

PS: MERSHAM

ASSESSMENT OF MAMMAL BONE

Robin Bendrey

Summary

7.16.1 422 fragments (9046g) of mammalian bone were recovered by manual excavation and additional material (1110g) by sieving. Around half (by number) of the hand-recovered assemblage is accounted for by a nearly complete horse skeleton from an early medieval context. The remaining material is dominated by cattle, sheep and pig and there is evidence suggestive of horn working.

7.16.2 The mammalian bone from early medieval deposits (Phase 3) offers the greatest potential for analysis as it is the largest group from a single phase. The potential for gaining environmental information from the material is very limited and any further work should instead concentrate on a detailed study of the horse skeleton and a dietary and economic analysis of the remaining material. This rural assemblage may then usefully be compared with early medieval urban groups, particularly from Canterbury and Dover.

Introduction

7.16.3 A total of little over 10kg of mammalian bone was recovered by manual excavation and by sieving

Methodology

7.16.4 The small size of the mammal bone assemblage negated the need to sub-sample and all the bone has, therefore, been catalogued. Sieved bone was recovered as part of the process outlined below (Appendix 17.2).

7.16.5 The hand-recovered bone was identified with the aid of a comparative osteological reference collection. Bone identified to species was recorded using the diagnostic zones of Dobney and Reilly (1988). Bone not identified to species was awarded an animal-size category (*e.g.* sheep-sized) or listed as being indeterminate. The criteria of Boessneck (1969) were used to differentiate between sheep and goat remains. If this was not possible the fragments were labelled sheep/goat. All bone fragments have also been weighed (Table One).

7.16.6 The mammalian bone from the samples was recorded in the same way as the hand-recovered material, except that the total bone material derived from each sieved sample was weighed instead of the individual fragments.

7.16.7 Basic fragment counts and bone weight have been used to quantify the material (Table One). Context frequency (for the hand-recovered bone) and sample frequency (for the bulk samples) have been used to compare the material from the two recovery methods. This allows comparison of the frequency of occurrence of the different taxa independently of differing fragmentation, bone weights and context/sample size.

Quantification

7.16.8 The hand-recovered assemblage consists of 422 fragments, weighing 9046g, from 25 contexts, a further 1110g was derived from 43 sieved samples. The total quantity (number of fragments and weight) of hand-recovered mammalian bone is presented in Table One. The distribution of this bone between the phases, groups and sub-groups is shown in Table Two.

7.16.9 Tables One and Two show the majority of the material to have derived from the early medieval period (Phase 3). A large part of this comprises a single horse skeleton. This skeleton contributes all the horse bones and all the cattle-sized material from sub-group 129, a total of 238 fragments (Table Two). Analysis of the number of contexts within which particular taxa occur goes some way towards cancelling out the bias caused by the articulating skeleton. Excluding the skeleton from the data leaves an assemblage typical of early medieval mammalian assemblages – one dominated by cattle, sheep and pig.

7.16.10 Comparison of the context/sample frequencies shows cattle to be better represented in the hand-recovered material, and sheep and pig to be better represented in the sieved material. This is a known product of recovery bias (Payne, 1975).

7.16.11 Table One

Summary of hand recovered mammalian bone

	Late Anglo-Saxon [Phase 2]	Early Medieval [Phase 3]	Late Medieval [Phase 4]	Post-Medieval [Phase 5]	Total number of frags.	Total weight (g)	Mean fragment weight (g)
Cattle	2	33	2	-	37	1665	45.0
Sheep/goat	-	22	3	1	26	207	8.0
Sheep ovis sp. domestic	1	5	-	-	6	80	13.3
Pig, sus Sp. domestic	-	13	-	-	13	164	12.6
Horse, Equus caballus sp. domestic	2	115	-	-	117	5803	49.6
Goat Capra sp. domestic	-	5	-	-	5	80	16.0
Sheep/Goat/Roe deer	-	1	-	-	1	14	14.0
Dog Canis sp. domestic	-	3	-	-	3	20	6.7
Cat Felis sp. domestic	-	1	-	-	1	4	4.0
Mustelid	-	1	-	-	1	1	1.0
Cattle-sized	-	159	1	-	160	895	5.6
Sheep-sized	1	38	-	-	39	103	2.6
Indeterminate	-	38	-	-	39	103	2.6
Total	6	408	7	1	422	9046	21.4

