Channel Tunnel Rail Link
Union Railways (South) Limited

Project Area 430

HURST WOOD, CHARING HEATH, KENT
ARC HWD 99

DETAILED ARCHAEOLOGICAL WORKS ASSESSMENT REPORT
FINAL

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SUMMARY

As part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL), the Oxford Archaeological Unit was commissioned by Union Railways (South) Limited to undertake a detailed excavation at Hurst Wood, and a trench excavation at East of Newlands, both in Charing, Kent (Figure 1). This assessment also considers the results of evaluation and watching brief work between CTRL project chainages 79+200 and 83+800, most of which falls within the southern part of Charing.

Overall, the features discovered provide rather sparse evidence for land-use, with no potential for further detailed stratigraphic or artefactual analysis and only very limited potential for contributing to studies of the Wealden Greensand Landscape Zone. In most periods the low density of features identified is consistent with a relatively low level of agricultural activity. Possible exceptions are the middle Bronze Age, from which there are cremation burials, and the late Iron Age and early Roman period, from which there is evidence for more intensive land-use, including possible indications of rural settlement sites at Newlands Stud, East of Pluckley Road, Leacon Lane and Leda Cottages.

A hollow way, thought to be of late Iron Age/ early Roman date, could represent the line of the Rochester-Dover Roman Road. Further research is required to assess this possibility.

Detailed investigation of a series of burnt pits at Hurst Wood has failed to establish either their date or function with any certainty.

1. INTRODUCTION

1.1 Project Background

1.1.1 The Oxford Archaeological Unit (OAU) was commissioned by Union Railways (South) Limited (URS) to undertake a detailed excavation at Hurst Wood, and a trench excavation at East of Newlands, both in Charing, Kent (Figure 1). This assessment also considers the results of evaluation and watching brief work between CTRL project chainages 79+200 and 83+800, most of which falls within the southern part of Charing Parish (the extreme eastern end from 83+200 to 83+800 lies within Westwell Parish). The evaluation data is not incorporated in detail as Fieldwork Reports are available for individual sites. This work formed part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL).

1.1.2 The archaeological Written Scheme of Investigation was prepared by Rail Link Engineering (RLE) and agreed in consultation with English Heritage and Kent County Council (KCC) on behalf of the Local Planning Authorities.

Table 1: List of fieldwork events

Event Name	Event Code	Contractor	Dates of fieldwork
Hurst Wood detailed excavation	ARC HWD98	OAU	14/09/98 - 01/10/98
East of Newlands trench excavation	ARC NEW98	OAU	21/09/98 - 25/09/98
Hurst Wood WBSDS	ARC 430 79+200-79+500 99	OAU	1999 - 2000
Hurst Wood WBG	ARC 430 79+500-79+950 99	OAU	1999 - 2000
East of Newlands WBSDS	ARC 430 79+950-80+150 99	OAU	1999 - 2000
Newlands Stud to East of Pluckley Road WBG	ARC 430 80+150-81+800 99	OAU	1999 - 2000
Leacon Lane WBSDI	ARC 430 81+800-82+000 99	OAU	1999 - 2000
Westwell Leacon and Leda Cottages WBG	ARC 430 82+000-83+800 99	OAU	1999-2000
Hurst Wood evaluation	ARC HWD97	WA	06/10/97 - 09/10/97
East of Newlands evaluation	ARC NEW97	MOLAS	03/06/97 - 19/06/97
East of Pluckley Road evaluation	ARC PRD97	MOLAS	09/05/97 - 21/05/97
Leacon Lane evaluation	ARC LLA98	MOLAS	27/07/98 - 03/08/98
Leda Cottages evaluation	ARC LED98	MOLAS	04/08/98 - 06/08/98
Westwell Leacon evaluation	ARC WWL98	MOLAS	11/08/98 - 19/08/98
Westwell Leacon geophysical	ARC WLG99	OAU	1998
Charing Heath geophysical	ARC CHT95	ABA	1995
Godinton Park geophysical	ARC GPK95	ABA	1995

1.2 Geology and Topography

1.2.1 This 4.6 km section of the CTRL lies on relatively level ground, undulating gently between *c* 70 m and 80 m OD, running roughly parallel to, and 2.5 km south-west of, the North Downs escarpment and around 1 km north-east of the Great Stour River.

1.3 Archaeological and Historical Background

1.3.1 Investigations associated with the CTRL have revealed numerous archaeological remains in an area where previously relatively few were known. In general, however, the remains are diffuse and lacking well-dated structural evidence.

1.3.2 Flint scatters have been identified at several points by Fieldwalking surveys. A scatter of Mesolithic flint was found just to the west of Newlands Road (URL 1994, no. 1078) in Newlands sandpit. A scatter of prehistoric flint was found spread over a wide area extending from Newlands Road to Pluckley Road (URL 1994, no. 1816), and a concentration dated to the Mesolithic-early Neolithic was identified at the eastern end of this area in the East of Newlands evaluation (URL 1997a). Two groups were also identified further to the south-east, within the area of the East of Pluckley Road evaluation (URL 1994, nos 1817 and 1818). The dating of some of these scatters is uncertain, but together they indicate significant prehistoric activity in the area.

1.3.3 The uncertainty concerning the date of some of the flint is unfortunate, since it leaves a chronological gap between the early Neolithic and the next well-dated features, which belong to the late Iron Age. Prehistoric pits found in the East of Pluckley Road evaluation (URL 1997c) may belong within this chronological gap, but they could not be closely dated. Undated linear cropmarks identified to the south of Newlands Stud could be prehistoric but are perhaps more likely to be later in date (URL 1994, no. 1318).

1.3.4 A small concentration of late Iron Age and Roman remains have been identified around Newlands Stud. Late Iron Age cremations, a Roman quern and Roman pottery were found in the Newlands sandpit (URL 1994, nos. 1140 and 1080). A late Iron Age-early Roman road in a hollow way, first identified in the East of Newlands evaluation (URL 1997a) and subsequently investigated by trench excavation and watching brief, is assessed in this report. The other available evidence suggests a settlement focus of late Iron Age-early Roman activity in the area immediately to the west of Newlands Stud. A late Iron Age pit, and a Roman ditch were, however, also identified further east, in the East of Pluckley Road evaluation (URL 1997c) indicating extensive, if not intensive, agricultural activity and possible further rural settlement.

1.3.5 A complex of medieval remains were noted around Newlands Stud. The farm itself incorporated medieval buildings (URL 1994, no. 176), and a Norman chapel stood nearby (URL 1994, no. 178). Earthworks to the north of Newlands Stud may have been related to the manor (URL 1994, no. 1167). These remains again suggest that the main focus of medieval activity in the area was in the immediate vicinity of Newlands Stud. Medieval and post-medieval pits were, however, also found in the East of Newlands evaluation (URL 1997a) *c* 500 m south-east of Newlands Stud, and filled boundary ditches of similar date were discovered further to the east in the East of Pluckley Road evaluation (URL 1997c).

2. ORIGINAL PRIORITIES, AIMS AND METHODOLOGY

2.1 Landscape Zone Priorities

2.1.1 The site falls within the Project Area 430 landscape zone and is of relevance to the following periods, as defined in the CTRL Research Strategy (most of the evidence discovered falls within periods 2 and 3):

- 1- Early Agriculturalists (4000–2000 BC)
- 2- Farming Communities (2000–100 BC)
- 3- Towns and their rural landscapes (100 BC- AD 1700)

2.1.2 Two key themes identified were understanding the utilisation of natural resources, especially woodland management and continuity or change in burial practices.

2.2 Fieldwork Event Aims

2.2.1 The fieldwork event aims for the excavation at Hurst Wood were:

- to establish the extent, morphology and function of the remains
- to determine whether they are associated with other contemporary features and form part of a settlement
- to recover dated environmental and economic indicators.

2.2.2 At East of Newlands they were to:

- verify the date, alignment and construction method of the road
- establish the origins and later development of the road
- establish the extent morphology and function of any medieval features
- determine whether they are associated with other contemporary features
- determine whether the function of the site was agricultural, industrial or settlement

2.2.3 The primary fieldwork aims for the watching brief in general were to record any significant archaeological structures, features or deposits, and to retrieve environmental and economic evidence and artefacts from those archaeological contexts, as well as any other artefacts disturbed during construction work.

2.3 Fieldwork Methodology and Summary of Excavation Results

Detailed excavation and trench excavation

2.3.1 In the Hurst Wood detailed excavation area and the East of Newlands trench excavation, the topsoil and subsoil were stripped to the top of the archaeologically significant layers by 360° tracked excavators with toothless buckets under close archaeological supervision. The site was then planned and the features revealed were excavated by hand, pits being half-sectioned, and ditches being sectioned at appropriate points. The features were recorded using a single context recording system, were drawn in plan and section, and were photographed. Samples for

palaeoenvironmental and palaeoeconomic analysis were taken from appropriate contexts.

Watching brief

2.3.2 An intensive watching brief was maintained on earthworks within the CTRL temporary (construction) fenceline. The results of the watching brief between chainages 79+200 and 83+800 are considered in this assessment. For descriptive and archive purposes the route has been divided into blocks, categorised according to the archaeological findings of the watching brief. The categories are defined as follows:

2.3.3 Watching Brief General (WBG) - Areas containing only finds and features of low significance and density, with no clear relationship to previously discovered sites.

2.3.4 Watching Brief Significant Discoveries Supplementary (WBSDS) - Areas containing data that adds significantly to known sites defined through previous archaeological excavation works. These are usually considered in the relevant site specific assessment.

2.3.5 Watching Brief Significant Discoveries Individual (WBSDI) - Areas containing unanticipated discoveries of at least local importance, assessed as individual sites.

2.4 Assessment Methodology

2.4.1 This assessment report was commissioned by URS to the specification provided by RLE, as discussed with English Heritage and KCC. This specification follows national guidelines prepared by English Heritage and provides additional information regarding the level of detail required in the report and its format. Stuart Foreman (project manager) and Chris Hayden (team leader) managed the production of the report. The specialist work was undertaken by appropriately qualified specialists. Because the quantity of finds was relatively small, all material was assessed.

3. FACTUAL DATA AND QUANTIFICATION

3.1 The Stratigraphic Record

Hurst Wood detailed excavation

Features

3.1.1 The following five types of feature were found on the site.

- Burnt pits are the type of feature most characteristic of the site. Twenty four definite examples of these features as well as a small number of less certain examples, were found scattered across the site. Two were also found in the Hurst Wood WBSDS, and three in the evaluation of the site (ARC HWD 97; URL 1997b). A further possible example was found in the East of Newlands evaluation (ARC NEW 97; URL 1997) not far away, and another, further east in the Leacon Lane evaluation (ARC LLA 98; URS 1999)

- Two small burnt surfaces were found at the southern edge of the site.

