

Archaeological Discoveries on the A259 Rustington By-pass,

with a report on the rescue excavations at Penfold Lane

by Oliver Gilkes and David Rudling

Project No. 861

June 1999



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ARCHAEOLOGY SOUTH-EAST

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GAZETTEER by Oliver Gilkes

The sites are noted by a number followed by a six or eight figure Ordnance Survey National Grid reference and are listed in order from east to west (Fig. 2). The original numbering sequence was geographically haphazard representing the actual progress of construction work. A new number sequence has been used for this report. The original site record numbers, where applicable, are shown in brackets following the grid reference.

A separate section follows containing an illustrated catalogue of some of the diagnostic finds.

Site 1. Approximately NGR TQ 055 033 (2)

An urned cremation burial had been badly truncated by heavy earth moving machinery. The remains consisted of the lower portion of a soft fired vessel in a fabric tempered largely with flint but also shell and chaff. The vessel, which contains a cremation, had been placed in a narrow feature 500-630mm deep. The remains of the cremation were recovered, but insufficient time was available to excavate the urn. The burial is likely to be Bronze Age; a number of other discoveries of this date have been recovered nearby (Rudling 1990; Lovell 1998).

Site 2. NGR TQ 055 032 (4)

A thick spread of calcinated flint was observed. This was well mixed with brickearth and quite scattered. Possibly the ploughed out remains of a burnt mound.

Site 3. NGR TQ 0435 0340 (3)

An area of dark soil, possibly a truncated ditch or midden, produced Late Iron Age and Early Roman, first to second century, ceramics.

Site 4. NGR TQ 0545 0338-0531 0354 (5)

In the area of the northern carriageway of the new road, heavy plant had uncovered a scatter of flint debitage comprising a number of struck and retouched flakes, including some implements. One of these was the fragment of a polished axe, suggesting a Neolithic date.

Site 5. NGR TQ 0490 0370 (12)

A deep cut was made across the Rustington stream to install a conduit and this permitted examination of the sections. Two to three metres of alluvial deposition had been laid down in distinct strata. Some of these contained freshwater molluscs, but most noticeably the substantial and well preserved trunks of large trees; five seem to have been found in a cut some 15 m wide. Below these levels was a lens of burning 160mm thick, containing calcinated flint, possibly a burnt mound, which in turn lay above a further 1m of alluvial deposition. Below this was the original chalk stream bed.

Site 6. NGR TQ 046 038 (11)

At the northern end of Penfold Lane topsoil stripping revealed extensive spreads of dark silty soil. This was found to contain substantial quantities of ceramics and other

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ABSTRACT

A watching brief and rescue excavations were undertaken in 1990 during the construction of the A259 Rustington By-pass. This fieldwork revealed various finds and features dating to the prehistoric and Roman periods. Of particular interest was a concentration of Roman remains at the northern end of Penfold Lane. The discovery at this location of a large number of Roman quern and mill stones, the finding nearby of undated waterlogged timbers, and the proximity of a watercourse (the Black Ditch) may indicate that this Roman site was connected with watermilling.

INTRODUCTION

One day in 1990 a member of Littlehampton Museum's stalwart team of volunteers appeared clutching a large Roman rotary millstone and directed Oliver Gilkes's attention to a veritable mountain of potsherds awaiting inspection in his car. The cause of these discoveries were the earth moving works then being undertaken for the construction of the A259 Rustington By-pass. This project, long planned, had unfortunately been provided with no archaeological coverage, despite the proximity of the Black Ditch and previous discoveries of prehistoric and Romano-British remains in the vicinity of this watercourse (Rudling 1990). In the event, the Museum and its assistants, together with relevant County organisations, pulled together to record and excavate along the route of the Rustington road scheme (Fig. 1).

A watching brief was maintained on the roadworks by members of Littlehampton Museum's field group. Any sites or concentrations of artefacts were noted and reported, and the original field records and finds are stored in Littlehampton Museum. Oliver Gilkes made periodic visits to photograph and record in detail any features of note. On one occasion, the discovery of a Roman rubbish tip at Penfold Lane, it was necessary to call in outside assistance in the form of West Sussex County Council, who contracted the University College London Field Archaeology Unit to undertake larger scale excavation. The archaeological recording of the Rustington By-pass lasted from April to June 1990.

This article comprises the report on the archaeological works outlined above. All sites observed, and those examined on only a small scale, are listed and described in the Gazetteer. Following this is a longer report on the excavation of Roman features at Site 6, and lastly other specialist reports.

finds of Roman date. A small excavation was undertaken by the UCL Field Archaeology Unit. This is reported on below.

Site 7. Centred on NGR TQ 0415 0352 (1, 6 and 7)

On the southern approach to the new bridge carrying the Rustington By-pass over the Brighton to Portsmouth railway, east of Norway Lane, a series of features were observed. The principal element was a ditch running north-west to south-east for 37.5 m from its terminal until it disappeared into the eastern edge of the southern carriageway. A small trial trench showed this to be at least 800mm deep and 2.5 m wide, and recovered a quantity of Late Iron Age 'transitional' type pottery (S. Hamilton, pers. comm.), fragments of Roman roof tiles, greensand rotary querns and daub.

To the north and south were other features, probably rubbish pits. A sub-rectangular pit to the south of the ditch was partly excavated, and proved to be at least 620mm deep from the topsoil. This contained Late Iron Age ceramics very similar to those found in the ditch fill, as well as some iron objects. Further south, at TQ039034, another, truncated rubbish pit was found. This contained the same transitional wares mentioned above, but also pottery with distinctly Roman forms and fabrics.

These discoveries occurred only some 20m to the south-west of the earlier discoveries made on the Watersmead industrial Estate (Gilkes 1991, 241-244). Those finds suggested a Roman field system, possibly with associated buildings. The pits and ditches found on Site 7 seem to be earlier in date, and are perhaps the precursor of the Watersmead site.

Site 8. NGR TQ039 033

A development for Trust House Forte to the south of the route of the by-pass also produced archaeological features. A series of three spreads of calcinated flints, 500mm deep, were the most noticeable. These were interspersed with rubbish pits and post-holes containing daub and ceramics, (both the Later Iron Age 'transitional' type and coarser flint tempered sherds).

THE FINDS FROM THE WATCHING BRIEF

The finds described and illustrated here are only a selection of those found. Much of the ceramic material in particular was undiagnostic or in an extremely fragmentary condition. In the interests of space, therefore, only those examples which were most characteristic were chosen for inclusion here. The finds from the excavation and watching brief at Site 6 are described below in the report on that work.

The Flintwork by Chris Butler

A small quantity of prehistoric flintwork was collected from three locations along the By-pass, and is listed in Table 1,

There is only one piece which may date from the Mesolithic period: a fragment from a bladelet from Site 10. The remaining material is mostly hard hammer-struck debitage, with a high proportion of implements and retouched pieces, which is probably due to a collection bias rather than being representative of the actual material present.

Of note, from Site 10, are two probable axe-thinning flakes. These hard hammerstruck flakes have a distinctive curved profile, with multi-directional flake scars on the distal surface. The flakes have probably come from the same piece of raw material, although they could not be refitted. Some of the other flakes from Site 10 have a blade-like profile. None of this small assemblage would be out of place in a Neolithic context.

The flintwork from Site 13, which is a mixture of hard and soft hammer-struck debitage, with two end scrapers on hard hammer-struck flakes, contains no distinctive pieces. The fragment of a Neolithic polished flint axe has been burnt and re-used as a hammerstone. A broad Neolithic/Bronze Age date could apply to these pieces.