7.16.12 Table Two

Distribution of hand-recovered mammalian bone, by number of fragments

<i>Phase</i>	3							
Group	3	6	8	10		11		
Sub-Group	147	153	67	119	73	128	129	152
Cattle	2	2	-	3	-	4	1	3
Sheep/goat	-	1	-	2	-	9	2	-
Sheep	1	-	-	1	-	1	-	-
Pig	-	1	-	-	-	3	-	-
Horse	2	-	-	-	-	-	115	-
Goat	-	1	-	-	-	1	-	-
Sheep/Goat/Roe deer	-	-	-	-	-	-	-	-
Dog	-	-	-	-	-	-	-	-
Cat	-	-	-	-	-	-	-	-
Mustelid	-	-	-	-	-	-	-	-
Cattle-sized	-	-	1	2	2	12	123	-
Sheep-sized	1	-	-	1	2	23	-	-
Indeterminate	-	-	-	-	-	1	-	-
Total NISP	6	5	1	9	4	54	241	3

<i>Phase</i>	3									
Group	12				13	14	19	20	27	34
Sub-Group	105	146	154	161	107	65	156	120	56	46
Cattle	1	-	2	-	9	6	2	-	2	-
Sheep/goat	3	3	-	-	1	-	-	1	3	1
Sheep	1	-	-	-	1	1	-	-	-	-
Pig	1	2	-	-	4	1	-	1	-	-
Horse	-	-	-	-	-	-	-	-	-	-
Goat	-	-	-	3	-	-	-	-	-	-
Sheep/Goat/Roe deer	-	-	-	-	-	1	-	-	-	-
Dog	-	-	-	-	-	3	-	-	-	-
Cat	-	-	-	-	-	1	-	-	-	-
Mustelid	-	-	-	-	-	1	-	-	-	-
Cattle-sized	4	4	-	-	5	5	-	1	1	-
Sheep-sized	5	1	-	-	5	1	-	-	-	-
Indeterminate	7	-	-	-	3	1	-	-	1	-
Total NISP	22	10	2	3	28	21	2	3	7	1

Provenance

7.16.13 Around half (by number) of the hand-recovered assemblage is accounted for by the skeleton of a horse, which is excellently preserved (context 421, sub-group 129, Group 11, Phase 3). The rest of the material varies between some well-preserved contexts and some poor, though it is generally fair.

7.16.14 The mammalian bone from early medieval deposits, Phase 3, offers the greatest potential for analysis, as it is the largest group from a single phase.

Conservation

7.16.15 Further analysis would not conflict with long-term storage. The material is already suitably packaged for long-term storage.

Comparative material

7.16.16 The bone from Mersham is contemporary with larger assemblages from Canterbury (Driver, 1990) and Dover (Bendrey, forthcoming). Comparison of the Mersham assemblage with these other sites may reveal interesting differences and/or similarities between the diet and economy of early medieval urban and rural.

Potential for further work

7.16.17 The mammal bone assemblage has the potential to illustrate aspects of diet and economy from the late Anglo-Saxon and early medieval site. The bone material offers a valuable opportunity to examine an assemblage from a rural site of this date, and compare it to previously studied urban assemblages. The horse skeleton provides an unusual opportunity to analyse a nearly complete medieval specimen.

7.16.18 The potential for gaining environmental information from the bone assemblage is very limited. Wild mammal bones are few and do not necessarily pertain to the immediate site environment, and there are only a few small mammal bones from the sieved samples.

7.16.19 Further work should focus on two areas. The first of these would comprise an analysis of the fragmentary assemblage for information on diet and economy (*e.g.*, the presence of goat horn cores in Phase 3 with the absence of post-cranial goat bones could suggest horn working). The second would involve a detailed study of the horse skeleton. This would encompass a metrical and morphological analysis and comparison with the measurements of disarticulated bones found from other sites. Attempts should also be made to identify the mustelid bone as to species, by comparison with reference material at the London Natural History Museum.

7.16.20 Analysis of the bulk samples will add a small amount of information to that provided by the hand-recovered material. They broaden the species range, with the identification of roe deer. Environmental information is limited; only three mammal bones were recorded, none of which have been identified to species. As has been stated above, the bulk samples reveal a recovery bias in the hand-recovered bone in favour of the larger species.

7.16.21 Although the assemblage is small, it is of importance for providing information on the rural economy, which is lacking for this period in Kent, and for allowing a comparison to be made between town and country in East Kent.

7.16.22 Bibliography

Bendrey, R., forthcoming; The Mammal Bone, in K. Parfitt, B. Corke and J. Cotter, *Excavations at Townwall Street, Dover, 1995-1996*, The Archaeology of Medieval Dover 1, Canterbury Archaeological Trust Occasional Papers, Canterbury.

Boessneck, J., 1969; Osteological Differences between Sheep (*Ovis aries* Linne) and Goat (*Capra hircus* Linne), in D. Brothwell and E. Higgs (eds), *Science in Archaeology*, London, pp331-58.