- Two clusters of postholes, one in the east and one in the west, none of which form clear structures, and all of which lack any traces of burning, were found.

- A number of tree-throw holes were found, mostly along the south-western edge of the site. Most show signs of burning similar to those found in the burnt pits.

- A series of linear features running east-west across the eastern part of the site are probably the remains of ridge and furrow.

3.1.2 It is not always easy to assign particular features to one or other of these types, the main area of uncertainty being between burnt pits and tree-throw holes, most of which are also burnt. The most significant criterion for distinguishing between these types is the regularity of their shape, but there remains an area of ambiguity in the definition of irregularly shaped pits and relatively regularly formed tree-throw holes.

3.1.3 A short section of a possible ditch was recorded in the evaluation (ARC HWD 97; URL 1997b) in the southern part of the area subsequently selected for more detailed excavation. However, no further traces of this feature were found in the detailed excavation.

Stratigraphy

3.1.4 All of these features were stratigraphically isolated, none cutting others. This in itself is perhaps a significant observation, hinting that the pits may have been cut over a quite short period, during which they may have remained visible. The assessment of these features, and especially the burnt pits, has, therefore, focused upon their form, size, pattern of filling and contents, in the hope that this might provide some insight into their function.

Size, Form and Truncation

3.1.5 Almost all of the burnt pits are roughly circular, rarely oval, in plan, although there are two examples (27 and 140) which are sub-rectangular. Their bases are usually slightly irregular and rounded, although some are more regular and flat. Their length is also variable, being on average 1.04 m, but varying from 0.42 to 1.72 m (standard deviation = 0.34 m). The most consistent feature of the pits is their depth: all are shallow, being on average only 0.13 m deep, the standard deviation just 0.04 m and

Patterns of Filling

3.1.6 The pattern of fills found within the burnt pits is also quite consistent, three layers being usually distinguishable. The first is a layer of burnt natural sediment, which, rather than a fill, derives from the scorching of the sides of the pit itself. The second is a dark layer containing a high proportion (between 20 and 90%) of charcoal. Above this, the upper fill of the pits usually consists of an orange or yellow grey brown clayey silt layer, not dissimilar to the natural subsoil. If the second layer represents the fires which burnt within the pits, the upper layer may have been used to damp the fires down, or may have been deposited by erosion.

3.1.7 Uniquely, there appear to have been two episodes of burning in one of the pits (104), the sequence of fills outlined above being repeated twice.

Contents and Residuality

3.1.8 Aside from the ubiquitous charcoal, the pits contained very few artefacts, and almost all of those that were recovered were found in the upper, unburnt fills. There is thus a high probability that these artefacts are residual, especially if the upper fills were used to damp down the burnt material below. This residuality is clear in the case of the flint, the commonest category of material, and perhaps more significantly, may also be true of the few sherds of pottery found within the pits. Just ten sherds of pottery were found, all in upper fills in five burnt pits. All of the sherds were highly comminuted. The only other finds were a few fragments of fired clay.

East of Newlands trench excavation

3.1.9 The trench excavation investigated a possible late Iron Age/ early Roman trackway found in the East of Newlands evaluation. The subsequent watching brief uncovered further traces of the in-filled hollow way extending for at least 45m.

3.1.10 Two sections were cut across the trackway. Possible metalled surfaces were found in both sections, in one consisting of ragstone cobbles and in the other of gravel. These were found part way up the sequence filling the hollow way, indicating that the road or trackway was not metalled in its early phases.

3.1.11 The dating evidence for the trackway is uncertain. It is not clear how long it would have taken for the hollow way to form as a result of erosion by constant use, but it is likely to have been a considerable period. A single sherd, dated to AD 43 - 100 was found in a layer of metalling (18), perhaps suggesting an early Roman date for the surface. However, as noted above, the surface occurred part way up the sequence filling the hollow way, and there is no datable material from the lowest fills. A larger number of abraded, probably residual sherds, dating from the late Iron Age to the 2nd century AD, were found in the upper fill of the hollow way and are therefore of no help in dating the trackway.

Watching brief

3.1.12 The results of the watching brief between chainages 79+200 and 83+800, a distance of 4.6 km, are summarised in the tables below:

Table 2: Hurst Wood WBSDS summary of results

Event name	Hurst Wood
Event Code	ARC 430 / 79+200 to 79+500
Category	SDS
Context 1	A small burnt feature, similar to features discovered during the Hurst Wood excavation, was recorded. This scatter of burnt pits is of uncertain date, probably Roman or later, and may result from woodland clearance 79+300 (1).

Table 3: Hurst Wood WBG summary of results

Event Code	ARC 430 / 79+500 to 79+950
Event name	Hurst Wood WBG
Category	WBG
	Thirty-six 2nd World War concrete tank traps were discovered beneath a farm track. They were not *in situ*, and may have been moved from their original position during the construction of the M20.

Table 4: East of Newlands WBSDS summary of results

Event Code	ARC 430 / 79+950 to 80+150
Event name	East of Newlands
Category	WBSDS
Context 19	A hollow way, possibly of Roman date, which was first discovered during an evaluation and was subsequently subject to detailed mitigation (trench excavation), was further investigated during the watching brief. A 45m stretch of the road could be traced, on a north-west to south-east alignment. An abraded fragment of Samian dating to the mid 2nd century was recovered from the stripped surface of the upper fill (this is consistent with the material from the trench excavation but is of no use for dating the main period of use of the road). This might be part of a known route that ran between Rochester and Dover, but if this were true the alignment between Maidstone and Ashford would need to be reinterpreted (80+100, 19). The absence of structured surfaces and roadside ditches suggests that it is more likely to be a trackway of local importance.
Context 23	A shallow middle Iron Age pit (79+950, 23) was discovered in this area, containing a charcoal rich fill and pottery. It is not impossible that this feature represents a cremation pit that has been truncated by ploughing, but no human remains were found. It is situated 20m west of two cremations of Bronze Age date. It contained a large number of sherds from a middle Iron Age saucepan pot, but also one late Iron Age sherd. Its exact date remains uncertain: The late Iron Age sherd could be intrusive or the saucepan pot could have been deposited at a later date than is usual.
Contexts 5, 7	Two badly disturbed middle-late Bronze Age cremations (79+950, 5 and 7). The shallow remains of a severely truncated pit (5), containing cremated human remains, also contained a large number of sherds from a middle-late Bronze Age bucket urn. The pit had been disturbed by animal burrowing and it was unclear if the cremation had originally been placed in the urn or had accompanied a separate deposit. A second severely truncated cremation pit (7) was found just 0.2 m to the east of pit 5. It contained no pottery, but is probably of similar date. Fragments of post-medieval tile found in cremation pit 7, however, indicate that this cremation has suffered from significant disturbance.
Context 21	A post-medieval field boundary. Also located in a MOLAS evaluation trench (ARCNEW97). (80+050, 21).

Table 5: Newlands Stud to East of Pluckley Road WBG summary of results

Event Code	ARC 430 / 80+150 to 81+800
Event name	Newlands Stud to East of Pluckley Road
Category	WBG
Contexts 66, 68	Two shallow pits, one subrectangular (81+200, 66) and one oval (81+200, 68) were the only archaeological significant features found within this area of the watching brief. Pit 66 contained nine small fragments of pottery suggesting a date in the period from c 75 BC to AD 100 or later. The other pottery is likely to be similar in date. Both contained large quantities of charcoal, but were not themselves burnt. Ironworking slag was found in pit 68.

Table 6: Leacon Lane WBSDI summary of results

Event Code	ARC 430 / 81+800 to 82+000
Event name	Leacon Lane
Category	SDI
Context 3	A concentration of Mesolithic/ Neolithic worked flint was recovered in the area of Leacon Lane. The concentration consisted of 160 flints, mostly flakes with some cores, distributed over an area of 100m x 40m. The recorded distribution does not represent the true extent of the concentration as parts of the surrounding area were subject to disturbance during construction works, impeding visibility. The flint concentration was situated between two areas where archaeological features were excavated (Area 1 to the west and Area 2 on the higher ground to the east) (81+870).
Area 1	An area 30m x 20m was stripped under archaeological control to reveal 7 pits and a ditch. The pits were filled with burnt flint and charcoal but no dating evidence was recovered. The ditch was aligned north-west to south-east and contained early Roman pottery (81+870).
Area 2	Situated on higher ground to the north-east, this area contained a small cluster of 10 late Iron Age or early Roman pits (81+870).

Table 7: Westwell Leacon and Leda Cottages WBG summary of results

Event Code	ARC 430 / 82+000 to 83+800
Event name	Westwell Leacon and Leda Cottages
Category	WBG
Contexts 1, 5, 9, 10	A loose cluster of four pits (83+300, 1, 5, 9, 10) was found in the Westwell Leacon and Leda Cottages area. The pottery in pits 1 and 5 has been dated to the late Iron Age to *c* AD 60, although the presence of a fragment of Roman tile suggests that pit 5 is unlikely to date from before AD 60. The pottery from the other two pits was less distinctive but suggestive of a similar late Iron Age-early Roman date. Pit 5 contained a small quantity (1 g) of cremated human remains and much charcoal. Charcoal was also found in the other pits, although no cremated remains were found. It is possible, given the small deposit of cremated remains in pit 5 that they were missed in the samples taken from the other pits. An alternative hypothesis is that rather than representing the deliberate burial of a cremation, pit 5, and perhaps also the other pits, were used to dump debris from the cremation pyre, and thus came to incorporate small quantities of cremated human remains. The presence of a large number of sherds from a Belgic jar in pit 5, however, makes it more likely that the cremation was deliberately deposited here. Small amounts of fired clay, ceramic building material and slag were also found in the pits.

Evaluations

3.1.13 The following evaluations were carried out on the CTRL route between chainages 79+200 and 83+800. The results have been taken into account in this assessment but are not incorporated in detail as Fieldwork Reports are available for individual sites.

Table 8: List of Evaluations between chainages 79+200 and 83+800

Fieldwork Event Name	Fieldwork Event Code	Chainage range	No. of Trenches	Summary of archaeological features
Hurst Wood	ARCHWD97	79+200 to 79+500	14	Undated features and flint finds, WA, 1997
East of Newlands	ARCNEW97	79+950 to 81+050	22	Late Iron Age/early Roman hollow way and some medieval finds, MoLAS, 1997
East of Pluckley Road	ARCPLD97	81+100 to 81+800	37	Pre-historic activity and Roman Road, MoLAS, 1997
Leacon Lane	ARCLLA98	82+100 to 82+500	17	Burnt tree throws, MoLAS, 1999
Westwell Leacon	ARCWWL98	82+500 to 82+950	23	Medieval chalk footings, MoLAS, 1998
Leda Cottages	ARCLED98	82+950 to 83+800	18	Post-medieval pit, MoLAS, 1998

3.2 The Artefactual Record

Prehistoric Pottery

Late Iron Age and Roman Pottery (Appendix 1)

3.2.1 Just ten sherds (27 g) of highly comminuted Iron Age and early Roman pottery were recovered from the Hurst Wood excavation, almost all from the upper fills of the burnt pits. They may all be residual.

