

# **Settling the Ebbsfleet Valley**

**High Speed 1 Excavations at Springhead and Northfleet, Kent  
The Late Iron Age, Roman, Saxon, and Medieval Landscape**

**Volume 3: Late Iron Age to Roman Human Remains  
and Environmental Reports**

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## Volume 3: Late Iron Age to Roman Human Remains and Environmental Reports

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Table 11 Element representation in the cattle bone assemblage from Springhead Sanctuary using NISP and MNE (excluding articulated burials)

Element	NISP					MNE				
	Late Iron Age	Early Roman	Sanctuary	Ritual shaft	Late Roman	Late Iron Age	Early Roman	Sanctuary	Ritual shaft	Late Roman
<i>Animal bone group</i>	–	–	–	1	–	–	–	–	1	–
Horncore	–	3	1	–	–	–	2	1	–	–
Skull	44	41	56	9	15	5	5	4	6	6
Hyoid	1	–	6	1	–	1	–	6	1	–
Mandible	48	35	72	15	8	21	10	22	8	3
Tooth	9	23	56	8	8	–	–	–	–	–
Atlas	5	–	4	4	–	4	–	3	4	–
Axis	5	2	4	1	–	3	2	3	1	–
Cervical vertebra	21	6	17	5	2	–	–	–	–	–
Thoracic vertebra	42	13	27	8	4	–	–	–	–	–
Lumbar vertebra	28	7	15	1	4	–	–	–	–	–
Vertebra	6	2	7	1	4	33	20	40	12	6
Costa	488	114	274	46	29	108	34	98	13	16
Sternum	4	1	1	–	–	–	–	–	–	–
Scapula	24	16	23	5	5	11	6	8	3	3
Humerus	21	12	21	5	2	13	4	7	3	1
Radius	14	13	14	2	5	6	6	4	1	3
Ulna	16	10	12	3	–	8	6	6	1	–
Metacarpal	8	7	16	5	5	7	5	10	3	3
Pelvis	35	18	27	8	4	11	7	12	5	2
Sacrum	3	1	–	–	–	2	1	–	–	–
Femur	29	18	27	7	3	9	5	8	2	1
Patella	4	–	–	–	–	2	–	–	–	–
Tibia	29	7	22	7	5	12	5	11	2	3
Astragalus	9	2	5	5	2	8	2	4	5	2
Calcaneum	10	4	8	4	1	10	4	8	4	1
Tarsal	3	–	1	2	1	–	–	–	–	–
Metatarsal	14	16	15	5	11	8	9	9	3	4
Carpal/tarsal	4	2	–	–	–	–	–	–	–	–
Metapodial	8	5	7	2	8	–	–	–	–	–
Phalanx (I)	13	4	15	1	7	12	4	15	1	7
Phalanx (II)	3	1	10	4	–	3	1	9	4	–
Phalanx (III)	–	2	5	2	1	–	2	4	1	1
Total	943	382	767	166	134	297	140	292	84	62

Table 12 Element representation in the sheep and goat bone assemblage from Springhead Sanctuary using NISP and MNE (excluding articulated burials)

Element	NISP					MNE				
	Late Iron Age	Early Roman	Sanctuary	Ritual shaft	Late Roman	Late Iron Age	Early Roman	Sanctuary	Ritual shaft	Late Roman
<i>Animal bone group</i>	–	1	–	–	–	–	1	–	–	–
Horncore	1	2	2	–	–	1	1	2	–	–
Skull	62	16	50	28	12	8	9	14	4	6
Hyoid	5	1	3	–	1	3	1	2	–	1
Mandible	93	47	115	22	19	49	40	62	6	14
Tooth	45	10	94	14	10	–	–	–	–	–
Atlas	–	2	1	–	–	–	1	1	–	–
Axis	2	1	3	–	–	2	2	3	–	–
Cervical vertebra	10	1	2	2	–	–	–	–	–	–
Thoracic vertebra	38	6	9	–	1	–	–	–	–	–
Lumbar vertebra	15	4	7	2	2	–	–	–	–	–
Vertebra	1	–	6	–	–	24	13	11	3	3
Costa	316	102	199	15	34	35	76	95	11	16
Sternum	5	1	3	–	–	–	–	–	–	–
Scapula	35	13	25	4	2	17	11	10	1	2
Humerus	30	12	47	11	–	25	16	35	3	–
Radius	40	15	76	14	5	29	16	41	6	5
Ulna	16	8	14	1	4	9	6	7	1	2
Metacarpal	19	17	36	7	8	10	19	28	2	8
Pelvis	15	9	16	2	3	9	9	8	–	2
Sacrum	2	1	–	–	–	1	2	–	–	–
Femur	25	10	27	7	4	9	10	15	2	3
Patella	–	–	1	–	–	–	–	1	–	–
Tibia	53	30	84	16	15	33	29	41	4	10
Astragalus	3	–	2	–	–	3	1	2	–	–
Calcaneum	5	2	3	1	–	5	3	2	1	–
Tarsal	–	–	–	1	–	–	–	–	–	–
Metatarsal	28	30	55	11	5	13	32	38	8	3
Carpal/tarsal	3	–	–	–	–	–	–	–	–	–
Metapodial	8	14	54	5	3	–	–	–	–	–
Phalanx (I)	20	4	9	1	–	18	6	9	1	–
Phalanx (II)	4	1	4	–	–	4	1	4	–	–
Phalanx (III)	3	1	1	–	–	3	1	1	–	–
Total	901	402	946	82	128	310	306	432	53	75

Table 13 Element representation in the pig bone assemblage from Springhead Sanctuary using NISP and MNE (excluding articulated burials)

Element	NISP					MNE				
	Late Iron Age	Early Roman	Sanctuary	Ritual shaft	Late Roman	Late Iron Age	Early Roman	Sanctuary	Ritual shaft	Late Roman
<i>Animal bone group</i>	–	–	1	1	–	–	–	1	1	–
Skull	103	11	22	6	6	16	4	9	2	2
Mandible	60	17	25	4	–	23	9	15	3	–
Tooth	46	10	32	7	5	–	–	–	–	–
Atlas	3	1	6	–	–	1	1	4	–	–
Axis	3	–	–	–	–	2	–	–	–	–
Cervical vertebra	4	–	–	–	–	–	–	–	–	–
Thoracic vertebra	14	–	2	–	–	–	–	–	–	–
Lumbar vertebra	17	–	4	–	1	–	–	–	–	–
Vertebra	1	–	1	–	–	10	–	7	–	1
Costa	135	5	43	10	5	39	3	26	10	4
Sternum	7	–	–	–	–	–	–	–	–	–
Scapula	29	3	6	2	4	20	3	6	2	3
Humerus	21	2	8	1	1	18	1	6	1	1
Radius	9	2	1	2	–	6	1	1	2	–
Ulna	14	5	7	1	1	9	5	7	1	1
Metacarpal	8	4	6	3	–	8	4	6	3	–
Pelvis	8	4	1	–	1	5	3	1	–	1
Sacrum	2	–	–	–	–	2	–	–	–	–
Femur	14	6	6	1	1	7	6	4	1	1
Patella	1	–	1	–	–	1	–	1	–	–
Tibia	29	3	10	4	1	23	3	6	2	1
Fibula	24	3	10	1	3	5	1	9	1	2
Astragalus	4	1	2	–	–	4	1	1	–	–
Calcaneum	8	1	3	1	–	8	1	3	1	–
Metatarsal	11	–	3	–	–	9	–	3	–	–
Carpal/tarsal	–	–	1	–	–	1	–	–	–	–
Metapodial	18	2	9	–	–	–	–	–	–	–
Phalanx (I)	4	1	3	–	–	4	1	3	–	–
Phalanx (II)	5	–	4	–	–	4	–	4	–	–
Phalanx (III)	–	2	1	–	–	0	2	1	–	–
Total	602	83	261	43	29	224	49	124	30	17



Table 14 Element representation in the equid bone assemblage from Springhead Sanctuary using NISP and MNE (excluding articulated burials)

Element	NISP					MNE				
	Late Iron Age	Early Roman	Sanctuary	Ritual shaft	Late Roman	Late Iron Age	Early Roman	Sanctuary	Ritual shaft	Late Roman
<i>Animal bone group</i>	2	-	-	-	-	2	-	-	-	-
Skull	-	-	4	1	-	-	-	4	1	-
Mandible	3	1	3	-	1	2	1	2	-	1
Tooth	2	7	9	4	-	-	-	-	-	-
Axis	-	-	1	-	-	-	-	1	-	-
Cervical vertebra	-	-	5	-	-	-	-	5	-	-
Thoracic vertebra	-	-	3	-	-	-	-	3	-	-
Lumbar vertebra	-	-	3	-	1	-	-	3	-	1
Costa	-	4	1	1	-	-	3	1	1	-
Sternum	-	-	1	-	-	-	-	-	-	-
Scapula	1	3	-	2	-	1	3	-	2	-
Humerus	-	-	2	-	-	-	-	1	-	-
Radius	-	2	1	1	-	-	2	1	1	-
Ulna	1	1	4	-	1	1	1	4	-	1
Metacarpal	-	2	-	-	-	-	2	-	-	-
Pelvis	1	-	2	1	1	1	-	2	1	1
Femur	-	2	2	-	2	-	2	2	-	2
Patella	-	-	1	-	-	-	-	1	-	-
Tibia	1	2	1	-	2	1	2	1	-	2
Astragalus	-	3	1	-	1	-	3	1	-	1
Calcaneum	-	2	1	-	-	-	2	1	-	-
Tarsal	1	-	1	-	-	-	-	-	-	-
Metatarsal	-	1	-	-	-	-	1	-	-	-
Carpal/tarsal	-	1	-	-	1	-	-	-	-	-
Metapodial	1	2	5	1	-	-	-	-	-	-
Phalanx (I)	2	-	-	-	1	2	-	-	-	1
Phalanx (II)	1	1	3	-	-	1	-	3	-	-
Phalanx (III)	-	1	-	-	-	-	1	-	-	-
Total	15	32	53	11	11	11	23	36	6	10

Table 15 Epiphyseal fusion of the cattle bone, excluding skeletons from Springhead Sanctuary (after Habermehl 1975)

Approx fusing age	Element	Phase											
		Late Iron Age			Early Roman			Sanctuary*			Late Roman		
		F	UF	% F	F	UF	% F	F	UF	% F	F	UF	% F
7-10 mths	scapula d	8	-	-	1	-	-	2	-	-	1	-	-
	pelvis	-	-	-	7	-	-	8	-	-	1	-	-
Total 7-10 mths		8	-	100	8	-	100	10	-	100	2	-	-
12-15 mths	radius p	4	-	-	2	-	-	3	-	-	3	-	100
15-18 mths	ph2 p	3	-	-	1	-	-	13	-	-	-	-	-
15-20 mths	humerus d	7	-	-	3	-	-	8	-	-	-	-	-
20-24 mths	ph1 p	12	-	-	2	1	-	14	2	-	6	1	-
Total 12-24 mths		34	-	100	8	1	89	38	2	95	9	1	90
2-2.5 yrs	metapodial d	8	3	-	4	1	-	12	4	-	7	-	-
	tibia d	6	1	-	1	-	-	6	1	-	1	-	-
Total 2-2.5 yrs		14	4	78	5	1	83	18	5	78	8	-	100
3 yrs	calcaneus p	5	2	-	2	-	-	4	2	-	1	-	-
3.5 yrs	femur p	4	2	-	1	1	-	-	-	-	-	-	-
3.5-4 yrs	humerus p	-	-	-	-	-	-	-	-	-	-	-	-
	radius d	4	-	-	3	-	-	2	1	-	-	-	-
	ulna p/d	-	1	-	1	-	-	-	-	-	-	-	-
	femur d	2	-	-	-	-	-	-	1	-	-	-	-
	tibia p	2	2	-	-	-	-	-	-	-	-	-	-
Total 3-4 yrs		17	7	71	7	1	88	6	4	60	1	-	100
5 yrs	vertebrae	20	24	-	4	11	-	7	30	-	-	-	-
Total 5 yrs		20	24	45	4	11	27	7	30	19	-	-	-

\* including ritual shaft

Table 16 Epiphyseal fusion of the sheep/goat bones, excluding skeletons from Springhead Sanctuary (after Habermehl 1975)

Approx fusing age	Element	Phase											
		Late Iron Age			Early Roman			Sanctuary*			Late Roman		
		F	UF	% F	F	UF	% F	F	UF	% F	F	UF	% F
3-4 mths	humerus d	10	-	-	2	3	-	10	3	-	-	-	-
	radius p	12	1	-	3	1	-	12	1	-	-	-	-
Total 3-4 mths		22	1	96	5	4	56	22	4	85	-	-	-
5 mths	scapula d	10	1	-	1	2	-	2	-	-	-	-	-
	pelvis	8	-	-	5	-	-	6	-	-	-	-	-
5-7 mths	ph2 p	2	2	-	1	-	-	3	1	-	-	-	-
7-10 mths	ph1 p	16	2	-	2	1	-	9	1	-	-	-	-
Total 5-10 mths		36	5	88	9	3	75	20	2	91	-	-	-
15-20 mths	tibia d	14	2	-	3	2	-	5	5	-	1	2	-
20-24 mths	metapodial d	3	9	-	1	8	-	8	4	-	-	1	-
Total 15-24 mths		17	11	61	4	10	29	13	9	59	-	3	25
3 yrs	calcaneus p	1	2	-	1	1	-	1	1	-	-	-	-
3-3.5 yrs	ulna p	2	1	-	-	-	-	-	1	-	-	-	-
	femur p	3	2	-	1	1	-	-	2	-	-	-	-
3.5yrs	humerus p	-	-	-	-	1	-	-	1	-	-	-	-
	radius d	3	3	-	2	1	-	1	3	-	1	1	-
	femur d	2	-	-	-	1	-	1	3	-	-	-	-
	tibia p	-	-	-	-	-	-	1	1	-	-	-	-
Total 3-3.5 yrs		11	8	58	4	5	44	4	12	25	-	1	0
4-5 yrs	vertebrae	7	12	-	1	7	-	1	11	-	-	1	-
Total 4-5 yrs		7	12	37	1	7	13	1	11	8	-	1	0

\* including ritual shaft

Table 17 Epiphyseal fusion of the pig bones, excluding skeletons from Springhead Sanctuary (after Habermehl 1975)

Approx fusing age	Element	Phase											
		Late Iron Age			Early Roman			Sanctuary			Late Roman		
		F	UF	% F	F	UF	% F	F	UF	% F	F	UF	% F
1 yr	scapula d	2	2	–	–	–	–	–	1	–	–	–	–
	pelvis	2	–	–	1	–	–	–	–	–	1	–	–
	humerus d	5	2	–	1	–	–	–	1	–	–	–	–
	radius p	5	1	–	1	–	–	1	–	–	–	–	–
	ph2 p	5	–	–	–	–	–	1	3	–	–	–	–
Total 1 yr		19	5	79	3	–	100	2	5	29	1	–	100
2 yrs	tibia d	7	1	–	–	2	–	–	4	–	–	–	–
	metapodial d	3	10	–	–	4	–	1	13	–	–	–	–
	ph1 p	2	2	–	–	–	–	1	1	–	–	–	–
2–2.5 yrs	calcaneus p	1	6	–	–	–	–	–	3	–	–	–	–
	fibula d	1	3	–	–	–	–	–	–	–	–	–	–
Total 2–2.5 yrs		14	22	39	–	6	0	2	21	9	–	–	0
3 yrs	ulna p	–	–	–	–	1	–	1	–	–	–	–	–
3.5 yrs	humerus p	–	2	–	–	–	–	–	–	–	–	–	–
	tibia p	–	2	–	–	–	–	–	–	–	–	–	–
	fibula p	–	–	–	–	–	–	–	2	–	–	1	–
	radius d	–	1	–	–	1	–	–	1	–	–	–	–
	ulna d	–	10	–	–	–	–	–	1	–	–	–	–
	femur p/d	–	3	–	–	1	–	–	–	–	–	–	–
	Total 3–3.5 yrs		–	18	0	–	3	0	1	4	20	–	1
4–7 yrs	vertebrae	–	16	–	–	–	–	–	1	–	–	1	–
Total 4–7 yrs		–	16	0	–	–	–	–	1	0	–	1	0

Table 18 Summary of element representation of the dogs from pit 2214 belonging to the Sanctuary complex

Element	Dog									
	1	2	3	4	5	6	7	8	9	10
Skull	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mandible	L+R	L	L+R	L+R	L+R		L			
Atlas	Yes									
Axis	Yes									
Cervical vertebra	Yes	Yes								
Thoracic vertebra	Yes	Yes								
Lumbar vertebra	Yes									
Costa	Yes						Yes			Yes
Scapula	L+R	L+R	L	L+R	L+R	L+R				
Humerus	L+R	L+R	L	L	L	L+R	L			
Radius	L	L+R				L+R	L			
Ulna	L+R	L+R	L	L	R	L				L
Metacarpal	Yes									
Pelvis	L+R			L	L+R					L
Sacrum	Yes									
Femur	L+R				L	L+R		L	L	L
Tibia	L+R	L			L+R	L+R	L	R		
Fibula					L+R					
Metatarsal	Yes									
Age	Adult	Adult	< 4–5 m	4–5 m	< 4–5 m	< 4–5 m	5–6 w	neonate	foetal	foetal
Sex	Male	?	M1 pc	?	M1 pc	M1 pc	E	?	?	?
Height (m)	0.23	0.22	na	na	na	na	na	na	na	na

As the dogs were not excavated as discrete skeletons, most vertebrae, ribs and smaller elements could not be attributed to a particular skeleton; pc = perforation of cript and E = erupting

Table 19 Measurements of the unfused dog bones from pit 2214 in the Springhead Sanctuary (after von den Dreisch 1976)

Measurement	Dog 3	Dog 4	Dog 5	Dog 6	Dog 7	Dog 8	Dog 9	Dog 10
Scap GL	52.1	41.2	40.0	37.9				
Scap SLC	12.9	13.7	11.6	10.5				
Hum GL	67.2	46.4	48.1	46.7	32.8			
Hum SD	7.1	7.8	7.8	6.2	5.1			
Rad GL				42.7	27.6			
Rad SD				6.2	4.4			
Ulna GL	72.4	50.6	48.8	47.8			19.8	
Ulna SD	5.2	5.3	5.3	4.0			2.5	
Fem GL			49.6	51.1		34.8	19.5	18.2
Fem SD			7.8	6.3		6.6	3.3	2.9
Tib GL			45.6	46.6	31.6	34.2		
Tib SD			7.9	6.4	5.8	6.4		

Table 20 Summary of element representation of the dogs from pit 2236 belonging to the Sanctuary complex

Element	Dog					
	1	2	3	4	5	6
Skull	Yes	Yes	Yes	Yes	Yes	
Mandible	L+R	L	L+R	L		
Atlas	Yes		Yes			
Axis	Yes		Yes			
Cervical vertebra	Yes		Yes			
Thoracic vertebra	Yes		Yes			
Lumbar vertebra	Yes		Yes			
Caudal vertebra			Yes			
Costa	Yes	Yes	Yes	Yes	Yes	
Scapula	L+R	L+R	L+R			
Humerus	L+R	L+R	L+R	L+R	L+R	R
Radius	L+R	L+R	L+R	L+R	L+R	L+R
Ulna	L+R	L+R	L+R	L+R	L+R	
Metacarpal	Yes		Yes			
Pelvis			L+R		R	
Sacrum			Yes			
Femur	L+R	L+R	L+R	L	L+R	
Tibia	L+R	L+R	L+R	L	L+R	R
Fibula	L+R	R	L+R			
Astragalus	L+R		L+R			
Calcaneus	R		L+R			
Metatarsal	Yes		Yes			
Phalanges	Yes		Yes			
<i>Age</i>	<4-5 m	5-6 w	Adult	5-6 w	Neonate	Neonate
	M1 pc	P2-4 E		P2-4 E		
<i>Sex</i>	?	?	Male	?	?	?
<i>Height (m)</i>	na	na	0.30	na	na	na

As the dogs were not excavated as discrete skeletons, most vertebrae, ribs and smaller elements could not be attributed to a particular skeleton; pc = perforation of cript and E = erupting

Table 21 Summary of element representation of the dogs from ritual shaft 2856 belonging to the Sanctuary complex

Element	Dog									
	1	2	3	4	5	6	7	8	9	10
Skull	Yes	Yes				Yes	Yes	Yes	Yes	
Mandible	L+R	L+R				L+R	L	L+R	L+R	
Atlas	Yes	Yes				Yes		Yes	Yes	
Axis	Yes	Yes				Yes		Yes	Yes	
Cervical vertebra	Yes	Yes				Yes		Yes	Yes	
Thoracic vertebra	Yes	Yes				Yes		Yes	Yes	
Lumbar vertebra	Yes	Yes				Yes		Yes	Yes	
Costa	Yes	Yes				Yes	Yes	Yes	Yes	
Scapula	L+R	R				L+R	R	L+R	L+R	
Humerus	L+R	L+R				L+R	R	L+R	L+R	
Radius	L+R	L+R				L+R	R	L+R	L+R	
Ulna	L+R	L+R				L+R		L+R	L+R	
Metacarpal	Yes	Yes				Yes		Yes	Yes	Yes
Pelvis	L	Yes	R		R			L+R	L+R	
Sacrum	Yes	Yes				Yes				
Femur	L	L+R		R		Yes	L+R	L+R	L+R	
Tibia	L	L+R		R		L+R	L	L+R	L+R	
Fibula	L				R	Yes	Yes	L+R	L+R	
Astragalus						L+R				
Calcaneum		R				L+R				
Metatarsal	Yes	Yes		Yes		Yes			Yes	
Phalanges	Yes	Yes				Yes		Yes	Yes	
<i>Context</i>	2855	2985	2985	2986	2986	2996	2996	5285	6619	6619
<i>Age</i>	Adult	Adult	Subadult	Adult	Adult	Adult	Juvenile	Adult	Adult	Adult
<i>Sex</i>	Male	?	?	?	?	Male	?	Male	?	?
<i>Height (m)</i>	0.33	0.46	?	0.32	?	0.46	na	0.52	0.34	0.34
Dog	11	12	13	14	15	16	17	18	19	20
Skull	Yes	Yes				Yes	Yes	Yes	Yes	Yes
Mandible	R	L+R			R	L+R	L	L+R	L+R	L+R
Atlas	Yes							Yes		Yes
Axis	Yes							Yes		Yes
Cervical vertebra	Yes									Yes
Thoracic vertebra	Yes				Yes	Yes		Yes	Yes	Yes
Lumbar vertebra	Yes				Yes			Yes	Yes	Yes
Costa	Yes	Yes		Yes	Yes	Yes			Yes	Yes
Scapula	L+R	L+R			L	L+R	R	R	L+R	R
Humerus	L+R	L+R			L+R	R	L+R		L+R	L+R
Radius	L	L+R							L+R	L+R
Ulna	L	L+R	L			R			L+R	L+R
Metacarpal										Yes
Pelvis									L+R	L+R
Sacrum								Yes	Yes	Yes
Femur		L		L	L+R			L+R	L+R	L+R
Tibia	R		L		L+R			L+R	L+R	L+R
Fibula								L+R		
Astragalus								L		L+R
Calcaneus							L	L		L+R
Metatarsal										Yes
<i>Context</i>	6619	6619	6619	6619	6620	6620	6620	6620	6620	6620
<i>Age</i>	<4-5 m	<5-6 w	Neonate	Neonate	4-5 m	5-6 w	4-5 m	Adult	Subadult	Subadult
	M1 pc	P2-4 pc			M1 E	P2-4 E	M1 E			
<i>Sex</i>	?	?	?	?	?	?	?	Male	Male	?
<i>Height (m)</i>	na	na	na	na	na	na	na	0.34	na	na

As the dogs were not all excavated as discrete skeletons, most vertebrae, ribs and smaller elements could not be attributed to a particular skeleton; pc = perforation of cript and E = erupting

Table 22 Condition of the hand collected bone fragments from Springhead Roadside Settlement by phase (%)

Phase	Moderate	Good	Excellent	NISP
Early Roman	4	29	67	5527
Mid-Roman	6	31	63	1141
Late Roman	5	61	34	736
Total	4	32	64	7404

Table 23 Quantification and taxa identified in each phase from Springhead Roadside Settlement presented as total number of fragments (NISP) collected by each recovery method

Taxon	Early Roman			Mid-Roman			Late Roman*	Total	
	Hand collected	Sieved	Total	Hand coll	Sieved	Total	Hand coll		
Domestic mammals	Cattle ( <i>Bos taurus</i> )	716	8	724	216	3	219	135	1078
	Equid (cf. <i>Equus caballus</i> )	71	1	72	24	–	24	14	110
	Sheep ( <i>Ovis aries</i> )	134	5	139	17	–	17	3	159
	Goat ( <i>Capra hircus</i> )	3	–	3	–	–	–	–	3
	Sheep/Goat ( <i>Ovis/Capra</i> )	1004	55	1059	130	2	132	74	1265
	Pig ( <i>Sus domesticus</i> )	212	9	221	45	2	47	39	307
	Dog ( <i>Canis familiaris</i> )	35	1	36	11	–	11	3	50
Cat ( <i>Felis catus</i> )	–	–	–	1	–	1	1	2	
Wild mammals	Red deer ( <i>Cervus elaphus</i> )	1	–	1	–	–	–	3	4
	Roe deer ( <i>Capreolus capreolus</i> )	2	–	2	1	–	1	1	4
	Deer (Cervidae)	–	–	–	1	–	1	–	1
	Hare ( <i>Lepus</i> sp.)	4	–	4	–	–	–	1	5
	Rabbit ( <i>Oryctolagus cuniculus</i> )	1	–	1	–	–	–	–	1
	Black rat ( <i>Rattus rattus</i> )	1	–	1	–	–	–	–	1
Rat ( <i>Rattus</i> sp.)	–	1	1	–	–	–	–	1	
Indeterminate mammals	Large mammal	1431	44	1475	350	3	353	226	2054
	Medium mammal	1260	331	1591	168	38	206	136	1933
	Small mammal	6	1	7	4	1	5	4	16
	Micro mammal	1	–	1	–	–	–	–	1
Carnivore	5	–	5	2	–	2	1	8	
Birds	Corvid (Corvidae)	1	–	1	–	–	–	–	1
	Crow ( <i>Corvus</i> sp.)	1	–	1	–	–	–	–	1
	Domestic fowl ( <i>Gallus gallus</i> dom.)	19	3	22	2	–	2	10	34
	Greylag goose ( <i>Anser anser</i> )	–	–	–	–	–	–	2	2
	Mallard ( <i>Anas platyrhynchos</i> )	1	–	1	1	–	1	–	2
	Raptor	1	–	1	–	–	–	–	1
	Raven ( <i>Corvus corax</i> )	1	–	1	–	–	–	–	1
	Teal/garganey ( <i>Anas crecca/querquedula</i> )	1	–	1	–	–	–	2	3
Bird (Aves)	11	4	15	4	2	6	3	24	
Fish	Fish (Pisces)	6	51	57	–	2	2	–	59
Anura	Common frog ( <i>Rana temporaria</i> )	3	3	6	–	–	–	–	6
	Common toad ( <i>Bufo bufo</i> )	4	1	5	–	–	–	–	5
	Toad ( <i>Bufo</i> sp.)	–	4	4	1	–	1	5	10
	Frog/toad ( <i>Rana/Bufo</i> )	3	4	7	–	–	–	33	40
Unidentified		589	711	1300	163	56	219	40	1559
All taxa	Total	5527	1237	6764	1141	109	1250	736	8750
	Weight (kg)	84.9	1.1	86.0	26.0	0.1	26.1	14.8	127.0

All skeletons were counted as NISP=1; \* no late Roman samples were analysed for animal bone

Table 24 Epiphyseal fusion of the hand collected cattle bones by phase from Springhead Roadside Settlement (after Habermehl 1975)

Approx fusing age	Element	Phase								
		Early Roman			Mid-Roman			Late Roman		
		F	UF	% F	F	UF	% F	F	UF	% F
7-10 mths	scapula d	14	-	-	1	-	-	2	-	-
	pelvis	3	-	-	-	-	-	-	-	-
Total 7-10 mths		17	-	100	1	-	100	2	-	100
12-15 mths	radius p	18	-	-	2	-	-	2	-	-
15-18 mths	ph2 p	14	1	-	7	-	-	3	-	-
15-20 mths	humerus d	6	1	-	2	-	-	3	-	-
20-24 mths	ph1 p	25	2	-	21	-	-	9	-	-
Total 12-24 mths		63	4	94	33	-	100	17	-	100
2-2.5 yrs	metapodial d	17	7	-	17	2	-	7	1	-
	tibia d	12	1	-	4	1	-	-	-	-
Total 2-2.5 yrs		29	8	78	21	3	88	7	1	88
3 yrs	calcaneum p	2	-	-	-	-	-	-	-	-
3.5 yrs	femur p	3	1	-	-	-	-	-	-	-
3.5-4yrs	humerus p	-	3	-	-	-	-	2	-	-
	radius d	-	1	-	1	-	-	-	-	-
	ulna p/d	-	1	-	-	-	-	-	-	-
	femur d	2	1	-	-	-	-	-	-	-
	tibia p	-	3	-	1	-	-	-	-	-
Total 3-4 yrs		7	10	41	2	-	100	2	-	100

Table 25 Element representation in the hand collected cattle bone assemblage by phase from Springhead Roadside Settlement using NISP and MNE

Element	NISP			MNE		
	Early Roman	Mid-Roman	Late Roman	Early Roman	Mid-Roman	Late Roman
Horncore	5	7	18	2	3	2
Skull	115	17	12	7	4	3
Hyoid	2	-	-	1	-	-
Mandible	123	31	14	46	8	8
Tooth	104	23	11	-	-	-
Atlas	1	3	1	1	2	1
Axis	4	1	2	3	1	2
Scapula	29	4	9	19	3	6
Humerus	27	5	5	21	3	4
Radius	23	6	3	16	3	2
Ulna	22	5	2	16	4	2
Carpals	3	2	3	3	2	3
Metacarpal	39	5	13	23	4	8
Pelvis	29	5	7	14	2	2
Sacrum	1	-	1	1	-	1
Femur	19	1	1	11	1	1
Tibia	17	8	-	11	5	-
Astragalus	11	3	-	10	3	-
Calcaneum	7	2	-	6	2	-
Tarsals	6	2	4	4	2	4
Metatarsal	42	36	10	28	20	6
Carpal/tarsal	3	3	-	3	2	-
Metapodial	22	14	2	-	-	-
Phalanx (I)	32	23	10	32	23	10
Phalanx (II)	17	8	5	17	8	5
Phalanx (III)	12	2	2	11	3	2
Indeterminate	1	-	-	-	-	-
Total	716	216	135	306	108	72

Table 26 Epiphyseal fusion of the sheep/goat bones by phase from Springhead Roadside Settlement (after Habermehl 1975)

Approx fusing age	Element	Phase								
		Early Roman			Mid-Roman			Late Roman		
		F	UF	% F	F	UF	% F	F	UF	% F
3-4 mths	humerus d	8	3	-	2	-	-	1	-	-
	radius p	6	2	-	-	-	-	-	-	-
Total 3-4 mths		14	5	74	2	-	100	1	-	100
5 mths	scapula d	1	3	-	1	-	-	1	-	-
	pelvis	1	1	-	1	-	-	-	-	-
5-7 mths	ph2 p	1	-	-	1	-	-	-	-	-
7-10 mths	ph1 p	20	8	-	1	1	-	2	-	-
Total 5-10 mths		23	12	66	4	1	80	3	-	100
15-20 mths	tibia d	21	8	-	4	-	-	3	-	-
20-24 mths	metapodial d.	18	27	-	1	1	-	1	3	-
Total 15-24 mths		39	35	53	5	1	83	4	3	57
3 yrs	calcaneum p	4	7	-	1	-	-	-	-	-
3-3.5 yrs	ulna p	-	3	-	-	-	-	-	-	-
	femur p	1	2	-	-	1	-	-	1	-
3.5 yrs	humerus p	-	3	-	-	-	-	-	-	-
	radius d	1	5	-	-	-	-	-	-	-
	femur d	1	-	-	-	2	-	1	-	-
	tibia p	1	4	-	1	-	-	-	-	-
Total 3-3.5 yrs		8	24	25	2	3	40	1	1	50

Table 27 Element representation in the hand collected sheep and goat bone assemblage by phase from Springhead Roadside Settlement using NISP and MNE (excluding articulated burials)

Element	NISP			MNE		
	Early Roman	Mid-Roman	Late Roman	Early Roman	Mid-Roman	Late Roman
ABG	7	-	-	-	-	-
Horncore	3	1	-	2	1	-
Skull	102	7	4	29	1	2
Hyoid	6	-	-	2	-	-
Mandible	292	34	14	194	21	11
Tooth	148	30	24	-	-	-
Atlas	2	-	-	2	-	-
Axis	1	1	-	1	1	-
Cervical vertebra	1	-	-	1	-	-
Thoracic vertebra	2	-	-	2	-	-
Lumbar vertebra	1	-	-	1	-	-
Sternum	1	-	-	1	-	-
Scapula	45	3	2	33	3	1
Humerus	29	5	2	25	4	1
Radius	46	10	5	32	5	4
Ulna	17	1	3	17	1	2
Metacarpal	112	17	7	89	15	4
Pelvis	19	4	1	11	3	1
Sacrum	1	-	-	1	-	-
Femur	18	4	2	14	4	1
Patella	1	-	-	1	-	-
Tibia	72	10	3	59	8	3
Astragalus	2	-	-	2	-	-
Calcaneum	11	1	-	10	1	-
Metatarsal	119	12	7	99	9	5
Carpal/tarsal	2	-	-	2	-	-
Metapodial	49	3	-	-	-	-
Phalanx (I)	30	3	3	29	3	3
Phalanx (II)	-	1	-	-	1	-
Phalanx (III)	2	-	-	2	-	-
Total	1141	147	77	661	81	38