See below for details of flintwork from Site 6.

Type of flintwork	Site						
	9	10	13	Total			
Hard hammer-struck flakes		6	5	11			
Soft hammer-struck flakes		1	3	4			
Axe thinning flakes		2		2			
Flake/blade fragments			2	2			
Bladelet fragment		1		1			
Retouched h/h flakes		5	1	6			
End scrapers		4	2	6			
Side scrapers	1	2		3			
Notched flake		1		1			
Polished axe fragment			1	1			
Total	1	22	14	37			

Table 1. Rustington By-Pass: Flintwork from Sites 9, 10 and 13

The Pottery by Oliver Gilkes (Fig. 3)

Site 7

Finds from the ditch terminal

1. Body sherd of a wheel thrown vessel in a dark grey-black highly micaceous fabric. The surface is decorated with a series of nicks made with the point of a thumb. A conjoining sherd was found in the feature to the north of the ditch, see below.

- 2. Small jar with a slightly flaring simple rim in a dark grey black sand tempered fabric.
- 3. High shouldered jar with an upright simple rim in a dark grey-black sand tempered fabric.
- 4. Jar with a slightly outurned rim in a dark grey-black sand tempered fabric.
- 5. Narrow shouldered hand built jar with a simple rim, decorated with three burnished lines just above the shoulder. The fabric is a dark grey-lack very fine sand tempered paste with inclusions of fine golden mica.

Feature to the north of the ditch

- 6. NOT ILLUSTRATED. Hand built jar, with a simple rim in a dark grey-black flint tempered fabric.
- 7. Body sherd of a wheel thrown vessel in a grey brown-black highly micaceous sand tempered fabric. The surface is decorated with a series of nicks made with the point of the thumb. A conjoining sherd was found in the ditch terminal, (see above, No. 5). Although these sherds are unparalleled in terms of decoration, the wheel thrown, sand tempered fabrics from this and other features seem to be related to Late Iron Age ceramics from elsewhere on the West Sussex Coastal Plain (Hamilton 1985, 220-228).

Feature to the south of the ditch terminal

8. NOT ILLUSTRATED. High shouldered wheel made jar in a sandy grey fabric. This is a 'Southern Atrebatic' form (Cunliffe 1978, 100 and Fig A3.2). The midrey reduced fabric of this sherd indicates the utilisation of a highly controlled firing technology. This suggests the later Iron Age as the earliest possible production date. Other ceramics from this feature are of the grey-black sand tempered type as found in other features on Site 7.

Site 8

- 9. NOT ILLUSTRATED. Hand built jar with a simple rim in a dark grey-black sand tempered fabric with smoothing marks on the exterior.
- 10. NOT ILLUSTRATED. Rim of a hand built bowl in a flint tempered fabric, with a brown exterior and grey interior.

Site 7

Whetstone by Oliver Gilkes

1. Whetstone, in a silicaceous sandstone, probably a glacial erratic of roughly rectangular cross section, the upper and lower surfaces are well smoothed. The end is broken. (Fig. 17, No. 4.)

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Metalwork by Luke Barber

1. Perforated lead weight or spindle whorl with domed upper surface and an 11mm diameter central hole. Overall diameter c. 33mm. The edges on one side have been lost (Fig. 13, No. 12).

EXCAVATIONS AT SITE 6 (Penfold Lane) by David Rudling

Introduction

The watching brief undertaken by Bob Frost and Peter Hammond during topsoil stripping along the route of the Rustington By-pass resulted in the discovery at the northern end of Pensfold Lane (NGR TQ 046 038) of Roman pottery and other finds, including quernstones. Oliver Gilkes of Littlehampton Museum subsequently informed Mark Taylor, the County Archaeologist for West Sussex, who then financed the University College London Field Archaeology Unit to carry out some rapid and limited rescue excavations on two of the concentrations of dark soil and Roman finds (i.e. Fig. 2: Areas I and II). Supervision of the excavations was undertaken initially by David Rudling, and subsequently by Simon Bryant. Other finds made during both the rescue excavations and subsequently during renewed clearance of topsoil at Site 6 included large quantities of unstratified Roman finds and some unfortunately undated and unrecorded waterlogged timbers and stakes. The latter, which were discovered by Peter Hammond in a deposit of grey clay, were located approximately 15m to the south east of Area II and 30m to the east of Area I.

The Excavations

Area I

Two trenches (Figs 2 and 4) were machine excavated in order to investigate an area of dark soil which had yielded much Roman pottery. Beneath the dark topsoil (Context 1) was a brown silty loam layer (Context 2). The 'natural' in the two trenches consisted of chalk (Fig. 4: as defined by dashed lines) or chalk with an orange clay capping. Although the machine stripping of the two trenches did not result in the discovery of further larger quantities of finds, it did reveal various features, including a ditch and several post-holes/pits (Figs 4 and 5). The shallow ditch (3), which was found in both trenches, contained, in the stretch of ditch investigated, a variety of silty clay deposits (Fig. 5: Contexts 4, 5, 6, 7 and 8), but very few finds. One of the basal fills (5) yielded three sherds of Roman courseware pottery. Soil samples were taken for environmental analysis and are reported upon below. In the western of the two trenches Ditch 3 was cut by, or cut, on undated pit (20). The other features included a group of four post-holes (9, 11, 13 and 15) which may represent a structure, perhaps a small four-post granary. The few finds from the fills of these features included some Roman pottery from Contexts 10 and 16, and post-packing material from Contexts 10, 12 and 14, and perhaps also from Context 16. Context 17, a shallow pit or post-hole, is undated, but could belong to a rectangular structure also incorporating Post-holes 9, 11, 13 and 15.

Area II

Area II, another concentration of dark soil and Roman finds, was located approximately 15m to the north east of Area I. This area, which was hand excavated, also contained a deposit of dark brown silty loam (2) below the dark topsoil (1). In contrast to Area I, however, the excavation of Area II revealed a much larger number of finds and features. The principle feature, and the probable source of many of the earlier topsoil finds from this area, was a layer (7) of flint and chalk rubble of varying sizes, with patches of clay and crushed chalk (Fig. 6). This deposit is possibly a floor layer for a timber structure incorporating post-holes 3 and 5. The floor/building is bordered on its north eastern side by a ditch (10), which at its northern end was overlain by a deposit of flints and quern stone fragments. Sample excavation of Ditch 10 adjacent to its over-burden of flints and quern fragments, revealed it to be only c. 300mm deep (Fig. 7). The north western side of Context 7 is marked by two large post-holes (14 and 16), the fill of Post-hole 14 yielding four sherds of Roman greyware. These two post-holes, and a much smaller example (12) which was discovered nearby, may also be part of the building containing floor layer 7. The eastern extent of the postulated building was probably contained by Ditch 9. This shallow feature, which was only sampled, yielded an assemblage of pottery dating to the second century (see below: The Pottery).

THE FINDS FROM SITE 6

The Flintwork by Chris Butler

A small quantity of worked flint was recovered from the excavations (Table 2). The majority of the flintwork had been produced from beach pebble flint, with a few pieces coming from flint from the chalk of the South Downs. The flakes were generally wider than their length, and most had been removed with a hard hammer. Two of the flakes from Context II/1 had been retouched. Retouch where present was abrupt or semi abrupt.

The small assemblage is typical of the flintwork found in the later Neolithic/Early Bronze Age.

