

**APPENDIX 13: ASSESSMENT OF MOLLUSCS**

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## **1.1 Introduction**

1.1 Mollusc shells were recovered during excavation works at West of Tollgate (ARC TGW 97), West of Northumberland Bottom (ARC WNB 98), the Area 330 watching brief (ARC 330 98) and Hazells Road diversion (ARC HRD 99).

1.2 Study of the molluscan shell was intended to assist the following Fieldwork Event Aims:

- to determine the palaeo-economy of settlement through recovery of palaeo-economic indicators
- to establish changes in the local environment through the recovery of suitable palaeo-environmental samples from the fills of cut features
- to determine the late and immediate post-Roman landscape.

## **2. Methodology**

2.1 In each case, the soil was processed using a modified Siraf-type tank fitted with 1.0mm and 0.25mm flexible nylon meshes to retain the residue and flot fractions respectively. The flot and residue fractions were air-dried in a warm drying cabinet and then visually sorted for mollusc shell.

2.2 Each sample was roughly quantified and then scanned under a binocular microscope to determine the species-composition of the assemblage. Taxonomic identifications were made using the MoLSS reference collection in conjunction with Cameron & Redfern 1976; and Kerney & Cameron 1979. Allocation of identified taxa to habitat groups, as specified by the CTRL post-excavation assessment report template, followed these sources together with Kerney 1999.

2.3 All mollusc groups were examined; no sub-sampling was required.

## **3. Quantification**

3.1 ARC TGW 97 produced nine sample groups containing approximately 160 shells from cut features. The mollusc group from the monolith sequence was, in general poorly preserved, but still produced identifiable species remains.

3.2 ARC 330 98 produced six sample groups containing approximately 80 shells from cut features.

3.3 ARC WNB 98 provided a total of 14 column sample groups containing approximately 402 shells from ditch [332]; the fills of which dated to the Middle/Late Iron Age. These groups were recovered from column samples taken at measured depths at 0.1m intervals. A further 41 sample groups containing approximately 4,900 shells, were wet-sieved/floated from bulk samples from pits, postholes, ditches and other cut features.

3.4 ARC HRD 99 produced a total of 18 sample groups containing approximately 160 shells from cut features.

3.5 The material derived almost entirely from terrestrial species with a very minor component of edible marine species; there were no freshwater species.

3.6 Identified terrestrial taxa recovered were *Oxychilus* sp., *Vallonia* sp., *Vallonia pulchella*, *Vallonia costata*, *Cepaea nemoralis*, *Helix aspersa*, *Hygromia* sp., *Retinella* sp., *Helicella* sp., *Helicigona lapicida*, *Ena montana*, *Cochlicopa lubrica*, *Pupilla muscorum*, *Columella edentula*, *Pomatias elegans*, *Clausilia* sp., *Balaea perversa*, *Cecilioides acicula* and *Discus rotundatus*. Shells of common whelk *Buccinum undatum*, common mussel *Mytilus edulis*, common cockle *Cardium edule*, and common/flat oyster *Ostrea edulis* were also recovered.

3.7 The Table (below) groups this material in terms of habitat preference and relative abundance as specified by the CTRL assessment template.

#### **4. Provenance**

4.1 The material comprised almost entirely of terrestrial species with no freshwater forms, with minor recovery of edible marine species. The terrestrial assemblage included catholic, shade loving, open country, and burrowing species.

4.2 The material is, in general, from well dated Iron Age, Roman and medieval features (see tables below), is in good condition and presents no difficulty in terms of species identification. The value of the assemblage will not be affected by factors of preservation.

#### **5. Conservation**

5.1 Further analysis of this material would involve more detailed examination under a binocular microscope in order to ensure identification and quantification of all species present. There is no reason why such work would damage the shells or impose any restriction on long-term storage procedures.

5.2 The shells are mainly small and fragile and therefore liable to accidental damage by crushing. They should therefore all be stored by context/sample groups in glass tubes or clear plastic boxes, each contained within labelled plastic bags. The complete assemblage should then be stored in an archive quality 'shoe-box'.

5.3 There is no reason to discard any of the mollusc assemblage.

#### **6. Comparative material**

6.1 The material from these sites can be compared directly with similarly dated deposits from other sites within the CTRL project.

6.2 Comparison may also be made with north Kent sites summarised in Philp 1984; and Philp, Parfitt, Willson & Williams 1999.