Table 28 Epiphyseal fusion of the pig bones by phase from Springhead Roadside settlement (after Habermehl 1975)

Approx fusing age	Element	Phase								
		Early Roman			Mid-Roman			Late Roman		
		F	UF	% F	F	UF	% F	F	UF	% F
1 yr	scapula d	–	–	–	–	–	–	1	1	–
	pelvis	–	–	–	1	–	–	–	–	–
	humerus d	4	1	–	1	–	–	1	–	–
	radius p	3	–	–	–	–	–	–	–	–
	ph2 p	1	–	–	–	–	–	–	–	–
Total 1 yr	8	1	89	2	–	100	2	1	66	
2 yrs	tibia d	1	1	–	1	–	–	2	–	–
	metapodial d	3	13	–	1	1	–	–	–	–
	ph1 p	3	1	–	–	–	–	–	1	–
2–2.5 yrs	calcaneum p	1	1	–	–	–	–	–	–	–
	fibula d	–	1	–	–	–	–	–	–	–
Total 2–2.5 yrs	8	17	32	2	1	66	2	1	66	
3 yrs	ulna p	–	1	–	–	–	–	–	–	–
3.5 yrs	humerus p	–	–	–	–	2	–	–	–	–
	tibia p	–	1	–	–	–	–	–	–	–
	fibula p	–	–	–	–	–	–	–	–	–
	radius d	–	–	–	–	1	–	–	–	–
	ulna d	–	–	–	–	–	–	–	–	–
	femur p/d	–	–	–	–	–	–	–	–	–
Total 3–3.5 yrs	–	2	0	–	3	0	–	–	–	

Table 29 Element representation in the hand collected pig bone assemblage by phase from Springhead Roadside Settlement using NISP and MNE (excluding articulated burials)

Element	NISP			MNE		
	Early Roman	Mid-Roman	Late Roman	Early Roman	Mid-Roman	Late Roman
ABG	–	1	–	–	–	–
Skull	40	3	2	8	1	1
Hyoid	–	–	–	–	–	–
Mandible	24	8	9	12	4	4
Tooth	40	7	8	–	–	–
Axis	1	–	–	1	–	–
Cervical vertebra	1	–	–	1	–	–
Thoracic vertebra	1	–	–	1	–	–
Scapula	8	3	6	7	3	6
Humerus	14	5	1	13	4	1
Radius	6	2	–	5	2	–
Ulna	16	2	3	13	2	3
Metacarpal	7	1	–	7	1	–
Pelvis	5	2	–	3	2	–
Femur	2	1	–	2	1	–
Tibia	11	2	3	7	2	2
Fibula	11	4	3	9	2	3
Astragalus	2	–	–	2	–	–
Calcaneum	2	–	–	2	–	–
Metatarsal	7	2	1	7	2	1
Carpal/tarsal	–	1	–	–	1	–
Metapodial	7	1	1	–	–	–
Phalanx (I)	4	–	2	4	–	2
Phalanx (II)	1	–	–	1	–	–
Indeterminate	2	–	–	–	–	–
Total	212	45	39	105	27	23

Table 30 Element representation in the hand collected equid bone assemblage by phase from Springhead Roadside Settlement using NISP and MNE

Element	NISP			MNE		
	Early Roman	Mid-Roman	Late Roman	Early Roman	Mid-Roman	Late Roman
Skull	5	1	1	5	1	1
Mandible	4	2	–	3	1	–
Tooth	14	2	4	–	–	–
Axis	2	–	–	2	–	–
Scapula	5	–	1	5	–	1
Humerus	2	2	–	1	2	–
Radius	2	1	1	2	1	1
Ulna	2	1	–	2	1	–
Metacarpal	5	1	1	5	1	1
Pelvis	2	3	2	2	2	2
Femur	3	–	–	3	–	–
Tibia	2	–	2	2	–	1
Astragalus	1	–	–	1	–	–
Metatarsal	5	4	2	5	4	2
Carpal/tarsal	1	–	–	1	–	–
Metapodial	7	1	–	–	–	–
Phalanx (I)	6	4	–	6	4	–
Phalanx (II)	1	–	–	1	–	–
Phalanx (III)	2	2	–	2	2	–
Total	71	24	14	48	19	9

Table 31 Element representation in the hand collected dog bone assemblage by phase from Springhead Roadside settlement using NISP and MNE (excluding articulated burials)

Element	NISP			MNE		
	Early Roman	Mid-Roman	Late Roman	Early Roman	Mid-Roman	Late Roman
ABG	8	1	2	–	–	–
Skull	2	–	–	2	–	–
Mandible	7	2	–	6	1	–
Tooth	3	1	–	–	1	–
Thoracic vertebra	–	1	–	–	1	–
Costa	3	–	–	2	–	–
Scapula	1	1	–	1	1	–
Humerus	1	–	1	1	–	1
Radius	2	1	–	2	1	–
Ulna	1	1	–	1	1	–
Metacarpal	2	–	–	2	–	–
Pelvis	1	–	–	1	–	–
Femur	2	–	–	2	–	–
Tibia	2	2	–	2	2	–
Fibula	–	1	–	–	1	–
Metatarsal	1	–	–	1	–	–
Total	36	11	3	23	10	1

Table 33 Condition of the hand collected bone fragments from Northfleet villa by phase (%)

Phase	Very Poor	Moderate	Good	Excellent	NISP
Early Roman	45	6	31	18	187
Mid-Roman	0	5	55	40	702
Late Roman	0	2	63	35	1313
Roman	–	32	31	37	195
Total	4	5	56	35	2397

Table 34 Epiphyseal fusion of all cattle bones from Northfleet villa (after Habermehl 1975)

Approx fusing age	Element	Phase Roman		
		F	UF	% F
7–10 mths	scapula d	7	1	–
	pelvis	1	–	–
Total 7–10 mths		8	1	89
12–15 mths	radius p	9	–	–
15–18 mths	ph2 p	11	–	–
15–20 mths	humerus d	9	1	–
20–24 mths	ph1 p	23	–	–
Total 12–24 mths		52	1	98
2–2.5 yrs	metapodial d	13	7	–
	tibia d	10	1	–
Total 2–2.5 yrs		23	8	74
3 yrs	calcaneum p	2	1	–
3.5 yrs	femur p	5	1	–
3.5–4 yrs	humerus p	3	2	–
	radius d	4	3	–
	ulna p	–	2	–
	femur d	3	2	–
	tibia p	2	1	–
Total 3–4 yrs		19	12	61

Table 35 Element distribution for cattle from Northfleet Roman villa using NISP and MNE (excluding articulated burials)

Element	NISP			Roman	MNE			Roman
	Early Roman	Mid-Roman	Late Roman		Early Roman	Mid-Roman	Late Roman	
<i>Animal bone group</i>	–	–	1	–	–	–	–	–
Horncore	–	2	4	6	–	1	1	1
Skull	1	11	6	1	1	2	1	1
Mandible	1	17	28	3	1	11	13	2
Tooth	1	11	31	–	1	–	–	–
Atlas	–	–	1	2	–	–	1	2
Axis	1	–	4	1	1	–	4	1
Scapula	1	8	11	1	1	8	7	1
Humerus	–	4	11	1	–	3	9	1
Radius	–	5	10	1	–	3	9	1
Ulna	–	1	8	2	–	1	6	2
Carpal	–	1	1	–	–	1	1	–
Metacarpal	1	2	5	1	1	2	4	1
Pelvis	–	5	8	–	–	4	4	–
Femur	1	8	7	–	1	4	3	–
Tibia	–	4	9	1	–	2	8	1
Astragalus	–	3	5	1	–	3	5	1
Calcaneum	3	3	5	–	3	3	5	–
Tarsal	–	1	5	–	–	1	5	–
Metatarsal	1	4	15	2	1	3	14	2
Carpal/tarsal	–	4	–	–	–	3	–	–
Metapodial	1	4	4	–	1	–	–	–
Phalanx (I)	–	10	13	1	–	10	13	1
Phalanx (II)	–	4	8	–	–	4	8	–
Phalanx (III)	1	4	1	–	1	3	1	–
Total	13	116	201	24	13	72	122	18

Table 36 Epiphyseal fusion of all sheep/goat bones from Northfleet villa (after Habermehl 1975)

Approx fusing age	Element	Phase Roman		
		F	UF	% F
3–4 mths	humerus d	4	–	–
	radius p	1	–	–
Total 3–4 mths		5	–	100
5 mths	scapula d	–	–	–
	pelvis	4	–	–
5–7 mths	ph2 p	–	–	–
7–10 mths	ph1 p	2	–	–
Total 5–10 mths		6	–	100
15–20 mths	tibia d	6	1	–
20–24 mths	metapodial d.	8	1	–
Total 15–24 mths		14	2	88
3 yrs	calcaneum p	–	–	–
3–3.5 yrs	ulna p	–	–	–
	femur p	–	–	–
3.5 yrs	humerus p	1	–	–
	radius d	–	1	–
	femur d	–	–	–
	tibia p	1	–	–
Total 3–3.5 yrs		2	1	66

Table 37 Element distribution for sheep/goat from Northfleet villa using NISP and MNE (excluding articulated burials)

Element	NISP			MNE				
	Early Roman	Mid-Roman	Late Roman	Roman	Early Roman	Mid-Roman	Late Roman	Roman
<i>Animal bone group</i>	1	–	–	1	–	–	–	–
Skull	–	2	1	–	–	2	1	–
Mandible	1	11	20	–	1	8	10	–
Tooth	1	7	16	1	1	–	–	1
Axis	–	1	–	–	–	1	–	–
Lumbar vertebra	–	–	4	–	–	–	4	–
Scapula	1	2	6	–	1	2	6	–
Humerus	–	2	4	1	–	2	3	1
Radius	1	4	7	–	1	3	6	–
Ulna	–	2	–	–	–	2	–	–
Metacarpal	–	3	3	–	–	3	3	–
Pelvis	1	1	8	–	1	1	6	–
Patella	–	–	1	–	–	–	1	–
Tibia	–	6	5	1	–	5	5	1
Astragalus	–	–	1	–	–	–	1	–
Metatarsal	1	3	7	1	1	3	7	1
Metapodial	1	6	6	–	1	–	–	–
Phalanx (I)	–	–	2	–	–	–	2	–
Phalanx (II)	1	–	–	–	1	–	–	–
Indeterminate	–	–	1	–	–	–	–	–
Total	9	50	92	5	8	32	55	4

Table 38 Epiphyseal fusion of all pig bones from Northfleet villa (after Habermehl 1975)

Approx fusing age	Element	Phase Roman		
		F	UF	% F
1 yr	scapula d	2	–	–
	pelvis	–	–	–
	humerus d	1	1	–
	radius p	1	2	–
	ph2 p	1	–	–
Total 1 yr		5	3	63
2 yrs	tibia d	–	–	–
	metapodial d	–	2	–
	ph1 p	–	3	–
2–2.5 yrs	calcaneum p	–	–	–
	fibula d	–	–	–
Total 2–2.5 yrs		–	5	0
3 yrs	ulna p	–	1	–
3.5 yrs	humerus p	–	1	–
	tibia p	–	–	–
	fibula p	–	–	–
	radius d	–	1	–
	ulna d	–	2	–
femur p/d	–	–	–	
Total 3–3.5 yrs		–	5	0

Table 39 Element distribution for pig from Northfleet Roman villa using NISP and MNE (excluding articulated burials)

Element	NISP			Roman	MNE			Roman
	Early Roman	Mid-Roman	Late Roman		Early Roman	Mid-Roman	Late Roman	
<i>Animal bone group</i>	-	1	-	-	-	-	-	-
Skull	1	-	5	1	1	-	2	1
Mandible	-	2	7	-	-	2	4	-
Tooth	-	5	10	-	-	-	-	-
Cervical vertebra	-	4	-	-	-	4	-	-
Thoracic vertebra	-	-	1	-	-	-	1	-
Scapula	-	1	3	-	-	1	3	-
Humerus	-	1	2	-	-	1	2	-
Radius	-	1	4	-	-	1	4	-
Ulna	-	-	5	-	-	-	5	-
Metacarpal	-	1	-	-	-	1	-	-
Femur	-	1	-	-	-	1	-	-
Tibia	-	-	1	-	-	-	1	-
Fibula	-	1	1	-	-	1	1	-
Tarsal	-	1	-	-	-	1	-	-
Metatarsal	-	1	-	1	-	1	-	1
Metapodial	-	-	1	-	-	-	-	-
Phalanx (I)	1	1	1	-	1	1	1	-
Phalanx (II)	-	1	-	-	-	1	-	-
Total	2	22	41	2	2	16	24	2

Table 40 Element distribution for equid from Northfleet Roman villa using NISP and MNE (excluding articulated burials)

Element	NISP			Roman	MNE			Roman
	Early Roman	Mid-Roman	Late Roman		Early Roman	Mid-Roman	Late Roman	
<i>Animal bone group</i>	-	1	-	-	-	-	-	-
Skull	-	-	1	-	-	-	1	-
Mandible	-	1	3	-	-	1	1	-
Tooth	2	10	8	1	-	-	-	-
Atlas	-	1	-	-	-	1	-	-
Axis	-	-	1	-	-	-	-	-
Scapula	-	3	1	-	-	3	1	-
Humerus	1	1	1	-	1	1	1	-
Radius	-	2	2	-	-	2	2	-
Ulna	-	1	-	-	-	1	-	-
Carpal	-	-	1	-	-	-	1	-
Metacarpal	-	4	1	1	-	4	1	1
Pelvis	1	1	1	2	1	1	1	2
Sacrum	-	-	1	-	-	-	1	-
Femur	-	-	3	-	-	-	2	-
Tibia	-	3	2	2	-	2	2	1
Astragalus	-	3	-	-	-	3	-	-
Calcaneum	-	2	1	-	-	2	1	-
Metatarsal	-	2	3	1	-	2	3	1
Carpal/Tarsal	-	4	-	-	-	4	-	-
Metapodial	-	3	4	-	-	-	-	-
Phalanx (I)	1	1	6	-	1	1	6	-
Phalanx (II)	-	4	-	-	-	4	-	-
Phalanx (III)	-	1	2	-	-	1	2	-
Total	5	48	42	7	3	33	26	5

Table 41 Relative proportion of cattle sheep or goats and pig remains quantified by number of identified specimens (NISP) at Northfleet and Keston villas

<b>Taxon</b>	<b>Northfleet</b>		<b>Keston</b>	
	<b>NISP</b>	<b>% of total</b>	<b>NISP</b>	<b>% of total</b>
Cattle	354	61	170	54
Sheep and goat	156	27	100	31
Pig	67	12	49	15
Total	577	–	319	–

The figures presented for Keston are for fragments from features assigned to the main villa complex (Locker 1991, tab 43)

## Chapter 3. Sediment Sequences and Landscape Tables

Table 47 Ebbsfleet River Crossing: Channel sediment sequences, section 1013 (Tr 4): series of date to date peat inception, colluvial inception, pollen record and (later colluvium and mollusc sequence)

Context	Sample/ Depth (m)	Material	Comments	Result no.	$\delta C^{13}$ %	Result BP	Cal date (2 sigma, 94.5% unless stated)	Phase
Top 493	160-1	herbaceous stem	top upper peat	NZA	-26.5%	1501±25	AD 460 (2.4%),	early Saxon
	0.65-0.66	( <i>Phragmites</i> )		28868			AD 530 (93.0%)	
Base 493	160-2	twigwood	base of upper	NZA	-26.6%	1318±25	AD 650-730 (73.0%),	mid-Saxon
	0.92-0.93		peat	28866			AD 740-770 (22.4%)	
494	160-2	bulk peat	thin lower peat	NZA	-30.4%	2625±30	835-770 BC	late Bronze
	1.07-108			28795				Age-early
546	161	bulk peat	peat immedi-	NZA	-28.8%	4519±45	3370-3080 BC	Iron Age
	0.34-0.35m		ately under	28773				earlier
			colluvial wedge					Neolithic
			to E of <160>					



Table 48 Sedimentary sequences at Ebsfleet River Crossing (Tr 4, south end)

Site code		ARC ERC01		Notes			
Feature		1013		0 m = top of monolith. 3 monoliths – 2 of 1 sequence overlapping 160–1 and 2, 160–1 = 0–0.81 m, 160–2 = 0.71–1.45 m (to E adjacent to 160–2 but stratigraphically lower = <161> 0.81 m)			
Section no		1013					
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
489	160–1	0	0.22	silty loam	–	Mottled 10YR 3/2 v dark greyish brown & coarse lenses & mottles of 10YR 4/4 dark yellowish brown humic silt loam. V rare small rounded stones & degraded herbaceous stems & wood charcoal 2 mm	Humic alluvium (colluvium? retain in water)
490	160–1	0.22	0.42	silty loam	clear	10YR 4/2 dark greyish brown massive compact silt loam faint sedimentary laminations. Rare coarse strong Fe mottles 7.5YR 3/4 dark brown. Burnt flint at 0.32 m	Alluvium (?colluvium retain in water)
493	160–1	0.42	0.64	peaty silt	diffuse	10YR 2/2 v dark brown highly organic silt, no visible inclusions, faint sedimentary laminations c 1 mm with increased silt content/decreased organic content	Peaty alluvium
493	160–1, 160–2	0.64	0.93	silty peat	diffuse	10YR 2/1 black well humified compact silty peat. Few recognisable plant remains & wood. Burnt flint at 0.78 m	Peat ‘the upper peat’
493	160–2	0.93	0.98	peaty clay	diffuse	10YR 2/1 black greasy massive peaty clay, no visible inclusions	Highly organic alluvium/gyttja
494	160–2	0.98	1.07	silty loam	abrupt	Fine horizontal laminations of 10YR 3/2 v dark greyish brown slightly humic & 10YR 4/3 brown soft silt. No inclusions.	Alluvium
546	160–2	1.07	1.08	peaty silt	abrupt	Wedge of 10YR 2/1 black peaty silt with ?fine comminuted charcoal	Organic silt ‘the lower peat?’
546	160–2	1.08	1.29	psilty loam	clear	10YR 5/2 greyish brown soft friable clean silt. Rare small herbaceous plant remains & small rounded stones	Alluvium
547	160–2	1.29	1.45	psilayey silt	clear	Mottled 10YR 4/3 brown silty clay with coarse strong Fe mottles (10YR 3/4 dark yellowish brown) 10 cm diam pocket of 7.5 YR 3/4 dark brown stiff clay at 1.43 m. No visible inclusions	Alluvium (colluvial input?)
<i>Comments on sequence from assessment</i>				Edge of channel (Ebsfleet) with overlying & intercalating colluvial sequence from E Neolithic onwards			

  

Site code		ARC ERC01		Notes			
Feature		1013		0 m = top of monolith. Monolith <161> 0.81 m (to E of 160–2 but stratigraphically lower)			
Section no		1013					
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
545	161	0	0.29	sandy silt	–	10YR 4/4 dark yellowish brown soft friable fine sandy silt. Angular–subrounded small chalk frags Strong Fe staining along few vertical root voids in upper 0.05 m. Weak blocky structure to top. Organic staining to base where underlying peat mixed in	Colluvium (some water re-sorting)
546	161	0.29	0.35	sandy peat	abrupt	10YR 2/1 black crumbly well humified fine sandy silty peat. Few vertical root voids small frag burnt flint at 0.33 m	Peaty land surface
547	161	0.35	0.75	silty loam	clear	10YR 4/2 dark greyish brown highly calcareous silt. V abundant molluscs. No clear inclusions. Abundant long vertical Fe stained root voids traceable to overlying layer (ie, well rooted)	Alluvium (highly calcareous)
	161	0.75	0.81			No sediment collected	
<i>Comments on sequence from assessment</i>				edge of channel (Ebsfleet) with overlying and intercalating colluvial sequence from E Neolithic onwards			

Table 48 (cont)

<b>Site code</b>		<b>ARC ERC01</b>		<b>Notes</b>			
<b>Feature</b>				0 m = top of monolith. Monolith 162 only. 0.89 m long. Adjacent to mollusc column <144>			
<b>Section no</b>		<b>1012</b>		Note only middle & upper fills sampled by monolith. Context 486 colluvium continues to 487 colluvium, which overlies the grey silty clay of 488 colluvium/alluvium? at c 32 m to W of sequence			
<b>Context</b>	<b>Sample no</b>	<b>Depth (m) From To</b>	<b>Keyword (Texture)</b>	<b>Upper contact</b>	<b>Description</b>	<b>Interpretation</b>	
479 + 478	<162>	0	0.47	clayey silt	–	10YR 4/6 dark yellowish brown compact homogeneous calcareous silt clay. Abundant macropores, well-developed large blocky prismatic structure. Redeposition of CaCO <sub>3</sub> along interped faces & few vertical root voids	Colluvium
484 + 485	<162>	0.47	0.77	clayey silt	diffuse	(as above) 10 YR 4/6 dark yellowish brown compact homogeneous calcareous clay silt. Moderately well developed large blocky structure. Redeposition of CaCO <sub>3</sub> along rare vertical root voids. Common coarse strong black Mn & Fe staining (7.5 YR 4/6 strong brown) No visible inclusions	Colluvium
485 - 486?	<162>	0.77	0.89	clayey silt	diffuse	10YR 4/4 dark yellowish brown slightly humic calcareous clay silt. Weak medium blocky structure few small rounded stones few coarse strong Fe mottles (7.5YR 4/6 strong brown)	Colluvium
<i>Comments on sequence from assessment</i>				To E of 160–161, colluvial sequence adjacent to mollusc and OSL sequences at edge of dryland. Sequence Roman or earlier (prob late prehistoric) cut by Roman channel (not sampled here)			

Table 49 Sedimentary sequences at Ebbsfleet River Crossing (Tr 5)

Site code Feature Section no.	ARC ERC01	Notes					
	1020	0 m = top of monolith. Continuous monolith sequence <155>-1 and <155>-2. Total 1.69 m long. <155>-1 = upper 0–0.84 m <155>-2 = lower (RHS) 0.84–1.69 m (LHS). Adjacent to mollusc column <156>					
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
500 – 501	<155>- 1	0	0.7	silty loam	–	10YR 3/4 dark yellowish brown soft friable silt, slightly humic slightly calcareous. Few poorly sorted angular–subrounded small flint & chalk frags. Rare charcoal. Weak/large blocky structure	Colluvium (secondary/ tertiary fill)
502	<155>-1	0.7	1.2	silty loam	diffuse	10YR 4/4 dark yellowish brown soft friable silt, calcareous. Few poorly sorted angular & subrounded small flint & chalk frags. Abundant faint medium Fe mottles (7.5YR 4/6 strong brown)	Colluvium (secondary fill)
503(=528)	<155>-2	1.2	1.6	silty loam	diffuse	10YR 4/4 dark yellowish brown massive silt loam rare small chalk frags. Few faint Fe & Mn mottles, no stones. Rare small charcoal	Colluvium (secondary fill)
530	<155>-2	1.6	1.69	silty clay	diffuse	10YR 6/3 Pale brown hard/compact silty clay. Massive. No inclusions 10YR 5/6 yellowish brown common strong Fe mottles	Waterlain silts (primary fill?)
<i>Comments on sequence from assessment</i>				Poss Iron Age/Roman ditch 529 at base, contains burnt flint, overlain by dominant Roman-post-Roman colluvium			
<i>Notes on sequence from description</i>				Sequence forms fill of prehistoric /Roman ditch 529 with ?primary fill collected but cut into natural not seen/collected			
Site code Feature Section no	ARC ERC01	Notes					
	1017	0 m = top of monolith. Monolith <157> only 0.63 m long adjacent to molluscs <158>					
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
502	<157>	0	0.09	sandy silt	–	10YR 4/3 brown soft friable fine sandy silt. Medium blocky structure. Abundant medium Fe mottles along vertical root voids. Few redeposition of CaCO <sub>3</sub> along interped faces. Few small rounded stones, common molluscs. Abundant macropores	Colluvium
537	<157>	0.09	0.42/ 0.51	silty loam	gradual	10YR 3/2 v dark greyish brown massive silt loam slightly humic. Few poorly sorted small–medium angular rounded flints, few small chalk frags, few molluscs. Common medium coarse Fe mottles (7.5YR 4/6 strong brown). Occasional wood charcoal <4 mm	Alluvium (water retain colluvium)
538	<157>	0.42/ 0.51	0.58	sandy clay	sharp, sloping (channel cut 540)	10YR 6/3 pale brown fine sandy clay sticky & highly calcareous. Common mollusc remains, few small subangular–subrounded stones. Rare specks ?charcoal & chalk. Common coarse strong Fe mottles	Alluvium (with post-depositional oxidisation/drying/stabilisation poss prior to Roman channel cut
539	<157>	0.58	0.63	silty clay	clear	10YR 4/2 dark greyish brown sticky calcareous silty clay. Common specks chalk, no other visible inclusions	Alluvium
<i>Comments on sequence from assessment</i>				Roman colluvium, repeated elsewhere			

Table 50 Sedimentary sequences at Ebbsfleet River Crossing (Tr 1, north end)

Site code	ARC ERC01		Notes				
Feature			1 monolith <151> 0.83 m long, 0.0m = c 0.15 m below drawn surface. Adjacent to analysed mollusc column				
Section no	1008						
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
402	151	0	0.1	silty loam	–	10YR 4/3 brown soft calcareous dry loose to top. Rare small rounded stones. Few subangular–rounded chalk frags <4 mm. Few molluscs. Small blocky structure to top	Alluvium (oxidised)
403	151	0.1	0.18	silty loam	clear	10YR 4/4 dark yellowish brown compact calcareous. Few small rounded chalk frags. Common subangular–rounded small–medium gravel. Increase in Fe stain not discerned in monolith. Weak blocky structure. Few fine strong Fe mottles	Alluvium (oxidised)
406 and 407	151	0.18	0.5	silty loam	diffuse	Strong Fe forming difference between contexts not discerned in monolith. 10YR 4/2 dark greyish brown, massive compact. Few rounded chalk frags <4 mm & molluscs. Bone at 0.35 m. Rare small–medium rounded flint. Rare coarse strong dark red (5YR 3/4 dark reddish brown) Fe mottles	Alluvium
411 (upper)	151	0.5	0.64	sandy silt	diffuse	10YR 3/2 v dark greyish brown highly calcareous slightly organic soft fine sandy silt. Faint fine (c 1 mm) sedimentary laminations. Few small rounded stones & chalk frags	A slightly organic alluvium
411 (lower) and 412	151	0.64	0.84	sandy silt	diffuse	10YR 4/2 dark greyish brown soft calcareous fine sandy silt. Abundant small subangular–rounded chalk frags. Common molluscs. 1 burnt flint at 0.66 m. Slight increase in medium strong Fe mottles to top	Alluvium inc numerous eroded chalk frags
<i>Comments on sequence from assessment</i>			N end of site, Roman (contexts 411–2) & post-Roman channel, inc peat sealing Roman deposits elsewhere				
Site code	ARC ERC01		Notes				
Feature			0 m = top of monolith. Monolith 154-1 = 0.0–0.84 m. Monolith 154-2 = 0.84–1.29 m (inc gap at top & base)				
Section no	1008						
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
402	154 (1 of 2)	0	0.18	silty loam	–	10YR 4/3 brown soft calcareous loose to top. Rare small rounded stones. Few subangular–rounded chalk frags <4 mm. Common molluscs weak small blocky structure to top	Alluvium (oxidised)
403	154 (1 of 2)	0.18	0.41	silty loam	diffuse	10YR 4/4 dark yellowish brown compact calcareous common angular–rounded chalk frags <4 mm. Few small–medium subrounded–rounded stones. Few fine Fe mottles	Alluvium (oxidised)
406	154 (1 of 2)	0.41	0.49	silty loam	clear	10YR 4/4 dark yellowish brown compact & cemented. Common fine–medium subrounded stones. Abundant medium strong Fe mottles	Alluvium (oxidised) with translocated Fe
407	154(1 of 2)	0.49	0.77	silty clay	clear/ abrupt	10YR 4/2 dark greyish brown massive fine calcareous sandy silt at base giving upwards to silty clay. Massive faint horizontal laminations in places. Common mollusc remains, few small rounded stones & chalk frags <4 mm	Alluvium
408	154 (1+2 of 2)	0.77	1.05	silty peat	sharp/ ?erosive	10YR 2/1 black soft, moderately humified horizontally bedded compact silty peat. Few recognisable plant remains but horizontal layering of herbaceous matter discernable	Fen peat
412	154(2 of 2)	1.05	1.15	sandy silt	clear	10YR 4/1 dark grey soft fine sandy silt. Highly calcareous abundant specks of chalk & molluscs. Struck flint at 1.08 m	Alluvium (with highly calcium-charged water source)
413	154 (2 of 2)	1.15	1.18 (1.27)	gravel	abrupt	No matrix recovered. Gravel clasts up to 20 mm angular–subrounded inc struck flint. 1.18–1.27 m loss of loose gravel	Channel base (deliberate anthropogenic consolidation likely)
<i>Comments on sequence from assessment</i>			N end of site, Roman (contexts 411–2) and post-Roman channel, including peat sealing Roman deposits elsewhere				

Table 5I Sedimentary sequences at Springhead waterfront

Site code Feature Section no	ARC SHN 02 17432 13739		Notes 0 m = 0.67 m below level #3737 1.45 m aOD. Single monolith <14252>				
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
17346	<14252>	0	0.63	clayey silt	–	10YR 2/2 v dark brown crumbly clay silt fining up unit to silty clay. Numerous macropores & weak medium blocky structure. Highly organic but no recognisable preserved plant remains. Rare stones, chalk frags & CBM (CBM) <5 mm	Mixed archaeological layer, some colluvial & waterborne input likely, sub-sequent weak soil formation
17435 17436	<14252>	0.63	0.79	silty loam	clear	10YR 2/2 v dark brown highly humic friable silt loam, granular structure & weak small blocky peds. Rare CBM, common charcoal. Common faint horizontal banding of 10YR 5/4 yellowish brown clay silt. Rare chalk frags <5 mm, rare stones subrounded–rounded 4–20 mm increasing to common at top of layer. NB the two contexts defined on site are not well differentiated in monolith but gravel increases to top of unit	Mixed archaeological layer, some colluvial & waterborne input likely
17439	<14252>	0.79	1.0	clayey silt	clear–abrupt	10YR 2/2 v dark brown highly humic friable clay silt, weak blocky structure & numerous macropores. Rare CBM, common charcoal. Common fine streaks/mottles of 10YR 5/4 yellowish brown clay silt. Rare chalk frags <5 mm, rare stones subrounded– rounded 4–20 mm	Mixed archaeological layer, both colluvial & waterborne input likely
17442	<14252>	1.0	1.07	organic silty clay	diffuse	10YR 3/2 v dark greyish brown humic silty clay with coarse mottles & pockets of 10YR 5/4 yellowish brown clay silt. Abundant charcoal <5 mm	Archaeological layer: prob dump
17445	<14252>	1.07	1.18	silty loam	clear but disrupted/mixed boundary	1.07–1.13 m 10YR 4/2 dark greyish brown silt, common subrounded stones 4–30 mm. Gradual boundary. 1.13–1.18 m 10YR 4/3 brown soft clay silt, occasional rounded stones <20 mm. 1 large (30 mm) flint flake. Non-calcareous, no visible bedding	Alluvium (reworked natural waterlain in shallow low–energy conditions/puddling)
<i>Comments on sequence from assessment</i>				Edge of Roman waterfront, ?alluvial & colluvial interaction with archaeological layers			

Table 51 (cont)