Context	I/1	II /1	II/2	II/9	II/17	II/25	Total
Flakes	4	9	12	1	2		28
Axe thinning flake			1				1
Fragments			3			1	4
End scrapers			2	1			3
Notched flake			1]			1
Retouched piece			1				1
Adze/pick	1			1			1
Hammerstone			1	1			1
Total	5	11	20	1	2	1	40

Table 2. Flintwork from Site 6

The Pottery by Luke Barber

Considering the small area investigated, the site yielded a very large quantity of Romano-British pottery, most of which, unfortunately, was unstratified. The disturbed nature of most of the pottery made quantification unnecessary.

The aim of this report is to provide a date range for the site and to give an indication of the range of forms and fabrics present.

The pottery was sorted by visual examination with a hand-lens into nine general fabric groups. By far the most common were the sandy grey wares, though redorange/brown-orange, buff, and black sandy wares were also well represented. Although these variations were divided into separate groups, there was much merging. It is likely that this is the result of varying firing conditions, as once colour is discounted these sandy wares tended to form one homogeneous group.

FABRIC GROUPS

Group 1

Light to dark grey sandy wares (some with black external surfaces). Temper ranges from fine to coarse sand (up to 1mm), sometimes with very occasional inclusions of flint, quartz, grog or chalk. Some light burnishing or simple incised line decoration is present. Forms include jars, bowls, lids, funnels and strainers.

Catalogue Nos.: 2, 3, 5, 6, 8, 13, 17, 19, 23, 24, 28, 35, 38, 39, 50, 53, 58, 59, 60, 62, 63, 64, 65, 67, 69, 73, 74, 78, 79

Group 2

Red-orange/orange-brown oxidised sandy ware. Core colours vary from black through to orange-brown. Temper ranges from fine to coarse sand (up to 1mm) sometimes with occasional grog or milky quartz inclusions. Decoration is similar to that of Group 1. Forms include jars, bowls, dishes, cups and flagons.

Catalogue Nos.: 1, 7, 16, 18, 20, 25, 26, 27, 36, 40, 44, 45, 51, 56,

66, 70, 71, 72, 80.

Group 3

Buff sandy wares. Often buff surfaces only: cores vary from black through grey to brown. Temper ranges from fine to coarse sand. Forms include jars, bowls, dishes and lids.

Catalogue Nos.: 14, 15, 31, 32, 41, 43, 61.

Group 4

Black sandy wares. Core colour often varies from light grey though orange-brown to black. Temper ranges from fine to coarse sand with some vessels having occasional

large flint and quartz inclusions. Some burnished vessels are present. Forms include jars, bowls, dishes and lids.

Catalogue Nos.: 11, 22, 29, 30, 33, 34, 37, 42, 68

Group 5

Cream/off-white sandy wares. Temper ranges from fine to medium sand with odd grog inclusions. Forms include jars, bowls and beakers.

Catalogue Nos.: 10, 12, 54, 76

Group 6

Miscellaneous fine sandy wares. A broad group encompassing a range of fabrics which all have sparse, very fine sand temper, sometimes with occasional flint, quartz, and grog inclusions up to 0.5mm. Colours vary from black through greys to oranges and creams. Forms includes jars, beakers, flagons and amphorae.

Catalogue Nos.: 4, 5, 21, 46, 47, 48, 75, 81, 82.

Group 7

Flint tempered ware. Very little is present. Coarse gritted black to brown ware. Probably Iron Age. The only recognisable form is a jar (Cat. No. 9).

Group 8.

A miscellaneous group consisting of fabrics with no visible sand tempering. Forms and colours vary greatly, though beakers and flagons are favoured.

Catalogue Nos.: 49, 52, 55, 57, 77.

Group 9

Samian Ware - see separate report below.

Catalogue (Figs. 8-10)

Area II, Contexts 1 and 2

- 1. Jar in red-orange sandy ware. Coarse sand temper. (Group 2).
- Jar in brown-grey sandy ware. Some inclusions of larger, milky quartz. (Group 1).
- 3. Jar in light grey/buff sandy ware. (Group 1).
- 4. Necked jar in fine off-white sandy ware. Soft fabric. (Group 6).
- 5. Large ovoid beaker(?) with out-turned rim. Very fine cream fabric with some sand and grog. (Group 6). Incised slash decoration around shoulder. Similar

form and decoration to Fishbourne Type 66.9 (Cunliffe 1971). Later 1st to early 2nd century(?)

- 6. Necked jar in medium to coarse sandy ware. (Group 1). Light grey core with brown-grey surfaces.
- 7. Everted rim jar in light orange-brown fine to medium sandy ware. (Group 2). Some grey inclusions up to c. 1.5mm.
- 8. Everted rim jar in light grey medium sandy ware. (Group 1).
- 9. Jar with out-turned rim in black, coarse flint tempered ware. (Group 7). Iron Age?
- 10. Everted rim jar in off-white fine to medium sandy ware. (Group 5) Internal incised line.
- 11. Everted rim jar in fine to medium sandy ware with very occasional grog inclusions (up to 3mm). (Group 4). Indistinct red-brown core with black surfaces. Batch mark incised on shoulder. *Cf.*: Fishbourne Type 313. Possibly from Rowlands Castle. (?)2nd to 3rd century.
- 12. Everted rim jar in off-white/pinkish medium sandy ware with off-white exterior surface. (Group 5). Batch mark on shoulder. Type as No. 11.
- 13. Everted rim jar in fine to medium grey sandy ware with very occasional small chalk inclusion (Group 1).
- 14. Everted rim jar with incised lines on body. Light brown-orange core with light buff surfaces. Fine to coarse sandy ware. (Group 3). Cf.: Fishbourne Type 327.
 2nd century.
- 15. Carinated bowl with everted rim in light buff fine to medium sandy ware. (Group 3). Internal surface medium brown. Similar form to: Fishbourne Type 209.5. (?)2nd century.
- 16. Bowl with everted rim. Red-brown medium sandy ware with light orangebrown surfaces. (Group 2). Incised lines on rim and body.
- 17. Bowl with everted rim in light grey fine to medium sandy ware with medium grey-brown surfaces. (Group 1). Exterior surface roughly burnished, including faint burnished lines. Type as No.15. 2nd century.
- 18. Bowl in dull red medium sandy ware with orange-brown surfaces. (Group 2). Ridged rim.
- 19. Strainer base in light grey sandy ware with dark grey surfaces. (Group 1). Narrow holes, pierced from the base up.

20. Decorated body sherd in pink-orange medium to coarse sandy ware. (Group 2). Deeply incised line decoration.

21.Rim and handle of furrowed-rim amphora. Fine red-orange fabric. (Group 6). Internal black residue. Probably from Normandy. Peacock and Williams (1986) Class 55. 2nd century.