Dobney, K. and Reilly, K., 1988; A method for recording archaeological animal bones; the use of diagnostic zones, *Circaea* **5.1**, pp79-96.

Driver, J. C., 1990; Faunal Remains, in J. C. Driver, J. Rady and M. Sparks, *Excavations in the Cathedral Precincts, 2; Linacre Garden, 'Meister Omers' and St Gabriel's Chapel*, The Archaeology of Canterbury IV, Maidstone, pp228-57.

Payne, S., 1975; Partial recovery and sample bias, in A. T. Clason (ed), *Archaeozoological studies*, Groningen, pp7-17.

7.17 ASSESSMENT OF BIRD AND FISH BONE

Enid Allison

SUMMARY

7.17.1 Over 2,000 pieces of bird and fish bone were recovered, largely through sieving although some, generally larger, material was collected by hand. The material has the potential to provide information on the diet and economy of the medieval inhabitants of the Mersham site. Little previous work has been carried out on an inland rural site of this date. Further analysis would concentrate on fish bone obtained from sieved samples.

Introduction

7.17.2 Bird and fish bones were recovered, both by manual excavation and by sieving of 48 bulk samples from selected features.

Methodology

7.17.3 Sieving of bulk samples was carried out onto nested 1mm and 2mm meshes after carrying out bucket flotation, to 0.5mm, for recovery of charcoal and seeds. All residues have been sorted and all bones present retrieved.

Quantification

7.17.4 Very few bird and fish bones (10 fragments of each) were recovered by hand collection. A total of 49 fragments of bird bone were recovered from the samples, representing a wider range of species than the hand-collected material. Eggshell was present in several samples.

7.17.5 Recovery of fish bone was greatly enhanced by sieving, with an estimated total of over 2,000 fragments recovered from 37 samples. Seven of these produced assemblages with over 100 fish fragments. The numbers of identifiable fragments make up a relatively low proportion of the total (this is usually the case with sieved material, as many small, undiagnostic fragments of fin rays are recovered). A relatively high proportion (c. 40%) of identifiable bone was recovered from just two Phase 3 samples (context 419, sub-group 130, Group 6; context 432, sub-group 146, Group 12); these consisted chiefly of eel vertebrae. The total of identifiable fish bones is estimated at c. 300. A few fish scales were recovered from three samples.

Provenance

7.17.6 The bird and fish remains were recovered from ditch and pit fills excavated closer to the supposed areas of industrial rather than domestic activity. The bones appear to be predominantly food debris although possible exceptions to this are provided by bones of small passerines.

Conservation

7.17.7 None of the bones will require conservation.

Comparative Material

7.17.8 There are relatively few published accounts of medieval bird and fish assemblages from this general area. Those that have been published are from semi-urban/ecclesiastical or urban sites, such as Maison Dieu (Ospringe; Wall, 1980), St Gregory's Priory (Canterbury; Powell *et al.*, forthcoming), and Townwall Street (Dover; Nicholson, forthcoming; Allison, forthcoming)).

Potential for further work

The material from Mersham provides an opportunity to examine material from an inland rural site. Although the bird bone should be noted, future work should concentrate upon the much larger assemblage of fish bone which has the potential to address the CTRL research aim to examine the:

Utilisation of natural resources, e.g. woodland management and exploitation of riverine and coastal resources.

7.17.10 The small, bird bone assemblage recovered is typical of food debris found on medieval sites, with domestic fowl and goose predominant. Bones of mallard (?) duck and pigeon (?) were present and several bones of small passerines were recovered by sieving. The potential for further work is limited by the small quantity of bone recovered and should consist of the production of a simple species list.

7.17.11 Further analysis of the fish bone would be more valuable in interpretation of the site economy. Work would necessarily be concentrated on the material recovered by sieving. The assemblage as a whole contains sufficient identifiable material to generate statistically significant information on the fish component of the diet of the medieval inhabitants of the site. The relative importance of freshwater and marine fish should be determined; comparison made with other medieval assemblages from sites along the southern North Sea and Channel coasts may shed light on the provenance of the latter and, therefore, on the trading/exchange patterns of the settlement.

7.18.12 Bibliography

Allison, E. P., forthcoming; The Bird Bones, in K. Parfitt, B. Corke and J. P. Cotter, *Excavations at Townwall Street, Dover, 1995-6, The Archaeology of Medieval Dover 1*, Canterbury Archaeological Trust Occasional Papers, Canterbury.

Nicholson, R. A. forthcoming; The Fish Remains, in K. Parfitt, B. Corke and J. P. Cotter, *Excavations at Townwall Street, Dover, 1995-6, The Archaeology of Medieval Dover 1*, Canterbury Archaeological Trust Occasional Papers, Canterbury.