Site code Feature Section no	ARC SHN02 17432 13739		Notes 0 m = 0.37 m below level #3737 1.45 m aOD. One monolith 14254, near edge of Roman waterfront			
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation
17346	<14254>	0 0.44	clayey silt	–	10YR 2/2 v dark brown crumbly clay silt fining up unit to silty clay. Numerous macropores & weak medium blocky structure. Highly organic but no recognisable preserved plant remains. Rare stones & chalk frags 40 mm frag tile at 0.40–0.44 m, other small frags CBM, most common to base	Mixed archaeological layer, some colluvial & waterborne input likely, subsequent weak soil formation
17435 17436	<14254>	0.44 0.62	clayey silt loam	clear	10YR 2/2 v dark brown highly humic friable clay silt loam, granular structure & weak small blocky peds. Rare CBM, common charcoal. Common fine medium mottles of 10YR 5/4 yellowish brown clay silt (but no evidence for horizontal banding observed in 14252). Rare chalk frags <5 mm, rare stones subrounded–rounded 4–20 mm increasing to common at top of layer. Oyster shell at 0.46 m degraded mussel at 0.63 m. Contexts defined in excavation were well differentiated in monolith & recovered material disturbed at this point	Mixed archaeological layer, some colluvial & waterborne input likely
17437	<14254>	0.62 0.7	clayey silt	clear-abrupt	10YR 2/2 v dark brown highly humic friable clay silt, weak blocky structure & numerous macropores. Rare CBM, common charcoal. Common fine streaks/mottles of 10YR 5/4 yellowish brown clay silt. Rare chalk frags <5 mm, occasional stones subangular–rounded <10 mm. NB v similar to context 17439 of <14252>	Mixed archaeological layer, both colluvial & waterborne input likely
<i>Comments on sequence from assessment</i>			Edge of Roman waterfront, ?alluvial and colluvial interaction with archaeological layers			
Site code Feature Section no	ARC SHN02 14293 13784		Notes 0 m = 6.19 m aOD. Monolith <14293> near edge of Roman waterfront			
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation
17709	<14293>	0 0.26	silty loam	–	10YR 3/2 v dark greyish brown amorphous dry silt loam, granular structure, rare specks charcoal, no other inclusions visible	Archaeological dump (of same matrix as underlying)
17710	<14293>	0.26 0.59	silty loam	clear	10YR 2/2 v dark brown highly organic silt loam. Common chalk, CBM & charcoal frags <10 mm. Rare oyster shell. <i>Similar to context 17436 of monoliths 14252–4. NB no sedimentary laminations observed in monolith, those suggested in field may have been discontinuous &amp; represent wash/run-off events.</i>	Mixed archaeological layer, some colluvial & waterborne input likely
17755	<14293>	0.59 0.8	silty loam	abrupt but disturbed/turbated	10YR 4/3 brown slightly massive humic silt. Moderately well developed blocky peds with organic coating, abundant macropores. Occasional small frags wood charcoal. Rare specks CBM. <i>The nature of the upper boundary suggests disturbance which might be related to trampling</i>	Weak soil development in weathered natural (Brick-earth), reworking & relaying in water indicated by sorting & massive nature
–	<14293>	0.8 0.85	clayey silt	clear–diffuse	10YR 5/4 yellowish brown massive friable (clay) silt, loessic. Generally few inclusions but rare specks charcoal & common angular–subangular stones <10 mm to base	Weathered natural (Brickearth)
<i>Comments on sequence from assessment</i>			Near waterfront, shallow slope but thick ?alluvial & colluvial deposits, why so thick? Early–late Roman. Note that collected no thicker than other sequences			

Table 52 Sedimentary sequences at Springhead – late Bronze Age feature 6525 under the Roman riverbed

Site code Feature Section no	ARC SPH00 6525 7749		Notes Monolith <8603> NB monolith positioned considerably lower in profile than indicated on section drawing. 0 m = top of monolith				
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
6467	8603	0	0.11	silty clay	–	10YR 4/3 brown silty clay loam, some fine iron staining at v small scale. Rare v small flints. Apparently massive	Alluvium
?6466	8603	0.11	0.23	silty clay	diffuse	10YR 4/3 brown silty clay loam (slightly darker than above). Small piece reddish brown fine sandstone & rare very small flints. Apparently massive	Alluvium
6465	8603	0.23	0.33	silty clay	v sharp (erosive)	10YR 4/1 dark grey silty clay loam, quite common small chalk <10 mm, occasional small charcoal <2 mm. Some small shell frags	Fill of feature (dump)
<i>Comments on sequence from assessment</i>			Clay (?alluvial) fills in feature (Late Bronze Age) in drier layers above gravel base overlain by Roman river bed (deliberately consolidated)				

Table 53 Sedimentary sequences at Springhead – late Iron Age terrace 400011

Site code Feature Section no	ARC SPH00 3053 7028		Notes monolith <8025> 0 m = top of monolith				
Context	Sample no	Depth (m) From To	Keyword (Texture)	Upper contact	Description	Interpretation	
3054	8025	0	0.26	silty clay	–	10YR 3/3 Dark brown silty clay loam, rare small flints, fine fleshy rootlets, ?blocky structure. Common macropores	B horizon material &/or colluvium
?3086	8025	0.26	0.4	silty loam	clear	10YR 4/4 dark yellowish brown silt loam. Occasional small white specs – with hand lens (x10) are not molluscs or chalk frags. Looks like some sort of precipitate in rootholes, prob silica or carbonate. Some mixing around upper boundary	Basal material attached to inverted turf below – B horizon material &/or colluvium
?3086	8025	0.4	0.44	silty loam	abrupt–clear	10YR 5/6 yellowish brown silt loam, white specks in rootholes as above, some inclusions of darker material below in ?rootholes	?B horizon of inverted turf. A horizon material in rootholes
?3086	8025	0.44	0.48	silty loam	abrupt	10YR 3/2 v dark greyish brown silt loam. Very distinct dark band, still intact roots running upwards into material above. Stonefree, macropores, some slight mixing at both top & bottom (root/worm action?)	Inverted turf/ A/Ah horizon
?3086	8025	0.48	0.56	silty loam	sharp–abrupt	10YR 5/6 yellowish brown silt loam, stonefree, no observable structure at this scale. Some slight mixing with inverted turf above (?residual worm or root mixing?). Macropores. Seems well sorted	‘Natural’ or colluvium (prob redeposited as collapse)
3261	8025	0.56	0.61	silty loam	abrupt	30% 10YR 5/6 yellowish brown silt loam, 70% 10YR 3/2 v dark greyish brown silt loam, mottled/mixed. Small rootholes again filled with ?siliceous/carbonate precipitate	Mixed material from base of inverted turf below
3261	8025	0.61	0.66	silty loam	clear	10YR 3/4 v dark greyish brown silt loam, stonefree, well developed large crumb structure, siliceous/carbonate precipitate in rootlets	A/Ah/top of inverted turf
3261	8025	0.66	0.74	silty loam	abrupt	10YR 5/6 yellowish brown silt loam, stonefree, no observable structure at this scale	‘Natural’ or colluvium (prob redeposited as collapse)
<i>Comments on sequence from assessment</i>			Late Iron Age ‘viewing platform’ with ?turf layers curving into section				

Table 54 Sedimentary sequences at Springhead – Roman spring deposits

Site code	ARC SPH00		Notes				
Feature	3192		Monolith 8147 0 m = top of monolith				
Section no	7210						
Context	Sample no	Depth (m)	From To	Keyword (Texture)	Upper contact	Description	Interpretation
6576	8600	0	0.08	silty clay	–	10YR 3/2 v dark greyish brown silty clay loam, occasional tiny chalk flecks & lumps <10 mm. Sparse v small charcoal, CBM, flint. Apparently massive, quite compact	?colluvium, poss reworked alluvially
6576	8600	0.08	0.27	clayey loam	diffuse	10YR 3/1 v dark grey clay loam, ?medium–large ?blocky structure, occasional tiny flecks sand, CBM, chalk. Root/wormhole 10 mm wide vertical filled with material above. Occasional small flint, subrounded <10 mm. Comminuted charcoal. No laminae but fine grained – alluvial?	Alluvially sorted anthropogenic material
6576	8600	0.27	0.41	silty clay	diffuse	10YR 2/1 black silty clay loam/clay loam, some rounded flint gravel c 20 mm at top, also some subangular. Quite common v small (1–2 mm) calcareous flecks, v small flints. Seems to continue ?structure from above layer. No laminae. From colour infer presence of comminuted charcoal, but no lumps observed	Alluvially sorted anthropogenic material
6577	8600	0.41	0.48	silty loam/ silty clay	clear	10YR 2/1 black (70%) silt loam/silty clay loam with paler laminae of v fine ?calcareous material. NB <i>could</i> be interleaved charcoal/ash laminae	Laminated alluvially sorted anthropogenic material
		0.48	0.61	silty loam/ silty clay	sharp	10YR 3/1 v dark grey silt loam. Quite common charcoal lumps <10 mm, occasional small pieces ?oyster shell, occasional small flints	Alluvium
<i>Comments on sequence from assessment</i>				Roman spring deposits: over sands and gravel (consolidation deposits), replicated in <8623>			

Table 55 Sedimentary sequences at Springhead – Roman ‘viewing platform’/terrace 400044

Site code	ARC SPH00		Notes				
Feature	3192		Monolith 8147 0 m = top of monolith				
Section no	7210						
Context	Sample no	Depth (m)	From To	Keyword (Texture)	Upper contact	Description	Interpretation
3941	8147	0	0.07	silty clay	–	10YR 4/4 silty clay loam, stonefree, fine fleshy rootlets, ?medium ?blocky structure	
3197	8147	0.07	0.09	silty clay	abrupt	2.5Y 5/3 light olive brown silty clay loam (large silt/very fine sand with some clay). Could be described as sandy loam, on the cusp	
3197	8147	0.09	0.21	silty loam	abrupt	10YR 4/3 brown silt loam, common rootlets, ?weak ?medium blocky structure. Sparse small calcareous lumps, macropores	Turf (? inverted)
3197	8147	0.21	0.25	silty clay	abrupt	10YR 5/4 yellowish brown silty clay loam, rare small (<2 mm) calcareous lumps. Occasional rootlets, macropores	
3197	8147	0.25	0.36	silty clay	clear	10YR 4/3 brown silty clay loam, quite coarse silt. ?medium ?blocky structure. Occasional small charcoal lumps	?Topsoil derived material
?3195	8147	0.36	0.42	sandy silt	clear	2.5Y 5/4 light olive brown sandy loam (NB fine sand or very coarse silt – could be silty clay loam). Quite common small chalk/calcareous bits. Quite mixed with above material in cracks/rootholes (not all vertical)	B horizon inverted and adhering to turf below
?3195	8147	0.42	0.49	silty loam	abrupt	10YR 4/3 brown silty clay loam, some v small calcareous/silicaceous ?precipitate in root voids. Mixed somewhat with orangy material below. Some rootlets extant & near horizontal	Turf (?inverted)
3193	8147	0.49	0.57	sandy silt	abrupt– clear	10YR 5/6 yellowish brown sandy loam (as before large silt/v fine sand). Mixed considerably with layer below	?B horizon inverted and adhering to turf below
3193	8147	0.57	0.71	silty loam	clear	10YR 4/3 brown silt loam, ?small–medium blocky or crumb structure, silicaceous or calcareous precipitate in root voids, some fine fleshy rootlets extant. Stonefree	Turf/topsoil (?inverted)
<i>Comments on sequence from assessment</i>				Roman ‘viewing platform’ and infill			



Table 56 Sedimentary sequences at Springhead – Roman roadside deposits

Site code		ARC SPH00		Notes			
Feature		-		Monolith 8601 0 m = top of monolith			
Section no		7736					
Context	Sample no	Depth (m)	From To	Keyword (Texture)	Upper contact	Description	Interpretation
6408	8601	0.0	0.05	silty loam	-	10YR 4/2 dark greyish brown silt loam (though with occasional sand grains). Occasional v small flints, v small chalk & charcoal. Well-sorted medium blocky structure, weakly developed. No laminations. Some macropores	Possibly wind/water sorted but no lamination
6410	8601	0.05	0.25	silty loam	abrupt	10YR 2/1 black silt loam. Series of comminuted charcoal/ashy bands with distinct microstratigraphy. Finds throughout	Repeated dumps or inwash
<i>Comments on sequence from assessment</i>				Dominantly Roman (possible prehistoric to base) near late Upper Palaeolithic area. Q: 'are the silts road wash-off deposits/ dumped/water-sorted'			

Site code		ARC SPH00		Notes			
Feature		-		Monolith 8602 0 m = top of monolith			
Section no		7736					
Context	Sample no	Depth (m)	From To	Keyword (Texture)	Upper contact	Description	Interpretation
-							
-	8602	0	0.02	silty clay	-	10YR 3/1 v dark grey silty clay loam, occasional charcoal flecks. NB only in vtop of core, not enough for full description	-
-	8602	0.02	0.16	silty loam	abrupt	10YR 5/1 grey silt loam, common small chalk (<3 mm), also small flint, charcoal, CBM. Medium-large ?blocky structure	Reworked colluvium with anthropogenic deposits (alluvially?)
-	8602	0.16	0.29	silty loam	diffuse	10YR 4/1 dark grey silt loam, some fine indistinct laminations, bands of coarse sand/fine grit at 21 & 27-29 cm. Quite common charcoal throughout. ?Medium-large blocky structure	Repeated inwash, stasis
-	8602	0.29	0.35	silty loam	clear	As above without gritty band. Could really be considered same layer	Fine inwash
<i>Comments on sequence from assessment</i>				Dominantly Roman (possible prehistoric to base) near late Upper Palaeolithic area. Q: 'are the silts road wash-off deposits/ dumped/ water-sorted'			

Table 57 Sedimentary sequences at Springhead – the slope between the Roman Sanctuary temple and spring

Site code	ARC SPH00		Notes				
Feature	-	monolith <8599> NB mono through deposits between Roman temple and spring itself – questions: what is the nature of deposits – can we infer anything about the nature of the slope/surface? (is it stable, grassy etc) 0 m = top of monolith					
Section no.	7750						
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description	Interpretation
		From	To				
6378	8599	0	23	Silty clay	–	10YR 3/3 silty clay loam, sparse chalk 1–10 mm, occasional flint gravel, anthropogenic components (?mortar <15 mm, small charcoal lumps). Unsorted, some small roots. Prob colluvial deposit	Colluvium
6536	8599	0.23	0.37	Silty loam	clear	10YR3/2 v dark greyish brown silt loam, v small amounts sand. Quite common rootlets & small roots, rare small chalk flecks. Occasional charcoal. Macropores visible, well developed ?medium blocky structure	Colluvium (with evidence of some pedogenesis)
6221	8599	0.37	0.63	Silty loam	Clear	10YR 3/2 v dark greyish brown (slightly paler than above) silt loam, weakly developed ?med blocky structure, roots & rootlets, anthropogenic components (oyster frags, CBM (<15 mm), slag (<20 mm), charcoal (<10 mm), mussel shell frags). Colluviation with dumping? Or dumped reworked colluvially?	Colluvium/dumping (?with some pedogenesis)
5492	8599	0.63	0.85	Silty loam	Gradual	10YR 4/2 dark greyish brown silt loam, occasional flint & chalk <30 mm, small flecks CBM & charcoal, macropores, some oyster frags	Colluvium (?with some pedogenesis)
<i>Comments on Sequence from Assessment</i>				Patch/ discontinuous soil layer, Roman deposits between Sanctuary temple & springs			

Table 58 Sedimentary sequences at Springhead – Bronze Age–Iron Age alluvium and colluvium and spread from burnt mound

Site code	ARC SPH00		Notes				
Feature	3192	Monolith 8244 0 m = top of monolith					
Section no.	7341						
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description	Interpretation
		From	To				
2527	8244	0	0.11	Silty clay	–	10YR 4/3 brown silty clay loam, sparse small (1–2 mm) chalk flecks, occasional small CBM (1–2 mm) & occasional larger CBM (20 mm). Occasional small charcoal lump (2 mm). Fairly well sorted, indicated some ?water sorting. Single large burnt flint (60 mm) at 10 cm obscures basal horizon	?Alluvially reworked colluvium
2528	8244	0.11	0.29	Silty clay	Diffuse	10YR 3/2 v dark greyish brown silty clay loam, sparse v small chalk flecks, quite common charcoal <10 mm, occasional flecks CBM. Occasional small burnt flint. Darkens with depth	Colluvium, ?possibly reworked by water
2528	8244	0.29	0.35	Silty loam	Clear	10YR 2/1 black silt loam (texture may be affected by quantity of comminuted charcoal). Common small burnt flint (<5 mm) & charcoal. Looks very charcoal-rich, most of which comminuted	Burnt mound material – could be <i>in situ</i> , prob moved downslope via colluviation
2529	8244	0.35	0.51	Silty clay	Clear	10YR 4/3 brown silty clay loam, occasional small chalk flecks, occasional flint <30 mm (rounded). NB at top is animal bone, pot/CBM & charcoal mixed from above	?Alluvially reworked colluvium?
<i>Comments on Sequence from Assessment</i>				Sloping deposits include ?alluvium/colluvium pre-/post-Roman (?Med of same above not sampled) and burnt mound in infilled spring/ pond at base of slope area C			

**Table 59 Sedimentary sequences at borehole 7 (STDR4)**

Site code		STDR4		GL = 3.04 m OD, E561560.0208, N174320.0145			
Area		Borehole 7					
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description	Interpretation
		From	To				
Na	3	1.75	1.96	Made ground	NA	Made ground	Made ground
Na	3	1.96	2.03	Made ground	Clear	Cobble	
Na	3	2.03	2.3	Silty peat	Clear	V dark brown (10YR 2/2). Rare clay patches, common fresh root & ligneous frags. Firm, compact peat with abundant silt running throughout. Massive structure	Upper clay silt
Na	5	2.3	2.55	Silty clay	Clear	V. dark greyish brown (2.5Y 3/2). Common poorly degraded root frags. Rare silt throughout. Firm, compact with fine discontinuous parallel laminae	
Na	5	2.55	2.6	Silty clay	Diffuse	Dark greyish brown (2.5Y 4/2). Occasional poorly degraded root frags, v rare fine silt disseminated throughout. Firm, compact clay with patchy discontinuous even, parallel laminae	
Na	5	2.6	2.72	Silty clay	Diffuse	V dark greyish brown (10YR 3/2). Abundant poorly degraded root frags & frequent silt throughout. Firm, compact clay, fine parallel discontinuous laminae	
Na	5	2.72	2.93	Tufa	Diffuse	Olive (5Y 5/3). Clay patches dark greyish brown (10YR 4/2). Rare ferrous patches. Massive, patchy structure with horizontal cracks. Unknown lower boundary (missing)	
Na	7	2.93	3.28	Silty clay	?	Clay with silt: 5Y 3.2 dark olive grey. Rare silt disseminated throughout. Rare ferrous patches. Massive firm structure. Merging to:	
Na	7	3.28	3.37	Silty clay	Diffuse	V dark greyish brown (2.5Y 3.2). Rare sand disseminated throughout. Rare clay patches & ferrous patches with some crystallisation. Massive, firm structure, horizontal cracking	
Na	7/9	3.37	4.24	Silty clay	Clear	Dark olive grey silty clay (5Y 3/2). Ferrous crystallised patch at 4.03–4.10 m. Massive firm structure with horizontal & vertical cracks. Discontinuous non-parallel laminae. Unknown lower boundary	
Na	11	4.24	4.87	Silty clay	?	V dark grey (5Y 3/1). Common fine silt running throughout. Firm, compacted with horizontal cracks. Parallel discontinuous laminae. Unknown lower boundary.	
Na	13/15	4.87	5.86	Silty clay	?	Silty clay: 5Y 3/2 dark olive grey. Common silt running throughout. Lenses of fine sand at 5.2–5.21 m, 5.38–5.39 m & 5.4–5.41 m. Firm, compacted with horizontal cracks. Parallel discontinuous laminae. Clear boundary to:	
Na	15	5.86	6.05	Peat	Clear	Black (2.5Y N2), well humified, crumbly peat with crumbly tufa disseminated throughout. Moderately compacted	Wood peat
Na	15	6.05	6.24	Tufa	Diffuse	Pale yellow (2.5Y 7/3). Common root matter throughout. Crumbly moderately compacted. Unknown lower boundary	
Na	17/21	6.24	8	Peat	?	Black (7.5YR N2) moderately humified crumbly peat. Wood content increasing with depth. Poorly humified wood macrofossil at 6.63–6.75 m. Firm, moderately compact	
Na	21	8	8.25	Silty clay	Clear	V dark grey (5Y 3/1). Rare silt running throughout. Rare small wood frags. Firm, compact. Parallel discontinuous laminae. Clear boundary to:	Lower clay silt
Na	23	8.25	8.54		Clear	Dark greyish brown (2.5Y 4/2). Rare silt & rare root frags throughout. Compact, firm with discontinuous laminae	

Site code Area		STDR4 Borehole 7		GL = 3.04 m OD, E561560.0208, N174320.0145			
Context	Sample no.	Depth (m)	Keyword (Texture)	Upper contact	Description	Interpretation	
Na	23	8.54	8.7	Silty clay	Diffuse	V dark greyish brown (2.5Y 3/2). As above in all aspects except colour. Common yellowy patches	
Na	23	8.7	8.8	Silty clay	Diffuse	Dark greyish brown (2.5Y 4/2). Rare silt & rare root frags throughout. Compact, firm with discontinuous laminae (As 8.35–8.54 m)	
Na	25	8.8	9.35	Silty clay	Diffuse	Black (5Y 2.5/1). Common silt disseminated throughout. Compact, firm with horizontal cracks. Discontinuous horizontal laminae	
Na	25	9.35	9.55	Organic sandy silt	Clear	Black. (10YR 2/1). Common root matter throughout. Sand content increases with depth. Firm, compact with faint horizontal continuous laminae	Organic silt
Na	27	9.55	9.74	Silty sand	Diffuse	Olive grey. (5Y 5/3) Rare clay nodules <3 mm. Compact	
Na	27	9.74	9.85	Organic sandy silt	Diffuse	V dark greyish brown (2.5Y 3/2). Rare clay nodules <3 mm. Compact, dense	
Na	27	9.85	10.1	Silty sand	Diffuse	Olive grey (5Y 5/3). Rare clay nodules <3 mm. Compact. Cracked (polygonal)	

Table 60 Sedimentary sequences at Trench 9 (STDR4)

Site code	STDR4		Top of <103> +1.2 m OD. Excludes 1.45 m of made ground				
Area	Trench 9						
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description	Interpretation
		From	To				
906	103	0.00	0.20	Peat	Not seen	V well humified, crumbly, v dark brown (7.5 YR 2.5/2). Some mineral input at 6–10 cm of light brown silty clay	Upper peat
908	103	0.20	0.28	Silty clay peat	Clear	Mid-brown (7.5YR 4/2), v soft & plastic, mottled with organics	
909	103	0.28	0.32	Silty clay	Diffuse	Grey (7.5 YR 6/1), soft & plastic, structureless	
910	103	0.32	0.49	Silty clay peat	Clear	Mid-brown (7.5YR 4/2), more humified 35–42 cm	
911	104	0.49	0.56	Organic silty clay	Clear	V dark greyish brown (10YR 3/2) finely laminated	Upper clay silt
911	104	0.56	0.79	Silty clay	Clear	Greyish brown (10YR 5/2) grading to greyish brown (2.5Y 5/2), firm, plastic, mottled with darker grey organics. Frequent Fe oxidation in subvertical root channels	
911	104	0.79	0.84	Organic silty clay	Clear	Dark greyish brown (10YR 4/2) soft, faint horizontal laminations	
912	104	0.84	0.85	Silty clay peat	Clear	Dark brown (10YR 3/3), structureless	
912	104	0.85	0.90	Organic silty clay	Clear	Dark greyish brown (10YR 4/2), soft, tenacious with frequent horizontally finely bedded plant material	
912	104	0.90	0.93	Organic silty clay	Clear	Dark brown (10YR 3/3), soft & plastic. Laminated with peaty lenses 3–4 mm thick (10YR 4/2)	
912	104	0.93	0.95	Organic mud	Clear	Dark greyish brown (10YR 4/2) soft, tenacious with frequent horizontally finely bedded plant material	
914	104	0.95	1.23	Silty clay	Diffuse	Dark grey (10YR 4/1) & dark greyish brown (10YR 4/2). Laminated between 0.95–0.99 m, 1.12–1.14 m, & 1.17–1.23 m. V dark grey (10YR 3/1) peaty lens 1.14–1.17 m	
915	104/105	1.23	1.29	Organic silty clay	Clear	V dark grey (10YR 3/1) laminated	
916	104/105	1.29	1.47	Peat	Clear	Black (10YR 2/1) well humified, crumbly	Wood peat
916	105	1.47	1.56	Silty clay peat	Clear	Dark brown (7.5YR 3/2)	
917	105	1.56	1.60	Clayey silt	Clear	Dark grey (10YR 4/1), many vertical channels filled with decaying oxidised roots, v firm structureless	
918	105	1.60	1.80	Silty clay peat	Abrupt	Black (7.5YR 2.5/1) v firm compacted, well humified, v fine fibrous plant material, lower contact sharp	
919	105	1.80	1.93	Tufa	Abrupt	Calcareous deposit of tufa, micritic but also granule sized nodules, many fine roots v occasional shell fragments	
926	105/106	1.93	2.43	Peat	Abrupt	V dark brown (10YR 2/2) firm, moderately humified peat, occasional v fine plant fibres, & abundant micritic tufa	

Site code	STDR4		Top of <103> +1.2 m OD. Excludes 1.45 m of made ground				
Area	Trench 9						
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description	Interpretation
		From	To				
927	106	2.43	3.11	Peat	Diffuse	Black (10YR2/1), firm, 1% micritic tufa, many fine plant fibres, horizontally bedded. Increased tufa concentrations between 2.43–2.61 m, 2.61–2.65 m, 2.67–2.7 m, 2.77–2.78 m and 2.86–2.87 m	
934	107	3.11	3.62	Peat	Diffuse	Black (10YR 2/1) Crumbly, frequent small twigs & rooty material, many fine plant fibres, moderately humified	
934	107	3.62	3.67	Organic sandy silt	Diffuse	Grading to dark grey (10YR 4/1) with some organic rooting from above	
936	107	3.67	3.87	Silty sand	Diffuse	Light grey (10YR 7/1) structureless, some organic rooting from above. Rare Fe mottling	Lower clay silt

Table 61 Sedimentary sequences from section 18044, Ebbsfleet Valley

Site code	ARC EBB01		Top of M13104 +3.70 m OD				
Area	Northfleet Gravel Spur		Sequence of (early?) Holocene colluvium beneath the Northfleet villa complex. Excludes deposits of post-Roman colluvium and made ground removed during excavation				
Section	18044						
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description	Interpretation
		From	To				
16764	13104	0	0.1	silty sand		7.5YR 5/8 bright brown. Massive bedding. No inclusions. Stiff compaction	
16764	13104	0.1	0.12	silty sand	sharp	7.5YR 4/6 brown. Stiff compaction. Few black point staining <5% <1 mm. Massive bedding	
16764	13104	0.12	0.15	clay silt	sharp	10.5YR 5/6 yellowish brown. Massive bedding. No inclusions. Stiff compaction	Holocene colluvium (pre-Bronze Age) probably deposited as sheetwash
16764	13104	0.15	0.21	clay silt	sharp	7.5YR 5/8 bright brown. Massive bedding. No inclusions. Stiff compaction	
16764	13104	0.21	0.23	silty sand	sharp	10YR 6/6 bright yellowish brown. Fine silty sand, stiff compaction. Massive bedding. No inclusions	
16764	13104	0.23	0.45	sandy silt	sharp	10YR 6/8 bright yellowish brown. Some mottling to 4/4 brown – seems to be following root canals & bioturbation features? Stiff compaction. No visible bedding	
16765	13104	0.45	0.55	silt	sharp	10YR 6/6 bright yellowish brown. Massive bedding. CaCO <sub>3</sub> precipitation in root canals (rhizocretions). No other inclusion or sedimentary structures	
16765	13104	0.55	0.56	CaCO <sub>3</sub> + silt	sharp	Band of CaCO <sub>3</sub> precipitate. Some silt is trapped in layer along with CaCO <sub>3</sub>	
16765	13104	0.56	0.65	clay silt	sharp	10YR 6/6 bright yellowish brown. Stiff compaction. Massive bedding. Few inclusions of CaCO <sub>3</sub> . No other inclusions or sedimentary structures	
16765	13106	0.65	1.03	Silt	Sharp	10YR 7/6 bright yellowish brown. Laminations occur in top 25 cm of layer. Someaminations include fine sand & are sub-horizontal & parallel. Mostly continuous. Silt stiffly compacted. Few inclusions <2% made up of flint <1 mm & some poss shell frags <1 mm. Band of medium sand (c 10 mm thick) marks bottom of laminated section; below this silt is massive	Pleistocene colluvium
16766	13106	1.03	1.20	Sandy silt	sharp	10YR 6/6 bright yellowish brown. Contains laminations c 1 mm thick. Becoming less intensely laminated toward base of layer. Laminations continuous. Some poss cross bedding visible c 40–45 cm down. Layer stiffly compacted. Few inclusions <2% <1 mm mainly flint but some shell frags visible	

Table 62 Sedimentary sequences from TT2018 (ARC EFT97)

Site code		ARC EFT97		L at +4.37 m OD					
Area		North western valley							
Section		footslope							
Section		TT 2018							
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description		Interpretation	
		From	To						
Na	Na	0	0.4	Silt		10YR 3/3 dark brown silt. Loose & friable with modern roots. Occasional well rounded flint clasts 20–30 mm. Occasional angular flint clasts (<30 mm). Occasional red CBM frags. Structureless & unconsolidated. Worked flint		Holocene colluvium	
Na	Na	0.4	1.2	Sandy silt	Diffuse	10YR 4/6 dark yellowish brown sandy-silt, poss becoming coarser with depth to silty-sand. Occasional flint clasts (<10–>100 mm), subangular–rounded. Occasional modern roots. Firm & compact. Worked flint			
Na	Na	1.2	1.3	Sandy silt	Diffuse	As above but poss increase in size & frequency of larger flint clasts. Worked flint. Late Iron Age or Roman pot			
Na	Na	1.3	1.5	Silty sand	Sharp	10YR 4/4 dark yellowish brown silty-sand with common chalk clasts. Chalk clasts (<10–>40 mm) subangular–angular. Occasional angular flint clasts (20–50 mm). All clasts rolled. No apparent structure. Loose & friable. Worked flint, Late Iron Age or Roman pot			
Na	Na	1.5	1.75	Sand	Sharp	10YR 5/4 yellowish brown fine sand with some silt. Loose & friable – slightly damp. No apparent structure. Occasional flint clasts (<5–>30 mm), angular–well rounded. Common modern roots. Molluscs present, charcoal frags common. Carbonate precipitate present as diffuse patches. Worked flint & Late Bronze Age pot			
Na	Na	1.75	2	Sand	Diffuse	As above but more compact. 10YR 5/2 greyish brown mottle with 7.5YR 4/6 strong brown colour. No molluscs present. Probable empty root canals noted. Occasional subangular–subrounded flint clasts. Slightly blocky structure? Worked flint			
Na	Na	2	2.25	Sand	Sharp	7.5YR 5/4 brown damp fine sand with some silt. Firm & compact. Common, poorly sorted flint clasts (<5–>50 mm), subrounded–subangular. Common sharp flints (poss broken by machine). Less blocky structure than above & fewer root canals. Mottled with 10YR 6/4 light yellowish brown. Worked flint			
Na	Na	2.25	2.6	Sand	not seen	As above poss becoming coarser sand with depth. Network of small thin (<2 mm) black stained & larger (2–4 mm) sand filled root canals. Worked flint			
Na	Na	2.6	2.8	Sandy silt	Sharp	Brown (10YR 4/3), mottled with dark greyish brown (2.5Y 4/2) sandy silt with medium sand. Firm & compact. V common angular burnt flint frags (<5–>50 mm). Charcoal present. Network of fine dendritic root canals (1–2 mm) – black stained & empty. No apparent structure. Occasional red CBM frags (<10 mm) – v soft. Worked flint		Buried soil?	
Na	Na	2.8	3	Sand	Sharp	10YR 6/6 brownish yellow medium sand mottled with 10YR 5/8 yellowish brown along root canals. Firm & compact. Abundant evidence of vertical rooting. Occasional small angular flint chips (<5 mm). Root still present in some root holes. Occasional frags burnt flint near top. Upper part of unit is 2.5Y 4/2 dark grey. Late Bronze Age pot. Worked flint		Holocene colluvium	
Na	Na	3	3.8	Sand	Not seen	7.5YR 5/4 brown sand with some clay-silt showing 10YR 6/2 light brownish grey mottles. Blocky structure. Poss fines down. Firm & compact. Dendritic root network & no apparent bedding. V rare flint chips or pebbles (<10 mm)		Pleistocene colluvium?	