- 22. Small bowl with everted rim and burnished line decoration. Black fine sandy ware with odd flint inclusions up to c. 2.3mm. (Group 4).
- 23. NOT ILLUSTRATED. Form as No. 22. Light grey fine to medium sandy ware with occasional larger inclusions of flint up to c. 1.5mm. Surfaces vary from light grey to light brown-orange. (Group 1/2). Similar burnished lines to No. 22, but slanted opposite way.
- 24. Base sherd in medium grey sandy ware with dark grey/black surfaces. (Group 1). Incised line decoration on base underside and lower body.
- 25. Bowl with everted rim in medium grey-brown sandy ware. (Group 2).
- 26. NOT ILLUSTRATED. Form as No 22. Orange-red fine to medium sandy ware with occasional flint and grog inclusions up to c. 2mm. (Group 2).
- 27. Cup imitating Samian Form 33. Dull orange fine to medium sandy ware with odd grey inclusions (Group 2). Cf.: Fishbourne Type 260. (?)2nd century.
- 28. Carinated cup or funnel(?) in light grey medium sandy ware. (Group 1). Black deposits internally.
- 29. Dish/bowl with internally hollowed rim. Medium grey sandy ware with black surfaces. (Group 4). Rim roughly burnished.
- 30. Lid with plain lip. Light grey core with orange-brown margins and black surfaces. Fine to medium sandy ware with some grog inclusions up to c. 2mm (Group 4).
- 31. Lid with simple lip. Intermittent light grey core with thick orange-brown margins and buff surfaces. Sparse fine to medium sandy ware. (Group 3).
- 32. Dish with simple rim in buff sandy ware. (Group 3).
- 33. Dish with simple rim and burnished lattice decoration. Black fine to medium sandy ware with all-over burnish. (Group 4).
- 34. NOT ILLUSTRATED. Form and fabric as No. 33, but with no burnishing. (Group 4).

- 35. Shallow bowl with thick horizontal rim. Grey/black core with grey-brown inner and grey to black outer surfaces. Fine to medium sandy ware, with some burnishing on rim. (Group 1/4).
- 36. NOT ILLUSTRATED. Form as No. 35. Dark grey medium sandy ware with orange-brown surfaces. (Group 2).
- 37. Shallow bowl in fine orange-brown sandy ware with black surfaces. Odd flint and grog inclusions. (Group 4). Exterior roughly burnished.
- 38. Shallow bowl in medium sandy ware. Light grey core with thick dull orange margins and light to dark grey surfaces. (Group 1). Cf.: Fishbourne Type 217.4.
- 39. Shallow bowl in light to medium grey sandy ware. Occasional small grog inclusions. (Group 1).
- 40. Dish/bowl with simple thickened rim. Thin intermittent grey core with dull orange-red surfaces. Fine to medium sandy ware. (Group 2).
- 41. NOT ILLUSTRATED. Form as No. 40. Light grey to buff sandy ware. (Group 3).
- 42. Jar with simple bead rim. Light grey sandy ware with black exterior surface. (Group 4). Cf.: Fishbourne Type 166. 1st century.
- 43. As No. 42 but well defined shoulder. Medium grey sandy ware with buff-brown surfaces. Some milky quartz inclusions. (Group 3).
- 44. As No. 42. Dull brown-orange fine to medium sandy ware. (Group 2).
- 45. As No. 42. Dull brown-orange fine to medium sandy ware. (Group 2).
- 46. Beaker in fine sandy grey ware with light grey to buff surfaces. Horizontal incised lines on body. (Group 6).
- 47. Plain barrel-shaped beaker. Light grey very fine sandy fabric with black surfaces. Horizontal incised lines on body. (Group 6). Cf.: Fishbourne Type 262. 2nd to early 3rd century.
- 48. Girth beaker in fine sandy buff ware with grey exterior surfaces in places. Horizontal lines and cordon on body. (Group 6). Cf.: Fishbourne Type 63.
- 49. Small jar in very fine orange fabric with matt-black colour coat. No temper visible. (Group 8). Probably 2nd century.
- 50. Small necked jar with everted rim. Light grey fine sandy ware with medium grey-brown surfaces. (Group 1).

- 51. Decorated body sherd in light grey medium sandy ware with orange-brown surfaces. (Group 2). Simple incised line decoration.
- 52. Decorated body sherd in powdery orange-red fine fabric; no temper visible. Shallow incised wave decoration. (Group 8).
- 53. Decorated body sherd in light grey fine to medium sandy ware. Two rows of incised zig-zag lines. (Group 1).
- 54. Mortaria-type bowl in off-white/cream fine to medium sandy ware. Some grog inclusions. (Group 5).
- 55. NOT ILLUSTRATED. Flanged body sherd from mortaria. Light grey fine laminar core with orange surfaces. No temper visible. (Group 8). Rounded grits average c. 1.2mm and vary in colour from clear to yellow and red-brown.
- 56. Flagon in dull orange medium sandy ware. Uneven rim. (Group 2).
- 57. Flagon in very fine cream/off-white ware with intermittent orange-pink core. Odd grey inclusions. (Group 8).
- 58. Base sherd in medium grey sandy ware with dark grey to black exterior surface. (Group 1).
- 59. Base or lid handle in light to medium grey sandy ware. (Group 1). Traces of black residue on inside.
- 60 Base sherd in light grey fine sandy ware with light grey-brown exterior surfaces. (Group 1).
- 61. Decorated body sherd from jar in light pink to grey-buff sandy ware. Incised line and stabbed dot decoration on shoulder. (Group 1).

Area II, Context 9: fill of Context 8 (ditch)

- 62. Jar with thickened, flaring rim in sandy grey ware. Slight grooves on rim interior. (Group 1).
- 63. Everted rim jar in medium sandy grey ware. Internal surface light grey, external surface black. (Group 1).
- 64. Necked jar with out-turned rim in medium sandy grey ware with a brown-grey external surface. Traces of soot on exterior. (Group 1).
- 65. Everted rim jar in light grey sandy ware with light brown-grey surfaces. (Group 1). Batch mark on shoulder and extensive external sooting. Possibly Rowlands Castle. Cf.: Fishbourne Type 311. (?) 2nd-3rd century.

- 66. Everted rim jar in orange-red medium sandy ware with traces of light grey slip(?) on external surface. (Group 2).
- 67. Bowl with out-turned rim in light grey sandy ware with medium grey surfaces. A few larger flint inclusions. (Group 1). Soot on exterior.
- 68. Jar with out-turned rim in light grey sandy ware with orange-brown margins and black surfaces. (Group 4). Rough external burnishing.
- 69. Jar with simple bead rim in light grey sandy ware. (Group 1). Cf.: Fishbourne Type 166. 1st century.
- 70. Shallow bowl in light grey sandy ware with orange-brown surfaces. (Group 2). Some milky quartz inclusions. *Cf.*: Fishbourne Type 217. 2nd century.
- 71. Shallow bowl with dull orange to light cream-grey core with dull orange surfaces. Medium sandy ware. (Group 2). 2nd century.
- 72. Bowl with simple thickened rim. Medium grey sandy ware with dull orange surface. (Group 2).
- 73. Lid with upturned lip. Light to medium grey sandy ware with light to dark grey outer and dark grey to black inner surfaces. Cf.: Fishbourne Type 196.
- 74. Lid with upturned lip. Light to medium grey sandy ware with dark grey/black surfaces. (Group 1). Cf.: as No. 73.
- 75. Beaker with simple rim. Light grey/cream core with black surfaces. Very fine fabric with some clear quartz inclusions up to 1mm. (Group 6).
- 76. Beaker with barbotine decoration. Cream/off-white fine to medium sandy ware. (Group 5). Groups of barbotine dots, some of which are in very low relief. (?) 2nd century.
- 77. Flagon base in very fine fabric with some grog inclusions. Light pinkish/offwhite interior with light brown-orange exterior surface. (Group 8).
- 78. Base sherd in medium grey fine sandy ware with grey-brown inner and black outer surfaces. (Group 1).
- 79. Decorated body sherd in light grey fine to medium sandy ware with medium grey surfaces. Incised acute lattice decoration in band around shoulder. (Group 1).
- 80. NOT ILLUSTRATED. Decorated body sherd in light grey sandy ware with red-brown surfaces. Incised, obtuse lattice decoration in band around shoulder. (Group 2).
- 81. Flagon with flanged rim. Fine off-white/cream sparse sandy ware. (Group 6).