3.2.2 A total of 22 sherds (97 g) of Roman pottery were recovered from the area of the East of Newlands trench excavation. The most closely dated of these is a fragment of a south Gaulish Samian Dr. 33 cup dated to *c* AD 43-110, which was found on the surface of the in-filled hollow way and is therefore of little value for dating the feature.

3.2.3 Just nine very small sherds of 'Belgic' grog-tempered B2 fabric pottery were found in pit 66 in the area from Newlands Stud to East of Pluckley Road which can be assigned only a broad date range of *c* 75 BC - AD 100+.

3.2.4 A small assemblage of 48 sherds (132 g) of late Iron Age-early Roman pottery was found in five pits in the Leacon Lane WBSDI. The pottery in three of the pits comprised heavily comminuted 'Belgic' grog-tempered sherds, suggesting a date from the late Iron Age to *c* AD 70. Fragments of Thameside greyware jars, a sherd in 'Belgic' fabric B2 and in sandy over-fired fabric LR2.2 suggest a later date, perhaps as late as the 3rd century.

3.2.5 A small assemblage (61 sherds, 132 g) of late Iron Age-early Roman pottery was recovered from four pits in the Westwell Leacon and Leda Cottages WBG. These include sherds in fabrics B2.1 and B9.1, and a few sherds in Upchurch fineware fabrics R16 and R17, suggesting a date from the late Iron Age to *c* AD 60. A fragment of Roman tile found in one pit, however, is unlikely to date from earlier than *c* AD 60.

Medieval and Post-Medieval Pottery (Appendix 1)

3.2.6 Small assemblages of medieval and post-medieval pottery were found at East of Newlands and Leacon Lane. In both cases they were recovered from topsoil or subsoil contexts.

Ceramic Building Material and Fired Clay (Appendix 1)

3.2.7 Small quantities of fired clay (0.348 kg) and ceramic building material (0.094 kg) were recovered from this group of sites. The ceramic building material which came from the East of Newlands trench is all roof tile, of late medieval or early post-medieval date and was found in the backfill of a trial trench. Most of the fired clay is undated, but there is vitrified clay or daub from the Westwell Leacon and Leda Cottages WBG and from the East of Newlands trench; the material from the latter site includes small pieces of slag, found only in the upper fill of the hollow way.

Worked Flint (Appendix 2.1)

3.2.8 A total of 497 pieces of worked flint and 10 pieces of burnt unworked flint (weighing 86g) was recovered from the excavations at Leacon Lane, Hurst Wood and East of Newlands (ARC 430 81+800-82+000, ARC HWD98, ARC 430 79+200-79-500, ARC NEW98). Flint was recovered from a variety of contexts including layers, the fills of pits, post-holes and tree-throw holes.

Stone (Appendix 2.2)

3.2.9 One fragment of sandstone, which appears to be glazed, was recovered from the topsoil in the Hurst Wood excavation. It is worth investigating this to discover if it is natural or a result of glass-working or another industrial process. There were also two fragments of lava, probably from a rotary quern or a millstone, from a subsoil context on the same site.

Metalwork (Appendix 3)

3.2.10 One unstratified nail was recovered from the Hurst Wood excavation and a post-medieval horse shoe was found on the surface of the upper fill of the hollow way at East of Newlands.

3.3 The Environmental Record

Human Remains (Appendix 4)

3.3.1 Two disturbed cremations (3 and 7), thought to date from the middle-late Bronze Age, were found in the East of Newlands WBSDS. Both deposits were insubstantial, weighing 84 g and 34 g respectively. Both probably represent the very fragmentary remains of adults. Identifiable bone comprised skull vault, long bone shaft and rib.

3.3.2 A further small deposit of cremated human remains, weighing just 1 g, was recovered from an early Roman pit (5) during the Westwell Leacon and Leda Cottages watching brief. The very small quantities of burnt bone recovered mean that it is uncertain whether these represent very poorly preserved cremation deposits or some other form of deposition involving token deposits of human remains.

Animal Bone (Appendix 5)

3.3.3 A single fragment of unidentified animal bone was recovered from the upper fill of pit 29 at the Leacon Lane WBSDI.

Charcoal (Appendix 6)

3.3.4 A total of seventeen samples, from cremation burials from the East of Newlands WBSDS and pits at the Hurst Wood excavation**,** were submitted for the assessment of wood charcoal. Three taxa were provisionally identified - *Quercus* sp. (oak), *Alnus/Corylus* (alder/hazel) and Maloideae (hawthorn, apple, pear etc.). A possible fourth taxa was present in pits 104 and 122 at Hurst Wood, which could be charred rootwood. Context 143, in pit 140 at Hurst Wood produced two immature grape seeds, which appeared to be charred.

3.3.5 The apparent dominance of a single taxon in the cremation deposits at East of Newlands is commonly seen in cremation burials of this period and provides evidence for the local practice of deliberate selection of fuelwood. The fact that the burnt pits at Hurst Wood are also dominated by a single taxon suggests deliberate selection of fuelwood for a specific purpose, possibly charcoal production.

3.4 Dating

Radiocarbon (Appendix 7)

3.4.1 Single samples from two burnt pits at the Hurst Wood detailed excavation were submitted for dating with the intention of estimating the date, and the date range of the burnt pits. The samples were therefore selected, as far as was possible, from two pits of contrasting shape, pit 140 being a flat-based, rectangular pit and pit 104 a circular, concave-based pit.

Table 9: Radiocarbon results obtained during the assessment

Lab ref	Context	Sample	Date	1σ	2σ	Comment
NZA-12274	ARC HWD98 ctx 107 (sample 9)	Burnt plant material (clematis vitalba)	1076±60	895-1017 cal AD	820-843 cal AD plus 862-1035 cal AD	From charcoal-rich fill of burnt, circular, concave pit 104
NZA-12284	ARC HWD98 ctx 143 (sample 14)	Burnt plant material (maloidiae)	2742 ±45	922-828 cal BC	993-810 cal BC	From charcoal-rich fill of burnt, rectangular, flat-based pit 140

3.5 Archive Storage and Curation

3.5.1 The material recovered from the site has been stored according to United Kingdom Institute for Conservation guidelines. It requires no special conservation measures.

3.5.2 Following further study and publication, if it is confirmed that the late Iron Age and Roman sherds from Hurst Wood are residual they need not be retained. The abraded late Iron Age and Roman sherds from East of Newlands may also be discarded. The post-medieval sherd from East of Newlands may be discarded. The nail and horseshoe from Hurst Wood and East of Newlands may be discarded.

3.5.3 The archive indices for the Detailed excavations and Watching Brief areas classified as SDI or SDS have been updated and are shown below.

3.5.4 Areas within CTRL Contract 430 classified as WBG have been archived together. The relevant archive index is included in the Project Area 430 watching brief interim report.

Table 10: Archive index for ARC HWD97 Hurst Wood Detailed Excavation

Item	**Number items or boxes or other**	**Number of fragments/ litres**	**Condition (No. of items)** (W=washed; UW=unwashed; M=marked; P=processed; UP=unprocessed; D=digitised; I=indexed)
Contexts records	143		I,D
A1 plans	7		I,D
A4 plans	50		I
A1 sections	0		I
A4 sections	50		I
Small finds	6		P, M,I
Films (monochrome)	4		M,I
Films (Colour)	5		M,I
Flint	1 size 3	102	W,M,I
Pottery	1 size 4	6	W, M,I
Fired clay	See misc. finds		W, M,I
CBM	0		W,M,I
Stone	See misc. finds		W,M,I
Metalwork	See misc. finds		P,I
Glass	0		W,M,I
Slag	See misc. finds		-
Human Bone	0		W, M
Animal Bone	0		W, M
Misc.	1 size 4	66	W,M
Soil Samples (No.)	14		P,I
Soil Samples (bags/tubs)	31		P,I

Table 11: Archive index for ARC NEW97 East of Newlands Trench Excavation

Item	**Number items or boxes or other**	**Number of fragments/ litres**	**Condition (No. of items)** (W=washed; UW=unwashed; M=marked; P=processed; UP=unprocessed; D=digitised; I=indexed)
Contexts records	7		D,I
A1 plans	2		I
A4 plans	0		D,I
A1 sections	2		I
A4 sections	0		I
Small finds	3		I
Films (monochrome)	2		M,I
Films (Colour)	2		M,I
Flint	see Misc	3	W,M,I
Pottery	1 size 4	26	W,M,I
Fired clay	see Misc	5	W,M,I
CBM	see Misc	6	W,M,I
Misc.	1 size 2		See above

Table 12: Archive index for ARC 430 79+200-79+500 Leacon Lane WBSDI

Item	**Number items or boxes or other**	**Number of fragments/ litres**	**Condition (No. of items)** (W=washed; UW=unwashed; M=marked; P=processed; UP=unprocessed; D=digitised; I=indexed)
Contexts records	65		D,I
A1 plans	2		D,I
A4 plans	2		I
A4 sections	17		I
Films (monochrome)			M,I
Films (Colour)			M,I
Flint	4 size 3 1 size 4	453	W,M,I
Pottery	1 size 3	181	W,M,I
Stone	See Misc.	1	W,M,I
Soil Samples (No.)	7		P,I
Soil Samples (bags/tubs)	38	380 Ltrs	P,I

Table 13: Archive index for ARC 79+500 - 79+950 Hurst Wood WBSDS

Item	**Number items or boxes or other**	**Number of fragments/ litres**	**Condition (No. of items)** (W=washed; UW=unwashed; M=marked; P=processed; UP=unprocessed; D=digitised; I=indexed)
Contexts records	6		D,I
A4 plans	1		
Films (monochrome)			M,I
Films (Colour)			M,I

Key to box sizes

Cardboard boxes		
Size 1 = Bulk box	391mm x 238mm x 210mm	0.02 m^3
Size 2 = Half box	391mm x 238mm x 100mm	0.01 m^3
Size 3 = Quarter box	386mm x 108mm x 100mm	0.004 m^3
Size 4 = Eighth box	213 mm x 102 mm x 80 mm	0.002 m^3

4. STATEMENT OF POTENTIAL

4.1 Stratigraphic Potential

4.1.1 The landscape zone priorities and fieldwork event aims for Hurst Wood, east of Newlands and the Project Area 430 Watching Brief are set out in Section 2 of this document. The site has very limited potential for addressing aspects of the CTRL research strategy for the periods `early agriculturists' (4500 BC - 2000 BC), `farming communities` (2000 BC - 100 BC) and 'Towns and their rural Landscapes' (100 BC - AD 1700).