Site code	ARC EFT97		L at +4.37 m OD				
Area	North western valley footslope						
Section	TT 2018						
Context	Sample no.	Depth (m)	Keyword (Texture)	Upper contact	Description	Interpretation	
		From	To				
Na	Na	3.8	4	Silt	Sharp	10YR 8/3 v pale brown carbonate rich silt with diffuse patches of 10YR 5/6 yellowish brown & 10YR 5/3 brown. Soft & malleable. Poss exhibits some disrupted parallel bedding. Common carbonate traces as precipitate. Some poss evidence for rooting?	
Na	Na	4	4.5	Sand	Not seen	10YR 5/8 yellowish brown medium sand with patches of 10YR 5/4 & 10YR 8/3 v pale brown along remnant laminae. No flint clasts	
Na	Na	4.5	5.3	Sand	Not seen	As above but with white flecks – molluscs?	
Na	Na	5.3+		Silt	Sharp	10YR 8/3 v pale brown chalky silt. Dense & compact. Silt matrix supported. Clasts poorly sorted (<5–>50 mm), subangular–subrounded & rolled. Occasional small (<5 mm) angular flint chips	Pleistocene solifluction deposit

Table 63 Sedimentary sequences from well 16731

Site code	ARC EBB01		M13039, M13040: Top of <13039> at 2.29 m OD				
Feature	16731						
Section no.	18001						
Context	Sample no.	Depth (m)	Keyword (Texture)	Upper contact	Description	Interpretation	
		From	To				
16187	13039	0	0.18	Silty loam	–	Brown (10YR5/3) slightly sandy silty loam. V dry & crumbly. Mixed with darker grey silt. Frequent charcoal, occasional burnt clay frags (1%, <3 mm) & small-medium clasts of chalk (1–2%, 1–5 mm)	Mixed backfill
16730	13039	0.18	0.25	Silty loam	Clear	V dark grey (10YR 3/1) soft & crumbly silty loam. Mixed deposit with frequent fine comminuted charcoal, occasional larger charcoal frag <2 mm (2%), burnt clay frags 2% (<4 mm)	Ash dump/backfill. Single phase?
16523	13039	0.25	0.42	Silty loam	Abrupt	Brown (10YR 5/3) slightly clayey silty loam. Less mixed than above, 2–5% charcoal flecks (2–5%, ≤1 mm), burnt clay (5%, < 15 mm, esp. concentrated at 0.31–0.35 m), chalk flecks (1%, <2 mm)	Dump/backfill with burnt material. Single phase?
16520	13039 13040	0.42	0.59	Gravel	Abrupt	Deposit of loose, coarse chalk rubble. Clasts subangular–rounded, poorly sorted (<30 mm) within a loose grey (10YR 6/1) silty matrix	Single-phase dump of chalk rubble (may represent debris from the limekiln)
16378	13040	0.59	0.84	Sandy silt	Abrupt	Light yellowish brown (10YR 6/4), fine sandy silt. Mixed with grey silt loamy & yellowish grey sandy silt. Frequent charcoal flecks (<20% & occasional frags <10 mm. Burnt clay frags (1%, <10 mm); chalk frags (1% <15 mm)	Redeposited natural mixed with backfill deposits
16378	13040	0.84	1	Sandy silt	Clear	Cleaner pale yellowish brown fine sandy silt. Fewer inclusions than above, charcoal flecks (2%), frequent irregular clasts of darker grey silt	Disturbed natural above construction cut

<b>Site code</b>	<b>ARC EBB01</b>		M13041, M13042, : Top of M13041 at 1.39 mOD				
<b>Feature</b>	<b>16731</b>						
<b>Section no.</b>	<b>18001</b>						
<b>Context</b>	<b>Sample no.</b>	<b>Depth (m)</b>		<b>Keyword (Texture)</b>	<b>Upper contact</b>	<b>Description</b>	<b>Interpretation</b>
		<b>From</b>	<b>To</b>				
16519	13041	0	0.05	Sandy silt	–	Lens of brown (10YR 5/3), friable, slightly clayey sandy silt, a little mixed. Charcoal flecks (5%, <1 mm), burnt clay frags (1%, 1 mm)	Dump deposit
16519	13041	0.05	0.15	Silty loam	Abrupt	V mixed deposit of crumbly brown (10YR 4/3) silt loamy & brown (10YR 5/3) silt similar to above. Frequent fine charcoal-rich patches with frags <4 mm	Dump deposit
16380	13041	0.15	0.39	Silty loam	Diffuse	As above but slightly fewer charcoal inclusions. Slightly sandy silty loam. Inc redeposited soil clasts < 15 mm. Chalk frags in upper 15 cm (3%, <3 mm). Charcoal frags (5%, <3 mm), rare stones (<20 mm), burnt clay frags (1%, <2 mm)	Dump deposit. Variance in chalk inclusions may indicate episodic dumping over short period, or just tip lines within single episode
16525	13041 13042	0.39	0.4	Sandy silt	Clear	Dark grey (10YR 4/1) friable, mixed fine sandy silt. Frequent poorly sorted subangular chalk frags (20%, <12 mm). Evidence of crude sub-horizontal bedding. Charcoal flecks (1%)	Dump deposit with chalk clasts indicating sloping tip line
16526/16525	13402	0.4	0.48	Clayey silt	Clear	V dark grey (10YR 3/1) crumbly slightly clayey silt. Relatively homogeneous. Charcoal flecks (2%), Burnt clay (1%, <3 mm), chalk flecks (1%)	Dump deposit
16526	13402	0.48	0.58	Silty loam	Diffuse	V dark grey (10YR 3/1) silty loam mixed with clasts, <10 mm yellowish brown silt. Charcoal flecks 5% (<1 mm). V rare chalk & burnt clay fleck	Dump deposit
16524	13402	0.58	0.84	Silty loam	Diffuse	As above	Dump deposit
<b>Site code</b>	<b>ARC EBB01</b>		M13071, M13072, M13073 : Top of M13071 at 0.55 mOD				
<b>Feature</b>	<b>16731</b>						
<b>Section no.</b>	<b>18000</b>						
<b>Context</b>	<b>Sample no.</b>	<b>Depth (m)</b>		<b>Keyword (Texture)</b>	<b>Upper contact</b>	<b>Description</b>	<b>Interpretation</b>
		<b>From</b>	<b>To</b>				
16545	13071	0	0.07	Silty clay	-	Dark greyish brown (2.5Y 4/2) firm, plastic silty clay	
16585	13071	0.07	0.23	Sand	Abrupt	Light brownish grey (2.5Y 6/2) very loose medium sand	
16586	13071 13072	0.23	0.48	Sandy silt	Abrupt	Dark grey (2.5Y 4/1) slightly sandy silt with occasional chalk clasts	
	13073						
16596	13072 13073	0.48	0.56	Clayey silt	Clear	V fine, clean, lens dark grey (2.5Y 4/1) slightly clayey silt, occasional dark organic flecking, faint evidence of horizontal bedding	
16597	13072 13073	0.56	0.6	Sandy silt	Abrupt	Lens sandy silt. Frequent organic detritus, some evidence for horizontal bedding	
16597	13073	0.6	0.65	Silt	Abrupt	Dark greyish brown (2.5Y 4/2) silt, slightly mixed with light brown slightly clayey silt	
16597	13073	0.65	0.74	Clayey silt	Clear	Well-mixed zone dark greyish brown (2.5Y 4/2) silt & light brown slightly clayey silt, occasional clasts burnt flint (<20 mm), occasional organic detritus	
16631	13073	0.74	0.79	Clayey silt	Clear	Dark greyish brown (2.5Y 4/2), soft, slightly clayey silt with lenses of fine sand. Rare organic flecking & granules of chalk	
Nat	13073	0.79	0.82	Sand	Clear	Medium-coarse, loose, light brownish grey (2.5Y 6/2) sand	
Nat	13073	0.82	0.85	Sandy gravel	Diffuse	Loose, brownish yellow (10YR 6/6) medium-coarse sand, frequent poorly sorted clasts rounded & subangular flint	

Table 64 Sedimentary sequences from well 16516

Site code		ARC EBB01		Top of M13026 +0.75 m			
Feature		16090					
Section no.		13265/ 13223					
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description	Interpretation
		From	To				
16387	13026	0	0.05	Sandy silt	Not seen	Grey (2.5Y 6/1) soft, plastic, structureless	
16387	13026	0.05	0.20	Silty clay	Abrupt	Dark grey (2.5Y 4/1), firm, faint horizontal bedding & fine discontinuous laminations of brownish yellow sand	
16387	13026	0.20	0.24	Silty clay	Abrupt	Dark grey (2.5Y 4/1), firm, horizontally bedded. Frequent fine discontinuous laminations of brownish yellow sand. Abundant organic flecking. Fe mineralisation along laminations	
16387	13026	0.24	0.39	Clayey silt	Abrupt	Brown (10YR 5/3). Horizontally bedded. Frequent fine discontinuous laminations of bluish grey clay silt & brownish yellow sand. Frequent organic flecking	
16388	13026	0.39	0.50	Sand	-	Brownish yellow (10YR 6/8) & pale yellow (2.5Y 7/4) slightly silty medium sand. Loose & structureless mottled with Fe. V small shell inclusions	

Table 65 Sedimentary sequences from well 15011

Site code		ARC EBB01		M11258, M11259, M11260: Top at 1.32 m OD			
Feature		15011					
Section no.		13009					
Context	Sample no.	Depth (m)		Keyword (Texture)	Upper contact	Description	Interpretation
		From	To				
15014 (lower)	11260 11259	0	0.61	Sandy silt	-	Firm light yellowish brown (10YR 6/4) to yellowish brown (10YR 5/6) well sorted v fine sandy silt. Fine horizontal micro laminations. Sterile apart from rare granule sized clasts of chalk (<1 mm, 1-2%)	Waterlain silts, derived from natural substrate with some mix of material blown/washed into well
15047	11259 11258	0.61	0.91	Silty Sand	Sharp, quite even	Loose light yellowish brown (10 YR 6/4) slightly coarser silty sand with frequent granule to small pebble sized clasts (30%) of chalk & flint (<10 mm)	Dumped deposit
15048	11258	0.91	1.15	Sandy silt	Clear, a little uneven	Denser, more consolidated brown (10YR 4/3) sandy silt. Frequent granule to small pebble sized clasts (50%) of chalk & flint (<10 mm)	Dumped deposit

Table 66 Sedimentary sequences from ditch 16723

Site code	ARC EBB01	Notes: M11472, M11471, and M11470. Top of M11472 2.82 m OD (0.05 m below top of section)
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Feature Section no.	16723 13216		1.35m	Keyword (Texture)	Upper contact	Description	Interpretation
Context	Sample no.	Depth (m)					
		From	To				
16042	11472	0	0.2	Silty loam	–	Dark greyish brown (10YR 4/2), v dry & crumbly silty loam with some fine yellowish mottling throughout, fine sand & granule sized clasts (2–5%) shell, mortar & chalk. Occasional large off-white weak mortar frags (<40 mm) & oyster shells lower boundary. Occasional charcoal flecks (1%)	
16041	11472	0.2	0.52	Silty loam	Diffuse	As above, but increased mottling & inclusions of shell, mortar & chalk (5–7%). Occasional CBM frags	
16040	11472 11471	0.52	0.73	Silty loam	Clear	V dark grey (10YR 3/1) slightly softer silty loam. Abundant charcoal flecks (5%) & ash in fabric to give lighter, less cemented texture. Fine irregular, yellowish fabric mottles throughout (5%). Rare clasts (≤2 mm, <1%). Occasional (2%) poorly sorted weak off-white mortar frags (<10 mm). Rare small frags animal bone inc sheep incisor. Also frags oyster shell	
16039	11471	0.73	1.01	Silty loam	Diffuse	V dark greyish brown (10YR 3/2) silty loam. More strongly mottled/mixed fabric, some charcoal/ash (as above), but also yellowish, greyish & dull orange-green (iron phosphate?) irregular mottles (30%) Rare small shell frags, clasts (<4 mm) & irregular clasts of brownish yellow (10YR 6/6) silt (<5 mm) at lower contact	
16038/ 16057	11471 11470	1.01	1.1	Silty loam	Clear	V dark grey (10YR 3/1) less variegated silty loam with abundant fine charcoal & ash (comminuted). Granule sized clasts chalk (1%)	
16036	11470	1.1	1.15	Silty loam	Clear	As above, but frequent broken mussel shells (sub-horizontal orientation)	
16035	11470	1.15	1.24	Silty loam	Clear	Mixed deposit of dense & compact light yellowish brown (10YR 6/4), brownish yellow (10YR 6/6) & v dark grey (10YR 3/1) silty loam containing abundant ash & finely comminuted charcoal (50%), Rare shell frags	
16034	11470	1.24	1.31	Silty loam	Clear	V dark grey (10YR 3/1), firm, slightly sandy silty loam faintly mottled with darker grey. Rare clasts (<2 mm), charcoal flecks (2%) & finely comminuted charcoal in diffuse small patches	
16034	11470	1.31	1.35	Sandy silt	Clear	Dark greyish brown (10YR 4/2) soft sandy silt with greyish brown mottles (10YR 5/2)	

Table 67 Results of the diatom assessment for edge of channel, Ebbsfleet (ARC ERC01); spring deposits, Springhead (ARC SPH00); edge of Roman Waterfront (ARC SHN02)

UCL Lab no.	Site & Sample	Depth (m)	Diatoms present	Diatom valve concentration	Quality of preservation	Diversity	Assemblage type	Potential for percentage counting
18	ERC01 <161>	0.38	No	–	–	–	–	None
19	ERC01 <161>	0.42	No	–	–	–	–	None
20	ERC01 <160–2>	0.97	Yes	Low	Poor	Low	Freshwater	Low
21	ERC01 <160–2>	0.99	Yes	High	Good to poor	Moderate	Freshwater	Some
22	ERC01 <160–2>	1.15	No	–	–	–	–	None
23	ERC01 <160–2>	1.31	No	–	–	–	–	None
24	SPH00 <8500>	0.86	No	–	–	–	–	None
25	SPH00 <8500>	0.88	No	–	–	–	–	None
26	SPH00 <8500>	0.92	No	–	–	–	–	None
27	SPH00 <8500>	0.96	No	–	–	–	–	None
28	SHN02 <14252>	1.08	No	–	–	–	–	None
29	SHN02 <14252>	1.12	No	–	–	–	–	None
30	SHN02 <14252>	1.16	No	–	–	–	–	None
31	SHN02 <14252>	1.18	No	–	–	–	–	None

Table 68 Mollusc data from Ebbsfleet River Crossing

Site Code	ARC ERC01												
Trench	1												
Section	7431				7417				1008				
Column	148	148	148	148	152	152	152	2871	143	143	143	143	143
Phase	Nat	?MBA		post RB	RB		RB	post RB					
Context	OLS	405	405	404	519	518	521	2872	412	412	411	411	411
Sample	1	2	3	4	1	2	3	8297	1	2	3	4	5
Depth	spot	spot	spot	spot	spot	spot	spot	spot	spot	spot	spot	spot	spot
Wt (g)	1500	1500	1500	1500	1500	1500	1500	2000	1500	1500	1500	1500	1500
LAND													
<i>Pomatias elegans</i> (Müller)	52	30	48	36	49	77	22	59	31	21	19	10	9
<i>Carychium minimum</i> (Müller)	-	-	-	-	-	-	-	3	-	-	2	4	3
<i>Carychium tridentatum</i> (Risso)	-	-	1	1	92	65	2	314	1	3	24	15	7
<i>Carychium</i> spp.	4	-	-	-	96	33	7	66	2	3	12	4	3
<i>Succinea putris</i> (Linnaeus)	-	-	-	-	-	-	-	-	-	-	-	-	3
<i>Oxyloma</i> cf. <i>pfeifferi</i> (Rossmässler)	-	-	-	-	-	-	-	-	-	-	-	6	23
<i>Succinea/Oxyloma</i> sp.	-	-	-	-	-	-	-	-	4	2	3	-	-
<i>Cochlicopa lubrica</i> (Müller)	-	3	1	-	11	11	1	9	4	-	4	1	2
<i>Cochlicopa lubricella</i> (Porro)	-	-	1	-	3	2	-	1	2	-	1	-	-
<i>Cochlicopa</i> spp.	4	5	6	11	17	31	9	41	10	12	9	3	3
<i>Truncatellina cylindrica</i> (Férussac)	-	1	-	2	-	1	3	-	1	-	-	-	-
<i>Vertigo pygmaea</i> (Draparnaud)	-	-	3	1	6	5	9	-	1	1	1	-	-
<i>Vertigo</i> spp.	-	2	1	2	4	-	1	1	1	1	-	-	-
<i>Pupilla muscorum</i> (Linnaeus)	4	12	32	37	34	38	32	-	2	4	1	6	3
<i>Vallonia costata</i> (Müller)	3	31	51	40	115	112	255	6	27	24	47	35	32
<i>Vallonia excentrica</i> (Sterki)	6	33	51	137	192	167	450	12	26	13	24	13	30
<i>Vallonia</i> spp.	-	2	5	4	9	8	7	-	1	1	2	1	3
<i>Acanthinula aculeata</i> (Müller)	-	-	-	-	19	28	6	24	-	-	-	-	-
<i>Ena obscura</i> (Müller)	-	-	-	1	1	1	-	3	2	-	1	-	1
<i>Punctum pygmaeum</i> (Draparnaud)	-	-	-	-	27	20	35	40	-	-	-	-	-
<i>Discus rotundatus</i> (Müller)	8	3	4	2	1	6	+	7	19	43	158	161	120
<i>Vitrea pellucida</i> (Müller)	1	-	-	1	2	5	6	1	-	-	-	-	-
<i>Vitrea crystallina</i> (Müller)	-	-	-	-	5	-	-	7	-	1	2	3	-
<i>Vitrea contracta</i> (Westerlund)	-	1	-	-	18	17	7	147	11	4	13	11	5
<i>Nesovitrea hammonis</i> (Ström)	-	-	-	-	-	2	-	2	-	1	1	-	-
<i>Aegopinella pura</i> (Alder)	-	-	-	2	66	53	15	96	8	-	2	4	-
<i>Aegopinella nitidula</i> (Draparnaud)	3	-	-	-	25	28	8	70	35	18	25	32	31
<i>Oxychilus cellarius</i> (Müller)	1	2	1	-	9	10	5	40	2	3	8	5	7
Limacidae	30	14	26	27	111	116	33	52	69	68	112	103	131
<i>Euconulus fulvus</i> (Müller)	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Cecilioides acicula</i> (Müller)	9	41	130	210	23	70	140	16	28	10	27	40	35
<i>Cochlodina laminata</i> (Montagu)	3	5	5	1	1	5	2	7	2	2	-	2	-
<i>Clausilia bidentata</i> (Ström)	14	5	4	8	6	13	3	2	4	3	3	5	1
<i>Helicella itala</i> (Linnaeus)	3	5	11	31	30	31	67	4	11	8	8	7	17
<i>Monacha</i> spp.	-	-	-	-	4	4	-	2	-	-	-	6	7
<i>Trichia hispida</i> (Linnaeus)	1	15	14	41	20	26	37	64	48	39	52	63	132
<i>Helicigona lapicida</i> (Linnaeus)	+	+	1	+	1	+	1	-	1	-	+	-	-
<i>Cepaea/Arianta</i> spp.	22	4	17	15	9	25	4	18	6	7	14	8	11
FRESH- /BRACKISH-WATER													
<i>Valvata cristata</i> (Müller)	-	-	-	-	2	-	-	-	16	36	7	30	19
<i>Lymnaea truncatula</i> (Müller)	-	-	-	-	-	-	-	-	-	-	3	10	4
<i>Planorbis planorbis</i> (Linnaeus)	-	-	-	-	-	-	-	-	-	-	-	1	2
<i>Anisus leucostoma</i> (Millet)	-	-	-	-	-	-	-	1	-	-	4	2	2
<i>Anisus vortex</i> (Linnaeus)	-	-	-	-	-	-	-	-	-	-	-	4	-
<i>Gyraulus albus</i> (Müller)	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Pisidium casertanum</i> (Poli)	-	-	-	-	-	-	-	-	-	-	1	3	2
<i>Pisidium nitidum</i> (Jeys)	-	-	-	-	-	-	-	-	-	-	1	1	-
<i>Pisidium</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	2
Taxa	16	16	17	19	27	27	22	28	24	21	28	28	25
TOTAL	159	173	283	401	985	941	1027	1100	347	318	564	559	615

Site Code	ARC ERC01												
Trench	1												
Section	7431				7417				1008				
Column	148	148	148	148	152	152	152	2871	143	143	143	143	143
Phase	Nat	?MBA		post RB	RB			RB	post RB				
Context	OLS	405	405	404	519	518	521	2872	412	412	411	411	411
Sample	1	2	3	4	1	2	3	8297	1	2	3	4	5
Depth	spot	spot	spot	spot	spot	spot	spot	spot	spot	spot	spot	spot	spot
Wt (g)	1500	1500	1500	1500	1500	1500	1500	2000	1500	1500	1500	1500	1500
Shannon Index	2.12	2.31	2.27	2.14	2.5	2.67	1.85	2.33	2.61	2.48	2.38	2.45	2.35
Brillouin Index	1.96	2.16	2.17	2.06	2.45	2.61	1.8	2.28	2.49	2.37	2.3	2.35	2.28
Shannon Index – Brillouin Index	0.15	0.16	0.11	0.08	0.06	0.06	0.04	0.05	0.12	0.12	0.09	0.09	0.08
Delta 2	0.82	0.87	0.87	0.83	0.88	0.91	0.73	0.84	0.9	0.89	0.86	0.86	0.86
Delta 4	4.83	7.16	6.83	4.86	7.65	9.86	2.73	5.19	9.41	8.26	5.97	6.03	6.11
% Shade-loving species	20.8	9.3	5.6	3.7	34.5	27.5	5.5	71.5	25.1	25.2	44.3	44	28.9
% Intermediate species	69.2	41	39.8	32.9	25.3	33.5	14.3	26.2	49	46.5	37.6	33.6	46.8
% Open country species	10.1	49.7	54.2	63.3	39.6	38.5	80.2	2.1	20.2	16.4	14.7	11.1	13.8
% Unassigned	0	0	0	0	0.4	0.4	0	0.2	1.2	0.6	0.5	2.2	5.4
% Land Snails	100	100	100	100	99.8	99.9	100	99.9	95.4	88.7	97.2	90.9	95
% Amphibious	0	0	0	0	0	0	0	0.1	0	0	1.2	2.2	1
% Catholic	0	0	0	0	0	0.1	0	0	0	0	0.2	0.2	0
% Slum	0	0	0	0	0.2	0	0	0	4.6	11.3	1.2	5.6	3.4
% Moving Water	0	0	0	0	0	0	0	0	0	0	0.2	0.5	0.3
% Unassigned	0	0	0	0	0	0	0	0	0	0	0	0.7	0.3
% Fresh Water	0	0	0	0	0.2	0.1	0	0.1	4.6	11.3	2.8	9.1	5

Table 69 Mollusc data from spring section, Springhead Sanctuary

Site Code	ARC SPH00																						
Trench	5002											5002											
Section	7487											7486											
Column	8420											8397											
Phase	Pre- ?MBA					LBA/EIA						Pre-?MBA			?MB A	LBA? EIA		8398					
Context	Stasis over chalk			5102	5102	5102	5101	5101	5101	5101	5101	5101	5101	5101	5102	5102	5102	5103	5101	5100	5100	5100	5100
Sample	1	2	3	9	10	11	12	13	14	15	16	17	8503	2	3	4	5	6	6	9	12	15	18
Depth	1.7-	1.6-	1.5	0.9-	0.8-	0.7-	0.6-	0.5-	0.4-	0.3-	0.2-	0.1-	spot	0.9-	0.8-	0.73-	0.63-	0.5-	1.2-	0.9-	0.6-	0.3-	0.03-
Wt (g)	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
LAND																							
<i>Pomatias elegans</i> (Müller)	-	+	-	+	+	2	4	1	14	58	32	2	2	1	2	4	5	3	+	+	-	+	-
<i>Carychium tridentatum</i> (Risso)	-	-	1	-	-	1	-	3	2	1	-	-	16	-	-	3	1	-	-	-	-	-	-
<i>Carychium</i> spp.	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-
<i>Oxyloma cf. pfeifferi</i> (Rossmässler)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Cochlicopa lubrica</i> (Müller)	-	-	-	-	-	3	-	1	2	4	3	1	-	-	-	1	-	1	-	-	-	-	3
<i>Cochlicopa lubricella</i> (Porro)	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cochlicopa</i> spp.	-	-	-	-	1	1	1	4	2	5	4	-	1	1	2	1	1	2	1	-	-	-	3
<i>Truncatellina cylindrica</i> (Férussac)	-	-	-	-	1	3	4	6	1	9	1	-	-	2	-	-	-	-	-	-	-	-	-
<i>Vertigo pygmaea</i> (Draparnaud)	-	-	-	-	-	1	3	-	2	4	2	-	-	-	-	-	-	1	-	-	-	-	1
<i>Vertigo</i> spp.	-	-	-	-	-	-	-	-	1	2	-	-	2	-	-	-	-	-	-	-	-	-	-
<i>Pupilla muscorum</i> (Linnaeus)	-	-	-	-	1	21	13	11	18	20	6	1	12	9	4	1	2	-	-	-	-	-	1
<i>Vallonia costata</i> (Müller)	-	-	-	+	5	99	126	178	105	149	71	3	49	9	9	3	14	11	2	2	1	12	48
<i>Vallonia excentrica</i> (Sterki)	-	1	-	-	3	45	69	140	116	83	73	26	6	11	16	1	7	12	2	13	3	15	42
<i>Vallonia</i> spp.	-	-	1	-	2	8	18	14	7	2	2	-	-	-	-	-	1	2	-	2	1	-	5
<i>Acanthinula aculeata</i> (Müller)	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ena obscura</i> (Müller)	-	-	-	-	-	-	-	1	-	2	1	-	-	-	2	1	-	-	-	-	-	-	-
<i>Punctum pygmaeum</i> (Draparnaud)	-	-	-	-	-	1	-	-	3	5	9	-	1	-	2	-	-	-	-	-	-	-	-
<i>Discus rotundatus</i> (Müller)	-	-	-	-	+	4	5	9	17	86	30	+	17	-	1	2	1	1	-	-	+	-	-
<i>Vitrea pellucida</i> (Müller)	-	-	-	-	-	3	-	-	-	7	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vitrea crystallina</i> (Müller)	-	-	-	-	-	-	-	-	1	5	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vitrea contracta</i> (Westerlund)	-	-	-	1	-	+	2	1	1	10	2	-	2	-	2	-	1	3	-	-	-	-	-
<i>Nesovitrea hammonis</i> (Ström)	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	1	1	-	-	-	-	-
<i>Aegopinella pura</i> (Alder)	-	-	-	-	-	1	1	-	3	20	8	-	2	-	-	1	-	-	-	-	-	-	-
<i>Aegopinella nitidula</i> (Draparnaud)	-	-	-	-	1	-	-	-	8	33	15	2	2	1	-	1	1	-	-	-	1	-	-
<i>Oxychilus cellarius</i> (Müller)	-	-	-	-	-	2	-	1	2	16	4	-	2	-	1	1	1	1	-	-	-	1	1
Limacidae	-	-	-	-	-	8	9	13	12	17	4	2	4	2	-	2	13	10	11	12	13	11	10
<i>Ceciloides acicula</i> (Müller)	-	-	-	20	26	-	131	121	132	85	140	71	-	100	39	37	101	209	32	148	38	155	230



Site Code	ARC SPH00																							
Trench	5002											5002												
Section	7487											7486												
Column	8420											8397												
Phase	Pre- ?MBA					LBA/EIA						Pre-MBA			Pre-?MBA			?MB A	LBA? EIA	8398				
Context	Stasis over chalk			5102	5102	5102	5101	5101	5101	5101	5101	5101	5101	5101	5102	5102	5102	5103	5101	5100	5100	5100	5100	5100
Sample	1	2	3	9	10	11	12	13	14	15	16	17	18	8503	2	3	4	5	6	6	9	12	15	18
Depth	1.7–	1.6–	1.5	0.9–	0.8–	0.7–	0.6–	0.5–	0.4–	0.3–	0.2–	0.1–	spot	0.9–	0.8–	0.73–	0.63–	0.5–	1.2–	0.9–	0.6–	0.3–	0.03–	
Wt (g)	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
<i>Cochlodina laminata</i> (Montagu)	–	–	–	–	–	–	–	1	2	4	1	–	1	–	–	–	–	–	–	–	–	–	–	–
<i>Clausilia bidentata</i> (Ström)	–	–	–	–	+	2	1	1	5	5	3	+	2	1	1	1	–	+	–	–	–	–	–	–
Clausiliidae	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	–	–	+	–	–	–	–
<i>Helicella itala</i> (Linnaeus)	–	–	–	–	–	2	1	5	5	4	2	1	1	–	–	3	2	2	–	3	1	1	3	3
<i>Monacha</i> sp	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	4	5	8	8
<i>Trichia striolata</i> (C. Pfeiffer)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
<i>Trichia hispida</i> (Linnaeus)	–	–	+	+	+	10	2	2	13	28	20	3	4	5	1	2	8	2	3	22	11	21	76	76
<i>Helicigona lapicida</i> (Linnaeus)	–	+	–	–	–	+	–	+	1	+	+	–	–	–	–	+	–	+	–	–	–	–	–	–
<i>Cepaea/Arianta</i> spp.	–	–	–	+	1	4	2	1	6	13	6	–	1	+	2	7	+	+	1	+	1	2	1	1
Taxa	0	1	2	1	7	19	15	17	24	25	24	9	19	10	13	16	14	12	6	6	8	9	11	11
TOTAL	0	1	2	1	15	222	261	393	351	596	305	41	128	42	45	35	59	52	20	55	36	69	202	202
Shannon Index	0	0	0.69	0	1.62	1.79	1.41	1.37	2.04	2.49	2.33	1.39	2.13	1.91	2.07	2.57	2.13	2.05	1.37	1.41	1.62	1.77	1.6	1.6
Brillouin Index	0	0	0.35	0	1.21	1.67	1.33	1.3	1.93	2.41	2.21	1.15	1.93	1.63	1.74	2.07	1.84	1.77	1.08	1.26	1.37	1.59	1.51	1.51
Shannon Index – Brillouin Index	0	0	0.35	0	0.41	0.12	0.08	0.06	0.11	0.08	0.13	0.24	0.2	0.28	0.33	0.5	0.28	0.28	0.29	0.14	0.25	0.17	0.08	0.08
Delta 2	0	0	0.5	0	0.75	0.72	0.63	0.63	0.78	0.88	0.85	0.58	0.8	0.82	0.81	0.91	0.84	0.83	0.65	0.71	0.75	0.8	0.74	0.74
Delta 4	0	0	0	0	4	2.61	1.74	1.75	3.54	7.14	6	1.46	4.25	5.19	4.89	13.88	6.01	5.63	2.17	2.66	3.34	4.25	2.93	2.93
% Shade-loving species	0	0	50	100	6.7	4.5	3.5	4.3	12	30.5	22.6	4.9	35.2	4.8	15.6	28.6	8.5	9.6	0	0	2.8	2.9	0.5	0.5
% Intermediate species	0	0	0	0	13.3	14.9	6.9	5.6	15.4	23.3	25.9	19.5	10.2	21.4	20	48.6	47.5	36.5	80	61.8	69.4	49.3	46	46
% Open country species	0	100	50	0	80	80.6	89.7	90.1	72.7	45.8	51.5	75.6	54.7	73.8	64.4	22.9	44.1	53.9	20	36.4	16.7	40.1	50	50
% Unassigned	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	1.8	11.1	7.3	4	4

Table 70 Mollusc data from boundary ditch 8065, Springhead

Site Code	ARC SPH00															
Trench	3134															
Section	7035															
Column	8065															
Phase	E/MRB								MRB							
Context	3141	3141	3141	3141	3141	3139	3139	3139	3138	3137	3137	3137	3136	3136	3135	3135
Sample	8082	8081	8080	8079	8078	8077	8076	8075	8074	8073	8072	8071	8070	8069	8068	8067
Depth	172– 181	162–172	152–162	142–152	132–142	116–126	106–116	96– 106	84–96	72–80	62– 72	52–62	40–49	30–40	20–26	10–20
Wt (g)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
LAND																
<i>Pomatias elegans</i> (Müller)	–	+	–	–	+	–	1	–	–	–	–	+	1	+	+	–
<i>Carychium minimum</i> Müller	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–
<i>Carychium tridentatum</i> (Risso)	–	1	–	–	4	3	–	–	–	1	–	–	8	9	13	–
<i>Carychium</i> spp.	–	–	–	–	2	2	–	–	–	1	1	–	1	3	4	1
<i>Succinea/Oxyloma</i> sp.	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
<i>Cochlicopa lubrica</i> (Müller)	–	–	–	–	–	3	–	1	4	–	–	3	5	3	1	–
<i>Cochlicopa lubricella</i> (Porro)	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–
<i>Cochlicopa</i> spp.	–	–	–	+	4	9	1	3	1	1	2	3	–	7	9	–
<i>Truncatellina cylindrica</i> (Férussac)	–	–	–	–	–	–	1	–	–	1	–	1	1	2	2	–
<i>Vertigo pygmaea</i> (Draparnaud)	–	–	–	–	–	1	–	–	–	–	–	–	2	–	5	1
<i>Vertigo</i> spp.	–	1	–	–	–	–	–	–	1	–	–	1	1	2	2	–
<i>Pupilla muscorum</i> (Linnaeus)	1	1	–	2	8	14	5	4	2	1	1	2	–	4	13	1
<i>Vallonia costata</i> (Müller)	3	9	5	3	14	28	24	43	43	8	6	13	9	22	35	–
<i>Vallonia excentrica</i> (Sterki)	4	5	4	2	25	22	14	7	6	4	1	6	4	14	24	1
<i>Vallonia</i> spp.	1	–	–	–	4	3	2	4	5	2	1	2	1	1	2	–
<i>Acanthinula aculeata</i> (Müller)	–	–	–	–	–	–	–	–	–	–	1	–	5	7	1	–
<i>Punctum pygmaeum</i> (Draparnaud)	1	–	–	–	3	–	–	–	–	1	–	2	1	5	5	1
<i>Discus rotundatus</i> (Müller)	1	–	–	–	1	9	12	7	4	–	1	2	–	–	3	–
<i>Vitrina pellucida</i> (Müller)	–	–	–	2	8	7	–	–	–	–	–	–	–	–	–	–
<i>Vitrea crystallina</i> (Müller)	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	–
<i>Vitrea contracta</i> (Westerlund)	–	1	–	–	–	3	–	–	–	–	–	–	3	4	8	–
<i>Nesovitrea hammonis</i> (Ström)	–	–	–	–	4	3	–	–	–	–	–	1	1	2	–	–
<i>Aegopinella pura</i> (Alder)	–	–	–	–	–	–	–	–	–	–	–	–	–	2	1	–
<i>Aegopinella nitidula</i> (Draparnaud)	–	–	–	–	2	1	1	–	–	–	–	1	3	6	8	1
<i>Oxychilus cellarius</i> (Müller)	–	–	–	–	–	1	–	1	–	–	–	–	1	3	2	2
Limacidae	1	1	–	–	17	23	17	15	23	11	5	17	25	29	21	2
<i>Euconulus fulvus</i> (Müller)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
<i>Ceciloides acicula</i> (Müller)	14	14	13	12	43	14	23	31	68	61	58	102	119	185	158	18
<i>Cochlodina laminata</i> (Montagu)	–	–	–	–	–	–	–	–	–	–	–	–	1	1	+	–

