Labour in Late Roman Silchester: Excavations in Insula IX since 1997*, Britannia Monograph Series, 22 (London, 2006), pp. 167–84; N.J. Sykes, 'Animal Bones', in D. Miles et al. (eds.), *Iron Age and Roman Settlement in the Upper Thames Valley: Excavations at Claydon Pike and Other Sites within the Cotswold Water Park*, Thames Valley Landscape Monograph, 10 (Oxford, 2006), pp. 151–3, 203–4; B. Wilson, 'Faunal Remains: Animal Bones and Marine Shells', in D. Miles (ed.), *Archaeology at Barton Court Farm, Abingdon, Oxfordshire* (Oxford, 1986).

[18] M. Maltby, 'Patterns in Faunal Assemblage Variability', in G. Barker and C. Gamble (eds.), *Beyond Domestication in Prehistoric Europe: Investigations in Subsistence Archaeology and Social Complexity* (London, 1985), pp. 33–67.

preferentially selected. Wild animals are generally scarce at Roman sites, but there is evidence that deer were exploited on a small scale (though the red deer antler may have been collected after natural shedding).

Body-part representation can provide information concerning activity areas and disposal practices. The pit assemblage is almost certainly representative of food waste rather than primary butchery, but in general the assemblage is of insufficient size to withstand detailed spatial analysis.

There is evidence for immature pig which suggests that breeding took place at or near the site, but few specimens offer ageing and metrical data and therefore the assemblage cannot provide reliable data on which to base inferences concerning animal husbandry practices and animal size.

STONE AXE by ROB IXER

The single axe-head recovered from the excavation belongs to IPG Group VII – Microdiorite (Augite granophyre).

Method of Analysis

The axe-head was cored and a polished thin section was prepared. The axe fragment and its cut surface were described macroscopically using a x20 hand lens. The colour of the natural surfaces was recorded and standardised using the Geological Society of America's rock-colour chart. The polished thin section was investigated in transmitted and reflected light using x8, x16 air, and x40 oil objectives.

Macroscopical Description

Hand Specimen

The axe-head is made from a dense, homogeneous, fine-grained, micro-porphyritic rock that has taken a good polish. The polished surfaces are a medium grey (N5 on the rock-colour chart), but broken areas are medium light grey (N6). The rock breaks with a sub-conchoidal fracture. Small (2–3-mm long), white, euhedral, lath-shaped plagioclase and 1-mm long, dark-coloured mafic microphenocrysts are present in the dark matrix.

Thin Section

The rock is a pale olive (10Y 6/2) and very fine-grained but carries 0.4-mm long, green mafic micro-phenocrysts in a turbid matrix.

Description

Small glomeroporphyritic clusters of clinopyroxene are present in a very fine-grained to fine-grained groundmass dominated by stubby crystals of altered plagioclase. Unaltered to altered clinopyroxene (augite); 20–40 μm diameter, euhedral magnetite now totally replaced by sphene; rarer titanomagnetite now comprising thin, <1 to 1 μm wide, relict, ilmenite lamellae in sphene; and abundant, 20x1 to 60x30 μm size, discrete ilmenite laths and quartz.

Some pyroxene has altered to green, highly pleochroic pumpellyite. A little brown lath-shaped amphibole also may be present. Elsewhere, pumpellyite forms radiating aggregates within the groundmass although prehnite is very rare. Late-stage, quartz-rich segregations are widespread and comprise stubby, altered plagioclase growing into quartz mosaics. Locally, quartz-feldspar intergrowths are symplectite-like, suggesting the presence of myrmekite.

Sulphides are rare but chalcopyrite occurs as 2–5 μm diameter grains in patches up to 60 μm in diameter, and a single 5 μm diameter grain of hexagonal pyrrhotite is present.

Discussion and Provenance

Comparison of the total petrography of this axe-head with recent published and unpublished descriptions of IPG Group VII axe-heads shows that the source material for this axe-head is an augite granophyre and a classical example of that group.[19] The rock comes from the Penmaenmawr area of North Wales.

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[19] R.A. Ixer et al., 'A Comparison between "Total Petrography" and Geochemistry using Portable X-Ray Fluorescence as Provenancing Tools for some Midlands Axeheads', in E.A. Walker et al. (eds.), *Lithics in Action*, Lithics Studies Society Occasional Paper, 8 (Oxford, 2004), pp. 105–15.