4.1.2 The stratigraphic potential for this group of sites is limited to providing evidence for burial, settlement and agricultural activity, in particular during the late Iron Age and Roman period (Towns and their rural landscapes, sub-period 1, 100BC - AD 410). The stratigraphic evidence has been examined in detail at the Fieldwork Event Aim level and there is little potential for further analysis to provide additional insights. However, the dating and characteristics of the main phases of activity, described below, can contribute to broader studies at the Landscape Zone level, as discussed in section 4.5 (Overall Potential).

Hurst Wood

4.1.3 The only notable feature of this site are the burnt pits, which are presumed to be associated with some form of agricultural or industrial process, perhaps charcoal production. The lack of secure dating evidence will prevent any meaningful further analysis of these features.

East of Newlands

4.1.4 The middle-late Bronze Age cremations in the same area have both been severely truncated and have suffered from disturbance. Their original form is thus not preserved and they provide few details of the practice of cremation. Although they provide an additional example of burial practise for this period, further detailed study of these examples will not contribute materially to the CTRL research aims.

4.1.5 The isolated middle-late Iron Age pit has no potential in terms of the CTRL research aims other than to indicate that some kind of activity took place in that period in this location.

4.1.6 Further excavation of the trackway has left its precise date unknown, although the balance of probability favours a possible start date in the late Iron Age with use continuing during the early Roman period. There is no evidence for later use of the track. Nevertheless the feature is of some local interest for understanding the development of the landscape and communication routes in particular. In spite of the lack of substantial road surfaces or drainage ditches the location and alignment of the track suggests that it could represent the Roman road from Rochester to Dover. Further research is required to assess this possible interpretation.

Newlands Stud to East of Pluckley Road

4.1.7 The two late Iron Age-early Roman pits at this site both appear to have been used, or reused as rubbish pits. Again, they are of little significance except as an indication of activity in this area.

Leacon Lane

4.1.8 The Mesolithic/ Neolithic flint scatter at Leacon Lane is not *in situ*, and is significant only as an indication of activity in this broad period in the general area.

4.1.9 The late Iron Age-early Roman pits in the same area of the watching brief provide equally limited insights into the character of the activity with which they were associated, and again have only limited potential.

Westwell Leacon and Leda Cottages

4.1.10 The four pits at Westwell Leacon and Leda Cottages again form an isolated group. It is possible, though far from certain, that the pits were used to deposit the remains from a cremation pyre, and it could be for this reason that they are isolated. Otherwise, however, they are significant only as an indication of activity in this area in the late Iron Age-early Roman period.

4.2 Artefactual Potential

Prehistoric Pottery

Late Iron Age and Roman pottery (Appendix 1)

4.2.1 The pottery from the sites along this area of the CTRL are generally only of significance as evidence for the date of the features within which they are contained. Such evidence is of greater importance in the case of the trackway at East of Newlands, although even here the precise date of its construction cannot be determined. The fragments of salt container found at Westwell Leacon and Leda cottages may also make a small contribution to our knowledge of the salt trade within the region during the late Iron Age and pre-Flavian periods. The pottery at Hurst Wood is likely to be residual and thus may not provide even a date for the burnt pits here.

Post-Roman Pottery (Appendix 1)

4.2.2 The medieval and post-medieval pottery from East of Newlands and Leacon Lane was all found in subsoil contexts and is thus of significance only as evidence for general activity in the areas in the periods concerned.

Ceramic Building Material and Fired Clay (Appendix 1)

4.2.3 The tile at East of Newlands was found in the backfill of an earlier test trench and thus has no potential in terms of the interpretation of the site. The fired clay from the same site is from the upper fill of the trackway and the topsoil and thus also contributes little to our understanding of the site. The fired clay at Hurst Wood was found in a tree-throw hole and is not obviously related to the function of the pits. It has little potential. Aside from indicating the possible presence of some kind of structure nearby, the fired clay from Westwell Leacon and Leda cottages is of little more interest.

Worked Flint (Appendix 2.1)

4.2.4 The Mesolithic material from Leacon Lane seems to represent the disturbed remains of a flint scatter within the ploughsoil. The material provides good evidence for Mesolithic activity, with possible usewear and refitting flakes. This would suggest that some *in situ* activity has been disturbed. Generally the material was in good condition and was probably only recently incorporated into the ploughsoil. It therefore represents a good group for analysis of flint technology. Further analysis

(incorporating use wear, refit analysis and distribution) would contribute to CTRL research aims at Landscape Zone Level relating to the location and nature of hunter-forager activity.

4.2.5 Other Mesolithic activity was identified at Hurst Wood, together with evidence for Neolithic occupation. This relatively well-dated group of flint has potential for understanding the use of the landscape in the Mesolithic and to a lesser extent into the Neolithic.

Stone (Appendix 2.2)

4.2.6 Further work might investigate the glass-coated stone and its origins. This would provide evidence for the nature of possible manufacturing activity in the vicinity, although in the absence of any dating evidence this will be of limited value. No other work is recommended.

Metalwork (Appendix 3)

4.2.7 The metalwork has no potential for further analysis.

4.3 Environmental Potential

Human Remains (Appendix 4)

4.3.1 The potential of the two cremation deposits at East of Newlands is limited by their small size and by the fact that both appear to have suffered significant disturbance. There is little to be learnt by attempting comparative analysis and no further work is recommended.

Animal Bone (Appendix 5)

4.3.2 The single unidentified bone from Leacon Lane has no potential in terms of the CTRL research aims.

Charcoal (Appendix 6)

4.3.3 Detailed analysis of the samples from Hurst Wood is unlikely to contribute further to our understanding of the site. However, it would be of value to confirm the identification of the radiocarbon dated burnt plant material (*Clematis/Vitis*) since the occurrence of two grape seeds in another pit on the same site is suggestive of grape cultivation. The Saxon radiocarbon date from the burnt plant material (especially if confirmed by a second date from the same charcoal or from a grape seed) is of considerable interest as an indicator of wine growing in the area at this time. This would contribute to CTRL research aims at Landscape Zone level related to changing agricultural practices over time.

4.3.4 The results from the cremation pits provide a few further details of the practice of cremation which appear to conform to wider patterns along the CTRL and may thus make a small contribution to our understanding of burial practices.

4.4 Dating Potential

Radiocarbon date (Appendix 7)

4.4.1 Widely divergent (Bronze Age and Late Saxon) radiocarbon dates have been obtained for two of the burnt pits at Hurst Wood, indicating either that similar activities were carried out on the site over a very long period of time, or more likely, that the pits contain residual organic material as well as artefacts. If the former is true, all of the burnt features would need to be radiocarbon dated in order to

examine their chronology. If the latter is true, further radiocarbon results would not resolve the dating problem at all. Since in either case the function of the pits will remain uncertain, no further dating is recommended.

4.4.2 There would be some intrinsic value in confirming the Saxon date of the *clematis vitalba* or *Vitis vinifera* charcoal from pit 104 and/ or the grape pips from the pit 143, with another radiocarbon date, to establish the date of possible vine cultivation on the site. This would be of value for wider CTRL research aims relating to changing agricultural practice over time.

4.4.3 No radiocarbon dating is recommended for other contexts in this group of sites as the features are either sufficiently dated by artefactual evidence or show evidence for a high level of residual material.

4.5 Overall Potential

4.5.1 This group of sites offers only very limited potential to address the research aims identified for the Wealden Greensand Landscape Zone, within the period divisions defined by the CTRL Research Strategy: 'hunter-foragers' (10,000BC - 4500BC), 'early agriculturists' (4500 BC - 2000 BC), 'farming communities' (2000BC - 100BC) and 'towns and their rural landscapes' (100BC - AD1700).

4.5.2 Overall, the features provide rather sparse evidence for land-use. In most periods the low density of features identified is consistent with a relatively low level of agricultural activity. Possible exceptions are the middle Bronze Age, from which there are two cremation burials, and the late Iron Age and early Roman period, from which there is evidence for more intensive land-use, including possible indications of rural settlement sites at Newlands Stud, East of Pluckley Road, Leacon Lane and Leda Cottages.

4.5.3 While the chronological and stratigraphic evidence from this group of sites is very slight, it is sufficient to support observations from elsewhere on the CTRL, within the 'Wealden Greensand' Landscape Zone (*eg* South of Snarkhurst Wood, Beechbrook Wood, West of Blind Lane, Church Lane/ East of Station Road). These sites characteristically show some evidence for middle-late Bronze Age activity in juxtaposition with a considerably greater density of late Iron Age and early Roman activity, with no evidence for continuity in the preceding or intervening periods. This would seem to support suggestions that these periods are characterised by population growth and relatively intensive agricultural exploitation. However, other sites on the CTRL, including White Horse Stone and Eyhorne Street, show almost the opposite pattern, with evidence for long-lived Neolithic and early-middle Iron Age occupation, but little or no Bronze Age or late Iron Age/ Roman activity.

4.5.4 This deserves further consideration at the Landscape Zone level of analysis, although considerable caution has to be exercised in interpreting such patterns, as they may be artefacts of the narrow transect across the landscape within which the CTRL investigations have taken place. The identification of such broad chronological patterns in land-use at a regional level would contribute to a number of Landscape Zone Priorities. Palaeoenvironmental sequences from sites such as White Horse Stone and East of Station Road have the potential to determine the regional environmental background to these major changes.

4.5.5 The chronology of the features found is summarised in Table 4. The clearest pattern is the much greater number of features dating to the late Iron Age-early Roman period than to earlier or later phases. This suggests, perhaps unsurprisingly, much more intensive exploitation of the landscape, and perhaps a denser population in this than in earlier phases. It also hints that this floruit may have been relatively short-

lived since later finds, notably 3rd and 4th century Roman finds, are equally scarce. The wider, but less detailed picture given by the *Assessment of historic and cultural effects* (URL 1994) fills some of the gaps in this picture (see 1.3 above), but still leaves the general pattern broadly intact. The limited remains found over much of the watching brief may thus have some potential to measure changes in the density and distribution of the population.

Table 14: Summary of the occurrence of features by period

Event Name	Meso/ Neolithic	Early Bronze Age	Middle Bronze Age	Late Bronze Age	Early Iron Age	Middle Iron Age	Late Iron Age	Early Roman	Late Roman	Anglo-Saxon	Med-ieval
Hurst Wood				Burnt Pit?							Burnt Pit?
East of Newlands			Cremations			Pit 23	Trackway				Pits
East of Pluckley Road							Pits	Ditch			Ditches
Newlands Stud							Pits				
Leacon Lane	Flint Scatter						Ditch				
							Pits				
Westwell Leacon							Pits				
							Cremation				

4.5.6 The potential of the Hurst Wood group of sites is discussed by period below.

Landscape Zone Priority: Early Agriculturalists (4000-2000 BC)

4.5.7 The flint scatter at Leacon Lane contains material of Mesolithic and Neolithic date. It is not *in situ* and is significant only as an indication of activity in this broad period in the general area. It may make a small contribution, of local interest, to our understanding of patterns in the use of the landscape when placed within the broader distribution of similar scatters.