Powell, A., Sergeantson, D., and Smith, P., forthcoming; Food Consumption and Disposal; the animal remains in Hicks, M., and Hicks, A., forthcoming; *Excavations at St Gregory's Priory Canterbury*, The Archaeology of Canterbury (new series) II, Canterbury.

Wall, S. M. (1980); The animal bones from the excavation of the hospital of St Mary of Ospringe, *Archaeologia Cantiana* **96**, pp227-266.

7.18 ASSESSMENT OF THE PLANT REMAINS

Ruth Pelling

Summary

7.18.1 Excavation work included the sampling of deposits for charred plant remains. Nine standard samples of early medieval date were assessed for their potential for analysis and seven yielded such remains. 13 samples also provided loose seeds that were included in the assessment, some of these had been mineralised and were extracted from flotation residues, others were carbonised and collected from the flots of small samples. Generally, the concentration of remains was low although two samples produced more substantial remains. Cereal crops included bread-type wheat, spelt wheat, oats and barley. Pulses included broad bean and possible cultivated vetch (*Vicia sativa* subsp. *sativa*). What may have been subsidiary crops, including flax, beet and plum or sloe, were also identified. Occasional mineralised seeds, particularly of brassica may be derived from sewage. Some further detailed analysis is recommended.

Introduction

7.18.2 Samples were collected from ditches, pits (including cess-pits) and post-holes during excavation and wet-sieved for the recovery of carbonised and mineralised material. The deposits examined were generally of early medieval date (Phase 3, c. 1050-1200). The samples were taken in order to address questions concerning the diet, cereal economy and environment of the site.

Methodology

7.18.3 Samples of 10 to 40 litres were processed by bucket flotation and the flots collected onto 0.5mm mesh sieves. Flots were air dried slowly prior to a rapid visual assessment of nine of them. Occasional seeds were picked out of residues or small flots from an additional 13 samples and were also submitted.

7.18.4 Each flot was assessed by scanning under a binocular microscope at x10 magnification. Any seeds or chaff noted were provisionally identified and an estimate of abundance made. Random fragments of charcoal were fractured and examined in transverse section at x10 and x20 magnification.

Quantification

7.18.5 Nine flots were assessed and the seeds extracted from a further 13 samples were provisionally identified. Flots were small to moderately sized (10 to 300 ml). Several samples contained frequent roots and two (samples 1009 and 1048) were rich in molluscan remains. The results of the examination are detailed below (Table One).

7.18.6 Seven of the nine flots produced charred cereal remains, generally in low numbers (up to 50 grains), although two samples (samples 1022 and 1029) were slightly richer, with 51 to 100 grains. Species noted included *Hordeum vulgare* (barley), free-threshing *Triticum* sp. (bread or rivet wheat), possible *Triticum spelta* (spelt wheat) and *Avena* sp. (oats). Cereal chaff was very rare, being recorded in one sample only (1022). The chaff noted consisted of a single *Hordeum vulgare* rachis. Weeds were quite common in sample 1022, but were rare or absent from the remaining flots. Non-cereal items were found in six flots and included seeds of possible *Brassica* sp. (cabbage, mustard *etc.*; mostly preserved by calcium phosphate mineralisation), *Vicia faba* (broad bean), *Vicia* cf. *sativa* (fodder vetch), *Linum usitatissimum* (flax), *Corylus avellana* (hazel-nut), *Beta vulgaris* (beet) and *Prunus* sp. (sloe, plum *etc.*). Wood charcoal was present in eight samples and was common in sample 1064. The taxa was generally provisionally assigned as *Quercus* sp. (oak) or Pomoideae (hawthorn, apple *etc.*), with occasional *Corylus/Alnus* sp. (hazel/alder).

7.18.7 The loose material included occasional charred cereal grain and *Vicia/Pisum* sp. (pulses), mineralised seeds of *Brassica* sp. (cabbage, mustard *etc.*) and a *Prunus* sp. (plum, sloe *etc.*) stone. Seeds of *Sambucus nigra* (elderberry) were recovered in quite large quantities from two samples (1067 and 1072). The *Sambucus* material was not charred; the seeds of this species tend to be particularly robust and resistant to decay, tending to survive where other remains do not (*e.g.*, in waterlogged deposits which have subsequently dried out).