82. Candle-holder(?), irregularly produced, possibly adapted from an amphora stopper. Light grey core with light orange-brown surfaces. Fine fabric with sparse fine sand and grog inclusions. (Group 6). Rough exterior surface; possibly where it has been whittled down to size.

The Samian Ware (incorporating comments by Catherine Johns)

The aim of this summary report is twofold: to provide general dating for the site, and to give an indication of the range of material available for detailed study.

The majority of the Samian recovered during the excavations is of Central Gaulish production, dating to the 2nd century, particularly during the Antonine period (A.D. 138-180). A few earlier sherds of South Gaulish production, probably all fitting into the later 1st century, are also present. East Gaulish products are represented in small quantities, dating predominantly to the Antonine period. A few of the sherds, particularly Forms 37 and 33, show signs of repair work with lead fastenings.

Vessel forms present:

South Gaul: Dr 27, 29.

Central Gaul: Dr 18/31, 27, 33, 36, 37 (Hadrianic to late Antonine), 38, Curle 11 and Curle 15.

East Gaul: Dr 37.

Although most of the Samian was recovered from disturbed Contexts 1 and 2 in Area II, one small stratified group was also located:

Area II Context 9: fill of Context 8 (ditch)

- 1. NOT ILLUSTRATED. Decorated bowl, Dr 37. Trajanic-Hadrianic c. 120 A.D. Central Gaul; probably from Lezoux. Decoration includes figures of Diana with bow, and dancing girl, separated by wavy line borders. Stanfield and Simpson (1958) Medetus-Ranto style (29; 353).
- 2. NOT ILLUSTRATED. Dr 33 cup. Central Gaul. Later 2nd century.
- 3. NOT ILLUSTRATED. Dr 18/31 bowl. Central Gaul. 2nd century.

Gold 'Ring Money' by David Rudling

After the excavations at Site 6, Mr Bob Frost discovered, with the aid of a metal detector, a penannular gold ring in the vicinity of the archaeological investigations. The solid ring, which was reported for Treasure Trove reasons to the local coroner, is an example of what is sometimes referred to as 'Ring Money'. Dating to the period c. 1200-100 BC, it is of Van Arsdell's (1989, 61-62) Plain Type; weighs 7.76g; is 15mm in diameter; has a thickness diameter of 4.5mm, and has blunt ends which do not touch (Fig. 11).

Although such rings may have been primarily used as ornaments, they could have functioned as money. Other 'Ring Money' found in Sussex include another example from Rustington and rings from Bracklesham and the River Cuckmere (Curwen 1937a, 212). The Rustington ring was formed of alternative transverse layers of gold and silver.

The Coins by David Rudling

The watching brief at Site 6 resulted in the discovery ofhree Roman coins:

1.	Claudius I,	A.D. 41-54. Ae Dupondius. Mint of Rome.
	Obverse:	[TI CLAVD] CAESAR AVG PM TR P, head, bare, left.
	Reverse:	CERES A]VGVSTA, Ceres seated left, S.C. in ex.
	Reference:	As <i>RIC</i> 94.

- Claudius I, A.D. 41-54. Ae As. Mint of Rome.
 Obverse: TI] CLAVD CAESAR AVG PM T[Reverse: Minerva right, S.C. in ex.
 Reference: As *RIC* 100.
- Gallienus, A.D. 253-68. Ae Antoninianus. Mint of Rome.
 Obverse GALLIENVS AVG], bare, head, right.
 Reverse: PROVID]A AVG, Providentia standing left.
 Reference: *RIC* 270.

The Copper Alloy Objects by Luke Barber

Although most of the copper alloy artefacts are unstratified finds, many are diagnostic and therefore aid the general dating of the site. This is particularly the case with the brooches (catalogue Nos. 1-5), which are predominantly 1st century in date, possibly stretching into the 2nd century (No.5). The rest of the copper alloy objects tend to fit in with this general date range. The more diagnostic pieces are described below, with a full list forming part of the archive. All are unstratified unless otherwise stated.

Catalogue (Fig. 12)

- 1. Nauheim derivative brooch with low-curved thick bow which contracts into a knife-edged foot with solid catch plate. The bow is decorated with two converging incised fines which run parallel to the edges of the bow. Small incised fines run off these two main lines with further incised fines on the foot. This type of brooch was common at Fishbourne: out of twenty one examples found there, nineteen were stratified in contexts dated between A.D. 43 75. The Rustington brooch has close parallels at Fishbourne (Hull 1971, Fig. 36: Nos. 1 and 2).
- 2. Small thistle brooch with high arched bow. The catch plate is missing. A similar example was found at Fishbourne (Hull 1971, Fig. 38: No. 22). 1st century.
- 3. Large flat thistle brooch with decorative plate and pin missing (the hole would be for the single fixing rivet of the decorative plate). The catch plate has the remains of a triangular perforation. A similar example has been published elsewhere (Hattatt 1985, Fig. 19: No. 284). 1st century.
- 4. Badly corroded remains of a Hod Hill type brooch with wide incised fine decoration. Pin, spring and catch plate missing. 1st century.
- 5. Small dolphin brooch with high arched bow with central ridge. Part of the catch plate is missing as is part of the pin. A common type of brooch, dating from the 1st to 2nd centuries.
- 6. Small spoon with circular bowl (a cochlear) and round sectioned handle. Traces of tinning are apparent on the interior of the bowl. Similar examples have been found at Fishbourne and Colchester (Cunliffe 1971, Fig. 47: No. 120; and Crummy 1983, Fig. 73: No. 2008), although these do not have a raised circular band on the interior of the bowl as in the case of the Rustington example. 1st- 2nd century.
- 7. Circular seal box lid with central hole and concentric decoration in relief The hinge has broken and there are traces of iron corrosion, particularly on the interior surface. An example of similar size and basic decoration was found at Fishbourne (Cunliffe 1971, Fig. 49: No. 130) in late 3rd century demolition deposits, though it is likely it may date from before this period.
- 8. Simple conical bell with suspension loop. Traces of iron corrosion on the interior mark the position of the internal hook to which the clapper would have been attached. Traces of tinning (?) on interior surface. The bell has a

small hole of unknown purpose near its edge. A similar example excavated at Fishbourne (Cunliffe 1971, Fig. 46: No. 106) was dated to the 1st century.