Landscape Zone Priority: Farming communities (2000-100 BC)

4.5.8 The potential of the pair of middle-late Bronze Age cremations (East of Newlands) is vitiated by their very poor state of preservation as well as being token deposits of any one individual. Therefore. they reveal few details of the practice of cremation. Burials of this date have been found at locations along the CTRL (eg Tutt Hill and Pepper Hill). Little can be learnt from comparisons and the potential of this assemblage is limited by its small size as a group and by the size of the deposits. However, they may make a general, locally significant contribution to our understanding of continuity and change in burial practices.

4.5.9 As the date of the burnt pits at Hurst Wood remains uncertain they are not discussed here, even though one produced a Bronze Age radiocarbon date.

East of Newlands

4.5.10 The isolated middle-late Iron Age pit has no potential in terms of the CTRL research aims other than to indicate that some kind of activity took place in this period at this location.

4.5.11 The trackway found at East of Newlands has some significance in terms of our understanding of the way in which people moved through the landscape and organised their communication networks. However, there is little apart from the alignment to suggest that the hollow way was a major road. It may, instead, have linked some, rural settlements, and thus can be regarded as being of only local significance.

Newlands Stud to East of Pluckley Road

4.5.12 The two late Iron Age pits, used or reused as rubbish pits, found in the area from Newlands Stud to East of Pluckley Road again have little significance except as an indication of activity in this area.

Leacon Lane

4.5.13 Although a more extensive scatter was found here than at other sites in this area, the late Iron Age and Roman pits again have little potential beyond indicating activity in this period in this area.

Westwell Leacon and Leda Cottages

4.5.14 The significance of the late Iron Age-early Roman cremation found at Leda Cottages is perhaps vitiated by the uncertainty regarding its function. Only small quantities of cremated human bone were recovered from one pit which is part of a group of otherwise similar pits all of which contain charcoal. It is thus possible that the contents of the pit were not a deliberately deposited burial, but merely a dump of the remains of a pyre.

4.6 Up-dated Research Aims

4.6.1 No specific up-dated research aims have been identified for this group of sites as the potential for further research is limited to broad studies at the Landscape Zone level. Detailed presentation of relevant up-dated research aims relating to the Landscape Zones can be found in the assessments for White Horse Stone (prehistoric settlement, landscape and ritual) and Thurnham Roman Villa (Late Iron Age and Roman rural settlement).

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APPENDIX 1 - CERAMICS

1.1 Assessment of Late Iron Age and Roman Pottery

by Malcolm Lyne

Introduction

1.1.1 The small assemblages of late Iron Age and Roman pottery recovered from the five areas covered in this assessment report are discussed individually by areas below. The methodology used in assessing each was the same. The recovery and study of the pottery was undertaken in accordance with the Fieldwork Event Aims (see Section 2.2). In particular the pottery is used to assist in dating and characterising the deposits from which it was recovered.

Methodology

1.1.2 All of the pottery assemblages were subjected to general sherd count, weighing and spot-dating. None of the assemblages were considered suitable for more detailed quantification because of their small size.

1.1.3 Fabrics were identified with the aid of a x8 lens with built-in metric scale for determining the sizes, nature, form and frequency of inclusions. Finer fabrics were further examined using a x30 magnification pocket microscope with artificial illumination source. Fabrics were classified using the Canterbury Archaeological Trust's codings where applicable (Macpherson-Grant *et al* 1995).

Hurst Wood

Introduction, Quantification and Provenance

1.1.4 This site produced just 10 Iron Age and early Roman sherds of pottery (27 g) from five burnt pit contexts (Table 15). The sherds are very comminuted and comprise five middle to late Iron Age calcined-flint tempered chips from burnt pit 27, two similar fragments from burnt pit 49 and another from burnt pit 143. A further calcined flint tempered sherd was present in the topsoil and a fragment possibly from an early Roman Hoo flagon came from burnt pit 46.

Potential for Further Work and Conservation

1.1.5 The comminuted nature of the sherds and the fact that they are all from the upper fills of the features suggests that they are residual in features which could be charcoal-burners' clamp bases of much later date. The material may have been raked up with the soil used to smother the clamps. The citing of parallels would be invidious and all of the sherds could be discarded after cataloguing.

East of Newlands

Introduction

1.1.6 A few sherds of Roman pottery were recovered during the watching brief and a few more from a trench excavated across a suspected hollow way thought to be of Roman date.

Quantification

1.1.7 The watching brief yielded 1 sherd (8 g) of pottery from a single context (Table 16); the excavation produced 21 more (89 g) from the fills of the possible Roman hollow

way (Table 16). The latter material is very comminuted and abraded. Five more sherds came from the backfill of the MOLAS trial trench.

Provenance

1.1.8 The putative Roman hollow way produced 22 sherds of 1st to 2nd century pottery. A fragment from a South Gaulish Samian Dr.33 cup (*c* AD 43-110) was recovered from the top fill of the feature during the watching brief. Fifteen abraded fragments from a jar in 'Belgic' grog-tempered fabric B2 and a rim sherd from a jar of Monaghan's Type 4A2.2 (1987; *c* AD 110-200) were recovered from the upper fill of the trackway during the excavation, as were two ground-up pellets of prehistoric pottery. The sherds are greatly abraded and do not provide very good dating evidence, although the absence of any later material supports a broadly late Iron Age or Roman date for the feature.

Conservation

1.1.9 No further conservation is required. The Dr.33 cup fragment and other rim sherds from the road should be retained but the more abraded pieces can be discarded.

Comparative Material

1.1.10 The small amounts of Roman pottery and the poor condition of the sherds makes any search for published parallels pointless. All that can be said is that the fabric breakdown of the assemblage is fairly typical for this part of Kent.

Potential for Further Work

1.1.11 The potential for the pottery from the site to contribute to the aims of the CTRL project appears to be very limited, other than providing the only available dating evidence for the road.

Newlands Stud to East of Pluckley Road

1.1.12 Pit 66 produced just nine tiny flakes from closed forms in 'Belgic' grog-tempered B2 fabric (Table 17). The sherds are all oxidised to a greater or lesser degree and two of the fragments have external combed decoration. In the absence of rim or other diagnostic sherds, the closest date range that it is possible to arrive at is *c* 75 BC - AD 100+. The only way in which such a tiny assemblage can contribute to the aims of the CTRL project is to confirm the late Iron Age/early Roman date of the activity on the site.

Leacon Lane

Introduction

1.1.13 Small amounts of comminuted and abraded late Iron Age and early Roman potsherds were recovered from the excavation of pits on the site. Larger amounts were recovered unstratified from subsoil contexts. Quantities are insufficient for anything other than the dating of features.

Quantifications

1.1.14 The site yielded 48 sherds (132 g) of late Iron Age-early Roman pottery from seven excavated features (Table 18). A further 125 sherds were recovered unstratified from the subsoil.

Provenance.

Late Iron Age - AD.70

1.1.15 Nineteen sherds of heavily comminuted 'Belgic' grog-tempered pottery of this date were recovered from the upper fills of Pits 20, 26 and 29. A further 16 sherds came from the fill of Ditch 39. All of the latter were from a single small jar in grog-tempered fabric B2.1, which was missing its rim.

c AD 70-200

1.1.16 Ten sherds of this date were present in the fills of the intercutting pits 53 and 69 (Contexts 54 and 70): the eight sherds from the earlier Pit 53 include a fragment from a second-century Thameside greyware jar and the two from the later Pit 69 comprise a sherd in 'Belgic' fabric B2 and a piece from a small jar in the sandy over-fired fabric LR2.2 which could be as late as the 3rd century.

Conservation

1.1.17 No further conservation is required. The stratified material should be kept but that from the subsoil can be discarded.

Comparative Material

1.1.18 The small amounts of stratified pottery and the lack of rims (only one rim sherd was present) severely limits the search for published parallels. It can be said, however, that the assemblage fabric make-ups are broadly what one might expect for this area of Kent.

Potential for Further Work

1.1.19 The potential for the pottery from the site to contribute to the aims of the CTRL project is severely limited. It indicates occupation from the Late Iron Age until AD 200 or slightly later and has some limited application in determining the changing patterns of pottery supply to the site.

Westwell Leacon and Leda Cottages

Introduction, Quantification and Provenance

1.1.20 The four pits yielded 61 sherds (953 g) of pottery between them of which 17 (564 g) are large fresh fragments from the lower part of a jar in 'Belgic' B2.1 fabric found in pit 5 (Table 19). This feature also produced nine other sherds of late Iron Age-AD 60 character, including a fragment in glauconitic sand tempered fabric B9.1. The presence of a chip of Roman tile does, however, indicate that the pit was dug after the Roman Conquest and is unlikely to be earlier than *c* AD 60.

1.1.21 Pit 1 is probably of similar date and produced five sherds, including one each in Upchurch fineware fabrics R16 and R17. The other pit assemblages are less closely datable but are of late Iron Age character.

Potential for Further Work

1.1.22 An interesting feature of the assemblages from Pits 1 and 10 is the presence of small fragments of salt container in fabric BER15 from salterns on the coast of East Kent. This adds to our knowledge of salt trade within the region during the late Iron Age and pre-Flavian periods. Apart from this, the very small pottery assemblages contribute little to the aims of the CTRL project other than in the fields of settlement

pattern and pottery distribution within the area. The quoting of parallels is impossible because of the lack of vessel rims and other diagnostic forms.

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1.2 Assessment of the Post-Roman Pottery

by Paul Blinkhorn

Introduction

1.2.1 Small assemblages of medieval and post-medieval pottery were found at East of Newlands and Leacon Lane. In both cases they were recovered from topsoil or subsoil contexts. The recovery and study of the pottery was undertaken in accordance with the Fieldwork Event Aims (see Section 2.2). In particular the pottery is used to assist in dating and characterising the deposits from which it was recovered.

Methodology

1.2.2 The pottery was examined visually, and sherd counts and weights recorded. The codes and chronologies of the Canterbury Archaeological Trust Fabric series for the county of Kent (Cotter forthcoming a) and b)) were used.