Site Code	ARC SPH00															
Trench	3134															
Section	7035															
Column	8065															
Phase	E/MRB								MRB							
Context	3141	3141	3141	3141	3141	3139	3139	3139	3138	3137	3137	3136	3136	3135	3135	
Sample	8082	8081	8080	8079	8078	8077	8076	8075	8074	8073	8072	8071	8070	8069	8068	8067
Depth	172– 181	162–172	152–162	142–152	132–142	116–126	106–116	96– 106	84–96	72–80	62– 72	52–62	40–49	30–40	20–26	10–20
Wt (g)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
<i>Clausilia bidentata</i> (Ström)	–	–	–	–	–	–	+	–	–	–	–	–	–	4	1	–
<i>Helicella itala</i> (Linnaeus)	–	–	–	3	2	8	4	4	1	2	2	–	2	4	2	–
<i>Monacha</i> spp.	–	1	–	–	–	–	–	1	2	–	–	2	–	–	–	–
<i>Trichia hispida</i> (Linnaeus)	1	5	6	6	33	89	27	26	19	13	4	7	9	6	11	+
<i>Helicigona lapicida</i> (Linnaeus)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	+	+
<i>Cepaca/Arianta</i> spp.	1	–	1	+	4	2	1	6	6	1	2	+	4	3	4	+
Taxa	8	9	4	6	15	17	12	11	11	11	11	13	20	23	20	8
TOTAL	14	25	16	18	136	233	110	122	117	47	27	63	90	146	178	10
Shannon Index	1.83	1.78	1.25	1.7	2.24	2.11	1.96	1.86	1.77	1.93	2.13	2.1	2.48	2.7	2.53	2.03
Brillouin Index	1.33	1.43	1.01	1.34	2.06	1.99	1.8	1.72	1.64	1.66	1.7	1.84	2.19	2.46	2.35	1.37
Shannon Index – Brillouin Index	0.5	0.36	0.24	0.35	0.17	0.12	0.15	0.14	0.14	0.27	0.43	0.26	0.29	0.24	0.18	0.65
Delta 2	0.8	0.78	0.7	0.8	0.86	0.81	0.83	0.78	0.76	0.81	0.85	0.84	0.88	0.9	0.9	0.86
Delta 4	6	4.36	2.87	5.38	6.4	4.28	5.16	3.77	3.35	4.97	7.78	5.78	7.73	10.2	9.14	21.5
% Shade-loving species	7.1	8	0	0	6.6	9	11.8	6.6	3.4	4.3	11.1	4.8	25.6	28.1	23.6	40
% Intermediate species	28.6	24	43.8	44.4	53.7	58.4	42.7	41.8	45.3	57.5	48.2	52.4	52.2	38.4	28.7	30
% Open country species	64.3	64	56.3	55.6	39	32.6	45.5	50.8	49.6	38.3	40.7	39.7	22.2	33.6	47.8	30
% Unassigned	0	4	0	0	0.7	0	0	0.8	1.7	0	0	3.2	0	0	0	0

Table 71 Summary of features examined for molluscan preservation at Northfleet Roman villa

Period	Villa phase	Sub -group	Description	Intervention	Preservation
Early Roman	1	16723	NNW-SSE ditch running from clay tank to bath-house	16032	Absent
Early Roman	2	15756	N-S enclosure by river	15598	Absent
Early-Middle Roman	2	15751	E-W (drainage?) ditch SW of eastern range	15494	Very poor
Middle Roman	3	16803	Ditch running S and W of the villa	15474	Very poor
Missle Roman	4	15755	N-S boundary ditch across eastern extension	15490	Poor to moderate
Late Roman	6	16698		10205/1043	Absent

Table 72 Mollusc data from Northfleet Roman villa

Villa phase	Sub - group	Intervention	Sample	Context	Depth (m)	Taxa
2	15751	15494	11437	15495	0.50–0.60	<i>Trichia hispida</i> , <i>Vallonia costata</i>
3	16803	15474	11453	15499	0.10–0.20	<i>Trichia hispida</i>
3	16803	15474	11456	15500	0.50–0.60	<i>Trichia hispida</i> , <i>Discus rotundatus</i>
3	16803	15474	11457	15501	0.60–0.70	<i>Discus rotundatus</i> , <i>Trichia hispida</i> , <i>Aegopinella</i> sp.
3	16803	15474	11458	15501	0.70–0.80	<i>Cochlicopa</i> sp., <i>Acicula fusca</i>
3	16803	15474	11460	15503	0.90–1.00	<i>Trichia hispida</i>
3	16803	15474	11465	15509	1.35–1.45	<i>Trichia hispida</i>
4	15755	15490	11425	15578	0.00–0.10	<i>Discus rotundatus</i> , <i>Carychium tridentatum</i> , <i>Oxychilus cellarius</i> , <i>Aegopinella</i> sp., <i>Vitrea</i> sp., <i>Cochlicopa</i> sp., <i>Trichia hispida</i>
4	15755	15490	11428	15493	0.30–0.40	<i>Planorbis planorbis</i>

Table 75 The insect remains recovered from Northfleet

	Period Sample no. Context no.	Ditch	Ditch	Well	Timber-lined cistern 16731						Phytophage host plants (Koch 1992)			
		10205	19312	16516	11201	12207	13058	13078	13079	13083		13085	13087	13098
	Ecological codes	10203	19341	16387	16545	16545	16586	16586	16586	16586	16586	16586	16597	
<b>DERMAPTERA</b>														
<i>Forficula auricularia</i> (L.)		-	-	-	-	-	-	-	-	-	-	-	-	2
<b>HEMIPTERA</b>														
Family, genus and spp. Indet.		-	-	1	-	-	-	-	1	10	-	-	-	7
<b>COLEOPTERA</b>														
<i>Carabidae</i>														
<i>Carabus granulatus</i> (L.)	Oa	-	-	-	-	-	-	-	-	-	-	1	-	-
<i>Leistus ferrugineus</i> (L.)	Oa	-	-	-	-	-	-	-	-	1	-	-	1	-
<i>Nebria brevicollis</i> (F.)	Oa	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Nebria</i> spp.	Oa	-	-	-	-	-	-	-	1	1	-	-	-	-
<i>Notiophilus palustris</i> (Duft.)	Oa	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Clivina fossor</i> (L.)	Oa	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Loricera pilicornis</i> (F.)	Oa	-	-	-	-	-	-	-	-	-	-	1	1	-
<i>Dyschirius globosus</i> (Hbst.)	Oa	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Dyschirius salinus</i> (Schaum)	oa-c	-	-	1	-	-	-	-	-	-	-	-	-	1
<i>Trechus rubens</i> (F.)	Oa	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Trechus quadristriatus</i> (Schrk)	Oa	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>T. quadristriatus</i> (Schrk) / <i>T. obtusus</i> (Er.)	Oa	-	-	-	-	1	2	-	2	2	1	3	-	-
<i>Trechoblemus micros</i> (Hbst.)	Oa	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Bembidion normannum</i> (Dej)	oa-c	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Bembidion minimum</i> (F.)	oa-c	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Bembidion doris</i> (Panz.)	Oa	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Bembidion</i> spp.	oa	-	-	1	-	-	-	-	-	1	-	-	-	2
<i>Harpalus ?rupicola</i> (Sturm)	oa	-	-	-	-	-	-	-	-	-	-	-	-	5
<i>Harpalus rufipes</i> (Geer)	oa	-	-	-	-	-	-	-	-	-	-	-	-	2
<i>Harpalus</i> spp.	oa	-	-	2	1	1	2	1	-	1	-	-	-	-
<i>Bradycellus</i> spp.	oa	-	-	-	-	-	-	-	-	3	1	-	-	-
<i>Poecilus versicolor</i> (Sturm)	oa	-	-	-	-	-	-	-	-	1	-	-	-	1
<i>Pterostichus melanarius</i> (Ill.)	oa	-	-	1	-	-	-	1	1	1	-	-	-	2
<i>Pterostichus</i> spp.	oa	-	-	-	-	1	-	-	1	-	-	-	-	2
<i>Calathus fuscipes</i> (Goeze)	oa	-	-	1	-	-	1	-	-	-	1	1	-	1
<i>Calathus melanocephalus</i> (L.)	oa	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Agonum fuliginosum</i> (Panz.)	oa-ws	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Platynus assimilis</i> (Payk.)	oa	-	-	-	-	-	-	-	-	-	1	-	-	3
<i>Platynus dorsalis</i> (Pont.)	oa	-	-	-	-	-	-	-	-	-	-	-	-	4
<i>Zabrus tenebrioides</i> (Goeze)	oa	-	-	-	-	-	-	1	-	-	-	-	-	3
<i>Amara</i> spp.	oa	-	-	-	1	1	2	1	4	-	-	-	-	6
<i>Badister</i> spp.	oa	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Panagaeus cruxmajor</i> (L.)	oa-ws	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Dromius linearis</i> (Ol.)	oa-ws	-	-	-	-	-	1	1	-	1	-	-	-	2
<i>Syntomus truncatellus</i> (L.)	oa	-	-	1	-	-	-	-	-	-	-	-	-	1
<b>Dytiscidae</b>														
<i>Hygrotus inaequalis</i> (F.)	oa-w	-	-	-	-	1	1	-	-	-	-	-	-	-
<i>Hydroporus palustris</i> (L.)	oa-w	-	-	-	-	1	-	-	-	-	-	-	-	1
<i>Hydroporus</i> spp.	oa-w	-	-	-	-	-	-	-	-	2	1	-	-	-
<i>Colymbetes fuscus</i> (L.)	oa-w	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Agabus</i> spp.	oa-w	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Agabus bipustulatus</i> (L.)	oa-w	-	-	-	-	-	-	-	-	1	-	-	-	3
<b>Hydraenidae</b>														
<i>Hydraena palustris</i> (Er.)	oa-w	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Hydraena</i> spp.	oa-w	-	-	-	1	-	1	-	1	-	-	-	-	-
<i>Ochthebius dilatatus</i> (Steph.)	oa-c	-	-	1	3	-	-	-	-	-	1	-	-	-
<i>Ochthebius bicolon</i> (Germ.)	oa-w	-	-	-	-	2	-	-	-	-	-	-	-	-
<i>Ochthebius minimus</i> (F.)	oa-w	-	-	-	2	1	-	-	1	-	-	-	-	3
<i>Ochthebius</i> spp.	oa-w	-	-	-	2	8	3	2	2	2	2	-	-	-
<i>Limnebius</i> spp.	oa-w	-	-	-	-	-	-	-	2	-	-	-	-	4
<i>Helophorus aquaticus</i> (L.)	oa-w	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Helophorus</i> spp.	oa-w	-	-	-	3	4	2	4	3	3	3	6	-	-
<b>Hydrophilidae</b>														
<i>Cercyon analis</i> (Payk.)	rt	-	1	-	-	-	-	-	1	1	1	-	-	-
<i>Megasternum boletophagum</i> (Marsh.)	rt	-	-	2	2	4	1	2	8	3	4	-	-	-
<i>Cryptopleurum minutum</i> (F.)	rf	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Hydrobius fuscipes</i> (L.)	oa-w	-	-	-	-	2	1	-	2	1	1	-	-	-
<i>Laccobius</i> spp.	oa-w	-	-	-	1	1	1	-	-	-	2	1	-	-



	Period Sample no. Context no.	Ditch	Ditch	Well	Timber-lined cistern 16731							Phytophage host plants (Koch 1992)	
		10205	19312	16516	11201	12207	13058	13078	13079	13083	13085		13087
	Ecological codes	10203	19341	16387	16545	16545	16586	16586	16586	16586	16586	16597	
Helodidae													
<i>Helodidae</i> Gen. & spp. Indet.	oa-w	-	-	-	1	1	-	2	-	1	-		
Nitidulidae													
<i>Brachypterus urticae</i> (F.)	oa-p	-	-	-	2	6	2	-	22	1	39	<i>Urtica dioica</i> L. (stinging nettle)	
<i>Meligethes</i> spp.	oa	-	-	-	-	1	-	-	-	1	-		
Cucujidae													
<i>Monotoma</i> spp.	rt	-	-	-	-	3	1	-	-	-	-		
<i>Oryzaephilus surinamensis</i> (L.)	g	46	15	1	3	4	2	3	17	1	54		
Cryptophagidae													
<i>Cryptophagus</i> spp.	rd-h	-	-	-	-	-	-	-	1	-	2		
<i>Atomaria</i> spp.	rd-h	-	-	7	2	3	-	-	3	1	2		
Phalacridae													
<i>Phalacrus</i> spp.	ws	-	-	-	1	-	-	-	1	-	1		
Lathridiidae													
<i>Enicmus minutus</i> Group	rd-h	-	-	4	2	5	-	1	5	1	13		
<i>Corticaria/ corticarina</i> spp.	rt	-	-	3	4	-	-	3	3	1	6		
Mycetophagidae													
<i>Typhaea stercorea</i> (L.)	rd	-	-	-	-	-	-	-	-	-	1		
Colydiidae													
<i>Aglenus brunneus</i> (Gyll.)	rt-h	-	-	-	-	-	-	-	-	-	1		
Coccinellidae													
<i>Coccinella septempunctata</i> (L.)	oa	-	-	-	-	-	-	-	1	-	2		
<i>Coccidula rufa</i> (Hbst.)	oa	-	-	-	-	-	-	-	-	-	1		
<i>Propylea quatuordecimpunctata</i> (L.)	oa	-	-	-	-	-	-	-	-	-	1		
<i>Thea vigintiduopunctata</i> (L.)	oa	-	-	-	-	-	-	-	-	-	1		
Lyctidae													
<i>Lyctus linearis</i> (Geer)	l-h	-	-	1	-	-	-	-	-	-	-		
Anobiidae													
<i>Grynobius planus</i> (F.)	l	-	-	-	-	-	-	1	-	-	-		
<i>Anobium punctatum</i> (Geer)	l-h	-	-	3	-	-	-	-	5	-	4		
Ptinidae													
<i>Ptinus fur</i> (L.)	rd-h	-	-	-	-	-	-	-	1	-	1		
Anthicidae													
<i>Anthicus bifasciatus</i> (Rossi)	rt	-	-	1	1	1	2	-	-	-	-		
<i>Anthicus</i> spp.	rt	-	1	-	-	-	-	-	1	-	1		
Tenebrionidae													
<i>Palorus ratzeburgi</i> (Wissm.)	g	1	1	-	-	-	-	-	-	-	1		
<i>Tenebrio obscurus</i> (F.)	rf	-	-	-	-	-	-	-	-	-	1		
Scarabaeidae													
<i>Geotrupes</i> spp.	oa-rf	-	-	-	1	-	-	1	1	1	1		
<i>Onthophagus</i> spp.	oa-rf	-	-	-	-	-	-	-	-	-	1		
<i>Oxyomus silvestris</i> (Scop.)	rt	-	-	-	-	-	1	1	-	-	1		
<i>Aphodius erraticus</i> (L.)	oa-rf	-	-	-	-	-	-	1	1	-	-		
<i>Aphodius contaminatus</i> (Hbst.)	oa-rf	-	-	-	2	1	-	-	4	1	30		
<i>Aphodius sphaelatus</i> (Panz.) or <i>A. prodromus</i> (Brahm)	oa-rf	-	-	-	-	-	2	-	-	-	-		
<i>Aphodius porcus</i> (F.)	oa-rf	-	-	-	-	-	1	-	1	-	-		
<i>Aphodius fimetarius</i> (L.)	oa-rf	-	-	1	1	-	-	-	-	1	1		
<i>Aphodius ater</i> (Geer)	oa-rf	-	-	1	1	-	1	-	-	-	1		
<i>Aphodius</i> spp.	oa-rf	-	1	-	-	6	-	-	-	-	-		
Chrysomelidae													
<i>Lema cyanella</i> (L.)	oa-p	-	-	1	-	-	-	-	-	-	-	<i>Cirsium</i> species often <i>C. arvense</i> (thistles)	
<i>Gastroidea viridula</i> (Geer)	oa-p	-	-	-	-	-	-	-	1	-	1	<i>Rumex</i> spp. (dock)	
<i>Phaedon</i> spp. (Germar.)	oa-p	-	-	-	-	-	-	-	1	-	-		
<i>Phyllotreta</i> spp.	oa	-	-	4	6	5	1	3	22	-	14		
<i>Haltica</i> spp.	oa	-	-	-	-	-	-	-	-	1	1		
<i>Chaetocnema concinna</i> (Marsh.)	oa	-	-	1	-	1	-	-	2	-	-		

	Period Sample no. Context no.	Ditch	Ditch	Well	Timber-lined cistern 16731						Phytophage host plants (Koch 1992)			
		10205	19312	16516	11201	12207	13058	13078	13079	13083		13085	13087	13098
	Ecological codes	10203	19341	16387	16545	16545	16586	16586	16586	16586	16586	16586	16597	
<i>Chaetocnema</i> spp.	oa	-	-	-	-	-	1	-	-	-	-	-	-	
<i>Psylliodes</i> sp.	oa-p	-	-	-	-	-	-	-	1	-	-	2		
<b>Curculionidae</b>														
<i>Apion violaceum</i> (Kirby)	oa-p	-	-	-	-	-	-	2	-	-	-	-	-	On <i>Rumex</i> spp. (dock)
<i>Apion hydrolapathi</i> (Marsh.)	oa-p	-	-	-	-	2	1	-	1	-	-	2	-	On <i>Rumex</i> spp. (dock)
<i>Apion aeneum</i> (F.)	oa	-	-	1	1	1	1	4	2	-	-	-	-	<i>Malva sylvestris</i> L. (Common mallow)
<i>Apion ulicis</i> (Forst.)	oa	-	-	-	2	1	-	-	-	-	-	-	-	On <i>Ulex europaeus</i> L. (gorse)
<i>Apion urticarium</i> (Hbst.)	oa-p	-	-	1	-	1	-	1	1	1	1	3	-	<i>Urtica dioica</i> L. (stinging nettle)
<i>Apion</i> spp.	oa-p	-	-	2	3	2	-	2	2	-	-	5	-	
<i>Barynotus</i> spp.	oa-p	-	-	-	-	-	-	-	-	-	-	1	-	
<i>Sitona cambricus</i> (Steph.)	oa-p	-	-	-	-	-	-	-	-	-	-	1	-	<i>Lotus pedunculatus</i> Cav. and <i>L. corniculatus</i> L. (lesser and greater birds foot trefoil)
<i>Sitona regensteinensis</i> (Hbst.)	oa-p	-	-	-	-	-	-	-	-	-	-	1	-	<i>Cytisus scoparius</i> L. (broom)
<i>Sitona lineatus</i> (L.)	oa-p	-	-	-	1	-	-	-	-	-	-	2	-	<i>Trifolium</i> species (clover)
<i>Sitona sulcifrons</i> (Thunb.)	oa	-	-	-	-	-	-	-	-	-	-	1	-	species (clover)
<i>Sitona flavescens</i> (Marsh.)	oa-p	-	-	-	-	-	-	-	1	-	-	-	-	<i>Trifolium</i> species (clover)
<i>Sitona hispidulus</i> (F.)	oa	-	-	1	-	-	-	-	1	-	-	1	-	<i>Trifolium</i> species (clover)
<i>Sitona humeralis</i> (Steph.)	oa-p	-	-	-	-	-	-	4	-	-	-	-	-	Often on <i>Medicago</i> (medicks) and <i>Trifolium</i> (clover)
<i>Sitona</i> spp.	oa	-	-	2	-	1	1	1	-	-	-	-	-	
<i>Notaris</i> spp.	oa-ws	-	-	-	-	-	-	1	-	-	-	-	-	
<i>Alophus triguttatus</i> (F.)	oa	-	-	-	-	-	-	-	1	-	-	1	-	
<i>Sitophilus granarius</i> (L.)	g	-	2	-	-	1	-	-	4	-	-	-	-	
<i>Ceutorhynchus contratus</i> (Marsh.)	oa-p	-	-	-	-	2	-	-	5	-	-	1	-	Usually associated with Resedaceae and Papaveraceae (mignonettes and poppies)
<i>Ceutorhynchus erysimi</i> (F.)	oa-p	-	-	-	-	1	-	1	2	-	-	2	-	On <i>Capsella bursa-pastoris</i> (L.) Medik. (shepherd's purse)
<i>Ceutorhynchus pollinarius</i> (Forst.)	oa-p	-	-	-	-	-	-	1	-	-	-	-	-	<i>Urtica dioica</i> L. (stinging nettle)
<i>Cidnorhinus quadrimaculatus</i> (L.)	oa-p	-	-	3	-	-	4	6	3	1	2	2	-	<i>Urtica dioica</i> L. (stinging nettle)
<i>Gymnetron</i> spp.	oa-p	-	-	3	-	1	1	-	-	-	-	-	-	<i>Plantago lanceolata</i> L. (plantain)
<b>DIPTERA</b>														
<b>SUBORDER CYCLORRHAPHA</b>														
Family, genus & spp. indet.		-	-	15	8	15	15	8	40	4	30			
<b>HYMENOPTERA</b>														
Formicoidea Family Genus and spp. indet.		-	-	-	2	1	-	-	4	-	3			

Ecological coding (Kenward and Hall 1995)

oa (& ob) - Species which will not breed in human housing

w - aquatic species

c - species associated with salt water and coastal areas

d - species associated with damp watersides and river banks

rd - species primarily associated with drier organic matter

rf - species primarily associated with foul organic matter often dung

rt - insects associated with decaying organic matter but not belonging to either the rd or rf groups

g - species associated with grain

l - species associated with timber

p - phytophage species often associated with waste areas or grassland and pasture

pu - species associated with pulses (peas and beans)

h - members of the 'house fauna'; this is a very arbitrary group based on archaeological associations (Hall and Kenward 1990)



Table 76 The proportions of the ecological grouping of Coleoptera from Northfleet

	11201	12207	13058	13078	13079	13083	13085	13087	13098	13100
Total number of individuals	47	25	88	96	124	67	83	215	56	388
Number of species	2	10	46	46	59	46	44	74	42	109
% oa	0.0	4.0	46.6	47.9	54.0	56.7	55.4	58.1	60.7	62.4
% a	0.0	0.0	0.0	10.4	17.7	13.4	9.6	7.4	19.6	4.9
% ws	0.0	0.0	5.7	6.3	2.4	6.0	4.8	5.1	8.9	12.6
% c	0.0	0.0	2.3	3.1	0.0	1.5	0.0	0.0	3.6	1.0
%rd	0.0	0.0	12.5	4.2	6.5	0.0	1.2	4.7	3.6	4.9
% rt	0.0	20.0	26.1	27.1	21.8	23.9	20.5	16.7	23.2	11.1
% rf	0.0	20.0	38.6	31.3	28.2	23.9	21.7	21.4	26.8	16.0
% p	0.0	0.0	12.5	9.4	14.5	13.4	20.5	18.6	5.4	16.2
% g	100.0	72.0	1.1	3.1	4.0	3.0	3.6	9.8	1.8	14.2
% l	0.0	0.0	4.5	0.0	0.0	0.0	1.2	2.3	0.0	1.0
% h	0.0	0.0	17.0	4.2	6.5	0.0	1.2	7.0	3.6	6.4

Ecological coding (Kenward and Hall 1995)

oa (& ob) - Species which will not breed in human housing

w - aquatic species

c - species associated with salt water and coastal areas

d - species associated with damp watersides and river banks

rd - species primarily associated with drier organic matter

rf - species primarily associated with foul organic matter often dung

rt - insects associated with decaying organic matter but not belonging to either the rd or rf groups

g - species associated with grain

l - species associated with timber

p - phytophage species often associated with waste areas or grassland and pasture

pu - species associated with pulses (peas and beans)

h - members of the 'house fauna'; this is a very arbitrary group based on archaeological associations (Hall and Kenward 1990)

## Chapter 4. Environmental Evidence for Subsistence and Economy

Table 80 Charred plant remains from late Iron Age features at Springhead

Sample	8003	8003*	8005	8029	8027	8040	8102	8112	8138	8142	8145	8146				
Phase	LIA	LIA	LIA	LIA	LIA	LIA	LIA	LIA	LIA	LIA	LIA	LIA				
Feature type	Pit	Pit	Hearth	Pit	Ditch	Ditch	Pit	Pit	Pit	Tree-throw hole	Pit	Pit				
<b>Feature</b>	3027	3027	3073	3199	3235	3335	3556	3680	3864	3921	3931	3931				
<b>Context</b>	3028	3028	3074	3036	3243	3339	3558	3685	3867	3920	3933	3937				
<b>Size (l)</b>	10	10	10	10	20	20	20	20	10	7	20	20				
<b>Flot size (ml)</b>	200	200	50	120	250	50	60	30	80	60	200	150				
<b>Rooty matter</b>	40	40	42.5	36	12.5	30	6	7.5	12	24	30	15				
<b>Charcoal</b>	++++	++++	-	++++	++++	+	++++	+	++++	+	++++	++++				
<b>Percentage sorted</b>	100	100	100	100	100	100	100	100	100	100	100	100				
<b>Percentage sorted</b>	100	100	100	100	100	100	100	100	100	100	30	10				
<b>Cereals</b>																
<i>Hordeum vulgare</i> L. <i>sl</i> (hulled grain)				hulled barley	5	2	-	2	2	-	-	5	18	15	10	9
<i>H. vulgare</i> L. <i>sl</i> (germinated hulled grain)				hulled barley	-	-	-	-	-	-	-	-	-	2	-	-
<i>Hordeum vulgare</i> L. <i>sl</i> (grain)				barley	-	3	-	5	11	3	-	3	8	6	23	16
<i>H. vulgare</i> L. (6-row rachis fragment)				barley	-	-	-	-	-	-	-	-	-	2	-	2
<i>H. vulgare</i> L. <i>sl</i> (rachis fragment)				barley	-	-	-	-	-	1	-	-	-	5	1	1
<i>H. vulgare</i> L. <i>sl</i> (basal rachis fragment)				barley	-	-	-	-	-	-	-	-	-	-	1	-
<i>Triticum</i> sp. (grains)				wheat	3	-	-	-	-	1	-	-	-	-	-	20
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. (grains)				emmer wheat	-	1	-	-	-	-	-	-	-	-	-	-
<i>T. dicoccum</i> Schübl. (spikelet fork)				emmer wheat	-	-	-	-	-	-	-	-	2	-	17	2
<i>T. dicoccum</i> Schübl. (glume base)				emmer wheat	3	1	-	-	-	-	-	-	2	-	19	est.8
<i>Triticum spelta</i> L. (spikelet fork)				spelt wheat	-	-	-	2	-	-	-	-	-	-	-	-
<i>Triticum spelta</i> L. (glume bases)				spelt wheat	2	-	-	26	425	3	5	56	50	53	est.55	27
<i>T. dicoccum/spelta</i> (grain)				emmer/spelt wheat	4	9	-	280	54	1	48	24	18	22	64	18
<i>T. dicoccum/spelta</i> (germinated grain)				emmer/spelt wheat	-	-	-	-	-	1	-	-	6	3	-	7
<i>T. dicoccum/spelta</i> (glume bases)				emmer/spelt wheat	7	10	-	47	15	14	34	260	61	570	est.242	est.1174
<i>T. dicoccum/spelta</i> (basal rachis fragment)				emmer/spelt wheat	-	1	-	5	3	2	4	12	3	8	2	22
<i>Triticum</i> cf. <i>aestivum</i> L. <i>sl</i> (grain)				bread wheat	-	-	-	1	-	-	1	3	-	-	-	-
Cereal indet. (grains)				cereal	20	7	cf.1	20	25	16	21	11	30	22	20	42
Cereal indet. (est. whole grains from frags.)				cereal	15	7	-	10	50	10	10	5	12	18	30	50
Cereal indet. (detached germinated coleoptile)				cereal	-	-	-	1	-	-	-	3	-	24	est.16	est.10
Cereal indet. (culm node)				cereal	1	-	-	-	-	-	3	-	-	1	8	-
<b>Other Crop Species</b>																
<i>Corylus avellana</i> L. (fragments)				hazel	3	-	-	3	3	1	-	-	-	1	11	10
<i>Vicia faba</i> var. <i>minor</i> L.				broad bean	cf.1	-	-	-	-	-	-	-	-	-	-	-
<i>Vicia</i> sp. L./ <i>Pisum sativum</i> L.				pea/bean/large vetch	-	-	-	-	-	-	2	-	-	1	2	-
<i>Linum usitatissimum</i> L.				flax seeds	-	-	-	cf.1m	-	-	cf.2	-	-	-	-	-
<b>Species</b>																
<i>Ranunculus</i> subg. <i>Ranunculus</i> arb				buttercup	-	-	-	-	2	-	-	-	-	-	-	1
<i>Papaver</i> sp.				poppy	-	-	-	-	-	-	-	-	-	1	-	est.10
<i>P. dubium</i> L./ <i>argemone</i> L. (5-ray seed head)				poppy	-	-	-	1	-	-	-	-	-	-	-	-
Chenopodiaceae/Caryophyllaceae				goosefoot/campion	-	-	-	3m	-	-	-	-	-	-	-	-
<i>Chenopodium album</i> L.				fat hen	-	-	-	-	-	-	-	-	-	2	est.66	est.125
<i>Atriplex</i> sp.				oraches	-	-	-	1	1	-	3	2	-	1	-	4
<i>Montia fontana</i> subsp. <i>chondrosperma</i> (Fenzl.)				blinks	-	-	-	-	-	-	1	-	-	1m	est.9	-
<b>Waters</b>																

Sample		8003	8003*	8005	8029	8027	8040	8102	8112	8138	8142	8145	8146
<i>Stellaria media</i> (L.) Vill.	stitchwort	-	-	-	-	-	-	-	-	-	-	est.9	-
<i>Spergula arvensis</i> L.	corn spurrey	-	-	-	-	-	-	-	-	1	cf.2	-	-
<i>Silene</i> sp.	campions	-	-	-	-	-	-	-	-	-	1	-	-
Polygonaceae indet.		-	-	-	2+6m	-	-	2	-	1	5	-	-
<i>Persicaria lapathifolia</i> (L.) Gray/ <i>P. maculosa</i> Gray	persicaria	-	-	-	-	-	-	1	-	-	cf.1	-	2
<i>Persicaria</i> sp./ <i>Polygonum</i> sp.	knot grasses	-	1m	-	-	-	-	-	-	-	-	-	-
<i>Polygonum aviculare</i> L.	knot grass	1	-	-	6	3	-	5	-	-	1	est.12	5
<i>Fallopia convolvulus</i> (L.) Á. Löve	black bindweed	-	-	-	-	1	-	3	1	-	1	2	1
<i>Rumex</i> sp.	docks	-	-	-	3	1m	-	9	-	-	4	est.9	-
<i>Rumex acetosella</i> L.	sheeps sorrel	-	-	-	-	-	-	-	-	1	2	-	-
<i>Rumex</i> cf. <i>crispus</i> L.	curled dock	-	-	-	4	11	-	15	2	2	9	est.16	est.19
<i>Malva</i> sp.	mallow	-	1m	-	-	-	-	3	-	-	-	-	-
<i>Brassica</i> sp.	cabbage, wild mustard	-	-	-	-	-	-	-	-	2	-	-	-
<i>Anagallis</i> sp.	pimpernel	-	-	-	-	-	-	-	-	-	-	est.6	-
Rosaceae (thorns indet.)	bramble, rose etc. thorns	-	-	-	-	-	-	-	-	-	-	1	-
<i>Rubus</i> sp.	brambles	-	-	-	6m	-	-	-	-	-	-	-	-
<i>Potentilla</i> sp./ <i>Fragaria</i> L.	cinquefoil/strawberry	-	-	-	1	-	-	-	-	-	-	est.3	-
<i>Aphanes arvensis</i> L.	parsley piert	-	-	-	-	-	-	-	-	-	2	-	-
<i>Prunus spinosa</i> L.	sloe	-	-	-	-	-	-	-	cf.1	-	-	-	-
<i>Crataegus monogyna</i> Jacq.	hawthorn	-	-	-	1	-	-	-	-	-	-	-	-
<i>Vicia/Lathyrus</i> sp.	vetch/pea	-	3	1	5+1m	23	3	12	4	-	9	est.96	4
cf. <i>Lathyrus</i> sp.	grass-pea	-	-	-	-	-	-	-	1	-	-	3	-
<i>Medicago lupulina</i> L.	black medick	-	-	-	-	1	-	-	-	-	-	est.3	-
<i>Trifolium</i> sp.	clover	-	1	-	4	-	-	7	-	1	6	est.47	1
<i>Linum catharticum</i> L.	fairy flax	-	-	-	-	-	-	-	-	-	-	-	cf.1
<i>Aethusa cynapium</i> L.	fool's parsley	-	-	-	-	cf.1	-	-	-	-	-	-	-
<i>Conium maculatum</i> L.	hemlock	-	-	-	-	1	-	-	-	-	-	-	-
<i>Apium</i> sp.	fool's watercress	-	-	-	-	-	-	-	-	-	cf.1	-	-
<i>Torilis</i> sp.	hedge parsley	-	-	-	1	-	-	-	-	-	-	-	-
<i>Hyoscyamus niger</i> L.	henbane	-	-	-	-	-	-	1	-	-	-	-	-
<i>Lithospermum arvense</i> L.	corn gromwell	-	-	-	133	5	-	323	-	50	159	est.93	6
Lamiaceae indet.	dead-nettles	-	-	-	1	-	-	-	-	-	-	-	-
<i>Mentha</i> sp.	mint	-	-	-	2	-	-	-	-	-	-	-	-
<i>Plantago lanceolata</i> L.	ribwort plantain	-	-	-	4	-	-	-	-	1	-	1	-
<i>Veronica</i> sp. (flat)	speedwell	-	-	-	-	-	-	1	-	-	-	-	-
<i>Odontites vernus</i> (Bellardi) Dumort.	red bartsia	-	-	-	2	-	-	33	8	-	4	est.12	-
<i>Sherardia arvensis</i>	field madder	-	-	-	-	-	-	4	-	16	3	5	-
<i>Galium</i> small indet.	bedstraw	-	-	-	-	-	-	-	1	-	-	-	-
<i>Galium aparine</i> L.	cleavers	-	-	-	-	3	1	1	3	-	-	15	-
<i>Valerianella dentata</i> (L.) Pollich	narrow fruited corn salad	-	-	-	-	-	-	-	-	-	-	-	1
<i>Carduus/Cirsium</i> sp.	thistle	-	-	-	-	-	-	-	-	-	-	-	1
<i>Lapsana communis</i> L.	nipplewort	-	-	-	1	-	-	-	-	-	-	-	-
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	-	-	-	-	-	-	15	1	-	4	est.31	est.10
Cyperaceae indet.	sedges	-	-	-	-	-	-	cf.1	-	-	-	-	-
<i>Eleocharis cf. palustris</i> (L.) Roem. & Schult.	common spike-rush	-	-	-	-	-	-	-	-	-	4	-	-
<i>Carex</i> sp. lenticular	sedge flat seed	-	-	-	-	-	-	1	-	-	-	-	-
<i>Carex</i> sp. trigonous	sedge trigonous seed	-	-	-	1	1	-	-	-	-	-	-	-
Poaceae (mid-large indet.)	medium to large grass seed	-	-	-	4	-	-	1	-	-	18	est.9	-
Poaceae (small indet.)	small grass seed	-	-	-	-	-	-	18	-	3	-	-	est.40
Poaceae (culm node)	grass culm node	1	-	-	-	-	-	-	-	-	8	-	-
Poaceae (culm internode)	grass stem	-	-	-	-	-	-	-	-	-	5	-	-
<i>Lolium</i> cf. <i>perenne</i> L.	rye grass	-	-	-	14	25	-	2	-	37	1	1	2
<i>Poa/Phleum</i> sp.	meadow grass/cats'-tails	-	-	-	-	-	-	-	3	-	6	est.12	est.10