- 9. Nail cleaner with incised fine decoration on both sides. The handle (with horizontal incised lines) is broken just below the suspension hole. (The presence of the hole suggests that this nail cleaner may have formed part of a toilet set). The blade (decorated with a central vertical incised line) has also been broken. Similar examples dating to the 1st century have been found at Fishbourne (Cunliffe 1971, Fig. 42: Nos. 67 and 69). Trench II, Context 18.
- 10. Undecorated 3mm round sectioned wire armlet/bracelet with plain terminals. The armlet/bracelet has been bent/broken, making its original proportions difficult to ascertain. It seems likely however that the armlet/bracelet was oval originally.
- 11. Shallow 'D' sectioned armlet/bracelet. This piece is badly corroded and broken, so original dimensions cannot be ascertained. One terminal survives however, and is of slightly thicker 'U' sectioned metal than the rest of the armlet/bracelet.
- 12. Circular domed sheeting with nine circular fixing holes (punched from exterior) around the edge. Fragments of round headed copper alloy rivets remain in six of the holes. The longest rivet (which is not complete) measures c. 12mm.
- 13. Large lock pin/handle (?). The head is spindle shaped with the upper face sunk around a high central cone. The head diameter is 39mm. Remains of a lead (?) filling are apparent within the back. The lead has a rectangular recess in it where the iron shaft was fitted. Examples have been found at Fishbourne (Cunliffe 1971, Fig. 46: No. 118); Chilgrove 2 villa near Chichester (Down 1979, Fig. 45: No. 22) and Colchester (Crummy 1983, Fig. 137: No. 4143). The Colchester example (where the shaft remained intact), is dated to the 2nd and 3rd centuries. Similar objects are also discussed elsewhere (Hattatt 1989, Fig. 11: No. 64). All these examples are however much smaller than the Rustington example, averaging only 25mm in diameter. Since the form is so similar they must however have performed the same function.
- 14. Bucket or cauldron handle mount. Remains of part of the sheet metal vessel remain on the interior surface of the mount where they are fastened by two large rivets. This example is not paralleled at Porchester (*Cf.:* Cunliffe 1975, Fig. 128: No. 208) and may be of later date.
- 15. Bead (?) with large central hole of 6mm diameter. Overall diameter 15mm, height 7mm.
- 16. Knife/tool ferrule of conical form with join along under surface. Remains of a square sectioned tang remain inside surrounded by baked clay (?).

- 17. Mushroom shaped handle/knob with remains of square sectioned iron fixing on base. There is a quantity of iron corrosion around the interior surface of the dome.
- 18-20. Convex headed composite stud heads. Three examples were found (only No. 18 is illustrated). The domed head is formed from sheet copper alloy. A small iron square sectioned fixing stud/shaft protrudes from the interior of the dome and is surrounded by a lead filling. Diameters range from 29-32mm. Similar examples, dated to the 1st century, have been found at Colchester (Crummy 1983, Fig. 56: No. 3160).
- 21. Part of a mid 17th century spur buckle. The pin is missing. A similar example, wrongly dated to the 2nd 3rd centuries, was found at Colchester (Crummy 1983, Fig. 56: No. 1819). This is a well known 17th century design and is frequently found on sites producing material of this date.

The Lead Objects by Luke Barber

Several pieces of waste lead were found during the excavations (i.e. Area 1, Contexts 1 and 7). These are either in the form of molten waste droplets or off-cuts from lead sheeting. A list of all the lead finds from Site 6 forms part of the archive. Only the more diagnostic pieces are catalogued below. All are unstratified unless otherwise stated. Although function may be suggested, the age of many lead artefacts cannot be ascertained (with the exception of the pottery fastener repairs: Cat. Nos. 28-31) as lead continued to be cast into simple undatable objects until the 19th century. The association with 1st and 2nd century copper alloy artefacts at Site 6 indicates however that much of the leadwork is of Roman origin, though caution is required.

Catalogue (Fig. 13)

- 1. Perforated lead weight or spindle whorl. A disc-shaped weight/spindle whorl with a wide raised band running around the outside edge on both sides. A narrower raised band runs around the 6mm diameter central hole, again on both sides. Overall diameter: 30mm.
- 2. Roughly rectangular lead strip with fixing holes at either end, crudely cut from 2mm lead sheet. Two parallel recessed marks are present on one side. This object could be a weight.
- 3. Tapering 'D' sectioned weight with suspension hole at the narrow end. Crudely cast with an uneven flat underside.
- 4. Small disc with central hole. Possibly a weight or gaming counter. Crudely cast with a 2mm diameter hole punched through from one side causing a small raised rim around the hole on the other side.

- 5. Extremely crude perforated weight cast in a disc form. It appears the original casting did not have enough lead, for more lead seems to have been added to make up the weight after the original casting had cooled; the result being the two castings did not properly fuse together. The unevenness of the disc suggests it is unlikely to be a spindle whorl.
- 6-9. Four pottery repairs were found. Numbers 6 and 9 (No. 9 is not illustrated) still contain sherds from the pots (both being an orange sandy ware). The exterior is formed by a 'D' sectioned rectangular bar. This has two round sectioned fixing pins coming off at right angles (through the vessel wall) joined by a crudely cast lead lump (on the interior surface of the vessel). No. 8 is similar, though missing a pin and the interior crude casting. No. 7 is also of similar form, but has a well cast bar joining the fixing pins on the interior, instead of the crude lead fixing found on Nos. 6 and 9. The interior bar is longer than the exterior one.
- 10. Flattened 'D' sectioned weight with 4mm diameter suspension hole. Area II, Context 2.
- 11. Part of an oval shaped 1mm sheet with complete fixing hole, 5mm in diameter, at one end. The remains of another nine fixing holes are spaced around the edge of the sheet. These appear to have possibly been broken when the sheet was prised off whatever it was fixed to. One end is broken so the full shape cannot be ascertained. It is possible it formed a repair to a wooden container such as a bucket. Area II, Context 7.

The Iron Objects by Luke Barber

Most of the iron objects came from unstratified contexts. Although much of this material may be of Roman origin, the undiagnostic nature of many of the artefacts makes it impossible to conclusively date them. A small selection of diagnostic pieces is described below, the rest have also been catalogued, and this listing forms part of the archive.

Catalogue (Fig. 14)

- 1. Part of a broad bladed knife blade with part of the iron ferrule/tang intact. Area II, Context 2.
- 2. Key (?) with large solid tapering handle giving way to a rectangular sectioned shank. The shank is broken just as it turns to form the bit. Area I, Context 1.
- 3.. Key from slide lock with rectangular sectioned stepped shank Similar stepped shanks have been noted at Fishbourne (Cunliffe 1971, Fig. 58: No. 25). The bow end is broken, so the suspension hole is missing. Similarly the bit has been broken off. Area I, Context 1.

Tile and Daub by David Rudling

The excavations and watching brief at Site 6 recovered small quantities of Roman tile and daub. The identifiable tile types include tegulae, imbrex and flat tiles.

The Quernstones by Oliver Gilkes

The excavations and watching brief at Site 6 produced 43 fragments of quernstones ranging from small lumps to almost complete stones. These all came from Contexts 1 and 2, or were unstratified. Given the fragmentary nature of the assemblage it has not been considered worthwhile to illustrate all the pieces. A description and discussion of the three identified types is given below, together with an illustrated catalogue of the more complete and significant examples. Littlehampton Museum accession numbers are given in brackets.

The stones were identified as being from at least three localised sources. Two fragments were in a greensandstone consistent with that defined by Peacock (1988, 62) as coming from Lodsworth. The majority of the remainder were in a hard greensandstone, probably with a West Sussex origin (J. Cooper pers. comm.). A fragment from a large rotary millstone was in a softer greensandstone or silt stone, possibly from the Steyning-Storrington area.

Three different types of querns were present: saddle querns, rotary quernstones and rotary millstones.

Saddle Querns.

The four examples of saddle querns found had been made from the broken remains of rotary stones, re-utilising the grinding surface with a hand rubber. Their presence in this assemblage is interesting, suggesting that older technology continued to have practical value despite the introduction of rotary quernstones during the later Iron Age. Possibly these stones represent domestic rather than bulk grinding of corn. Another example of this type of reuse is known locally from a Late Iron Age context (Gilkes 1993, 13).

Rotary Quernstones.