East of Newlands

1.2.3 The post-Roman pottery assemblage comprised a single small sherd of Red Earthenware (2 g) from the topsoil (8; Table 20). This material is categorized as fabric PM1 in the Canterbury Archaeological Trust Fabric series for the county of Kent (Cotter forthcoming a and b), and dated 1550-1800. This single sherd has no potential in terms of the CTRL research aims or of the interpretation of the site and may be discarded.

Leacon Lane

1.2.4 Just seven sherds (33 g) of abraded medieval pottery were found on the site in contexts which also contained Iron Age and Roman pottery. The following fabric types were noted:

- M38B, N or W Kent fine sandy ware, 1225/50 – 1400. 5 sherds, 20 g.
- M40B. Ashford/Wealden sandy ware, ?1200/25 – 1400. 2 sherds, 13 g.

1.2.5 The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 21.

1.2.6 The assemblage comprised two relatively large groups of abraded Iron Age and/or Romano-British pottery with a few sherds of medieval wares mixed in. The medieval pottery was all found in subsoil contexts. The range of ware types indicate small-scale activity during the 13th or 14th centuries. This material has little potential except as evidence for activity in the general area in this period.

Acknowledgements

1.2.7 Grateful thanks go to John Cotter and Nigel McPherson-Grant of the Canterbury Archaeological Trust for their kind help in identifying and dating this material.

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1.3 Assessment of the Ceramic Building Material and Fired Clay

by Susan Pringle

Introduction

1.3.1 A small amount of fired clay and ceramic building material, totalling 0.376 kg, was recovered from three sites: Hurst Wood, East of Newlands and Westwell Leacon and Leda Cottages. It was hoped that this material would provide evidence for activities and structures, and their date.

Methodology

1.3.2 All of the ceramic building material and fired clay was examined. The fragments have been counted and weighed, and notes made of the most distinctive fabrics and any unusual inclusions. Exceptionally reduced (blackened) or vitrified material has been noted. The presence of original surfaces, imprints and tempering has been noted. No analytical work has been carried out on the fabrics.

Quantification and Provenance

Ceramic Building Materials

East of Newlands

1.3.3 Ceramic building material was found only at East of Newlands. Five fragments of peg or plain tile (0.094 kg) came from the backfill of a test trench excavated during the evaluation (Table 23). The tile fragments, of which two conjoin, are in a calcareous orange-red fabric, and have medium to coarse moulding sand. Part of one round nail or peg hole is present. No glaze was noted. This type of tile is hard to date as the form changes little over the centuries, but, on the evidence of the moulding sand and the shape of the nail hole, these could be as early as the 15th century.

Fired clay

Hurst Wood

1.3.4 A total of 40 small, abraded fragments (0.022 kg) of sooted and reduced daub is present, from the fill of tree-throw hole 11 (Table 22). Most are abraded, but the largest fragment contains quartz sand which seems to be worn. The material may be the remains of an earth floor, although trampling during excavation must be a possibility.

East of Newlands

1.3.5 Seven fragments of fired clay (0.009 kg) were found in two contexts at East of Newlands (Table 23). All were in a sandy fabric, but that from context 3005, the upper fill of the trackway, is so heavily vitrified that it resembles slag. It may originally have been iron-working debris reused for road-surfacing, as at the Bardown Romano-British ironworking site at Wadhurst, Sussex (Cleere 1970, 8-9), although here it was found in the upper fill and thus does not appear to have formed the original surface of the trackway. The remaining fired clay was found in a subsoil context (3002).

Westwell Leacon and Leda Cottages

1.3.6 The total weight of the twelve fragments of fired clay is 0.251 kg (Table 24). Most is undistinguished orange, sandy daub, which occurs in pits 5, 9 and 10, but two fragments of fired clay (from contexts 3 and 6 in pits 1 and 9 respectively) have overfired or vitrified surfaces.

Conservation

1.3.7 Further analysis may be needed on some of the material, so it should not be placed in long term storage until this has been carried out. The condition of the material is fairly abraded, but there is no risk to its preservation. There are no special requirements for long term storage, other than the use of robust packaging materials and a dry environment.

1.3.8 At this stage, all the material should be retained. In the future, the majority can be discarded. Material to be retained includes the fired clay which has features of interest and is likely to be of assistance in the interpretation of funerary or industrial practices, or to provide useful comparanda with similar material from other sites.

Comparative Material

1.3.9 Since these small quantities of material derive from contexts which are generally of little archaeological interest, little would be gained by comparative analyses.

Potential for Further Work

1.3.10 The tile at East of Newlands was found in the backfill of an earlier trial trench and thus has no potential in terms of the interpretation of the site. The fired clay from the same site is from the upper fill of the trackway and the topsoil and thus also contributes little to our understanding of the site. The fired clay at Hurst Wood was found in a tree-throw hole and is not obviously related to the function of the pits. It has little potential. The fired clay from Westwell Leacon and Leda cottages is of little intrinsic interest, and has no potential for further analysis; as it is suggestive of a nearby structure the information contained in this assessment should be taken into account in any further analytical work on the site.

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Table 15: Hurst Wood: summary of LIA and Roman pottery

Context	Count	Weight (g)	Period	Comments
1	1	4	LIA	
28	5	11	M-LIA	crude flint tempered
47	1	4	*c* AD 70-150	?Flagon
52	2	7	MIA	
143	1	1	M-LIA	crude flint temper

Table 16: East of Newlands: summary of LIA and Roman pottery

Context	Count	Weight (g)	Period	Comments
3004	5	5	LIA- AD 70+	abraded and cominuted
3005	21	8	LIA-2nd C AD	abraded and cominuted; rim from Monaghan jar type 4A2.2
22	35	164	LIA	LIA - 1 sherd + MIA saucepan pot
2	73	462	MBA-LBA bucket urn	
18	1	8	AD 43 - 100+	South Gaulish R42 Dr 33?

Table 17: Newlands Stud to East of Pluckley Road: LIA and Roman pottery

Context	Count	Weight (g)	Period	Comments
65	9	13	LIA-AD 100+	oxidised fabric B2 + combed decoration

Table 18: Leacon Lane: summary of LIA and Roman pottery

Context	Count	Weight (g)	Period	Comments
22	6	31	LIA-AD 70+	
43	16	51	LIA-AD 70+	
2	36	139	LIA-AD 70+	also medieval
3	90	471	LIA-AD 200+	also medieval
21	5	9	LIA-AD 70+	
28	3	9	LIA-AD 70+	
31	12	27	LIA-AD 70+	
52	2	2	LIA-AD 70+	
54	8	32	late 1st C - 2nd C	
70	2	2	late 1st C - 2nd C	

Table 19: Westwell Leacon and Leda Cottages: late Iron Age and Roman pottery

Context	Count	Weight (g)	Period	Comments
4	17	195	LIA-AD 50+	fabrics B2, B2.1 and BER 15 salt container frags
6	20	493	LIA	fabrics B2.1 and B9.1
7	8	23	LIA	B2 and B9.1 sherds
12	2	6	LIA-AD 50+	very abraded
2	4	4	AD 40-70	also M-LIA
11	9	66	LIA-50+	includes B2 fabric and BER15, East Kent salt container frags.

Table 20: East of Newlands: post-medieval pottery

Context	No sherds	Weight (g)	Period	Comments
8	1	2	PM	fabric PM1, Red Earthenware; date range 1550-1800

Table 21: Leacon Lane: medieval pottery

Context	No sherds	Weight (g)	Period	Comments
2	2	7	MD	M38B; date range M13-14? century
3	4	18	MD	M38B, M40B; date range M13-14? century
72	1	8	MD	M40B; date range E13-14? century
Total	***7***	***33***		***M38B, M40B***

Table 22: Hurst Wood: summary of fired clay

Context	Count	Weight (g)	Type	Comments
4	40	22	Fired clay	Small abraded daub frags, all reduced/sooted. Largest looks worn - ?from earth floor.

Table 23: East of Newlands: summary of fired clay and ceramic building material

Context	Count	Weight (g)	Type	Period	Early date	Late date	Comments
3002	5	2	Fired clay				Sandy fabric, some sooted/reduced areas.
3004	5	94	Peg tile	MD; PM	1150	1700	2 conjoin; orange-red calc fabric; med to coarse mldg sand; unglazed. Part round n/hole.
3005	2	7	Slag?				Vitrified and ?iron-rich - vitrified daub or slag.

Table 24: Westwell Leacon and Leda Cottages: summary of fired clay

Context	Count	Weight (g)	Type	Comments
3	1	80	Fired clay	Vitrified surface
4	1	14	Fired clay	Orange sandy daub; flat surface
4	3	7	Fired clay	Whitish x 2; orange x 1
6	1	14	Fired clay	Orange sandy - vitrified surface?
12	2	136	Fired clay	Orange sandy daub

APPENDIX 2 - LITHICS

2.1 Assessment Of Worked And Burnt Unworked Flint

By Philippa Bradley

Introduction

2.1.1 A total of 497 pieces of worked flint and 10 pieces of burnt unworked flint (weighing 86 g) was recovered from the excavations at (ARC 430 81+800-82+000, ARC HWD98, ARC 430 79+200-79-500, ARC NEW98). Material from the Mesolithic and Neolithic seems to be present. The majority of the flint came from the excavations and flint scatter at Leacon Lane, with one particular feature being particularly productive (context 22 produced 288 pieces of flint).

Methodology

2.1.2 All of the flint was briefly scanned and recorded, with information regarding dating, technology and general condition being noted. The material was added to an Access database. All of the burnt flint was scanned and weighed; general comments on the condition of this material were also made. Numerous pieces of natural flint were recovered from the excavations; these have been noted and discarded.

Quantification

2.1.3 A total of 497 pieces of worked flint and 10 pieces of burnt unworked flint (weighing 86g) was recovered from the excavations at Leacon Lane, Hurst Wood and Newlands (ARC 430 81+800-82+000, ARC HWD98, ARC 430 79+200-79-500, ARC NEW98). This material is summarised below in Tables 24-29.