<b>Sample</b>		8003	8003*	8005	8029	8027	8040	8102	8112	8138	8142	8145	8146
<i>Avena</i> sp. (grain)	oat grain	6	8	-	2	7	-	10	10	5	39	4	20
<i>Avena</i> sp. spikelet wild	oak spikelet wild	-	-	-	-	-	-	-	-	-	1	-	-
<i>Avena</i> sp. (floret base wild)	wild oat floret base	-	-	-	-	-	-	-	-	-	12	1	-
<i>Avena</i> sp. (floret base indet.)	oat floret base indet.	-	-	-	-	-	-	-	3	-	7	-	-
<i>Avena</i> sp. (awn)	oat awn	-	-	-	-	-	-	-	5	-	20+	-	est.100 +
<i>Avena</i> / <i>Bromus</i> sp.	oat/brome	-	-	-	-	1	-	1	10	-	2	38	29
<i>Phleum</i> sp.	cat's tails	-	-	-	-	-	-	1	1	1	-	-	-
<i>Bromus</i> sp.	brome	3	1	1	-	1	1	2	12	1	20	7	6
Seed indet. large		-	-	-	1	-	-	-	-	-	1	-	1
Seed indet.		2m	3m	1	5m	-	-	-	-	-	5	-	-
Seed indet. small		-	-	-	-	-	-	-	-	1	-	-	est.20
<b>OTHER</b>													
<i>Bud</i>	twig	-	-	-	-	-	-	1	-	1	-	1	18

Table 8| Charred plant remains from Springhead Sanctuary (spring and early Roman)

Sample	8242	8327	8207	8195	8252	8198	8177	8209	8222	8308	8314	8324	8134	8135	8096	8041	8030	
Phase	E-MRB	E-MRB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	ERB	
Feature type	spring/	spring/	ditch	Pit	Pit	Pit	oven	oven	Pit	Pit	Pit	Pit	Ditch	ditch	Pit	Pit	Pit	
Feature			2174	2227	2227	2266	2289	2289	2318	2954	2954	2958	3089	3089	3114	3311	3349	
Context			2177	2229	2583	2267	2139	2297	2320	2950	2952	5001	3092	3094	3120	3312	3351	
Size (l)	13	14	10	13	10	18	10	8	18	20	20	20	10	10	10	20	20	
Flot size (ml)	200	100	100	225	100	175	100	40	60	250	175	100	60	40	200	40	80	
Rooty matter	4	2	60	22.5	2	5.25	65	16	1.2	12.5	17.5	5	12	4	30	8	16	
Charcoal	++++	++	++++	++++	++++	++	++	+	++++	++++	++++	++++	++++	+	++++	-	++	
Percentage sorted																		
Percentage sorted																		
	% 1 mm	% 0.5 mm																
	10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
	10	5	100	50	100	50	100	100	100	10	10	10	100	100	100	100	100	
<b>Cereals</b>																		
<i>Hordeum vulgare</i> L. <i>sl</i> (hulled grain)		15	-	-	-	3	1	-	-	5	3	5	1	-	1	-	-	
<i>H. vulgare</i> L. <i>sl</i> (germinated hulled grain)		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Hordeum vulgare</i> L. <i>sl</i> (grain)	30	-	-	4	3	15	-	-	-	4	2	-	2	-	1	3	-	
<i>H. vulgare</i> var. <i>nudum</i>	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>H. vulgare</i> L. (6-row rachis fragment)	2	50	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	
<i>H. vulgare</i> L. <i>sl</i> (rachis fragment)	12	38	-	-	2	-	-	-	-	-	-	4	-	-	-	-	-	
<i>H. vulgare</i> L. <i>sl</i> (basal rachis fragment)	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Triticum</i> sp. (grains)	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	4	-	
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. (grains)	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>T. dicoccum</i> Schübl. (spikelet fork)	est 10	8	-	3	-	3	-	-	cf.1	-	2	1	-	-	-	2	-	
<i>T. dicoccum</i> Schübl. (glume base)	-	1	-	-	-	6	-	-	cf.2	-	1	-	-	-	-	4	-	
<i>Triticum spelta</i> L. (spikelet fork)	est 50	6	-	-	-	-	-	1	-	-	-	10	-	387	-	-	5	
<i>Triticum spelta</i> L. (glume bases)	est 2744	1870	202	78	-	364	34	40	15	55	-	925	62	-	2	110	570	
<i>T. dicoccum/spelta</i> (grain)	445	30	72	34	17	43	9	6	20	200	130	4	7	9	14	9	16	
<i>T. dicoccum/spelta</i> (germinated grain)	15	10	-	-	1	9	-	-	-	14	14	14	-	-	-	6	-	
<i>T. dicoccum/spelta</i> (spikelet fork)	2	-	-	-	94	-	-	-	-	-	-	-	-	-	-	-	-	
<i>T. dicoccum/spelta</i> (glume bases)	est 7170	est 800	1750	est 397	160	est 1662	242	127	80	est 170	est 100	-	7	640	-	366	1109	
<i>T. dicoccum/spelta</i> (basal rachis fragment)	est 260	14	5	1	2	7	3	-	7	13	3	10	241	3	2	-	-	
<i>Triticum</i> cf. <i>aestivum</i> L. <i>sl</i> (rachis fragment)	-	-	-	-	-	cf.1	-	1	-	-	-	-	-	-	-	-	-	
<i>T. cf. turgidum</i> L. (tetraploid rachis fragment)	-	-	-	-	-	-	-	-	cf.2	-	-	-	-	-	-	-	-	
Cereal indet. (grains)	-	15	20	41	5	68	12	7	15	50	50	5	8	9	14	5	9	
Cereal indet. (est. whole grains from frags.)	-	15	-	40	5	8	10	7	10	30	40	11	-	10	2	10	-	
Cereal indet. (detached germinated coleoptile)	est 380	21	5	3	4	est 357	3	1	-	-	-	45	15	39	-	6	24	
Cereal indet. (basal rachis fragment)	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cereal indet. (culm node)	4	-	-	-	-	2	1	-	5	10	6	3	2	-	1	-	-	
Cereal indet. (basal culm node)	-	-	-	-	-	-	-	-	1	9	-	-	-	-	-	-	-	
<b>Other Crop Species</b>																		
<i>Pinus pinea</i> L. (cone scale)	-	1f.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Corylus avellana</i> L. (fragments)	9	-	6	-	-	4	3	1	3	14	16	8	3	1	-	-	8	
<i>Prunus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	3m	-	-	-	-	-	
<i>Vitis vinifera</i> L.	-	-	-	-	-	-	-	-	1m	-	-	-	-	-	-	-	-	
<i>Vicia faba</i> var. <i>minor</i> L.	-	-	-	-	-	-	-	-	-	-	-	cf.1	-	-	-	-	-	
<i>Vicia</i> sp./ <i>Pisum sativum</i> L.	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	
<i>Linum usitatissimum</i> L.	-	-	-	-	-	-	-	-	1m	-	-	-	-	-	-	-	-	
<i>Allium cepa</i> L.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	

Sample		8242	8327	8207	8195	8252	8198	8177	8209	8222	8308	8314	8324	8134	8135	8096	8041	8030
<b>Species</b>																		
<i>Ranunculus</i> subg <i>Ranunculus</i> arb	buttercup	-	-	-	-	-	est 8	-	-	5	-	1+3m	12	-	-	-	1	-
<i>Ranunculus flammula</i> L.	spear-leaved buttercup	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Ranunculus sardous</i> Crantz.	hairy buttercup	-	-	-	-	-	-	-	-	-	-	-	-	-	cf.1	-	-	-
<i>Papaver</i> sp.	poppy	-	-	-	-	-	-	-	-	1m	-	-	-	-	-	-	-	-
<i>Fumaria</i> sp.	fumitory	est 10	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Urtica dioica</i> L.	common nettle	-	++m	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Chenopodiaceae/Caryophyllaceae	goosefoot/campion	-	-	1m	-	-	-	-	-	1m	-	-	-	-	-	-	1m	-
<i>Chenopodium album</i> L.	fat hen	-	-	-	-	-	est 12	-	-	-	-	2	-	-	-	-	-	-
<i>Atriplex</i> L.	oraches	est 10	-	3	est 4	1	est 15	-	-	-	est 35	4	-	1	-	-	-	-
<i>Montia fontana</i> subsp. <i>chondrosperma</i> (Fenzl.)	blinks	-	-	-	-	-	est 3	-	-	2	-	-	-	-	-	-	-	-
Waters																		
<i>Stellaria media</i> (L.) Vill.	stitchwort	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Stellaria palustris</i> Retz./ <i>S. graminea</i> L.	marsh/lesser stitchwort	-	-	-	-	-	est 3	-	-	-	-	-	-	-	-	-	-	-
<i>Spergula arvensis</i> L.	corn spurrey	-	-	-	-	-	-	-	-	cf.1	-	-	-	-	-	-	-	-
<i>Agrostemma githago</i> L.	corn cockle	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Silene</i> sp.	campions	1	-	-	-	-	est 6	-	-	2m	-	-	1	2	2	-	-	-
Polygonaceae indet.		-	-	-	-	-	3	-	-	3m	-	-	-	1	-	-	-	-
<i>Persicaria lapathifolia</i> (L.) Gray/ <i>P. maculosa</i> Gray	persicaria	-	-	-	-	-	est 3	-	-	-	-	-	1m	-	-	-	-	-
<i>Persicaria</i> sp./ <i>Polygonum</i> sp.	knot grasses	-	-	-	-	-	est 3	-	-	-	-	-	-	-	-	-	-	-
<i>Polygonum aviculare</i> L.	knot grass	-	2	3	-	1	est 14	-	-	-	est 42	19	2	-	-	-	-	-
<i>Fallopia convolvulus</i> (L.) Á. Löve	black bindweed	-	1	1	-	-	5	1	-	-	3	3	-	-	1	-	-	-
<i>Rumex</i> sp.	docks	est 50	4m	1	2	-	est 24	3	2	8m	est 32	1	1m	7	4	1	-	-
<i>Rumex</i> sp. (bract)	dock bract	-	-	-	-	-	-	1?	-	-	-	-	-	-	-	-	-	-
<i>Rumex acetosella</i> L.	sheeps sorrel	2	-	2	-	-	est 91	2	-	1m	-	1	-	3	-	-	-	1
<i>Rumex</i> cf. <i>crispus</i> L.	curled dock	-	7	5	est 6	1	est 36	1	1	5	12	14	25	19	1	-	1	-
<i>Malva</i> sp.	mallow	-	1m	-	-	1	-	1	-	1+5m	-	-	1m	-	-	-	-	-
Rosaceae (thorns indet.)	bramble, rose etc. thorns	-	-	1	-	-	1	-	1	-	-	-	-	-	-	-	-	-
<i>Rubus</i> sp.	brambles	-	-	-	-	-	-	-	-	4m	-	-	-	-	-	-	-	-
<i>Potentilla</i> sp. L./ <i>Fragaria</i> L.	cinquefoil/strawberry	-	39m	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
<i>Prunus spinosa</i> L.	sloe	1f	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ornithopus perpusillus</i> L.	bird's foot	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Vicia/Lathyrus</i> sp.	vetch/pea	est 73	10	6	10	1	est 20	10	1	13	22	14	8	3	3	-	3	2
cf. <i>Lathyrus</i> sp.	grass-pea	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>Medicago lupulina</i> L.	black medick	est 10	-	-	-	-	1m	1	-	2	est 40	3	est 116	1	-	-	-	-
<i>Trifolium</i> sp.	clover	-	2m	3	est 2	-	est 54	2	-	2	-	est 33	est 20	24	8	-	3	-
Large Apiaceae indet. fennel?	fennel?	-	-	-	-	-	-	-	-	-	-	-	3m	-	-	-	-	-
<i>Chaerophyllum</i> L./ <i>Scandix pecten-veneris</i> L.	golden chervil/shepherd's-needle	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
<i>Aethusa cynapium</i> L.	fool's parsley	-	2+1m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Conium maculatum</i> L.	hemlock	-	3m	-	1	-	-	-	-	1	-	-	3m	-	-	-	-	-
<i>Apium</i> sp.	fool's watercress	-	-	-	-	cf.2	-	-	-	-	-	-	-	-	-	-	-	-
<i>Torilis</i> sp.	hedge parsley	-	18m	-	-	-	-	-	-	3m	-	-	-	-	-	-	-	-
<i>Torilis nodosa</i> (L.) Gaertn.	knotted hedge parsley	-	-	-	-	-	-	-	-	1m	-	-	-	-	-	-	-	-
<i>Hyoscyamus niger</i> L.	henbane	-	1+18m	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Lithospermum arvense</i> L.	corn gromwell	est 204	2	8	12	-	200	5	13	7	137+20 m	156+8 m	2+9m	2	8	79	-	1
Lamiaceae indet.	dead-nettles	-	-	-	-	-	est 6	-	-	1m	-	-	-	-	-	-	-	-
<i>Lamium</i> sp.	dead-nettle	-	1m	-	-	-	-	-	-	1m	-	-	-	-	-	-	-	-
<i>Prunella vulgaris</i> L.	self-heal	-	-	1	-	-	-	-	-	-	-	1	-	3	-	-	-	-
<i>Mentha</i> sp.	mint	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-
<i>Plantago major</i> L.	greater plantain	-	-	-	-	-	est 3	-	-	-	-	-	-	-	-	-	-	cf.1
<i>Plantago lanceolata</i> L.	ribwort plantain	-	1+17m	-	-	-	est 9	1	1	3m	-	-	est 56	5	cf.1	-	-	-
<i>Odontites vernus</i> (Bellardi) Dumort.	red bartsia	1	1	2	-	-	est 10	-	1	-	-	-	-	2	-	-	-	-







Sample		8030	8103	8107	8322	8325	8339	8447	8415	8443	8438	8440	8446	8441	8442	8456	8460	8550	8564	8565
<i>Pisum sativum</i> L.	pea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
<i>Linum usitatissimum</i> L.	flax seeds	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Coriandrum sativum</i> L.	coriander	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-
<b>Species</b>																				
<i>Pteridium aquifolium</i> (L.) Kuhn	bracken	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	1
<i>Ranunculus</i> subg <i>Ranunculus</i> arb	buttercup	-	1	-	4	-	-	-	-	1f.	-	-	-	-	1	-	6m	-	-	-
<i>Ranunculus sardous</i> Crantz.	hairy buttercup	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>P. dubium</i> L. (whole capsule)	poppy	-	-	-	-	-	-	-	-	-	-	-	-	cf.1	-	-	1	-	-	-
<i>Fumaria</i> sp.	fumitory	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Urtica urens</i> L.	small nettle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	cf.1	-	-
Chenopodiaceae/Caryophyllaceae	goosefoot/campion	-	9m	-	-	-	-	10m	1	-	-	-	-	-	1	3	6m	-	-	-
<i>Chenopodium album</i> L.	fat hen	-	-	-	est 10	-	-	-	-	est 6	-	-	-	-	2	12	2	-	-	-
<i>Atriplex</i> sp.	oraches	-	4	-	est 10	-	-	-	2	1	2	-	-	-	-	-	8	-	-	-
<i>Montia fontana</i> subsp. <i>chondrosperma</i> (Fenzl.)	blinks	-	-	-	-	-	-	-	-	-	est 30	-	-	-	-	-	1	-	-	-
Waters																				
<i>Stellaria media</i> (L.) Vill.	stitchwort	-	-	-	est 20	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-
<i>Stellaria holostea</i> L.	greater stitchwort	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
<i>Silene</i> sp.	campions	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	1	1	-	-
Polygonaceae indet.																				
<i>Persicaria lapathifolia</i> (L.) Gray/ <i>P. maculosa</i> Gray	persicaria	-	-	-	6	-	-	-	-	1	-	-	-	-	-	3	9m	3m	-	-
<i>Polygonum aviculare</i> L.	knot grass	-	25+	-	8	-	-	-	1	4	3	1	1	-	1+1?	-	5	-	-	-
			15m																	
<i>Fallopia convolvulus</i> (L.) Á. Löve	black bindweed	-	-	-	6	-	-	-	5	-	-	-	1	-	-	5	-	-	-	-
<i>Rumex</i> sp.	docks	-	5m	-	est 22	-	-	-	1	3	2	-	-	1	1	-	-	1	-	1
<i>Rumex acetosella</i> L.	sheeps sorrel	1	-	-	est 10	-	-	-	4	est 12	-	1	1	5	5	-	1	-	-	-
<i>Rumex cf. crispus</i> L.	curled dock	-	3	1	7	-	4	1	3	15	2	4	23	4	2	3	22	1	-	-
<i>Malva</i> sp.	mallow	-	-	1	est 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thlaspi arvense</i> L.	field penny-cress	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1m	-	-	-
<i>Brassica</i> sp.	cabbage, wild mustard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-
<i>Reseda</i> sp.	wild mignonette/weld	-	-	-	-	-	-	-	-	cf.1	-	-	1	-	-	-	-	-	-	-
<i>Anagallis</i> sp.	pimpernel	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Rosaceae (thorns indet.)	bramble, rose etc. thorns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
<i>Rubus</i> sp.	brambles	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	1	-	-
<i>Potentilla / Fragaria</i> sp.	cinquefoil/strawberry	-	-	-	est 10	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Aphanes arvensis</i> L.	parsley piert	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Prunus spinosa</i> L.	sloe	-	-	-	-	-	-	-	-	-	-	-	-	2f+cf3	-	-	-	-	-	-
<i>Crataegus monogyna/Prunus spinosa</i> (thorns indet.)	hawthorn/sloe (thorns)	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	cf.1	-	-	-
<i>Ornithopus perpusillus</i> L.	bird's foot	-	-	?1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vicia/Lathyrus</i> sp.	vetch/pea	2	6	-	33	-	1	3	7	22	5	6	16	15	5	-	25	4	-	-
<i>Vicia/Lathyrus</i> sp. (immature pod)	vetch/pea	-	-	-	-	-	-	-	-	1	-	-	-	-	-	10	-	-	-	-
<i>Medicago lupulina</i> L.	black medick	-	-	-	1	-	5	1	3	2	-	-	-	3	-	1	-	-	-	-
<i>Trifolium</i> sp.	clover	-	5+1m	-	est 24	-	-	2	3	est 13	1	1	-	10	8	-	3	-	-	-
Large Apiaceae indet. fennel?	fennel?	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Aethusa cynapium</i> L.	fool's parsley	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-	-
<i>Conium maculatum</i> L.	hemlock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Torilis</i> sp.	hedge parsley	-	16m	-	1	-	-	-	3	-	-	-	-	-	-	-	-	1	-	cf.1
<i>Lithospermum arvense</i> L.	corn gromwell	1	50	-	44	-	2	2+	14	45+	65	-	27	9	2	-	85+	1m	+	30
								16m		5m							8m			
Lamiaceae indet.	dead-nettles	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Lamium</i> sp.	dead-nettle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1m	-	-	-
<i>Prunella vulgaris</i> L.	self-heal	-	-	-	-	-	-	-	1	est 2	1	-	-	-	-	-	-	-	-	-
cf. <i>Clinopodium acinos</i> (L.) Kuntze	basil thyme	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-

Sample	8030	8103	8107	8322	8325	8339	8447	8415	8443	8438	8440	8446	8441	8442	8456	8460	8550	8564	8565	
<i>Plantago major</i> L.	greater plantain	cf.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Plantago lanceolata</i> L.	ribwort plantain	-	-	2	-	-	-	-	1	-	-	-	-	-	2	1m	-	-	-	
<i>Odontites vernus</i> (Bellardi) Dumort.	red bartisia	-	1	-	-	-	-	2	est	2	-	-	1	-	1	3	-	-	-	
<i>Sherardia arvensis</i> L.	field madder	-	-	-	14+1 m	-	-	-	3	5	3	-	2	-	1	-	-	-	-	
<i>Galium</i> sp. small indet.	goosegrass	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Galium aparine</i> L.	cleavers	-	-	-	est 10	-	-	-	7	2	-	30	-	cf.2	-	2	-	-	1	
<i>Sambucus nigra</i> L.	elder	-	-	-	-	-	-	-	-	-	1	-	-	-	-	100+ m	-	-	-	
<i>Carduus/Cirsium</i> sp.	thistle	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	
<i>Centaurea</i> sp.	knapweed	-	-	-	cf.15	-	-	-	-	-	-	6	-	-	-	-	-	-	-	
<i>Lapsana communis</i> L.	nipplewort	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
<i>Anthemis cotula</i> L. (seed head)	stinking chamomile	-	-	-	-	-	-	-	-	cf.1	-	-	-	-	-	-	-	-	-	
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	-	8	-	-	-	cf.1	2	est 6	-	-	-	1	2	3	1	-	-	1	
Monocot root stems	grass/sedge stems	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	
<i>Juncus</i> sp. (capsule)	rush	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Eleocharis cf. palustris</i> (L.) Roem. & Schult.	common spike-rush	-	-	-	1	-	-	1	est 3	-	-	-	-	4	-	-	-	+	-	
<i>Carex</i> sp. lenticular	sedge flat seed	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	
<i>Carex</i> sp. trigonous	sedge trigonous seed	-	-	-	-	-	-	2	-	-	-	-	1	-	1	1m	2	-	1	
POACEAE (mid-large indet.)	medium to large grass seed	-	-	-	-	2	-	3	3	-	-	-	1	-	-	-	-	-	-	
POACEAE (small indet.)	small grass seed	1	-	-	est 40	-	-	1	est 2	est 30	-	1	1	-	-	-	-	-	-	
POACEAE (culm node)	grass culm node	-	-	-	-	-	-	-	1	1	-	-	-	-	-	1	-	-	2	
POACEAE (culm internode)	grass stem	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	
<i>Lolium perenne</i> L.	rye grass	10	2m	2	est 75	-	25	1	8	2	1	3	3	15	-	-	7	est 82	+	19
<i>Poa</i> sp.	meadow grass	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	
<i>Poa/Phleum</i> sp.	meadow grass/cats'-tails	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
<i>Arrhenatherum elatius</i> (L.) P. Beauv.	false oat-grass	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	
Ex J. & C. Presl. var. <i>bulbosum</i> (Willd.)																				
<i>Avena</i> sp. (grain)	oat grain	-	1+1m	-	8	-	6	-	1	8	2	-	12	1	-	20	11	-	+	9
<i>Avena</i> sp. (floret base wild)	wild oat floret base	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	
<i>Avena/Bromus</i> sp.	oat/brome	-	-	-	-	-	-	3	-	2	33	-	-	1	-	5	-	-	-	
<i>Phleum</i> sp.	cat's tails	-	-	-	-	-	-	-	est 14	1	-	-	1	1	-	-	-	-	-	
<i>Bromus</i> sp.	brome	-	-	-	1	-	1	-	5	17	-	2	1	-	1	4	-	-	1	
<i>Anisantha sterilis</i> (L.) Nevski	barren brome	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
<i>Danthonia decumbens</i> (L.) DC.	heath grass	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Seed indet. large		-	2m	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	
Seed indet.		-	3m	-	-	-	-	-	1m	-	-	-	-	-	-	10m	-	-	-	
Seed indet. small		-	1m	-	-	-	est 10	2	1	est 40	-	est 40	-	-	-	2+4m	-	-	est 20	
Mineralised nodules (large)		-	-	-	-	-	-	19	-	-	-	2	-	-	-	4	-	-	-	
Mineralised nodules (small)		-	-	-	-	-	-	-	5m	-	-	6	-	-	-	1	-	-	-	
<b>OTHER</b>																				
<i>Bud</i>		-	-	-	-	-	-	-	1	1	-	2	-	-	-	-	1	+	9	



Sample		8566	8567	8568	8587	8590	8591	8586	8621	8727	8317	8387	8405	8437	8409	8448
<b>Other Crop Species</b>																
<i>Corylus avellana</i> L. (fragments)	hazel	-	+	4	6	3	3	-	-	-	11	18	8	7	-	2
<i>Vicia</i> sp./ <i>Pisum sativum</i> L.	pea/bean/large vetch	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
<i>Pisum sativum</i> L.	pea	-	-	-	-	-	cf.4	-	-	-	-	-	-	-	-	-
<i>Coriandrum sativum</i> L.	coriander	-	-	-	-	-	-	-	-	-	-	-	cf.1	-	-	-
<b>Species</b>																
<i>Pteridium aquifolium</i> (L.) Kuhn	bracken	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
<i>Ranunculus</i> subg <i>Ranunculus</i> arb	buttercup	-	+	7m	-	9	-	-	-	-	-	4	2	-	-	-
<i>Papaver</i> sp.	poppy	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Fumaria</i> sp.	fumitory	-	-	-	-	-	-	1	-	-	-	-	-	1	-	1
Chenopodiaceae/Caryophyllaceae	goosefoot/campion	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
<i>Chenopodium album</i> L.	fat hen	-	-	-	2	105	-	-	-	-	-	-	-	-	-	-
<i>Atriplex</i> sp.	oraches	-	+	3m	-	2	-	-	1	-	-	-	cf.8	1	3	-
Caryophyllaceae	stichworts	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Stellaria media</i> (L.) Vill.	stichwort	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Stellaria holostea</i> L.	greater stichwort	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Scleranthus annuus</i> L.	annual knawel	-	cf.+	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Agrostemma githago</i> L.	corn cockle	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1
<i>Silene</i> sp.	campions	cf.5	-	-	-	-	-	-	-	-	-	-	1	2	-	-
Polygonaceae indet.		-	-	10m	-	-	-	-	1	-	1	-	-	-	-	-
<i>Polygonum aviculare</i> L.	knot grass	1	+	1+2m	-	3	2	-	-	-	-	-	1	-	1	-
<i>Fallopia convolvulus</i> (L.) Á. Löve	black bindweed	-	-	2m	-	-	-	-	-	-	-	2	-	-	-	1
<i>Rumex</i> sp.	docks	3	-	1	-	5	-	-	-	-	1	2	12	-	-	-
<i>Rumex</i> sp. (bract)	dock bract	-	-	13m	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rumex acetosella</i> L.	sheeps sorrel	1	-	4m	-	2	-	-	-	est 50	-	est 20	est 71	-	-	-
<i>Rumex cf. crispus</i> L.	curled dock	-	+	-	est 16	18	4	7	4	est 250	3	6	est 35	4	8	est 22
<i>Malva</i> sp.	mallow	-	-	-	-	-	-	-	-	-	-	4	2	-	-	-
Rosaceae (thorns indet.)	bramble, rose etc. thorns	9	+	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus</i> sp.	brambles	-	-	-	-	2	1	-	-	-	-	1	-	-	-	-
<i>Prunus spinosa</i> L.	sloe	-	-	-	-	-	-	-	-	-	-	2+5f	1	-	-	-
<i>Vicia/Lathyrus</i> sp.	vetch/pea	-	-	12	8	21	17	4	8	1	-	-	18	20	3	2
<i>Medicago lupulina</i> L.	black medick	-	-	-	1	1	4	-	-	-	1	-	13	2	-	-
<i>Trifolium</i> sp.	clover	-	-	-	1	2	-	-	2	est 150	-	est 36	est 21	-	-	-
<i>Aethusa cynapium</i> L.	fool's parsley	-	cf.+	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Conium maculatum</i> L.	hemlock	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
<i>Torilis nodosa</i> (L.) Gaertn.	knotted hedge parsley	-	-	-	cf.1	-	-	-	-	-	-	-	-	-	-	-
<i>Lithospermum arvense</i> L.	corn gromwell	8	+	12	6	139	21	2	10	-	12	1	7	-	4	3
<i>Lithospermum arvense</i> L. (mineralised)	corn gromwell	-	-	7	1	-	-	-	-	-	-	-	-	-	-	-
<i>Lithospermum arvense</i> L. (seedhead)	corn gromwell	-	-	-	-	-	1f.	-	-	-	-	-	-	-	-	-
Lamiaceae indet.	dead-nettles	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Plantago lanceolata</i> L.	ribwort plantain	-	-	1m	1	1	-	-	-	-	-	-	-	-	-	-
<i>Veronica hederifolia</i> L.	ivy-leaved speedwell	-	-	-	-	cf.1	-	-	-	-	-	-	-	-	-	-
<i>Odontites vernus</i> (Bellardi) Dumort.	red bartsia	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
<i>Sherardia arvensis</i> L.	field madder	1	-	-	-	-	3	-	1	-	1	-	2	-	-	-
<i>Galium aparine</i> L.	cleavers	-	-	-	2	-	-	-	2	-	-	-	1	-	-	-
<i>Sambucus nigra</i> L.	elder	-	+	-	-	7	-	-	-	-	-	1	-	-	-	1
<i>Carduus/Cirsium</i> sp.	thistle	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Centaurea</i> sp.	knapweed	-	-	1m	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lapsana communis</i> L.	nipplewort	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	-	-	-	1	-	-	-	-	est 650	-	-	1	-	-	1
<i>Triglochin palustris</i> L.	arrowgrass	-	-	3m	-	-	-	-	-	-	-	-	-	-	-	-
<i>Juncus</i> sp. (capsule)	rush	-	-	cf.1m	-	-	-	-	-	-	-	-	-	-	-	-
<i>Eleocharis cf. palustris</i> (L.) Roem. & Schult.	common spike-rush	2	+	-	-	4	-	-	-	-	-	-	4	-	-	-

Sample		8566	8567	8568	8587	8590	8591	8586	8621	8727	8317	8387	8405	8437	8409	8448
<i>Schoenoplectus lacustris</i> (L.) Palla	bristle club-rush	-	+	-	-	1	-	-	-	-	-	-	1	-	-	-
<i>Carex</i> sp. lenticular	sedge flat seed	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-
<i>Carex</i> sp. triganous	sedge trigonous seed	-	-	-	-	2	-	-	-	-	-	-	9	-	-	-
POACEAE (mid-large indet.)	medium to large grass seed	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
POACEAE (small indet.)	small grass seed	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-
POACEAE (culm node)	grass culm node	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lolium perenne</i> L.	rye grass	39	+	2	2	33	5	est 247	7	est 5900	24	est 22	10	12	est 185	est 180
<i>Lolium perenne</i> L. (germinated)	rye grass	-	-	-	-	-	-	-	-	est 200	-	-	-	-	-	-
<i>Poa/Phleum</i> sp.	meadow grass/cats'-tails	-	-	-	20	-	-	-	-	-	-	-	1	-	-	-
<i>Avena</i> sp. (grain)	oat grain	-	-	3	12	5	10	est 15	4	est 370	8	2	-	3	35	est 296
<i>Avena</i> sp. (germinated grain)	oat grain germinated	-	-	-	-	-	-	-	-	10	-	-	-	-	7	6
<i>Avena</i> sp. spikelet wild	oak spikelet wild	-	-	-	-	-	-	-	-	1	-	-	-	-	5	8
<i>Avena</i> sp. spikelet indet	oat spikelet indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
<i>Avena</i> sp. (floret base wild)	wild oat floret base	-	-	-	-	-	-	-	-	3	-	-	-	-	-	1
<i>Avena/Bromus</i> sp.	oat/brome	-	-	-	3	-	-	-	-	-	-	3	-	-	-	-
<i>Bromus</i> sp.	brome	-	-	-	3	-	3	1	2	5	-	-	-	-	1	-
Seed indet.		-	-	4m	1m	-	-	-	-	-	-	est 12	-	-	-	-
Seed indet. small		est 10	-	-	est 40	est 40	-	1m	-	-	est 20	-	est 50	est 10	-	-
Mineralised nodules (small)		-	-	2m	-	-	-	-	-	-	-	-	-	-	-	-
<b>OTHER</b>																
<i>Bud</i>		-	-	1	-	-	-	-	-	-	1	-	1+catkin	-	-	-