7.18.8 Table One

PLANT REMAINS

<i>Sam- ple</i>	<i>Con- text</i>	<i>Feature</i>	<i>Phase</i>	<i>Type</i>	<i>Flot size (ml)</i>	<i>GRAI N</i>	<i>Chaff</i>	<i>Weed seeds</i>	<i>Other</i>	<i>Id-Other</i>	<i>Char- coal</i>	<i>Comm- ents</i>
1007	347	Cess pit	3	Seeds	0							Modern rubus
1009	353	Ditch	5	Flot	100						+	Mollusc rich
1016	374	Ditch	3	Seeds	0				+	Brassica		Mineral -ised
1017	366	Pit	3	Seeds	0	++			++	Brassica		Mineral ised
1019	383	Cess pit	3	Flot	100	++			+	Beta vulgaris, Corylus	++	Rooty
1022	403	Pit	3	Flot	200	+++	+	+++	++	Vic.faba Vic.sat Corylus Linum	++	2xflots
1023	414	Cess pit	3	Flor	200	++		++			++	Rooty, 2xflots
1024	419	Cess pit	3	Seeds					+	cf Prunus,		Mineral -ised
1028	440	Pit	3	Flot	300	++		+	+	Corylus Prunus Vic/lath Crataegus	++	Very rooty
1029	432	Pit - iron working?	3	Flot	200	+++		+	+	Corylus Vic/Pis	++	2xflots
1038	498	Cess pit	3	Seeds	0	+		+				
1048	519	Ditch	3	Flots	10	+						Moll- uscs
1064	567	Pits	3	Flots	50						+++	
1067	570	Pits	3	Flots	50	+		+	+	Corylus	++	Elder
1070	573	Pits	2	Seeds	0	+			+	Vic/Pis		
1072	575	Pits	3	Seeds	0			++				Elder
1075	584	Pit	3	Seeds	0	+						
1076	587	Pits	3	Seeds	0							Modern seeds
1078	595	Ditches	3	Seeds	0							Modern seeds
1082	605	Post- holes	3	Seeds	0							Modern seeds
1087	610	Pots- holes	3	Seeds	0	+						
1090	618	Pits	2	Seeds	0				+	Vic/Pis		

Provenance

7.18.9 Those samples that contained moderate to good quantities of grain were all taken from pit fills (contexts 383, 403, 414, 440, 432). The mineralised brassica seeds recovered from pit fill 366 would suggest that this pit contained sewage material and therefore may have been a cess-pit. Other than the brassica seeds, mineralised remains were not common although occasional items, including the *Prunus* stone in context 419, do confirm the interpretation of some features as cess-pits. The charred remains recovered from both cess-pits and other features are likely to represent small-scale cereal processing and food-preparation waste as well, perhaps, as waste from hearth or furnace fires.

Conservation

7.18.10 The flots are in a stable condition and can be archived for long-term storage.

Comparative material

7.18.11 Comparable sites of this period are infrequent in Kent. A tenth-century assemblage was recovered from the Graveney Boat (Wilson, 1978), which produced a range of estuarine and salt marsh species, terrestrial trees and shrubs and herbaceous plants as well as the actual cargo of the boat which included, most notably, a large deposit of *Humulus lupulus* (hops). The Graveney deposits are, however, rather unusual. Slightly later (twelfth-/thirteenth-century) deposits from Ebbsfleet, and a possible Saxon grave at Chalk Hill, were examined as part of the Sandwich Bay archaeological project (Scaife 1995). The assemblages were limited, but the Ebbsfleet samples produced a comparable species list with free-threshing wheat, possible spelt wheat, *Hordeum vulgare*, oats, and rye rachis, broad bean and pea. Material from Northfleet (Pelling, unpubl.), dated to the eleventh/ twelfth century, again suggests a mixed cereal economy, producing free-threshing wheat, barley, oats and rye. The pulses at this site included cultivated vetch as well as beans and peas. The sites all suggest that *Triticum turgidum* (rivet wheat) was not cultivated in Kent at this time, although it is known from eleventh and twelfth century records elsewhere in the country (Moffett, 1991). They do suggest that cultivated vetch is present from at least the eleventh century, as the Mersham sample seems to support.

7.18.12 Outside of Kent, there is a growing body of archaeobotanical assemblages from this period, for example the large scale assemblages examined from West Cotton (Campbell 1994) which cover the late Anglo-Saxon and early medieval periods, although with many gaps in the record. While there are many references to medieval urban deposits (see Robinson and Wilson 1987), many are slightly later (thirteenth century onwards) and small-scale rural assemblages have been less frequently examined. This is a period of potential economic and agricultural change, with new introductions from Scandinavia and Norman France. It is, therefore, important to continue to develop the data-set for areas, like Kent, for which the data is still limited in order to trace the introduction of new species and to analyse developing agricultural and, perhaps, climatological trends throughout the country.