Table 25: Summary composition of flint assemblage from Leacon Lane WBSDI

Context	Chain	Count	Period	Comments
2	81+800	2		2 flakes, 1 from an opposed platform core, slightly blade-like removals, cherty grey flint, also 1 natural discarded
8	81+800	7		3 flakes, 2 chips, 1 core frag, 1 single platform flake core - grey cherty flint, 1 of the flakes is burnt
22	81+800	288	Mesolithic	255 flakes – inc 5 burnt, some trimming flakes, some usewear, 5 CRF - face/edge, some irregular flakes, 1 plunging flake, many blades/blade-like flakes, 6 core fragments, 19 cores - 1 single plat on a thin nodule, 3 other single platform, 3 opposed platform flake/blade, 3 discoidal, 7 multi-platform - only 1 flake a single platform type has blade scars rest are flake, 2 on flakes, 1 fabricator, 2 retouched flakes, 1 serrated flake very worn, on blade-like blank, 1 misc retouch – flake retouched around its circumference, 1 notch, 4 natural
43	81+800	3		3 flakes
2	81+850	44	Mesolithic	38 flakes inc blades/blade-like, 1 ?crested flake, 1 CRF face/edge, 5 cores - 1 discoidal, 2 single plat blade/flake, 2 core frags, 1 ?core tool roughout
22	81+850	28		21 flakes – inc 1 slightly blade-like one, and 1 flake from an opposed platform core, some usewear, hard and soft hammers, some hinges, 4 cores - 1 opposed platform with slightly blade-like removals, 2 multi-platform and 1 single platform - some edge abrasion, 1 end and side scraper very minimally retouched, 2 retouched flakes - 1 one a flake from an opposed platform core, both are minimally retouched and possibly just use
2	81+900	31	Mesolithic	23 flakes - some SH, inc 1 possible axe thinning flake, and 1 CRF - tablet, also 1 irregular flake, 6 cores - 3 multi-platform - both with a few blade scars and 2 single platform flake and blade - 1 is a classic pyramid blade core, 1 opposed platform blade core, 2 core fragments
52	81+900	-		2 natural from sample 7
54	81+900	2		2 flakes

56	81+900	17	?Mesolithic	15 flakes inc 1 possible truncated blade, 1 chip – recent break, 1 CRF - face/edge blade scars, also 1 natural
58	81+900	-		2 natural from sample 9
60	81+900	1		1 flake, 1 natural
1	81+940	1	Mesolithic	1 opposed platform blade core, some platform preparation worn cortex
3	81+940	4		Flakes, including 2 slightly blade-like egs, some ?usewear
72	81+940	8	?Mesolithic	3 flakes, 1 blade with usewear, 2 cores - 1 multi platform, 1 single platform blade (with possible refitting flake) 1 CRF - tablet, 1 retouched blade-like flake
Total		436		

Table 26: Burnt unworked flint from Leacon Lane WBSDI

Context	Chain	Count	Weight (g)	Comments
22	81+800	1	5	Calcined grey
2	81+900	1	5	Heavily calcined
Total		2	10	

Table 27: Summary of flint assemblage from Hurst Wood Detailed Excavation

Context	Count	Period	Comments
1	29	Neolithic?	27 flakes inc 1 flake from a polished implement and 2 burnt, many are trimming flakes, several may be natural, some worn edges, 2 core fragments, also 35 natural
1	1	Neolithic?	End and side scraper, well worked on thinish blank SF 5
2	1		?used flake SF 2
2	1		Flake SF 3
13	1		1 flake, also 1 natural
25	3		3 flakes, 1 natural
28	1	Mesolithic	1 broken microlith steeply retouched along both edges, possibly late Mesolithic
29	1		?chip, possibly natural
54	1		Flake
77	1		Flake
103	2		1 flake, 1 possible chip
125	8		6 flakes, 1 chip, 1 multi-platform flake core - some possible refits with orange cortex
129	2		2 flakes
137	1		1 flake
142	3		All possible chips
143	1		1 flake
Total	57		

Table 28: Burnt unworked flint from Hurst Wood (ARC HWD98)

Context	Count	Weight (g)	Comments
1	1	5	Calcined grey
13	4	16	Calcined grey
50	1	43	Calcined grey
52	1	7	Calcined grey
143	1	5	Calcined grey
Total	8	76	

Table 29: Summary of flint assemblage from Hurst Wood WBSDI

Context	Chain	Count	Period	Comments
5	79+300	1		Flake, very worn and battered
Total		1		

Table 30: Summary of flint assemblage from East of Newlands Trench Excavation

Context	Count	Period	Comments
3005	1		?Trimming flake SF 3000
3005	1		Small flake SF 3001
3005	1		Core fragment SF 3002
Total	3		

Provenance

2.1.4 The flint from Leacon Lane came from a disturbed flint scatter within the subsoil. The material from Hurst Wood came from a range of features including a series of pits which may have been used to make charcoal. It is possible that the flint is redeposited within these features as none of it was burnt.

Conservation

2.1.5 The flint is appropriately bagged and boxed for long-term storage. No conservation is required. All of the natural flint has been discarded. Selected burnt unworked flint could be discarded, keeping only a selection of representative material for archive purposes. The full quantification (by weight and number), together with a description of the material discarded would provide sufficient records for any future work.

Condition

2.1.6 Some of the flint has suffered some post-depositional damage; although there are many fresh edges and some evidence for used edges. Cortication is mixed. Several pieces of burnt unworked flint were also recovered and a few pieces of worked flint were also burnt.

Comparative material

2.1.7 Mesolithic material from other sections of the CTRL route will provide comparative material.

Potential for further work

2.1.8 The material provides good evidence for Mesolithic activity, with possible usewear and refitting flakes. This would suggest that some *in situ* activity has been disturbed. Generally the material was in good condition and was probably only recently incorporated into the ploughsoil. It therefore represents a good group for analysis of flint technology. Further analysis (incorporating use wear, refit analysis and distribution) would contribute to CTRL research aims at Landscape Zone Level relating to the location and nature of hunter-forager activity.

2.2 Assessment of the Stone

by Ruth Shaffrey

2.2.1 All retained stone was examined visually.

2.2.2 Three pieces of stone were recovered during the excavations at Hurst Wood (Table 31). These are listed in the tables below. One chunk of sandstone, which appears to be glazed, was recovered from the topsoil (context 1). It is worth investigating this to discover if it is natural or a result of glass-working or other manufacturing process. In addition to this specimen, two fragments of lava were recovered from a subsoil context (context 2). Although these show no evidence of working, lava is known to have been imported as a rotary quern and millstone material and these fragments probably originated from artefacts of this type. An unworked chert pebble was recovered from the investigations at Leacon Lane (Table 32).

2.2.3 The sandstone and pebble were probably available locally but the lava fragments were originally imported from the Rhineland.

2.2.4 No conservation is required. All of the stone from Hurst Wood should be retained until final decisions are taken about the scope of further research at Landscape Zone Level, but the unworked pebble from Leacon Lane may be discarded.

Potential for further work

2.2.5 Further work might investigate the glass-coated stone and its origins. This would provide evidence for the nature of possible manufacturing activity in the vicinity, although in the absence of any dating evidence this will be of limited value. No other work is recommended.

Table 31: Summary of stone from Hurst Wood Detailed Excavation

Context	Count	Material	Comments
1	1	Sandstone	Looks like glazed stone
2 SF1	2	Lava	Rounded fragments, weathered.

Table 32: Summary of stone from Leacon Lane WBSDI

Context	Count	Material	Comments
8	1	Chert pebble	Angular fragment

APPENDIX 3 - METALWORK

3.1 Assessment of the Metalwork

by Valerie Diez

Introduction

3.1.1 A single unstratified nail was found in the Hurst Wood excavation, and a horse shoe in the upper fill of the trackway at East of Newlands.

3.1.2 The artefacts have been x-rayed and examined visually. All of the artefacts were retrieved by hand excavation.

Hurst Wood

3.1.3 A single, unstratified iron nail was found during the excavations at Hurst Wood (Table 33). The find has no significance in terms of the interpretation of the site and may be discarded. No further work is necessary.

East of Newlands

3.1.4 A post-medieval iron horseshoe with rectangular counter-sinkings was found in the upper fill of the late Iron Age-early Roman trackway (Table 34). It has no significance in terms of the interpretation of the site and need not be retained. No further work is recommended.

Table 33: Summary of metalwork from Hurst Wood Detailed Excavation

Context	Special number	Material	Count	Period	Comments (description)
Unstrat.		Fe	1	-	Nail

Table 34: Summary of metalwork from East of Newlands Trench Excavation

Context	Special number	Material	Count	Period	Comments (description)
15		Fe	1	PM	Horseshoe

APPENDIX 4 - HUMAN REMAINS

4.1 Assessment of the Cremated Human Remains

by Angela Boyle

Introduction

4.1.1 Two small deposits of middle-late Bronze Age cremated remains were recovered during the watching brief at East of Newlands, and a further small deposit, dated to the early Roman period, from the watching brief at Westwell Leacon and Leda Cottages. The study of the material was aimed at determining the number, age and sex of the burials and details of burial practices.

Methodology

4.1.2 Cremated material was quantified by weight and scanned in order to determine age, sex, and potential for further analysis. Given the small size of the assemblage a decision was made to scan all of it. Each deposit was recorded on a pro forma record sheet which includes context, context type, period, weight, identifiable fragments, colour and minimum number of individuals (where determined). The >2 mm fraction was scanned with a view to determining whether or not it should be sorted for small fragments of human bone.

Quantification

4.1.3 The cremated remains are quantified and summarised in Table 35 (East of Newlands) and Table 36 (Westwell Leacon and Leda Cottages) below.

Provenance

4.1.4 The two deposits from the East of Newlands watching brief came from two pits (3 and 7) dated to the middle-late Bronze Age. Both were associated with pottery although they were so disturbed that it is unclear whether the cremations were actually placed within them or they were accompanying grave goods.

4.1.5 The deposit from the Westwell Leacon and Leda Cottages watching brief came from one of the pits (5) in a loose cluster which was dated to the early Roman period.

Conservation

4.1.6 The material does not require any conservation for the purposes of long-term storage. Under the terms of the CTRL act, however, all human remains are to be reburied.

Comparative Material

4.1.7 The middle-late Bronze Age cremations from East of Newlands are so disturbed that little could be learnt from comparisons. Cremations of similar date were found at Tutt Hill. Only a very small sample of cremated remains was recovered at Westwell Leacon and Leda Cottages and comparisons will be equally difficult. There is, however, a wealth of burial evidence of comparable date from along the CTRL at Pepper Hill, Boys Hall Balancing Pond Chapel Mill and other sites.

Potential for Further Work

4.1.8 The potential of this assemblage is limited by its small size as a group and by the size of the deposits. An average adult cremation can weigh between 1000-2400 g if

complete (McKinley 1997, 68; observations at modern crematoria). Clearly, then they are only token deposits most of the deposits do not represent the entire remains of any one individual. No further analysis is recommended.

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Table 35: Summary of cremated remains from the East of Newlands WBSDI

Context	Context type	Period	Weight (g)	Identifiable fragments	Colour	Minimum number of individuals
2	Fill of pit 3	M-LBA	84	Skull vault, rib and long bone shaft	White	? 1 adult
6	Fill of pit 7	M-LBA	34	Skull vault, rib	White	? 1 adult

Table 36: Summary of cremated remains from the Westwell Leacon and Leda Cottages WBG

Context	Context type	Period	Weight (g)	Identifiable fragments	Colour	Minimum number of individuals
4	Fill of pit 5	ER	> 1	Long bone shaft	white	

APPENDIX 5 - ANIMAL REMAINS

5.1 Assessment of the Animal Bone

by Bethan Charles

5.1.1 A single fragment of burnt bone (2 g) was recovered from the upper fill (31) of a large shallow pit (29) during the Leacon Lane watching brief. The bone was not identifiable to species. No further work is recommended.