#### **7. Potential for further work**

7.1 The assemblage has some potential to contribute to study of each of the listed Fieldwork Event Aims related to the nature of local habitats and landuse. The

molluscs have considerable potential for further study in terms of species identification and accurate quantification. Once this work is done, it will then be possible to detect spatial and temporal variation resulting from changes in local conditions, such as shading, and to consider their implications for changes in landuse.

7.2 It may also be possible to obtain Accelerator Mass Spectrometry (AMS) radiocarbon dates on the snails obtained from the bulk samples (Contexts [2] and [3] from ARC TGW 97), if required. AMS dating of the snails would probably be the best way of dating the sediment sequence seen in the monolith sequence. Unfortunately there were no snails preserved in the lowest redeposited soil material.

7.3 The very sparse marine fauna does not generally provide potential for further study although the large group of oyster shell from ARC WNB 98 [238] subgroup (38) has some potential for metrical analysis which may give an insight into the nature of the exploited oyster population.

## 8. Bibliography

Cameron, R A D & Redfern, M, 1976 British land snails *Linnean Society synopses of the British fauna no.6* London

Kerney, M, 1999 *Atlas of the land and freshwater molluscs of Britain and Ireland* Colchester

Kerney, M P, & Cameron, R A D, 1979 *A field guide to the land snails of Britain and north-west Europe* London

Philp, B, 1984 Excavations in the Darent Valley, Fourth Report in the Kent Monograph Series. *Kent Archaeological Rescue Group 71*

Philp, B; Parfitt, K; Wilson, J & Williams, W, 1999 The Roman villa site at Keston, Kent. *Eighth Research Report in the Kent Monograph Series*

Table 1: Assessment of molluscs from ARC TGW 97

+ present (0-5 items), ++ some (6-10 items), +++ many (11+).

Event code	ARC TGW 97	ARC TGW 97	ARC TGW 97	ARC TGW 97	ARC TGW 97	ARC TGW 97	ARC TGW 97	ARC TGW 97	ARC TGW 97
Column/Section									
Sample	5	6	7	8	9	14	16	13	15
Date/interpretation	natural	Natural	natural	natural	natural	/ditch	/ditch		/ditch
Context	2	2	2	3	3	101	124	154	170
Depth (m)									
Catholic species				+			+		
Open country species	++	+++	+		+		+		++
Shade-loving species							+++	+	+++
Burrowing species									
Aquatic species									
Marine species									
Approx totals	10	25	5	1	1	0	50	1	65

Table 2: Assessment of molluscs from ARC WNB 98

Event code	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98
Column/Section							
Sample							
Date/interpretation	IA/ditch	IA/ditch	IA/ditch	IA/ditch	IA/ditch	IA/ditch	IA/ditch
Context	[332]	[332]	[332]	[332]	[332]	[332]	[332]
Depth (m)	0-0.1	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5-0.6	0.6-0.7
Catholic species	+++	+	+	+		+	+
Open country species				+			+
Shade-loving species	+++	+	+++	+++	+++	++	+++
Burrowing species							
Aquatic species							
Approx totals	110	2	21	25	16	12	36

<b>Event code</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB98</b>
Column/Section							
Sample							
Date/interpretation	IA/ditch	IA/ditch	IA/ditch	IA/ditch	IA/ditch	IA/ditch	IA/ditch
Context	[332]	[332]	[332]	[332]	[332]	[332]	[332]
Depth (m)	0.7-0.8	0.8-0.9	0.9 –1.0	1.0-1.1	1.1-1.2	1.2-1.3	1.3-1.4
Catholic species					+	+	+
Open country species						+	
Shade-loving species	+++	+++	+++	+++	+++	+++	+++
Burrowing species							
Aquatic species							
Approx totals	30	25	25	13	16	34	37

<b>Event code</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>
Column/Section									
Sample	38	35	34	75	77	36	1	37	2
Date/interpretation	/ditch	/ditch	/ditch	/oven	/oven	/ditch		/ditch	
Context	238	268	269	292	292	296	302	362	372
Depth (m)									
Catholic species	+++					+++		+++	
Open country species						+			
Shade-loving species	+++	+	+++			+++		+++	
Burrowing species		+++	+++	+	+++		+++		+++
Aquatic species									
Marine species	+++								
Approx totals	320	150	40	5	120	755	25	80	20