Twelve fragments of lowerstones and four of upperstones were recovered. Diameters varied between 400 and 900mm, thicknesses between 40 and 70mm. The angle of slope of the grinding surfaces was between 10 and 15 degrees. Given the probable later second century date of the assemblage (*see* above), this would accord with the typology suggested by Curwen (1937b, 144-5).

Other features were more difficult to determine due to the fragmentary nature of the stones. Pivot holes appear to have completely perforated the lowerstones, there being no examples of partial perforation. Details of handle sockets or hoppers on upperstones are completely lacking.

Rotary Millstones.

This category consists of stones which may have been turned by a mechanical drive. A number of criteria have been used to determine which stones are included in this group. Thickness and diameter have been considered (Curwen 1950, 52, Wilmot and Rhatz 1985, Welfare 1981), or the presence of other features such as cutaways to accommodate a rynd. With regard to the latter feature, it should be noted that some smaller stones from other sites also possess cutaways, as at Whitton (Welfare 1981, 221 fig 84.1 and 4), making size an important determining feature. The diameters varied between 600 and 800mm and thicknesses between 70 and 110mm. The angle of the grinding surfaces was between 2 and 5 degrees, quite low for stones of a later second-century date, according to Curwen's typology. However, in this class of rotary stones a lower angle appears to have been the norm.

Despite the now extensive body of evidence for mills elsewhere in Roman Britain (Spain 1985), the West Sussex coastal plain has produced surprisingly little evidence of mechanical milling in the Roman period. The fine soils supported extensive agriculture, and the frequent rivers and streams could have been canalised so as to produce an adequate head of water to power a watermill, although human or animal power would have been available at any time. A single fragment of a millstone was found at Fishbourne (Cunliffe 1971, 153-155) and another six fragmentary stones at Wickbourne near Littlehampton in the 1950's (Gilkes 1993, 14-15). Despite the lack of definite structures it is possible that the site at Penfold Lane may have been connected with watermilling. A watercourse, the Rustington stream, is nearby and the concentration of other fragmentary mill and quernstones is paralleled by finds at the watermill found at Ickham, Kent (Young 1975, 190-191, Spain 1985, 123-124).

Catalogue of illustrated quernstones (Figs 15 and 16)

- 1. Context 1. 255x220x55mm. Fragmentary rotary quern in greensandstone, reused as a saddle quern. (A1607).
- Context 2. 222x191x115mm. Fragmentary rotary quern in greensandstone, reused as a saddle quern. The broken edges of this fragment are heavily worn. (A1607).
- 3. Unstratified. 322mm diameter 78mm thick. Lower stone of a rotary quern in green sandstone, with a completely perforated pivot hole.
- 4. NOT ILLUSTRATED. Context 2. 350x195x60mm. Two fragments of a large flat rotary millstone in greensandstone. The upper surface of the stone is crudely finished, while the shallow grinding surface is well worn. (A1607/14).
- 5. Context 1. 220x90x104mm. Two fragments of a very large rotary millstone in siltstone, c. .70m in diameter. The upper surface is roughly tooled, while the grinding surface has been worn almost completely smooth. A square pivot hole with two dovetailed cutaways to accommodate a rynd completely perforate the stone. (Fig. 16). (A1619).

Other Stone Objects by Oliver Gilkes

Three other stone objects were found at Site 6. All had been fabricated from the same material, a siliceous sandstone, probably a tertiary sarsen (J. Cooper pers. comm.). The three objects appear to have been smoothed, suggesting their use as rubbing or whetstones (Fig. 17).

- 1. Context 1. 152x90x49mm. Slight pecking on the wider end of this stone suggests that it may have also served as a hammerstone. (A1608).
- 2. Context 1. 111x96x17mm. An almost flat heartshaped stone. (A1622).
- 3. Context 1. 63x49x21mm. A triangular shaped stone with well smoothed and rounded edges. (A1621).

Animal Bones by Lucy Sibun

A small quantity of 67 unstratified animal bones were submitted for analysis from Site 6. The range of species present includes sheep/goat, cattle and pig. Most skeletal elements are represented and these include mandibles, vertebrae and ribs, upper and lower limb bones, carpals and tarsals. There is minimal evidence of butchery with shallow cuts to one cattle vertebra and one rib fragment. A single bone fragment shows evidence of gnawing by rodents

The Environment of the Ditch in Area I by Ken Thomas

I must begin this report with an acknowledgement to the following MSc students at the Institute of Archaeology, University College London, who undertook the extraction of biological remains from the various samples, and also made preliminary identifications of them. Sonia Archila, Daniel Clark, Albert Daniels, the late Helen Hibberd, Marta Moreno-Garcia, Jane Ruddle and Jane Sidell. 1 checked, confirmed or modified all these identifications, except for the fish bones and plant remains which were identified by Brian Irving and Dr Dominique De Moulins, respectively.

The biological remains recovered from the various samples from the fill of the ditch in Area I (Figs. 4 and 6) are listed in Tables 3-5. Land snails were the most abundant category (Table 3), along with a significant and interesting range of other organisms, as shown in Tables 4 and 5, although most of these are from the most recent context (1) A few insect fragments were recovered from the lower contexts of the ditch (4 and 5). With the sole exception of a few bones of the marine fish *Zeus faber* (the John Dory), all the taxa present are terrestrial or freshwater in their habitat requirements. The presence of John Dory bones must represent food debris dumped into the ditch by people in the past, although it is also present in the most recent context (1), suggesting possible mixing of material in the ditch fill. The charred grains of barley and oats might be debris resulting from stubble-burning of adjacent crop fields in the recent past (note harvest mouse and field vole in the same sample in Context 1). All the remaining taxa are of animals or plants that lived near, or in, the ditch at various times during its in-fill, and are therefore potential indicators of local, and possibly extra-local, environments.

Low numbers of biological remains in spit sample 3 from Context 1 down to spit sample 1 from Context 4 probably indicate the relatively rapid in-fill of the ditch during the period of time covered by these samples.

The samples from spit 3 Context 4 down to the bottom of the ditch probably best represent the local environment during the functional life of the ditch, although the biological assemblages recovered are not large, so detailed environmental interpretations are not warranted. The land snail assemblages (Table 3) are dominated by shade-loving or relatively catholic species, suggesting locally shaded or moist conditions in and around the ditch. The lack, except for Vallonia excentrica, of truly open-country species in these assemblages is interesting, suggesting that the assemblages were derived wholly from the immediate habitat of the ditch, and possibly from any dense vegetation growing along its edges. The freshwater and amphibious molluscs (Table 4), along with frog and water vole (Table 5), suggest that the ditch had standing or running water in it for at least some periods in the year, although the rather depauperate assemblage of aquatic molluscs suggests that the ditch was not permanently wet. Some of the animal bones and teeth from these lowest samples were coated with the bright blue mineral vivianite, which typically forms in anaerobic organic-rich (more accurately, phosphate-rich) deposits. The ditch might have served a drainage function during wet periods or seasons. The possible use of the land surrounding the ditch as seasonal pasture, hay meadows, or for cereal crops, can only be conjectured from the bioarchaeological remains.