APPENDIX 6 - PLANT REMAINS

6.1 Assessment of the Charcoal

by Dana Challinor

Introduction

6.1.1 A total of seventeen samples were taken during the excavation from the deposits of seven burnt pits and two cremation pits. Fourteen were from the excavation at Hurst Wood and three were from the watching brief at East of Newlands. The purpose in sampling was to examine the evidence for change and continuity in burial practices, and to consider the function of the pits.

Methodology

6.1.2 The samples were processed by flotation in a modified Siraf-type machine, with the flots collected onto a 250µm mesh. All seventeen of the samples taken were processed and assessed. The volume of soil processed ranged from 4 to 44 litres. The flots were air-dried and divided into fractions using a set of sieves. Fragments of charcoal were randomly extracted, fractured and examined in transverse section under a binocular microscope at x10 and x20 magnification. Fragments caught in the >2mm sized sieves were quantified as identifiable. In the case of large flots, a sample of *c* 20% was examined, although any quantification given is based on estimates of the entire flot. The flots were also scanned for the presence of any other charred plant remains.

Quantification

6.1.3 A total of seventeen samples were assessed, of which sixteen produced identifiable wood charcoal. Three taxa were provisionally identified - *Quercus* sp. (oak), *Alnus/Corylus* (alder/hazel) and Maloideae (hawthorn, apple, pear etc.). A possible fourth taxa was present in pits 104 and 122 at Hurst Wood; small round fragments with very large pores, wide rays and a distinctive ridged stem, which potentially could be charred rootwood. Superficially, the charcoal looked like *Clematis vitalba* (clematis), but could equally be *Vitis vinifera* (vine) as the growth rings were not wide enough for the full anatomical characteristics to be displayed. Further work is required to identify this charcoal.

6.1.4 The two middle-late Bronze Age cremation pits at East of Newlands differed in taxonomic composition (pit 3 containing *Quercus* and pit 7 containing *Alnus/Corylus*), but the concentration of charcoal was low in both (Table 37).

6.1.5 All of the burnt pits at Hurst Wood produced medium to large assemblages dominated by *Quercus*, some with smaller quantities of Maloideae and the possible rootwood fragments (Table 38).Other charred plant remains were scarce and limited to a single glume base from context 22 and a couple of weed seeds from pit 140. Context 143 produced two immature grape seeds, which appeared to be charred although further tests will be needed to confirm this. Roots and modern seeds were present in most flots.

Provenance

6.1.6 The apparent dominance of a single taxon in the cremation deposits at East of Newlands is appropriate for cremation burials of this period and provides evidence for the local practice of deliberate selection of fuelwood.

6.1.7 The fact that the burnt pits at Hurst Wood are also dominated by a single taxon suggests deliberate selection of fuelwood for a specific purpose. Consequently, it is possible that the function of these pits was for making charcoal. Preservation was generally very poor; most of the charcoal fragments were infused with sediment, hindering examination of the anatomical patterns. The preservation status of the grape seeds requires elucidation. If contemporary with the dated pits, it could suggest evidence for vine-growing on the site, although the dating of these features is very uncertain and there is little potential for further analysis.

Conservation

6.1.8 The flots are in a stable condition and present no problems for long-term storage.

Comparative Material

6.1.9 The predominance of a single taxon in prehistoric cremation assemblages, indicating the use of a single tree or specifically selected species in ritual activities, has been noted at Radley Barrow Hills (Thompson 1999, 352) and at Rollright Stones (Straker 1988). It has also been suggested that the abundance of oak or ash in cremation deposits, compared to other species, is a result of the pyre structure, the timber from these trees providing the supports in a central position, less likely to have been totally reduced to ash (Gale 1997, 82).

6.1.10 Traditional methods for making charcoal may shed light on the possiblility that the pits at Hurst Wood were used to make charcoal. Traditional charcoal burners do utilise shallow pits but the dimensions are generally larger than those at Hurst Wood (Edlin 1949, 160). Moreover, there was no real evidence for the layers of straw, grass or bracken traditionally used to shut out the air, although this may be a bias of preservation. Indeed, there are other taxa which make better charcoal than *Quercus*, such as *Frangula alnus* (alder buckthorn), *Alnus glutinosa* (alder) and *Salix* sp. (willow) (Edlin 1949, 165). In fact, *Quercus* has such good burning properties as a wood fuel, it hardly seems necessary to make it into charcoal, although this would depend upon the purpose of the charcoal burning.

Potential for Further Work

6.1.11 Detailed analysis on these samples is unlikely to contribute greatly to our understanding of the site. However, the *Clemtis/Vitis* charcoal should be properly identified and time should be allotted to an examination of the grape seeds. Radiocarbon dating of the grape seeds may be appropriate. The presence of this material suggests wine growing in the vicinity, and the suggested late Saxon date for this is of considerable interest as an indicator of when this was taking place. It would be of value to confirm both the species identification, and the radiocarbon date with the dating of a second sample. This would contribute to CTRL research priorities at Landscape Zone Level concerning changes in agricultural practice over time.

6.1.12 The results from the cremation pits provide a few further details of the practice of cremation which appear to conform to wider patterns along the CTRL and may thus make a small contribution to our understanding of burial practices.

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Table 37: East of Newlands: summary of charcoal

Sample details					Flot details		
Feature	**Context**	**Period**	**sample no.**	**Sample size (l)**	**Flot size (ml)**	**Charcoal**	**Taxa**
3	2	MBA	1	14	45	++	*Quercus* Stone plinth or machine base.
7	6	MBA	2	4	1	+	*Alnus/Corylus*

+ = 1-10; ++ = 11-50; +++ = 51-100; ++++ = 101-1000; 1000+ = >1000

Table 38: Hurst Wood: summary of charcoal

Sample details					Flot details		
Feature	**Context**	**Period**	**sample no.**	**Sample size (l)**	**Flot size (ml)**	**Charcoal**	**Taxa**
23	22	M-LIA	3	40	200	+++	*Quercus* sp.
27	28	M-LIA	1	30	25	++	*Quercus* sp.
	29	M-LIA	2	19	110	+++	*Quercus* sp. Maloideae
49	50	MIA	3	13	8	++	*Quercus* sp.
	51	MIA	4	4	45	+	*Quercus* sp.
	52	MIA	5	18	30	+	*Quercus* sp.
104	105	undated	7	8	220	+++	*Quercus* sp.
	106	undated	8	13	25	++	*Alnus/Corylus Quercus* sp. cf. *Clematis/Vitis*
	107	undated	9	30	40	++	*Quercus* sp. cf. *Clematis/Vitis*
102	103	undated	10	20	200	+++	*Quercus* sp. *Alnus/Corylus*
122	124	undated	11	20	700	1000+	*Quercus* sp.

Sample details					Flot details		
Feature	**Context**	**Period**	**sample no.**	**Sample size (l)**	**Flot size (ml)**	**Charcoal**	**Taxa**
	125	undated	12	21	110	+++	*Quercus* sp. cf. *Clematis/Vitis*
140	142	MIA	13	30	325	+++	Maloideae *Quercus* sp.
	143	MIA	14	44	60	++	Maloideae *Quercus* sp.

+ = 1-10; ++ = 11-50; +++ = 51-100; ++++ = 101-1000; 1000+ = >1000

APPENDIX 7 - DATING

7.1 Assessment of the Radiocarbon Dates

Introduction

7.1.1 Single samples from two burnt pits at Hurst Wood were submitted for radiocarbon dating. The samples were taken from pits which contrasted in size, form and location as far as was possible given the need to obtain datable sample. They were intended to provide an indication of the date, and hopefully the range of dates of the burnt pits on this site.

Method

7.1.2 The sample was analysed using an accelarator mass spectrometer to determine its conventional radiocarbon age, percent modern and $\Delta^{14}C$ based on the NBS-I oxalic acid standard, and the $\delta^{13}C$ was measured using a stable isotope mass spectrometer.

Material and Context

The two samples consisted of fragments of burnt plant material. From amongst the fragments of wood charcoal, two samples from small twigs or stems were selected, one probably *Maloideae* (hawthorn, apple, pear etc.) and the other probably *Clematis vitalba* (clematis) or *Vitis vinifera* (vine). The selection of twigs and stems ensures that the date obtained should be close to the date of death of the plant. The need to select material of this kind rather than unidentified wood charcoal, severely restricted the range of contexts which could be dated, and the original intention to date pits which differed in size, shape and location, and which thus might be of differing date, could not all be fulfilled. One sample was eventually taken from context 143, the upper fill of pit 140, a flat-based, rectangular burnt pit. The other was from context 107, the primary fill of pit 104, a concave-based circular pit. Although contrasting in shape, both are amongst the larger pits on the site, and both lie at the northern end of the site. The upper fill of pit 104 contained a few fragments of fired clay, whilst pit 143 also contained a few sherds of middle-late Iron Age pottery, two pieces of flint and what may be a grape pip. The dates may thus provide a test of the extent to which these finds are likely to be residual.

Results

The sample results are tabulated below.

Table 39: Radiocarbon results obtained during the assessment

Lab ref	Context	Sample	Date	1σ	2σ	Comment
NZA-12274	ARC HWD98 ctx 107 (sample 9)	Burnt plant material (clematis vitalba)	1076±60	895-1017 cal AD	820-843 cal AD plus 862-1035 cal AD	From charcoal-rich fill of burnt, circular, concave pit 104
NZA-12284	ARC HWD98 ctx 143 (sample 14)	Burnt plant material (maloidiae)	2742 ±45	922-828 cal BC	993-810 cal BC	From charcoal-rich fill of burnt, rectangular, flat-based pit 140

7.1.3 Widely divergent (Bronze Age and Late Saxon) radiocarbon dates have been obtained, indicating either that similar activities were carried out on the site over a very long period of time, or more likely, that the pits contain residual organic material as well as artefacts. If the former is true, all of the burnt features would

need to be radiocarbon dated in order to examine their chronology. If the latter is true, further radiocarbon results would not resolve the dating problem at all. Since in either case the function of the pits will remain uncertain, no further dating is recommended.

7.1.4 There would be some intrinsic value in confirming the Saxon date of the *clematis vitalba* or *Vitis vinifera* charcoal from pit 104 and/ or the grape pips from the pit 143, with another radiocarbon date, to establish the date of the possible vine cultivation.

7.1.5 No radiocarbon dating is recommended for other contexts in this group of sites as the features are either sufficiently dated by artefactual evidence or show evidence for a high level of residual material.