Potential for further work

7.18.13 Given the paucity of comparative material for this period in Kent and the importance of building up a national data-set for all potential periods of change, some further work on the material is recommended. To this end, it is suggested that the five samples that produced moderately sized deposits should be sorted and analysed in full (samples 1019, 1022, 1023, 1028 and 1029). In addition the loose grain and brassica seeds extracted from sample 1027 should be identified and discussed. Further work on this assemblage has the potential to address the following Landscape Zone priorities:

changes to the organisation of the landscape through time;
reliance on pastoralism versus arabalism;

And the following Fieldwork Event Aims:

to recover environmental and other economic indicators present on the site;

to determine the landscape setting of the site and its interaction with the contemporary local environment.

7.18.14 Bibliography

Campbell, G., 1994; The preliminary archaeobotanical results from Anglo-Saxon West Cotton and Raunds, in J. Rackham (ed), *Environment and Economy in Anglo-Saxon England*, CBA Research Report 89, pp65-82.

Moffett, L., 1991; The archaeobotanical evidence for free-threshing tetraploid wheat in Britain, in E. Hajnalova (ed), *Palaeoethnobotany and Archaeology*, Acta Interdisciplinaria Archaeologica VII, Nitra, pp233-244.

Pelling, R. unpublished; Northfleet East Substation; The Charred Plant Remains, Unpublished report for the Oxford Archaeological Unit.

Robinson, M. and Wilson, B., 1987; A survey of environmental archaeology in the South Midlands, in H.C.M. Keeley (ed) *Environmental Archaeology; A Regional Review. Volume II*, Historic Buildings and Monuments Commission for England, Occasional Paper No 1, London, pp16-100.

Scaife, R., 1995; Charred Plant Remains, in C. M. Hearne, D. R. J. Perkins and P. Andrews, The Sandwich Bay Wastewater Treatment Scheme Archaeological Project 1992-1994, *Archaeologia Cantiana* **115**, pp325-9.

Wilson, G., and Conolly, A. P., 1978; Plant Remains including the Evidence for Hops, in V. Fenwick (ed) *The Graveney Boat; a Tenth-Century Find from Kent*, BAR British Series 53, pp133-50.

7.19 ASSESSMENT OF THE MARINE MOLLUSCA

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Summary

7.19.1 The small assemblage of marine molluscan remains recovered from the site has been identified and weighed. Oyster, cockle and mussel were represented in several samples, winkle and tellin were represented in single samples; see table One for details.

Introduction

7.19.2 Marine molluscan shells were recovered by hand during excavation and from the bulk sample residues taken from pit and ditch fills.

Methodology

7.19.3 The samples were sieved onto nested 2mm and 1mm meshes after carrying out bucket flotation onto 0.5mm. mesh. The 2mm fractions from each sample were sorted in their entirety and searched for molluscan remains.

Quantification

7.19.4 The marine shells recovered by hand consisted of 54 partial or complete oyster shells with a total weight of 732g. The sieved samples produced a wider range of species. Cockle and mussel shell was common in a few samples, but generally the remains consisted of small quantities of fragmentary oyster, mussel and cockle shell (Table One). Winkle and tellin were recorded in single samples, as were the calcareous tubes of marine annelid worms (commonly found adhering to shells) and a crustacean claw.

7.19.5 Table One
Marine Molluscs

Context	Sample	Group	Sub-Gp	Phase	10-50%	1-10%	<1%	Trace
309	1000	22	139	3			Oyster	
309							Mussel	
309							Cockle	
314	1001	17	32	3				Shellfish
314								Crustacean Claw
330	1003	26	36	4			Oyster	
330							Mussel	
328	1004	10	33	3				Oyster
328								Mussel
324	1005	10	141	3				Oyster
324								Mussel
341	1006	0	0	0			Mussel	
347	1007	6	25	3			Mussel	
353	1009	33	99	5				Mussel
350	1011	10	166	3				Shellfish
362	1012	22	167	3				Shellfish
374	1016	7	26	3			Cockle	
366	1017	11	27	3				Mussel
383	1019	6	131	3	Mussel			
403	1022	11	129	3	Mussel			
403					Cockle			
414	1023	6	130	3				Mussel
419	1024	6	130	3				Mussel
440	1028	11	164	3		Cockle		Mussel
432	1029	12	146	3				Oyster
432								Mussel
499	1039	12	179	3			Oyster	
499							Mussel	
510	1042	20	120	3				Mussel
515	1044	6	180	3			Mussel	
516	1045	6	180	3			Shellfish	
518	1047	6	180	3				Mussel
518								Cockle
519	1048	14	65	3			Mussel	
567	1064	13	107	3			Shellfish	
570	1067	23	111	3		Mussel		
573	1070	4	101	2				Mussel
574	1071	4	101	2		Oyster	Cockle	
584	1075	4	171	2			Mussel	
584							Cockle	
587	1076	13	162	3				Mussel
589	1077	9	13	3				Mussel
599	1080	13	161	3			Mussel	
622	1089	2	160	2			Cockle	
618	1090	3	115	2			Mussel	

Provenance

7.19.6 All of the material described above is of marine origin, and it suggests that East Kent fishermen were either providing these resources at Mersham markets, or that, in the light of the documentary evidence (see Appendix 7.21), some of the Mersham fishermen had access to marine resources.