Table 84 Charred plant remains from Springhead Sanctuary (early and mid-Roman)

Sample	8546	8511	8555	8554	8556	8439	8179	8188	8200	8202	8189	8290	8292	8291	8216	8237 A	8237 B	8223	
Phase	ERB	ERB	ERB	ERB	ERB	RB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	
Feature type	Layer	Spread	Layer	Layer	Layer	Post-hole	Ditch	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit	
Feature						5541	2171	2214	2214	2214	2236	2236	2236	2236	2359	2389	2389	2414	
Context	5602	5826	6022	6035	6132	5542	2172	2219	2263	2264	2239	2715	2716	2718	2361	2449	2449	2391	
Size (l)	20	10	20	15	10	9	7	10	10	30	20	10	20	20	10	10	10	8	
Flot size (ml)	100	250	450	60	200	30	25	200	400	150	125	250	750	120	50	1700	350	30	
Rooty matter	15	175	382.5	6	170	1	1.75	10	20	7.5	30	2.5	7.5	2.4	1		35	3	
Charcoal	+	++++	++++	++	+	-	++	++++	++++	++++	++++	++++	++++	++++	++		++++	+	
Percentage sorted	100	100	10		100	100	100	100	25	100	100	100	100	100	100	100	100	100	
Percentage sorted	10	10	10		10	100	100	50	10	10	50	50	10	100	100	5	100	100	
<b>Cereals</b>																			
<i>Hordeum vulgare</i> L. <i>sl</i> (hulled grain)	4	-	4	10	1	-	-	-	-	-	-	3	-	3	-	-	-	-	
<i>Hordeum vulgare</i> L. <i>sl</i> (grain)	4	-	5	4	-	5	7	3	3	2	18	15	30	8	-	1	7	2	
<i>H. vulgare</i> L. (6-row rachis fragment)	2	-	-	2	-	-	-	-	-	-	1	-	-	1	2	-	-	-	
<i>H. vulgare</i> L. <i>sl</i> (rachis fragment)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>H. vulgare</i> L. <i>sl</i> (basal rachis fragment)	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
<i>Triticum</i> sp. (grains)	-	-	-	-	-	5	-	-	-	-	1	-	-	-	-	-	-	6	
<i>T. dicoccum</i> Schübl. (spikelet fork)	-	-	-	-	-	-	-	1	-	2	-	-	3	-	-	-	cf.1	-	
<i>T. dicoccum</i> Schübl. (glume base)	-	-	-	-	-	-	-	-	-	1	-	-	3	-	-	-	-	cf.1	
<i>Triticum spelta</i> L. (spikelet fork)	4	-	1	-	-	-	-	5	20	4	-	-	3	-	-	-	-	-	
<i>Triticum spelta</i> L. (glume bases)	575	20	est.65	75	25	10	55	est.47	115	102	41	20	147	50	50	-	11	10	
<i>T. dicoccum/spelta</i> (grain)	21	100	124	18	17	4	19	83	545	47+1	14	24	52	22	6	1	12	-	
<i>T. dicoccum/spelta</i> (germinated grain)	4	2	-	1	1	-	-	2	2	cf.1	-	-	1	3	1	-	-	-	
<i>T. dicoccum/spelta</i> (glume bases)	est.1550	est.145	est.79	208	est.70	71	208	-	est.250	est.118	est.180	est.64	est.1460	208	210	est.20	2	20	
<i>T. dicoccum/spelta</i> (basal rachis fragment)	1	1	3	2	-	1	4	est.8	15	-	3	4	6	2	3	-	2	1	
<i>Triticum</i> cf. <i>aestivum</i> L. <i>sl</i> (grain)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
Cereal indet. (grains)	10	18	80	14	16	8	21	25	-	8	23	6	23	5	7	3	7	-	
Cereal indet. (est. whole grains from frags.)	15	30	40	18	9	12	30	42	-	4	20	9	30	25	8	-	-	4	
Cereal indet. (detached germinated coleoptile)	est.131	-	-	-	-	1	4	-	-	3	est.9	2	-	6	10	-	-	-	
Cereal indet. (basal rachis fragment)	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cereal indet. (culm node)	1	3	-	3	-	-	-	est.13	28	10+1m	-	-	1	-	3	-	-	-	
Cereal indet. (basal culm node)	-	-	-	-	-	-	-	-	21	-	-	-	1	-	-	-	-	-	
<b>Other Crop Species</b>																			
<i>Corylus avellana</i> L. (fragments)	4	6	1	4	1	-	-	-	-	3	2	2	-	3	-	-	1	2	
<i>Ficus carica</i> L.	-	-	-	-	-	-	-	-	-	1m	-	-	-	6m	-	-	-	-	
<i>Malus sylvestris</i> (L.) Mill./ <i>domestica</i> Borkh.	-	-	-	-	-	-	-	-	-	-	-	-	-	cf.6m	-	-	-	-	
<i>Prunus</i> sp.	-	-	-	-	-	-	-	cf.1	1	37m	-	-	-	24m	-	1m	4m	-	
<i>Vicia faba</i> var. <i>minor</i> L.	-	-	-	-	-	-	-	-	-	1m	-	-	-	-	-	-	-	-	
<i>Lens culinaris</i> Medik.	-	-	cf.1	-	-	-	-	-	-	1m	-	-	-	-	-	-	-	-	
<i>Pisum sativum</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	
<i>Linum usitatissimum</i> L.	-	-	-	-	-	-	-	-	-	cf.2m	-	-	-	-	-	-	-	-	
<i>Linum usitatissimum</i> L. (capsule fragment)	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
<b>Species</b>																			
<i>Ranunculus</i> subg <i>Ranunculus</i> arb	-	-	-	1	1m	-	-	-	-	1	-	8m	1m	5m	-	-	-	-	
<i>Papaver</i> sp.	-	-	-	-	-	-	-	est.2	-	-	-	-	-	cf.1	-	-	-	-	
<i>P. dubium</i> L. (whole capsule)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Fumaria</i> sp.	-	-	1	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	
<i>Urtica urens</i> L.	-	-	-	-	-	-	-	-	-	-	-	1m	-	2m	-	-	-	-	
Chenopodiaceae/Caryophyllaceae	-	-	-	1	1m	-	-	-	-	-	-	1	-	-	-	-	-	-	







Table 85 Charred plant remains from Springhead Sanctuary (mid-Roman)

Sample	8232	8276	8261	8288	8306	8302	8318	8038	8381	8408	8476	8569	8528	8541	8524
Phase	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB	MRB
Feature type	Pit	Quarry pit	Well	Layer T2/B3	Layer	Ritual shaft	Ritual shaft	Pit	Pot oven	Pot oven	Pit	Ditch	Ditch	Ditch	Hearth
Feature	2420	2500	2706	2761	2761	2856	2856	3228	5367	5405	5900	5934	5935	5935	5989
Context	2422	2498	2709	2675	2945	2855	2994	3418	5366	5411	5902	5951	5945	5951	5975
Size (l)	20	14	14	20	20	20	5	20	10	20	20	20	1	10	10
Flot size (ml)	250	170	120	125	90	250	500	175	80	130	175	250	40	175	100
Rooty matter	2.5	1.7	12	10	9	5	15	52.5	4	43	35	62.5	4	3.5	50
Charcoal	++++	++++	++	++	++++	++++	++	++++	+	+	+	++++	+	++++	+
Percentage sorted	100	100	100	25	100	50	5	100	100	100	100	100	100	100	100
Percentage sorted	10	?	50	25	10	10	5	30	25	100	100	10	100	10	100
Cereals															
<i>Hordeum vulgare</i> L. <i>sl</i> (hulled grain)						3		5	4	16	2	5		2	15
<i>H. vulgare</i> L. <i>sl</i> (germinated hulled grain)				3		cf.1	5		1						
<i>Hordeum vulgare</i> L. <i>sl</i> (grain)	1		5	13		12						15		10	1
<i>H. vulgare</i> L. (6-row twisted grain)				1											
<i>H. vulgare</i> L. (6-row rachis fragment)		1				3	16		2					1	
<i>H. vulgare</i> L. <i>sl</i> (rachis fragment)							1					1			
<i>H. vulgare</i> L. <i>sl</i> (basal rachis fragment)							4								
<i>Triticum</i> sp. L. (grains)						11				2	1		1	2	3
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. (grains)					2	2									
<i>T. dicoccum</i> Schübl. (spikelet fork)			cf.3					8							
<i>T. dicoccum</i> Schübl. (glume base)			cf.10			1		5							
<i>Triticum spelta</i> L. (single grain spikelet)							5								
<i>Triticum spelta</i> L. (spikelet fork)	2					est.14	est.611	2	3	2			1		1
<i>Triticum spelta</i> L. (glume bases)	20	50		est.4323	782	est.841	est.25000	28	240	31	115	37	71		60
<i>T. dicoccum/spelta</i> (grain)	143	53	10	63	45		150	120	10	5	355	60	1	6	5
<i>T. dicoccum/spelta</i> (germinated grain)			1	75	11	13	150		20			2	cf.1	7	cf.5
<i>T. dicoccum/spelta</i> (glume bases)	est.230	150	est.2538	est.5960	est.1360	est.1900	est.20000	est.701	est.680	est.50	60		est.80	est.1305	est.260
<i>T. dicoccum/spelta</i> (basal rachis fragment)	5	11			2	est.40	17	13	3			4	1		3
<i>Triticum</i> cf. <i>aestivum</i> L. <i>sl</i> (grain)		3			cf.1					10					
<i>Triticum</i> cf. <i>aestivum</i> L. <i>sl</i> (rachis fragment)								2							
Cereal indet. (grains)	10	23	10	37	12	34		47	10	10	14	40	3	11	8
Cereal indet. (est. whole grains from frags.)	15		8	20	15			50	15	8	10	10	2	5	7
Cereal indet. (detached germinated coleoptile)	1	8	est.76	est.846	est.65	est.140	est.4033	est.25	est.50			1	3	est.100	
Cereal indet. (rachis fragment)						2						1			
Cereal indet. (basal rachis fragment)	1					2	3								
Cereal indet. (culm node)	4	36		3		6	9	1				6			
Cereal indet. (basal culm node)		4					est.100								
Other Crop Species															
<i>Pinus pinea</i> L. (cone scale)		1													
<i>Pinus pinea</i> L. (cone scale)		1													
<i>Corylus avellana</i> L. (fragments)		7	1	2	12	1		10	2		4	4		3	5
<i>Prunus</i> sp.	4m				1	1+4f.	1m	cf.1							
<i>Vitis vinifera</i> L.	1m														
<i>Vicia faba</i> var. <i>minor</i> L.	2														
<i>Lens culinaris</i> Medik.	cf.3m					cf.1									
<i>Vicia</i> sp./ <i>Pisum sativum</i>						1			1						

Sample		8232	8276	8261	8288	8306	8302	8318	8038	8381	8408	8476	8569	8528	8541	8524
<i>Pisum sativum</i> L.	pea	-	-	cf.1	-	-	-	-	-	-	-	-	-	-	-	-
<b>Species</b>																
<i>Peridium aquifolium</i> (L.) Kuhn	bracken	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Ranunculus</i> sp. subg <i>Ranunculus</i> arb	buttercup	-	-	-	-	-	8+ 10m	4m	5	-	1	-	1	-	-	-
Chenopodiaceae/Caryophyllaceae	goosefoot/campion	-	2m	-	-	-	-	-	-	est.12	-	-	-	-	1	1
<i>Chenopodium album</i> L.	fat hen	-	-	est.4	1	1	2	-	est.	-	-	1	-	-	-	-
									150							
<i>Atriplex</i> sp.	oraches	-	5	-	2	-	-	-	1	-	2	-	-	-	1	-
<i>Stellaria media</i> (L.) Vill.	stitchwort	-	-	-	-	-	-	-	1	-	est.30	-	-	-	-	-
<i>Stellaria palustris</i> Retz./ <i>S. graminea</i> L.	marsh/lesser stitchwort	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Agrostemma githago</i> L.	corn cockle	-	-	-	-	-	-	1	-	6	-	-	-	-	-	-
<i>Silene</i> sp.	campions	-	5	-	2	1	1+1m	-	-	-	-	-	-	-	-	-
Polygonaceae indet.							3m		1	1				1		
<i>Polygonum aviculare</i> L.	knot grass	4	-	-	1	1	5	-	4	2	-	-	4	1	-	-
<i>Fallopia convolvulus</i> (L.) Á. Löve	black bindweed	-	-	-	6	1	2	-	1	1	-	-	-	-	1	-
<i>Rumex</i> sp.	docks	4+5m	8+5m	3	1	-	est.26	5m	1	est.22	-	-	2m	-	-	2
<i>Rumex</i> sp. (bract)	dock bract	-	-	-	-	-	1m	-	-	-	-	-	-	-	-	-
<i>Rumex acetosella</i> L.	sheeps sorrel	-	23	-	-	-	3	-	est.9	-	est.27	-	-	cf.1	-	1
<i>Rumex</i> cf. <i>crispus</i> L.	curled dock	12	9	5	3	3	9	est.92	est.	est.40	10	1	13	2	9	1
									100							
<i>Malva</i> sp.	mallow	1	-	-	1m	-	-	-	4	-	-	-	-	25	1	-
<i>Bryonia dioica</i> Jacq.	white bryony	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Raphanus raphanistrum</i> L. (capsule)	runch	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Rubus</i> sp.	brambles	30m	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Potentilla</i> sp./ <i>Fragaria</i>	cinquefoil/strawberry	-	1	-	-	-	-	-	est.12	-	-	-	-	-	-	2
<i>Vicia/Lathyrus</i> sp.	vetch/pea	20	7	2	7	7	7	2	-	-	12	1	49	1	14	3
cf. <i>Lathyrus</i> sp.	grass-pea	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Medicago lupulina</i> L.	black medick	5	28	est.2	-	-	est.47	-	-	-	-	4	-	-	2	3
<i>Trifolium</i> sp.	clover	-	8	-	-	-	est.31	-	est.38	1	1	4	-	-	2	1
<i>Laburnum/Medicago orbicularis</i> ?	laburnum/medick	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Mercurialis annua</i> L.	annual dog mercury	-	-	-	-	-	-	-	cf.1	-	-	-	-	-	-	-
Large Apiaceae indet. fennel?	fennel?	-	-	-	-	-	1m	-	-	-	-	-	-	-	-	-
<i>Conium maculatum</i> L.	hemlock	-	-	-	-	-	-	-	623	-	1	-	-	-	-	-
<i>Apium</i> sp.	fool's watercress	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Petroselinum segetum</i> (L.) W.D.J. Koch	corn parsley	-	-	-	-	-	-	-	cf.1	-	-	-	-	-	-	-
<i>Torilis</i> sp.	hedge parsley	-	-	-	-	-	1m	-	-	-	-	-	-	-	-	-
<i>Torilis nodosa</i> (L.) Gaertn.	knotted hedge parsley	1m	-	-	-	-	1m	-	-	-	-	-	-	-	-	-
<i>Lithospermum arvense</i> L.	corn gromwell	333+	806+	-	-	-	4+	-	53	53	12	1	70	-	6	3
		1m	8m				12m									
<i>Lithospermum arvense</i> L. (mineralised)	corn gromwell	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Lamiaceae indet.	dead-nettles	est.	-	-	-	-	-	-	23	1	-	-	-	-	-	-
		40m														
<i>Lamium</i> sp.	dead-nettle	3m	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Prunella vulgaris</i> L.	self-heal	-	cf.2	-	-	-	-	-	est.9	-	-	-	-	-	-	-
cf. <i>Clinopodium acinos</i> (L.) Kuntze	basil thyme	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-
<i>Mentha</i> sp.	mint	est.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Plantago major</i> L.	greater plantain	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Plantago lanceolata</i> L.	ribwort plantain	6+1m	1	est.2	1	-	4	-	est.39	-	-	6	-	-	1	-
<i>Veronica hederifolia</i> L.	ivy-leaved speedwell	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-
<i>Odontites vernus</i> (Bellardi) Dumort.	red bartsia	-	-	-	-	-	-	-	-	est.24	-	-	1	-	-	-
<i>Sherardia arvensis</i> L.	field madder	-	-	-	-	-	-	-	-	3	-	-	3	-	-	-
<i>Galium</i> sp. small indet.	goosegrass	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-
<i>Galium aparine</i> L.	cleavers	-	-	-	-	-	2+1m	2	1	-	-	4	1	-	-	-

Sample	8232	8276	8261	8288	8306	8302	8318	8038	8381	8408	8476	8569	8528	8541	8524
<i>Sambucus nigra</i> L.	elder	-	-	-	-	19m	-	5	-	-	-	-	1	-	-
<i>Valerianella dentata</i> (L.) Pollich	narrow fruited corn salad	-	2m?	-	-	-	-	-	-	-	-	-	-	-	-
<i>Centaurea</i> L.	knapweed	-	-	-	1	-	-	1	-	-	-	-	-	1	-
<i>Tragopogon pratensis</i> L.	goat's beard	-	-	-	-	-	-	2	-	-	-	-	-	-	-
<i>Anthemis cotula</i> L.	stinking chamomile	-	-	est.7	-	-	-	-	-	-	-	-	-	-	-
<i>Chrysanthemum segetum</i> L.	corn marigold	-	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	-	1	est.7	-	-	2	-	-	-	-	-	-	-	-
<i>Juncus</i> sp. (capsule)	rush	-	cf.1	-	-	3	-	-	-	-	-	-	-	-	-
<i>Eleocharis</i> cf. <i>palustris</i> (L.) Roem. & Schult.	common spike-rush	1+1m	2	-	-	-	-	-	5	1	-	2	-	-	-
<i>Schoenoplectus lacustris</i> (L.) Palla	bristle club-rush	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Carex</i> sp. lenticular	sedge flat seed	-	-	-	-	-	-	est.3	-	-	-	-	-	-	-
POACEAE (mid-large indet.)	medium to large grass seed	-	3	-	-	-	-	2	-	-	-	-	-	-	1
POACEAE (small indet.)	small grass seed	-	-	-	-	2	-	-	1	-	3	-	-	-	-
POACEAE (culm node)	grass culm node	1	1	-	-	2	-	1	-	-	-	-	-	-	-
POACEAE (culm internode)	grass stem	-	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lolium perenne</i> L.	rye grass	est.111	38	est.8	est.73	5	16	est.40+3m	est.24	5	est.23	17	2	4	22
<i>Poa</i> sp..	meadow grass	-	3	-	cf.2	-	-	-	-	-	-	-	-	-	-
<i>Poa/Phleum</i> sp.	meadow grass/cats'-tails	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Arrhenatherum elatius</i> (L.) P. Beauv.	false oat-grass	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Ex J. & C. Presl. var. <i>bulbosum</i> (Willd.)															
<i>Avena/Bromus</i> sp. (germinated)	oat/brome	-	-	-	-	-	-	est.107	-	-	-	-	-	-	-
<i>Avena</i> sp. (grain)	oat grain	2	3	14	6	2	11	62	2	4	15	3	12	-	1
<i>Avena</i> sp. (germinated grain)	oat grain germinated	-	-	-	1	-	-	5	-	-	-	-	-	-	-
<i>Avena</i> sp. spikelet wild	oak spikelet wild	-	-	-	-	-	-	3	-	-	-	-	-	-	-
<i>Avena</i> sp. spikelet indet.	oat spikelet indet.	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Avena</i> sp. (floret base wild)	wild oat floret base	-	-	-	-	-	-	cf.1	-	-	-	-	-	-	-
<i>Avena/Bromus</i> sp.	oat/brome	2	14	10	-	2	3	10	-	2	-	-	-	-	-
<i>Phleum</i> sp.	cat's tails	-	-	est.15	2	-	-	-	est.18	-	-	-	-	-	-
<i>Bromus</i> sp.	brome	1	3+1m	6	-	3	4	10	3	3	4	-	-	-	-
<i>Bromus</i> sp. (germinated grain)	brome grass	-	-	-	-	-	-	2	-	-	-	-	-	-	-
<i>Anisantha sterilis</i> (L.) Nevski	barren brome	1	-	-	-	-	3	-	-	-	-	-	-	-	-
Seed indet. large		5m	-	-	-	-	-	-	-	-	-	-	-	-	-
Seed indet.		-	-	-	-	-	-	-	-	-	-	-	-	est.20	-
Seed indet. small		-	-	-	est.32	-	est.120	-	est.18	est.12	est.20	-	est.30	-	-
Capsule fragment indet.		-	1	-	-	-	-	-	-	-	-	-	-	-	-
Mineralised nodules (large)		1	-	-	-	-	-	-	-	-	-	-	-	-	-
Mineralised nodules (small)		2	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>OTHER</b>															
<i>Bud</i>		-	2	-	1	-	-	-	-	1	38	-	1	-	-



Sample		8268	8388	8350	8445	8592	8545	8473	8474
<i>Chenopodium album</i> L.	fat hen	1	-	-	-	-	-	-	-
<i>Atriplex</i> sp.	oraches	-	-	1	-	-	-	-	est.12
Caryophyllaceae	stichworts	-	1	-	-	-	-	-	-
<i>Stellaria media</i> (L.) Vill.	stichwort	-	-	-	-	-	1	-	-
<i>Agrostemma githago</i> L.	corn cockle	-	-	-	-	1	1	-	-
<i>Silene</i> sp.	campions	-	-	-	-	-	2	-	-
Polygonaceae indet.		1	-	-	-	-	-	-	-
<i>Polygonum aviculare</i> L.	knot grass	5	2	-	-	-	-	-	-
<i>Fallopia convolvulus</i> (L.) Á. Löve	black bindweed	3	1	1	-	-	3	1	2
<i>Rumex</i> sp.	docks	2	-	-	2	-	-	-	1
<i>Rumex</i> cf. <i>crispus</i> L.	curled dock	-	1	26	-	2	est.107	1	4
<i>Brassica</i> sp.	cabbage, wild mustard	-	-	1	-	-	-	-	-
<i>Rubus</i> sp.	brambles	-	-	-	-	-	est.10	-	-
<i>Prunus spinosa</i> L.	sloe	-	1	-	-	-	-	-	-
<i>Vicia/Lathyrus</i> sp.	vetch/pea	1	5	4	4	1	12	-	3
<i>Medicago lupulina</i> L.	black medick	1	1	2	1	-	3	-	-
<i>Trifolium</i> sp.	clover	-	2	-	est.10	-	-	-	-
<i>Lithospermum arvense</i> L.	corn gromwell	307	-	1+2m	2	-	-	2	4+2m
<i>Prunella vulgaris</i> L.	self-heal	-	-	-	1	-	1	-	-
<i>Plantago lanceolata</i> L.	ribwort plantain	-	-	-	-	-	1	-	-
<i>Odontites vernus</i> (Bellardi) Dumort.	red bartsia	-	-	-	-	-	-	-	est.10
<i>Sherardia arvensis</i> L.	field madder	-	-	-	1	-	-	-	-
<i>Galium</i> sp. small indet.	goosegrass	-	-	1	-	-	-	-	-
<i>Galium aparine</i> L.	cleavers	-	-	-	-	-	-	1	-
<i>Centaurea</i> sp.	knapweed	-	-	-	-	-	2	-	-
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	-	-	-	1	-	-	-	est.10
<i>Eleocharis</i> cf. <i>palustris</i> (L.) Roem. & Schult.	common spike-rush	-	-	-	-	-	-	1	-
<i>Lolium perenne</i> L.	rye grass	16	est.16	est.910	10	est.382	est.137	3	5
<i>Arrhenatherum elatius</i> (L.) P. Beauv. Ex J. & C. Presl. var. <i>bulbosum</i> (Willd.)	false oat-grass	-	-	-	-	-	-	-	cf.1
<i>Avena/Bromus</i> sp. (germinated)	oat/brome	-	-	-	-	-	-	-	1
<i>Avena</i> sp. (grain)	oat grain	-	1	33	2	est.394	8	11	7
<i>Avena</i> sp. (germinated grain)	oat grain germinated	-	-	4	-	8	-	-	-
<i>Avena</i> sp. spikelet wild	oak spikelet wild	-	-	-	-	1	-	-	1
<i>Avena</i> sp. (floret base wild)	wild oat floret base	-	1	-	-	6	-	-	-
<i>Avena/Bromus</i> sp.	oat/brome	11	-	66	-	-	-	-	9
<i>Bromus</i> sp.	brome	4	-	30	3	est.42	-	-	3
Seed indet.		-	-	-	1	-	-	-	-
Seed indet. small		3	-	est.60	est.4	-	est.40	est.20	-
Mineralised nodules (large)		-	-	-	-	-	-	-	12
Mineralised nodules (small)		-	-	-	-	-	-	-	2
<b>OTHER</b>									
<i>Bud</i>		-	cf.1	-	-	-	-	-	-



Sample		14154	14189	14159	14181	14180	14193	14190	14191	14202	14238	14275	14305	14310	14315	14294
<i>Beta vulgaris</i> L.	beetroot	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Vitis vinifera</i> L.	grape	-	-	-	-	-	1?fruit	-	-	-	-	-	-	-	-	-
<i>Vicia faba</i> var. <i>minor</i> L.	broad bean	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
<i>Lens culinaris</i> Medik.	lentil	-	-	-	-	-	-	-	-	-	-	-	-	-	cf.1	1
<i>Pisum sativum</i> L.	pea	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Linum usitatissimum</i> L.	flax seeds	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Linum usitatissimum</i> L.	flax capsule fragments	-	-	-	8+	-	-	7	-	-	-	-	-	-	-	-
<b>Species</b>																
<i>Ranunculus</i> subg <i>Ranunculus</i> arb	buttercup	2	-	-	5+1m	-	-	1	2	-	4	1	est.10	2	-	-
<i>Fumaria</i> sp.	fumitory	-	-	-	-	-	-	-	-	-	-	-	est.10	1	-	-
<i>Urtica dioica</i> L.	common nettle	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
Chenopodiaceae/Caryophyllaceae	goosefoot/campion	-	-	-	-	-	-	-	-	-	1	-	-	88m	-	-
<i>Chenopodium ficifolium</i> sm.	fig-leaved goosefoot	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Chenopodium album</i> L.	fat hen	-	-	-	-	-	-	-	-	-	19	4	-	-	-	-
<i>Atriplex</i> sp.	oraches	1	-	-	-	-	-	1	-	-	1	10	1	18	-	-
<i>Montia fontana</i> subsp. <i>chondrosperma</i> (Fenzl.) Waters	blinks	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-
<i>Stellaria media</i> (L.) Vill.	stitchwort	-	-	-	1	-	-	-	-	-	-	3	-	-	-	-
<i>Stellaria palustris</i> Retz./ <i>S. graminea</i> L.	marsh/lesser stitchwort	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-
<i>Spergula arvensis</i> L.	corn spurrey	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-
<i>Agrostemma githago</i> L.	corn cockle	-	-	-	1+cf.2m	-	2	-	-	-	-	1	cf.1	-	-	-
<i>Silene</i> sp.	campions	-	-	-	-	1	-	-	6	-	-	-	est.36	2	est.20	-
Polygonaceae indet.		-	-	1	-	-	-	-	-	-	-	-	-	9m	est.10	-
<i>Polygonum aviculare</i>	knot grass	-	-	-	1	-	-	-	2	-	3	7	-	-	-	-
<i>Fallopia convolvulus</i>	black bindweed	cf.1	-	-	3	-	5	2	2	-	-	2	est.10	3	-	-
<i>Rumex</i> sp.	dock	-	-	-	3+1m	1	2	-	-	-	-	3	-	2	est.30	-
<i>Rumex acetosella</i> L.	sheeps sorrel	2	-	-	-	-	-	-	2	-	-	6	est.20	3	-	-
<i>Rumex</i> cf. <i>crispus</i> L.	curled dock	6	est.80	4	25	8	est.50+	est.107	1	est.4	6	40	est.71	30	11	est.80
<i>Malva</i> sp.	mallow	-	-	-	-	2	-	-	-	-	-	cf.1	-	-	-	-
Brassicaceae ( <i>Lepidium</i> , <i>Barbarea</i> etc.)	small indets 1-2 mm	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-
<i>Reseda</i> sp. L.	wild mignonette/weld	-	-	-	-	-	-	-	-	-	-	-	cf.2	-	-	-
Rosaceae (thorns indet.)	bramble, rose etc. thorns	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-
<i>Rubus</i> sp.	brambles	-	-	-	-	-	-	-	14m	-	-	1	-	7m	-	-
<i>Potentilla</i> sp./ <i>Fragaria</i> L.	cinquefoil/strawberry	-	-	-	-	-	-	-	-	-	-	-	-	5m	-	-
<i>Prunus spinosa</i> L.	sloe	-	-	-	-	-	-	-	-	-	-	-	-	1f.	-	-
<i>Ornithopus perpusillus/sativa?</i>	bird's foot	-	-	-	-	-	-	-	-	-	cf.1	??	-	-	cf.1	-
<i>Vicia/Lathyrus</i> sp.	vetch/pea	8	4	5	18	7	2	4	9	est.3	4	162	26+4 m	26+6m	45	-
cf. <i>Lathyrus</i> sp.	grass-pea	1	-	-	-	-	-	-	1	-	-	1	-	-	3	-
<i>Medicago lupulina</i> L.	black medick	-	-	-	-	2	-	-	1	-	-	4	-	6	-	-
<i>Trifolium</i> sp.	clover	22	1	-	5+1m	2	-	3	17	-	7	32	est.60	1	-	-
Large Apiaceae indet. fennel?	fennel?	-	-	-	-	-	-	-	-	-	-	-	3m	-	-	-
<i>Conium maculatum</i> L.	hemlock	-	-	-	-	-	-	-	-	-	-	-	cf.1m	-	-	-
<i>Apium</i> sp.	fool's watercress	-	-	-	cf.1	-	-	-	-	-	-	-	-	-	-	-
<i>Torilis</i> sp.	hedge parsley	-	-	-	-	-	-	-	1	-	7	1	1m	cf.2	-	-
<i>Hyoscyamus niger</i> L.	henbane	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Lithospermum arvense</i> L.	corn gromwell	14	-	6	1	2	-	-	-	1	2	187	est.182	11	-	-







Sample		14314	14280	14211	14267	14258	14255	14175	14251	14182	14020	14104	14048	14067	14069	14123	14065	
<i>Secale cereale</i> L. (grain)	rye	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cereal indet. (grains)	cereal	5	est.30	est.100+	50	47	est.20	100	63	101	-	105	-	53	35	175	30	
Cereal indet. (est. whole grains from frags.)	cereal	5	-	est.100+	250	200	est.130	130	297	250	-	40	36	174	10	200	120	
Cereal indet. (detached germinated coleoptile)	cereal	-	1	est.5000+	est.46	12	est. 100+	1	est. 2093	7	est.2850	13	-	est.2459	29	-	est.100	
Cereal indet. (rachis fragment)	cereal	-	-	est.10+	-	1	-	-	9	1	-	-	2	-	-	-	-	
Cereal indet. (basal rachis fragment)	cereal	-	13	-	1	-	-	-	3	1	1	1	-	-	-	-	3	
Cereal indet. (culm node)	cereal	-	23	est.10+	3	13	-	1	2	2	est.10	2	2	3	-	-	2	
Cereal indet. (basal culm node)	cereal	-	6	-	-	5	-	-	-	-	3	-	-	-	-	-	1	
<b>Other Crop Species</b>																		
<i>Corylus avellana</i> L. (fragments)	hazel	2	1	-	-	-	-	7	2	31	1	1	4	-	5	8	-	
<i>Malus sylvestris</i> (L.) Mill./domestica Borkh.	apple	-	-	1fruit	-	-	-	-	cf.1	-	-	-	-	-	-	-	-	
<i>Vicia faba</i> var. <i>minor</i> L.	broad bean	-	9	-	-	-	-	cf.2	-	-	-	-	-	-	-	-	-	
<i>Lens culinaris</i> Medik.	lentil	1	cf.1	-	-	-	-	-	-	-	-	cf.1	-	-	-	-	-	
<i>Vicia sp./Pisum sativum</i> L.	pea/bean/large vetch	-	-	-	-	-	-	-	-	-	-	3	cf.3	-	-	-	-	
<i>Pisum sativum</i> L.	pea	-	-	-	-	-	-	cf.1	-	-	-	-	-	-	-	-	-	
<i>Linum usitatissimum</i> L.	flax seeds	-	2	-	-	-	-	-	-	-	-	1m	-	1	-	-	-	
<i>Linum usitatissimum</i> L.	flax capsule fragments	-	-	-	1	1	-	-	1	-	-	-	-	4	1	-	-	
<b>Species</b>																		
<i>Peridium aquifolium</i> (L.) Kuhn	bracken	-	+++	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Ranunculus</i> subg <i>Ranunculus</i> arb	buttercup	1	4	-	2	1	1	-	1	cf.1	1	2+3m	3	-	-	-	-	
<i>Ranunculus sardous</i> Crantz.	hairy buttercup	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Papaver dubium</i> L./ <i>rhoeas</i> L. (7-8 ray seed head)	poppy	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>P. dubium</i> L./ <i>argemone</i> L. (5-ray seed head)	poppy	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>P. cf. dubium</i> L./ <i>argemone</i> L. (capsule)	prickly headed poppy	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Urtica dioica</i> L.	common nettle	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	
<i>Urtica urens</i> L.	small nettle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	
Chenopodiaceae/Caryophyllaceae	goosefoot/campion	-	1	-	1m	2	-	-	-	-	-	-	-	-	-	-	-	
<i>Chenopodium ficifolium</i> sm.	fig-leaved goosefoot	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
<i>Chenopodium album</i> L.	fat hen	-	-	-	-	-	-	-	-	-	-	1	2	-	-	3	-	
<i>Atriplex</i> sp.	oraches	-	10	1	-	1	-	38	-	44	est.20	9m	3	2	-	-	1	
<i>Montia fontana</i> subsp. <i>chondrosperma</i> (Fenzl.) Waters	blinks	-	3	-	-	1	-	-	-	-	-	-	-	-	-	3	-	
<i>Stellaria</i> sp./ <i>Cerastium</i> sp.	stitchwort	-	-	-	-	-	-	1	-	-	-	6m	-	-	-	-	-	
<i>Stellaria media</i> (L.) Vill.	stitchwort	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	
<i>Stellaria palustris</i> Retz./ <i>S. graminea</i> L.	marsh/lesser stitchwort	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Scleranthus annuus</i> L.	annual knawel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Spergula arvensis</i> L.	corn spurrey	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Agrostemma githago</i> L.	corn cockle	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Silene</i> sp.	campions	-	-	-	1	-	-	7	-	-	-	-	-	-	-	-	-	
Polygonaceae indet.		-	-	-	1m	-	-	3	-	6m	-	3m	-	-	-	1	-	
<i>Persicaria lapathifolia</i> (L.) Gray/ <i>P. maculosa</i> Gray	persicaria	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	
<i>Persicaria</i> sp./ <i>Polygonum</i> sp.	knot grasses	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	
<i>Polygonum aviculare</i> L.	knot grass	3	15	-	4	-	-	1	-	12	-	1+7m	2	-	-	1	-	
<i>Fallopia convolvulus</i> (L.) Á. Löve	black bindweed	-	1	est.10+	9	-	1	2	2	5	est.60	2+1m	6	-	-	-	-	
<i>Rumex</i> sp	dock	3	1	-	1m	-	-	2	-	14	-	9+10m	2	est.100	1m	-	-	
<i>Rumex acetosella</i> L.	sheeps sorrel	-	-	-	-	13	-	-	-	cf.2	-	-	-	1	cf.2	3	-	
<i>Rumex</i> cf. <i>crispus</i> L.	curled dock	6	24	est.10+	35	8	est.10	7	13	9	est.10	40	11	109	1	3	13	
<i>Malva</i> sp.	mallow	-	1	-	-	-	-	1	-	-	-	3m	-	-	-	-	-	