Context:	1	1	2	2	4	4	5	5
Spit No.	1	3	1	3	1	3	1	2
Carychium spp.	1				8			
Cochlicopa lubtica (Müller)	5				1			
Cochlicopa sp.					3	3		
Vallonia costata (Müller)					2	1		
Vallonia excentrica Sterki	10	4			2	1		
Vallonia cf. pulchella (Müller)					2			
Acanthinula aculeata (Müller)					1	1		
Punctum pygmaeum (Draparnaud)					1			
Vitrina pellucida (Müller)					1			
Vitrea crystallina(Müller)					3	1		
Nesovitrea hammonis (Str6m)					1			
Aegopinella pura (Alder)						2	1	
Aegopinella nitidula (Draparnaud)		28	2					
Oxychilus cellarius(Müller)					9			
Limacidae						1		
Cecilioides acicula(Müller)					3	1	7	
Clausilia bidentata (Ström)					+	1		
Trichia stilolata (Pfeiffer)		1			7			
Trichia hispida (Linnaeus)	6	6	5	1	4	4	2	
Trichia sp.					1			
Cepaea sp.					2	2		
Totals *	22	11	5	1	0	76	19	5

TABLE 3. SITE 6: Land Mollusca from Ditch in Area I

* Excluding C. acicula

TABLE 4. SITE 6: Aquatic and Amphibious Mollusca from Ditch inArea I.

Context:	1	l	2	2	4	4	5	5
Spit No:	1	3	1	3	1	3	1	2
Bythinia sp.						2		
Anisus leucostoma (Millet)						7		1
Succinea sp.						1		
Pisidium sp.						11	3	1

Context	1	1	2	2	4	4	5	5
Spit No:	1	3	1	3	1	3	1	2
	1	1						
Fish (Zeusfaber)	+	+			+			
Frog (Rana temporaria)	+	+			+	+	+	+
Water vole (Arvicola terrestis)		+						
Field vole (Microtus agrestis)					+			+
Harvest mouse (Micromys minutus)	+							
Charred grains:								
Barley	+							
Oats	+							
Uncharred seeds:								
Blackberry	-+-						+	
Buttercup	+							
Elder	+				+			
Nettle	+-							
Dock	+		[
Wild grasses	+							
Sedge	+							

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TABLE 5. SITE 6: Other Biological Taxa from Ditch in Area I

DISCUSSION

The various discoveries made during the construction of the A259 Rustington By-pass demonstrate that this area of the West Sussex Coastal Plain is rich in archaeological remains. The oldest finds are flintwork; Site 10 producing one fragment from a bladelet of possible Mesolithic date, and flakes, including two probable axe-thinning examples, which may be Neolithic. At Site 13 recovered flintwork includes a fragment of a Neolithic polished flint axe, and two endscrapers and flint debitage which has a broad Neolithic/Bronze Age date range. Similar small assemblages of flintwork of Neolithic/Bronze Age date were found at other sites, such as site 6. An urned cremation at Site 1 is thought to be Bronze Age. Of uncertain prehistoric date was a thick spread of burnt flint at Site 2. This discovery may have been the remains of a burnt mound (*Cf.* Stevens 1997). Several locations along the By-pass yielded evidence for later Prehistoric activity, and include the gold pennanular ring from Site 6, and pottery finds from Sites 3, 6, 7 and 8.

The main concentration of evidence for Romano-British activity was at Site 6, where most of the finds can be dated to the first and second centuries. Of these finds the large amounts of pottery and metalwork probably indicate settlement activity, whilst the many fragments of quernstones and millstones are interpreted as indicating that one function of the site was concerned with milling, and perhaps watermilling given the site's proximity to an important watercourse. The Black Ditch. The relatively small quantities of food remains (i.e. the animal and fish bones, and also a few oyster shells) may be due to soil conditions. In addition to the discovery of finds, the fieldwork at Site 6 included the exposure by excavation and recording of various features, including three ditches, a possible granary and a timber building with a chalk and clay floor. The ditches were probably a necessity given the extremely lowlying (under 5m OD) location of Site 6 (Fig. 1) and the environmental evidence from the ditch in Area I. It is very unfortunate that there was insufficient time and resources available to investigate a much larger area at Site 6, especially the area containing the waterlogged timbers and stakes (the dates of which are unknown). Elsewhere along the By-pass traces of Roman activity (i.e. finds and features) were uncovered at Sites 3 and 7.

The absence of features and significant quantities of finds dating to the medieval and post-medieval periods may indicate that after the Roman period this area was away from settlement and used only for such activities as seasonal pasture or hay meadows.

Earlier and subsequent fieldwork in the vicinity of the by-pass has also revealed a similar intensity of archaeological evidence (Gilkes 1993; Gilkes and Hammond 1991; Lovell 1998; Rudling 1990; Weaver 1995; and numerous entries in the West Sussex County Council Sites and Monuments Record.). This evidence supports an extensive area of early Roman settlement features and fieldsystems, together with some industry, such as the postulated watermill at Site 6 and pottery production at the former Horticulture Research International (HRI) site near the western end of the Rustington By-pass (Fig. 1; Lovell 1998). The particular importance of the Black Ditch is indicated by the earlier discoveries at the eastern end of the By-pass (Rudling 1990) and by the location of the Angmering Villa in the angle-formed between two branches of the Black Ditch (Fig. 1). The general paucity of evidence for late Roman activity in the vicinity of the Rustington By-pass is a situation which has been noted elsewhere

regarding the Roman settlement pattern of other parts of the Coastal Plain (Gilkes and Hammond 1991, 242; Pitts 1979, 80-81). Although some unstratified later Roman sherds were recovered from the HRI site (Fig. 1; Lovell 1998), it remains possible that many of the low lying sites in the Rustington area were vulnerable to marine transgression associated with environmental deterioration.

ACKNOWLEDGEMENTS

The authors would like to thank West Sussex County Council (WSCC), and especially Mr Mark Taylor (County Archaeologist) and Mr Garlick (Engineer), for permission and encouragement to undertake the archaeological fieldwork. Mr Gammon (the Bypass Engineer) of Shephard Hill Civil Engineering Limited is also thanked for his help and cooperation. Funding for the fieldwork aspects of the UCLFAU excavations at Penfold Lane was provided by WSCC through Mark Taylor, and the same organisation made a contribution towards the post-excavation analysis/report preparation costs. Further grant aid for post-excavation work came from the Margary Research Fund of the Sussex Archaeological Society. Most of the Littlehampton Museum watching brief was carried out by two of its volunteers, Mr Peter Hammond and Mr Bob Frost. Thanks are also due to the various excavation staff and volunteers, especially Mr Simon Bryant who supervised part of the excavations. Similarly the authors are grateful to all the post-excavation specialists, and to Jane Russell who prepared most of the illustrations (N.B. Figures 8-10 and 12-14 were prepared by Luke Barber). Valuable help and co-operation during the report writing stage of this project was provided by Mr Ian Friel (Curator of Littlehampton Museum) and Mr John Mills (Deputy County Archaeologist, WSCC).

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Fig. 1 Rustington By-pass: location map.







Fig. 4 Rustington By-pass. Site 6, Area 1: Plan of trenches.







Fig. 6 Rustington By-pass. Site 6, Area II: Plan of trench.



Fig. 7 Rustington By-pass. Site 6, Area II: Sections.

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Fig. 8 Rustington By-pass. Site 6, Roman Pottery.



Fig. 9 Rustington By-pass. Site 6: Roman Pottery.

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Fig. 10 Rustington By-pass. Site 6: Roman Pottery.



Fig. 11 Rustington By-pass. Site 6: Penannular Gold Ring.



Fig. 12 Rustington By-pass. Site 6: Copper Alloy Objects.



Fig. 13 Rustington By-pass. Sites 6 and 7: Lead Objects.







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Fig. 16 Rustington By-pass. Site 6: Mill Stone.



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