Conservation

7.19.7 All of the material is inherently stable and has been packaged for long-term storage.

Comparative material

7.19.8 Marine molluscs were found in abundance at Townwall Street (Dover) in early medieval contexts. Most of that material has not been studied in any detail, however, and there is a general lack of analysis of marine remains from East Kent sites. This enhances the value of the Mersham assemblage, which, although small, is worthy of publication in a summary form at least, as a significant part of the dietary evidence for the site, particularly in the early medieval period, in particular (25 of the 34 samples are from Phase 3).

Potential for further work

7.19.9 The lack of comparative studies from elsewhere in East Kent is to be regretted, but that does not diminish from the value of this assemblage which appears to represent not inconsiderable component of the dietary regime (and thus the trading connections) of Mersham in the early medieval period. The material is generally unspectacular and there is too little for any detailed quantification to be carried out. No further work is required on the specimens. Nonetheless, the material does warrant summary publication, as valuable evidence for the presence of marine molluscs prepared for consumption at an inland site.

7.20 ASSESSMENT OF THE LAND SNAILS

Mike Allen

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Summary

7.20.1 A sample of flots from washover floatation was presented for assessment. The assemblage contained a number of large and apical fragments of *Helix aspersa*, which is a Roman introduction, and also one *Candidula* sp., which is a medieval one. The assemblage is post-Roman and probably medieval or later. The composition of the assemblage indicates terrestrial, synanthropic habitats. No further work is recommended.

Introduction

7.20.2 One sample was received from CAT for assessment of the land snails. The sample (number 1025) was from a flots from washover floatation. It was from one of the fills of an early medieval pit (context 422, sub-group 63, Group13, Phase 3) that appears to have been cut specifically to dispose of metal-working debris.

7.20.3 The assessment aims were to;

quantify shells to indicate if statistically viable analysis was possible;
characterise the assemblage;
indicate if there was change in the local environment over time;
examine if the assemblage will determine whether ditches or other features contained water;
indicate the potential resolution of interpretation.

Methodology

7.20.4 The available material was scanned under a x10 to x30 stereo-binocular microscope to identify the basic mollusc taxa/species present and, crudely, quantify the total numbers in the fractions received, from which it can be determined whether the total assemblages are likely to be statistically viable for analysis.

7.20.5 For assessment of the snails it is normal to assess the flots that contain the majority of the floating shells. There is some minor inherent bias in the flots as some species and shell fragments will not have floated and may only be present in the unextracted residues. The flots are likely to contain shells that are less likely to break (*i.e.*, larger robust species and very small species). Nevertheless the flots normally contain the majority of the shells in any sample and are more representative of the total assemblage. By contrast the residues usually contain shell fragments, the majority of which are non-apical and undiagnostic.

Quantification

7.20.6 The residue was very 'dirty' and contained a large quantity of fine sand. Although shells were very abundant, the taxonomic range was very limited and thus, with high numbers of shells, simple quantification was of little significance.

7.20.7 The results are given in Table 1 and are presented in habitat preferences rather than taxonomic order for ease of reference.

7.20.8 Table One

LAND SNAILS

Context	422
Sample	1025
OPEN COUNTRY	
<i>Candidula</i> sp	A
CATHOLIC SP	
<i>Trichia hispida</i>	A
<i>Monachia cf cantiana</i>	A
<i>Helix aspersa</i>	C
SHADE LOVING	
<i>Discus rotundatus</i>	C
<i>Aegopinella nitidula</i>	B
<i>Oxychilus</i> sp.	B
BURROWING SPECIES	
<i>Ceclioides acicula</i>	B
	100+

KEY: A 10 items or more
 B 5 to 9 items
 C 4 items or fewer

Provenance

7.20.9 The assemblage contained a number of large and apical fragments of *Helix aspersa*, which is a Roman introduction, and also one *Candidula* sp., which is a medieval introduction. The assemblage is post-Roman and probably medieval or later. The composition of the scanned assemblage seems to indicate strongly terrestrial habitats; many of the species present although classed shade-loving (according to Evans 1972), are synanthropic and may be found in garden habitats, debris and rock rubble.

Conservation

7.20.10 All of the material is inherently stable and has been packaged for long-term storage.

Comparative material

7.20.11 Comparable material is ubiquitous but of little value in terms of addressing the Fieldwork Event Aims or Landscape Zone Priorities.