<b>Event code</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>
Column/Section								
Sample	3	10	17	18	24	28	30	16
Date/interpretation	/ditch	/ditch	/ditch	/ditch	/pit	/pit	/pit	/crem
Context	381	392	397	421	447	451	510	518
Depth (m)								
Catholic species				+				
Open country species			+					
Shade-loving species	++		+++	++	++			++
Burrowing species	++	+++			++	+++		
Aquatic species								
Marine species	+++						+++	
Approx totals	45	20	50	20	20	50	75	10

<b>Event code</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>
Column/Section									
Sample	59	73	5	6	7	8	11	12	13
Date/interpretation	/ditch	/fill	/phole	/pit	/pit	/pit	/pit	/pit	/pit
Context	526	565	1004	1008	1009	1026	1027	1032	1033
Depth (m)									
Catholic species		+							
Open country species	+								
Shade-loving species	+++	+++			+++	+++		+++	
Burrowing species	++	+++	+++	+++	+++			+++	+++
Aquatic species									
Marine species	+						+		
Approx totals	30	120	30	500	400	30	3	200	50

Event code	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98	ARC WNB 98
Column/Sectn										
Sample	14		26	27	55	54	65	56	58	63
Date/interpretation	/pit		/pit	/pit	/ditch	/ditch	/kiln	/ditch	/phole	/grave
Context	1036	1037	1043	1046	1048	1051	1056	1063	1099	1191
Depth (m)										
Catholic species					+			+		
Open country species	+				++	+		++		
Shade-loving species	+++	+	+++	+++	+++	+++	+++	+++	++	+
Burrowing species	+++	+	+++	+++	+++	+++	+++	+++	++	+
Aquatic species										
Marine species	+					+				
Approx totals	600	10	200	95	240	120	40	140	25	10

<b>Event code</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>	<b>ARC WNB 98</b>
Column/Section				
Sample		70	78	81
Date/interpretation		/ditch	/oven	/?crem
Context	1202	1279	1281	2163
Depth (m)				
Catholic species		+		
Open country species		+		
Shade-loving species		++	+	
Burrowing species	+++	+++	+++	+++
Aquatic species				
Approx totals	100	40	20	75

Table 3 : Assessment of molluscs from ARC 330 98

Event code	ARC 330 98	ARC 330 98	ARC 330 98	ARC 330 98	ARC 330 98	ARC 330 98
Column/Section						
Sample	21	80		57	67	144
Date/interpretation	M/LIA/pit	M/LIA/pit				/quarry pit
Context	141	324	325	338	344	561
Depth (m)						
Catholic species	+				+	+
Open country species						
Shade-loving species			+++	+		++
Burrowing species		+		+		
Aquatic species						
Marine species						
Approx totals	5	1	50	5	1	15

Table 4: Assessment of molluscs from ARC HRD 99

Event code	ARC HRD 99	ARC HRD 99	ARC HRD 99	ARC HRD 99	ARC HRD 99	ARC HRD 99	ARC HRD 99	ARC HRD 99	ARC HRD 99	ARC HRD 99
Column/Section										
Sample	1	2	43	5	6	10	34	16	35	40
Date/interpretation	Rom/hearth	/hearth	ext.occ				med/ditch	med/ditch	med/ditch	LRom/pit
Context	2	3	7	15	20	26	53	60	77	80
Depth (m)										
Catholic species	+							+		+
Open country species					+					
Shade-loving species		+	++		+++	+	+	+	+	+
Burrowing species				+						+
Aquatic species										
Marine species							+			
Approx totals	1	5	10	2	25	3	5	5	5	10

<b>Event code</b>	<b>ARC HRD 99</b>	<b>ARC HRD 99</b>	<b>ARC HRD 99</b>	<b>ARC HRD 99</b>	<b>ARC HRD 99</b>	<b>ARC HRD 99</b>	<b>ARC HRD 99</b>	<b>ARC HRD 99</b>
Column/Section								
Sample	27	36	37	38	53	45	46	54
Date/interpretation		/ditch	med/ditch	LRom/ditch	LRom/ditch	med/ditch	med/ext.surf	
Context	98	104	105	106	131	156	163	213
Depth (m)								
Catholic species	+	+			+	++	+	
Open country species	+			+	+	++		
Shade-loving species	+	+	+	+	+	++		+
Burrowing species	+							
Aquatic species								
Marine species						+	+	
Approx totals	15	10	5	10	5	30	5	5