Potential for further work

7.20.12 Very high shell numbers were present and statistically viable analysis is possible. To provide a total assemblage would require sorting the residue, ideally to 0.5mm, in order to recover other species. However, the assessed assemblage indicates a regime favouring synanthropic species and further analysis would probably not be of great environmental value for this site.

7.20.13 Bibliography

Evans, J.G. 1972; *Land Snails in Archaeology*, London Seminar Press.

PS: N OF WESTENHANGAR CASTLE

ASSESSMENT OF PLANT REMAINS

Ruth Pelling and Enid Allison

1. Introduction

- 1.1 A total of 46 bulk samples with individual volumes of 2-70 litres were taken during the excavation phase. The total volume of soil processed was 878 litres, with 435 litres of this coming from the fills of a feature containing plant remains, which was initially thought to be a possible oven or corn drier (URS 1998, 13).

2 Methodology

- 2.1 Due to the high clay content of the soil, each sample was soaked in a weak hydrogen peroxide solution (<1%) prior to processing. After this, bucket flotation of remove lighter biological material was carried out to produce a washover onto 0.5mm mesh. The soil remaining in the bucket after this process was then sieved to 2mm. Washovers and residues from each sample were dried and examined briefly.

3 Quantification

- 3.1 A number of features, including ditches, gullies, pit fills and the fill of a post hole were sampled. These generally produced small washovers, of 20ml or less. Most of these contained only a few cereal grains (less than 10) and small amounts of charcoal, although there were several where charred remains were a little more common. These included the upper fill of a ditch (sub-group 45), several ditch fills (sub-groups 14 and 20), the fill of a burnt feature (sub-group 10). Most of these are features assigned to Phase 3 (Table 10).
- 3.2 The principal results of interest, however, came from the eleven samples taken of the pit fill (sub-group 21). Samples taken from this feature were very rich in charred cereal remains, some containing several thousand grains. The bulk of these are grains of oat (*Avena*). Lower numbers of grains of rye (*Secale cereale*) and free-threshing wheat (*Triticum*) and occasional grains of barley (*Hordeum vulgare*) were also present. Cereal chaff was present in one sample. Weed seeds, especially brome grass (*Bromus* subset *Eubromus*) were common, and possible pulses were also seen.

4 Conservation

- 4.1 The charred remains are in an excellent state of preservation. They are currently stored in sealtight plastic bags. No conservation work is required on them. They take up only a small amount of space and, given the rarity of plant remains of this period from East Kent, it is recommended that they are retained in long-term storage.

5 Comparative Material

- 5.1 There is little comparative material of early medieval date from rural sites in East Kent. The principal assemblages against which these remains can be compared are the much smaller assemblage from Mersham and the plant remains from Monkton on the Isle of Thanet (Wiltshire forthcoming). The plant remains from Townwall Street, Dover are contemporary, although they stem from an urban context (Campbell forthcoming). The earlier evaluation report noted also the presence of botanical remains from other CTRL sites at Boys Hall Road and East of Pluckley Road (URS 1998, 25).

6 Potential for further work

- 6.1 The potential for analysis of the principal assemblage here is very high and further work on the assemblage is strongly recommended. The site information is reasonable, allowing the assemblage to be placed within a dated framework. Relatively little is known of the crop history of East Kent and the composition of this assemblage is unusual by the standards of other areas of southern Britain. Further work should produce information on agricultural practices and crop processing techniques relating to the farmsteads, and also on the contemporary environment.
- 6.2 Detailed analysis of the plant remains from the pit may help to establish the function of the feature, or determine if the assemblages are redeposited burnt refuse. The large numbers of oat grains present may suggest that the feature is not a corn drier, as oats do not usually require drying. It will be particularly important to examine spatial differences within the feature for evidence of its use. Analysis of the charcoal will provide evidence of fuel types.
- 6.3 The plant remains are directly relevant to the Fieldwork Event Aim to: Recover charred plant material and other economic indicators for palaeo-economic studies.
- 6.4 This assemblage, although centred on a single period, provides significant information relating to agricultural practices and crop processing techniques within a rural environment at that time.

Table Ten

Summary of Principal Excavated Contexts with Plant Remains

<i>Site</i>	<i>Context</i>	<i>Sub-Group</i>	<i>Group</i>	<i>Phase</i>	<i>Sample No.</i>
CAT Excavation	47	45	7	3	9
CAT Excavation	82	14	8	3	15
CAT Excavation	138	12	12	3	29
CAT Excavation	144	20	8	3	30
CAT Excavation	156	21	11	3	35,36
CAT Excavation	165	20	8	3	43