Sample		14314	14280	14211	14267	14258	14255	14175	14251	14182	14020	14104	14048	14067	14069	14123	14065
<i>Avena</i> sp. (florete base wild)	wild oat florete base	-	1	est.6	-	1	-	-	-	4	-	-	-	1	1	-	-
<i>Avena</i> sp. (florete base cultivated)	cultivated oat florete base	-	-	-	-	-	-	-	cf.1	-	-	-	-	-	-	-	-
<i>Avena</i> sp. (awn)	oat awn	-	-	est.100+	-	-	-	-	-	+	-	+	-	-	-	-	2
<i>Avena./Bromus</i> sp.	oat/brome	-	-	-	-	5	-	-	7	5	est.403	13	1	17	-	4	10
<i>Phleum</i> sp.	cat's tails	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Bromus</i> sp.	brome	-	2	est.5	2	31	-	1	33	3	est.103	2	-	6	-	1	2
<i>Bromus</i> sp. (germinated grain)	brome grass	-	-	-	-	-	-	-	3	-	2	-	-	-	-	-	-
<i>Anisantha sterilis</i> (L.) Nevski	barren brome	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Seed indet.		-	1	-	3	-	-	-	-	3m	-	-	-	-	-	-	-
Seed indet. small		-	-	-	est.30	2	-	-	est.20	4	-	est.100	-	-	-	-	-
Capsule fragment indet.		-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<b>OTHER</b>																	
Bud		-	5	-	8	-	-	-	-	-	-	1	-	-	-	-	3

Table 89 Charred plant remains from Springhead Roadside Settlement (Properties 11 and 12)

Sample		14066	14078	14077	14128	14070	14074	14033	14144	14057	14016	14058	14151	14277
Property		11	11	11	11	(11)	11.12	12	12	12	12	12	12	-
Phase		MRB	MRB	MRB	MRB	ERB	MRB	ERB	ERB	MRB	MRB	MRB	MRB	ERB
Feature type		Pit	Ditch	Ditch	Oven	R'side Ditch	Quarry pit	Pit	Pit	Pit	Pit	Pit	Sunken feature	Post-hole
Feature		10950	11437	11437	11477	11453	11450	10058	11818	10122	10122	10122	11892	17842
Context		10969	11438	11439	11486	11455	11452	10363	11827	10124	10152	10152	11896	17844
Size (l)		18.00	20.00	20.00	9.00	18.00	20.00	20.00	8.00	10.00	10.00	20.00	20.00	6.00
Flot size (ml)		250.00	90.00	75.00	60.00	150.00	1000.00	100.00	200.00	130.00	40.00	100.00	200.00	450.00
Charcoal		++++	+	+	+	++++	++++	++	+	+	+	++	++++	++++
Percentage sorted	% 1 mm	100	25%	50%	100%	100%	5%-100% weeds etc	100%	33%	100%	100%	100%	33%	10%
Percentage sorted	% 0.5 mm	100%	16.60%	25%	100%	10%	5% of 370ml (18.5ml)	10%	5%	10%	50%	33%	5%	5%
<b>Cereals</b>														
<i>Hordeum vulgare</i> L. <i>sl</i> (hulled grain)	hulled barley	-	-	-	1	16	-	-	2	2	-	-	-	est.10
<i>H. vulgare</i> L. <i>sl</i> (germinated hulled grain)	hulled barley	-	-	-	1	2	8	5	-	1	-	-	-	-
<i>Hordeum vulgare</i> L. <i>sl</i> (grain)	barley	8	-	-	-	-	16	-	-	-	-	2	3	-
<i>H. vulgare</i> L. (6-row rachis fragment)	barley	1	-	2	-	1	5	5	11	2	2	-	est.21	15
<i>H. vulgare</i> L. <i>sl</i> (rachis fragment)	barley	-	4	2	-	7	2	1	4	2	-	-	-	5
<i>Triticum</i> sp. (grains)	wheat	5	6	-	cf.2	-	-	12	-	-	-	-	-	-
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. (grains)	emmer wheat	-	-	-	-	1	-	-	-	cf.1	-	-	-	-
<i>T. dicoccum</i> Schübl. (spikelet fork)	emmer wheat	-	-	1	-	3	-	cf.4	-	-	1	-	5	-
<i>T. dicoccum</i> Schübl. (glume base)	emmer wheat	-	-	cf.20	-	-	-	8	-	1	-	-	-	1
<i>Triticum spelta</i> L. (single grain spikelet)	spelt wheat	-	-	-	-	-	1	-	-	-	-	-	-	2
<i>Triticum spelta</i> L. (two grain spikelet)	spelt wheat	-	-	-	-	-	-	-	-	-	-	-	-	3
<i>Triticum spelta</i> L. (sterile terminal spikelet)	spelt wheat	-	-	-	-	-	-	-	-	-	-	-	-	15
<i>Triticum spelta</i> L. (spikelet fork)	spelt wheat	-	2	1	-	3	16	2	7	3	8	1	4	est.200
<i>Triticum spelta</i> L. (glume bases)	spelt wheat	222	est.7155	est.4370	615	960	est.22725	3977	est.8410	2565	est.850	1319	est.1692	est.17820
<i>T. dicoccum/spelta</i> (grain)	emmer/spelt wheat	27	14	24	5	31	300	25	63	13	37	23	38	-
<i>T. dicoccum/spelta</i> (germinated grain)	emmer/spelt wheat	1	27	22	12	20	430	25	150	23	24	12	200	est.640
<i>T. dicoccum/spelta</i> (spikelet fork)	emmer/spelt wheat	-	-	-	-	-	34	-	-	6	-	-	-	-
<i>T. dicoccum/spelta</i> (glume bases)	emmer/spelt wheat	-	est.4800	est.3880	357	est.1866	est.26600	est.3000	est.14000	est.36940	est.400	est.1422	est.6700	est.17000





Table 90 Summary statistics generated for the samples from Springhead and used in the interpretations for Springhead Sanctuary

Phase	Group	Feature type	Feature	Context	Sample	% germinated grain (total grain)	% sprouts (sprouts & grain)	% sprouts (sprouts & glumes)	Items per litre	Log (10) est. hulled wheat grains/ glumes	% grain (grain & weeds)	% large seeds >2.5 mm	% small seeds <2.5 mm  (from total weed seeds)	% Inter- mediate seeds
MBA	3	Ring ditch	6173	6122	8547	50.0	0.0	0.0	3.0	0.2730	58.33	93.3	6.7	0.0
LATE IRON AGE	3	Pit	3027	3028	8003	0.0	0.0	0.0	7.5	0.4437	82.46	100.0	0.0	0.0
	3	Pit	3027	3028	8003*	0.0	0.0	0.0	5.4	0.2449	69.05	92.3	7.7	0.0
	3	Pit	3199	3036	8029	0.0	0.3	1.3	59.1	0.6037	62.97	80.4	7.6	12.0
	3	Ditch	3235	3243	8027	0.0	0.0	0.0	33.8	-0.5848	62.01	55.8	0.0	44.2
	3	Ditch	3335	3339	8040	0.0	0.0	0.0	2.8	-0.0263	86.11	100.0	0.0	0.0
	3	Pit	3556	3558	8102	2.0	0.0	0.0	30.6	0.3220	14.82	77.4	16.5	6.1
	3	Pit	3680	3685	8112	0.0	5.6	0.9	23.2	-0.9641	43.22	62.7	31.3	6.0
	3	Pit	3864	3867	8138	25.0	0.0	0.0	33.0	-0.3436	42.79	60.7	6.6	32.8
	3	Tree-throw hole	3921	3920	8142	12.0	21.4	3.4	162.3	-1.1421	21.84	83.6	9.5	6.9
	3	Pit	3931	3933	8145	0.0	8.7	4.9	51.5	-0.3378	24.70	55.8	38.5	5.7
3	Pit	3931	3937	8146	28.0	6.6	0.8	91.8	-1.1910	30.87	24.2	67.9	7.9	
EARLY ROMAN	3	Corn dryer	2289	2139	8177	0.0	8.6	1.1	36.5	-0.9815	41.03	58.7	6.5	34.8
	3	Ditch	2174	2177	8207	0.0	5.2	0.3	212.4	-1.3267	59.35	46.8	16.1	37.1
	3	Pit	2227	2229	8195	0.0	2.4	0.6	50.0	-0.6404	73.05	51.1	4.4	44.4
	2	Pit	2266	2267	8198	17.0	70.8	14.9	186.9	-1.2440	15.94	41.9	18.4	39.6
	3	Corn dryer	2289	2297	8209	0.0	4.8	0.6	26.8	-0.9269	47.62	63.6	13.6	22.7
	3	Pit	2318	2320	8222	0.0	0.0	0.0	18.1	-0.3424	25.28	84.7	7.6	7.6
	3	Pit	2227	2583	8252	5.6	11.4	1.1	30.2	-1.1060	77.50	44.4	33.3	22.2
	3	Layer		2592	8317	10.7	5.8	0.8	165.3	-0.8708	71.31	29.6	29.6	40.8
	3	Pit	2954	2950	8308	6.5	0.0	0.0	47.0	0.1259	45.36	58.6	0.0	41.4
	3	Pit	2954	2952	8314	9.7	0.0	0.0	35.5	0.3560	41.14	57.9	28.1	14.0
	2	Ditch	3089	3092	8134	0.0	45.5	17.9	47.4	-0.7385	12.86	8.3	45.8	45.8
	2	Ditch	3089	3094	8135	0.0	58.2	2.7	114.2	-1.7033	39.44	41.9	25.6	32.6
	3	Pit	3114	3120	8096	0.0	0.0	0.0	12.1	1.1461	28.07	97.6	0.0	2.4
	3	Pit	3311	3312	8041	31.6	14.0	1.2	27.2	-1.0780	66.07	42.1	15.8	42.1
	2	Pit	3349	3351	8030	0.0	49.0	1.4	87.9	-1.8297	59.52	23.5	11.8	64.7
	3	Pit	3546	3567	8103	0.0	0.0	0.0	25.5	1.2051	70.62	79.8	13.5	6.7
	3	Corn dryer	3590	3588	8107	0.0	0.0	0.0	16.5	0.5246	96.48	40.0	0.0	60.0
	1	Pit	2958	5001	8324	77.8	53.6	4.5	79.3	-1.3527	6.82	18.5	22.1	59.4
	3	Hearth	5080	5060	8322	0.6	0.0	0.0	54.6	-0.0039	42.82	40.5	28.0	31.5
	1	Hearth	5156	5155	8339	87.5	81.5	5.4	455.6	-1.7482	48.65	21.1	19.3	59.6
3	Layer		5348	8387	5.6	25.0	2.4	62.0	-1.1561	39.27	17.3	34.6	48.1	
3	Layer		5414	8405	33.3	12.5	1.0	40.9	-1.1359	10.77	13.5	28.9	57.5	
3	Layer		5414	8437	21.4	34.2	2.9	49.0	-1.2058	46.15	42.9	23.2	33.9	
1	Spring/pond		5436	8409	95.8	88.8	7.1	9,267.8	-1.7330	65.59	23.1	0.0	76.9	

Phase	Group	Feature type	Feature	Context	Sample	% germinated grain (total grain)	% sprouts (sprouts & grain)	% sprouts (sprouts & glumes)	Items per litre	Log (10) est. hulled wheat grains/ glumes	% grain (grain & weeds)	% large seeds >2.5 mm	% small seeds <2.5 mm  (from total weed seeds)	% Inter- mediate seeds
	1	Spring/pond		5436	8448	85.7	76.7	5.1	11,708.8	-1.5248	77.20	61.0	0.2	38.8
	3	Pit	5447	5449	8447	0.0	0.0	0.0	11.2	-0.2102	68.89	64.3	14.3	21.4
	3	Pit	5452	5454	8415	0.0	0.0	0.0	31.7	-0.3328	52.67	49.3	18.8	31.9
	3	Ditch	5481	5482	8443	3.1	7.4	0.7	65.5	-1.0948	28.09	53.4	26.7	19.9
	1	Pit	5481	5483	8438	31.6	74.3	5.6	303.3	-1.6217	12.41	54.7	42.5	2.8
	3	Post-hole	5535	5547	8440	0.0	23.1	5.0	16.5	-0.7597	50.00	50.0	10.0	40.0
	2	Pit	5554	5567	8446	83.3	14.5	16.7	67.8	0.1347	27.90	58.3	25.6	16.1
	3	Post-hole	5577	5578	8441	15.0	6.7	0.6	60.9	-1.1199	36.21	41.1	20.5	38.4
	3	Post-hole	5581	5582	8442	0.0	6.7	3.2	8.9	-0.5740	25.45	31.7	39.0	29.3
	2	Layer		5602	8546	16.0	68.9	5.8	119.2	-1.6638	54.13	50.0	30.0	20.0
	3	Pit	5609	5610	8456	1.6	0.0	0.0	67.0	-0.0856	76.52	63.2	31.6	5.3
	3	Ditch	5639	5638	8460	3.7	1.3	0.4	45.5	-0.6692	44.28	72.4	7.0	20.5
	3	Spread		5826	8511	2.0	0.0	0.0	37.7	-0.0382	74.26	82.4	2.0	15.7
	3	Layer		6022	8555	0.0	0.0	0.0	134.8	0.2083	9.98	99.3	0.0	0.7
	3	Layer		6035	8554	5.3	0.0	0.0	31.6	-0.8687	36.93	70.0	10.0	20.0
	3	Layer		6132	8556	5.6	0.0	0.0	19.3	-0.3584	47.83	89.4	0.0	10.6
	3	Pit	6166	6165	8550	0.0	2.6	0.1	238.5	-1.5167	44.64	5.5	2.2	92.3
	3	Hearth	6166	6260	8565	0.0	0.0	0.0	111.1	-1.2430	40.52	46.7	31.1	22.2
	3	Hearth	6166	6278	8566	0.0	0.0	0.0	145.6	-1.1701	42.15	14.3	21.4	64.3
	3	Pit	6285	6286	8568	0.0	0.0	0.0	9.5	-0.6183	46.55	90.3	0.0	9.7
	1	Post-hole	6395	6353	8586	60.0	78.5	4.1	652.2	-1.8161	20.17	8.3	0.0	91.7
	2	Cremation burial	6345	6355	8587	47.3	50.7	4.0	154.9	-1.4023	47.83	29.2	55.0	15.8
	3	Pit	6391	6392	8591	2.9	0.0	0.0	55.9	-0.7499	55.41	80.0	1.4	18.6
	2	Kiln	6388	6434	8590	10.3	41.1	5.4	80.8	-1.2285	17.84	45.9	37.6	16.5
	2	Box fill	6608	6610	8621	100.0	18.5	5.0	19.1	-0.7759	48.89	62.2	11.1	26.7
	1	Pit	6644	6672	8727	91.1	92.3	6.5	21,369.6	-1.9581	22.97	5.1	10.5	84.4
<b>EARLY- MIDDLE ROMAN</b>	2	Spring/pond		2528	8242	3.3	43.5	3.6	910.8	-1.3250	41.67	78.7	7.7	13.6
	3	Spring/pond		5082	8327	25.0	19.6	0.8	212.1	-1.5877	53.09	80.3	5.6	14.1
<b>MIDDLE ROMAN</b>	3	Ditch	2171	2172	8179	0.0	4.9	1.5	55.3	-0.6697	67.54	5.4	18.9	75.7
	3	Pit	2214	2219	8188	2.4	0.0	0.0	215.2	0.4063	7.47	97.4	1.5	1.1
	3	Pit	2236	2239	8189	0.0	10.6	3.9	16.8	-0.7853	76.00	41.7	8.3	50.0
	3	Pit	2214	2263	8200	0.4	0.0	0.0	538.8	0.1321	11.15	98.1	0.0	1.9
	3	Pit	2214	2264	8202	2.1	4.6	1.3	14.9	-0.5870	29.11	90.7	4.6	4.6
	3	Pit	2359	2361	8216	14.3	30.3	3.7	31.0	-1.1139	76.67	28.6	28.6	42.9
	3	Pit	2414	2391	8223	0.0	0.0	0.0	8.3	-0.3030	40.00	72.2	5.6	22.2
	3	Pit	2420	2422	8232	0.0	0.6	0.4	49.6	-0.1800	23.37	65.7	10.1	24.2



Phase	Group	Feature type	Feature	Context	Sample	% germinated grain (total grain)	% sprouts (sprouts & grain)	% sprouts (sprouts & glumes)	Items per litre	Log (10) est. hulled wheat grains/ glumes	% grain (grain & weeds)	% large seeds >2.5 mm	% small seeds <2.5 mm  (from total weed seeds)	% Inter- mediate seeds
	3	Pit	2389	2449	8237 A	0.0	0.0	0.0	3.5	-0.9031	41.67	100.0	0.0	0.0
	3	Pit	2389	2449	8237 B	0.0	0.0	0.0	7.3	0.0393	46.43	76.7	3.3	20.0
	3	Quarry pit	2500	2498	8276	0.0	9.2	3.8	94.9	-0.4273	7.49	85.9	2.6	11.6
	1	Layer T2/B3	2761	2675	8288	54.3	80.0	7.6	574.5	-1.6091	59.77	15.5	28.9	55.6
	2	Well	2706	2709	8261	9.1	69.1	2.9	196.3	-2.0270	28.57	37.6	41.2	21.2
	3	Pit	2236	2715	8290	0.0	3.4	2.3	18.6	-0.4114	60.64	37.8	29.7	32.4
	3	Pit	2236	2716	8292	1.9	0.0	0.0	92.3	-1.2672	62.67	30.9	40.7	28.4
	3	Pit	2236	2718	8291	12.0	8.3	2.3	21.0	-0.7304	44.30	51.8	28.9	19.3
	3	Layer		2766	8268	1.0	0.0	0.0	66.1	0.1428	53.59	93.5	1.1	5.4
	1	Ritual shaft	2856	2855	8302	50.0	64.8	4.8	167.5	-1.5881	19.24	16.6	51.7	31.7
	3	Layer Structure	2761	2945	8306	19.0	43.0	2.9	116.7	-1.3670	76.79	61.5	7.7	30.8
	1	Ritual shaft	2856	2994	8318	50.0	93.0	8.0	10,088.8	-2.0116	47.29	61.2	0.0	38.8
	3	Pit	3228	3418	8038	0.0	10.1	3.2	109.4	-0.5487	16.05	61.7	26.6	11.7
	1	Layer		5220	8388	37.5	75.0	7.3	52.8	-1.7005	44.44	30.0	10.0	60.0
	1	Layer		5221	8350	56.5	83.2	3.4	2,396.8	-2.0307	21.98	12.4	5.4	82.2
	2	Pot oven	5367	5366	8381	66.7	45.5	5.1	124.0	-1.1427	23.26	37.6	25.9	36.5
	3	Pot oven	5405	5411	8408	0.0	0.0	0.0	16.6	-0.7950	24.29	28.3	32.1	39.6
	3	Layer		5585	8445	1.4	29.6	3.1	210.3	-1.1093	77.30	29.3	39.0	31.7
	1	Spread		5598	8592	92.3	87.5	6.6	14,360.8	-1.7185	61.72	53.8	0.0	46.2
	3	Pit	5900	5902	8476	0.0	0.0	0.0	30.3	0.3377	89.46	20.0	31.1	48.9
	3	Ditch	5935	5945	8528	33.3	27.3	1.9	200.0	-1.2225	18.60	79.4	0.0	20.6
	1	Ditch	5935	5951	8541	46.7	69.9	7.1	153.4	-1.5980	34.40	38.7	6.5	54.8
	3	Ditch	5934	5951	8569	3.2	0.8	0.1	78.3	-1.0826	41.12	74.1	16.9	9.0
	3	Hearth	5989	5975	8524	38.5	0.0	0.0	39.4	-1.0530	67.69	38.1	19.0	42.9
	1	Spread		6065	8545	58.2	84.7	6.7	886.1	-1.7843	39.31	8.2	14.2	77.7
<b>Roman</b>	3	Post-hole	5541	5542	8439	0.0	2.9	1.2	17.3	-0.4500	46.58	61.5	30.8	7.7

NB Percentages are calculated from a total of the items given in brackets. Further explanation for the categories can be found in the text

Table 91 Summary statistics generated for the samples from Springhead and used in the interpretations for Springhead Roadside Settlement

Phase	Property	Group	Feature type	Feature	Context	Sample	% germinated grain (total grain)	% sprouts (sprouts & grain)	% sprouts (sprouts & glumes)	Items per litre	Log(10) est. hulled wheat grains/glumes	% grain (grain & weeds)	% large seeds >2.5 mm	% small seeds <2.5 mm	% Intermediate seeds
													(from total weed seeds)		
EARLY ROMAN	12	1	Pit	10058	10363	14033	40.3	85.5	6.1	378.7	-1.8169	69.37	33.3	33.3	33.3
	11	2	Pit	10338	10371	14104	20.5	4.3	0.1	821.3	-1.7881	50.70	42.8	37.7	19.6
	11	3	Pit	10657	10628	14048	3.2	0.0	0.0	28.7	-0.0419	44.97	77.1	4.0	18.9
	11	3	Layer		10703	14123	3.5	0.0	0.0	87.0	0.9982	92.26	60.0	26.7	13.3
	11	1	Pit	11461	11425	14067	69.7	83.9	3.7	3,397.2	-2.0542	46.13	8.2	0.2	91.6
	(11)	3	R'side Ditch	11453	11455	14070	38.5	27.9	2.2	204.9	-1.3190	22.11	40.7	18.6	40.7
	11	2	Pit	11461	11463	14069	60.0	30.5	1.6	123.0	-1.4527	59.46	36.4	6.8	56.8
	12	1	Pit	11818	11827	14144	70.4	83.2	6.9	3,099.4	-1.6998	47.59	7.9	1.1	91.1
	2	3	Oven	12002	12030	14154	0.0	0.0	0.0	22.4	-0.0439	37.30	39.0	31.2	29.9
	2	2	Pit	12446	12465	14189	12.5	35.8	1.8	4,007.5	-1.4317	63.09	9.9	5.5	84.6
	5	3	Pit	16472	16471	14175	16.5	0.3	0.2	123.1	-0.2872	51.88	64.3	3.6	32.1
	9	3	Pit	16574	16575	14182	0.0	1.4	3.2	117.7	0.1988	56.74	44.8	12.3	42.9
	4	1	Pit	16902	16894	14211	88.9	81.7	4.7	6,080.8	-1.7451	50.81	5.8	1.1	93.1
	3	3	Pot oven	17174	17171	14238	12.9	4.5	0.3	172.8	-1.2766	46.29	40.7	41.5	17.9
	(5)	2	Gully	17533	17534	14255	42.9	30.3	16.1	53.6	-0.3496	83.33	58.7	2.2	39.1
	4	3	Pit	17749	17752	14267	1.8	8.8	0.8	355.4	-1.1428	49.64	79.4	7.5	13.1
	3	3	Slot	17837	17840	14275	8.3	7.0	2.5	187.3	-0.6149	27.90	63.2	22.5	14.2
-	1	Post-hole	17842	17844	14277	100.0	93.7	21.4	7,786.8	-1.4396	65.99	23.0	0.6	76.4	
3	3	Pit	19217	19216	14305	3.2	16.9	6.1	102.2	-0.4979	39.53	52.4	24.4	23.2	
3	3	Kiln	19253	19250	14310	11.8	1.1	9.1	130.6	0.6942	86.02	40.5	13.1	46.4	
3	3	Layer	19386	19384	14315	26.7	0.0	0.0	98.4	-1.1395	9.66	45.5	17.0	37.5	
MIDDLE ROMAN	12	1	Pit	10122	10124	14057	62.2	83.4	1.0	4,018.6	-2.6528	31.37	15.4	23.4	61.1
	12	2	Pit	10122	10152	14016	39.3	49.6	4.5	142.4	-1.1737	60.40	30.0	2.5	67.5
	12	2	Pit	10122	10152	14058	34.3	58.6	3.6	149.6	-1.5692	51.06	46.4	7.2	46.4
	9	1	Pit	10258	10264	14020	100.0	86.2	5.2	6,999.8	-1.7550	34.94	88.2	0.0	11.8
	11	3	Pit	10950	10948	14065	3.8	27.5	3.3	170.7	-1.0816	81.17	41.7	3.3	55.0
	11	3	Pit	10950	10969	14066	3.0	0.0	0.0	22.3	-0.4265	62.35	70.3	0.0	29.7
	11	1	Ditch	11437	11438	14078	57.4	89.9	5.5	645.5	-2.0610	32.11	6.0	8.4	85.6
	11	1	Ditch	11437	11439	14077	47.8	85.6	7.0	455.7	-1.8692	50.49	12.0	1.0	87.0
	11.12	1	Quarry pit	11450	11452	14074	58.9	82.8	9.7	2,895.6	-1.5443	34.93	43.4	5.9	50.7
	11	1	Oven	11477	11486	14128	63.2	61.8	5.4	121.8	-1.3812	51.52	31.3	18.8	50.0
	12	1	Sunken feature	11892	11896	14151	84.0	59.9	8.4	494.1	-1.1283	77.59	29.1	1.4	69.6
	2	1	Pot burial	12222	12223	14159	40.0	87.3	4.4	921.2	-2.1504	59.79	21.1	2.6	76.3

Phase	Property	Group	Feature type	Feature	Context	Sample	% germinated grain (total grain)	% sprouts (sprouts & grain)	% sprouts (sprouts & glumes)	Items per litre	Log(10) est. hulled wheat grains/glumes	% grain (grain & weeds)	% large seeds >2.5 mm	% small seeds <2.5 mm	% Intermediate seeds
													(from total weed seeds)		
	2	1	Layer	12353	12351	14181	83.6	90.2	4.9	3,251.4	-2.1039	13.36	2.4	8.6	89.0
	2	1	Layer	12392	12390	14180	56.7	85.9	4.9	1,912.4	-2.0387	33.44	5.2	26.0	68.8
	2	1	Channel	12490	12494	14193	75.0	62.5	2.4	4,199.9	-1.6784	75.66	15.0	5.7	79.3
	2	1	Layer	12503	12527	14190	75.3	90.2	7.9	3,017.0	-1.9029	18.61	1.8	6.8	91.4
	2	1	Tree-throw hole	12566	12567	14191	66.7	75.2	9.6	650.9	-1.4614	47.32	10.2	34.7	55.1
	5	1	Pit	17309	17394	14251	54.3	70.9	7.3	2,955.4	-1.4522	85.39	51.0	14.3	34.7
	4	3	Post-hole	17550	17549	14258	22.6	2.7	0.5	336.7	-0.8909	58.74	55.9	6.4	37.8
	3	3	Layer		17710	14314	0.0	0.0	0.0	27.0	-0.9680	37.50	73.3	0.0	26.7
	3	2	Layer	13830	19126	14294	0.0	47.2	1.0	7,055.0	-1.9345	76.19	8.6	0.0	91.4
<b>Roman</b>	2	1	Layer		12352	14202	66.7	64.5	7.7	71.5	-1.3502	46.22	15.6	0.0	84.4
	3	3	Slot		17864	14280	0.0	0.9	0.1	68.1	-0.7843	26.02	78.0	8.6	13.5

NB Percentages are calculated from a total of the items given in brackets. Further explanation for the categories can be found in the text

Table 92 Charred plant remains from the early Roman phase at Northfleet villa

SAMPLE NUMBER	11110	11113	11166	11473	13097
SUB-GROUP	16726	10165		16723	
FEATURE NUMBER	10663	10165	15226	16032	16650
CONTEXT NUMBER	10755	10801	15212	16033	16651
CONTEXT TYPE	Pit	Ditch	Pit	Ditch	Post-hole 1st Roman BLDG
PHASE	ERO	ERO	ERO	ERO	ERO
PROPORTION SORTED (The scores presented are only for the portion sorted. Where only a sub-sample of the medium fraction of the flot has been sorted, that has been indicated and scores are multiplied by the appropriate factor)	100%	25%	6.25% (=1/16th)	100%	100%
MULTIPLIER FOR MEDIUM FLOT RESULTS (indicated as M by score)			x2	x2	x2
SAMPLE VOLUME (l)	40	10	40	1	10
FLOT VOLUME (ml)	35	350	3010	40	80
SEEDS PER LITRE	9	695	3585	2273	650

## LATIN BINOMIAL

## CEREAL GRAIN

<i>Hordeum</i> sp. – hulled	–	19	–	–	8
cf. <i>Hordeum</i> sp. – hulled	–	8	–	–	–
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. – germinated	–	1	–	–	–
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L.	–	9	2	–	11
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L. – germinated	–	2	–	–	–
<i>Triticum spelta</i> L.	–	8	1	–	47
<i>Triticum spelta</i> L. – germinated	–	1	6	–	–
<i>Triticum</i> sp. – indeterminate	–	243	29	16	2000 MgE
<i>Triticum</i> sp. – germinated	–	–	3	–	–
Cereal – indeterminate	5E	262E	2000MgE	5	1000gE
Cereal – indeterminate germinated	–	–	1	–	–
Cereal/large POACEAE – indeterminate	6E	167E	2000MgE	30	1000gE
Cereal/large POACEAE – indeterminate germinated	–	–	2M	–	–

## CEREAL CHAFF

<i>Hordeum vulgare</i> L. – six-row rachis node	–	–	4M	–	4M
<i>Hordeum</i> sp. – indeterminate rachis node	–	5	–	–	–
cf. <i>Hordeum</i> sp. – rachis node	–	1	–	–	–
<i>Hordeum</i> sp./ <i>Secale cereale</i> L. – rachis node	–	–	–	–	2
<i>Secale cereale</i> L. – rachis node	–	–	2	–	4
<i>Triticum spelta</i> L. – spikelet fork	–	9 = 16gb + 1r	25 = 50gb gE	6 = 8gb + 4r	6 = 9gb + 3r
<i>Triticum spelta</i> L. – glume base	30	191	4000MgE	600MgE	400MgE
<i>Triticum spelta</i> L. – glume/ lemma fragments	(+)	(+)	(++)	–	–
<i>Triticum spelta</i> L./ <i>aestivum</i> L. – type rachis node	–	–	1 = 2gb + 1r	–	–
<i>Triticum</i> sp. – spikelet fork	–	12 = 17gb + 5r	–	7 = 10gb + 2r	5 = 10gb
<i>Triticum</i> sp. – glume base	71E	230	–	600 MgE	1000 MgE
<i>Triticum</i> sp. – rachis node	105E	114	–	500 MgE	200 MgE
<i>Triticum</i> sp. – basal rachis node	–	–	16	–	–
<i>Triticum</i> sp. – glume/lemma fragments	(+)	(+)	(++)	–	–
<i>Triticum</i> sp. – awn	–	(++)	(+)	–	–
Cereal/large POACEAE – rachis internode	104E	197	100 MgE	300 MgE	200 MgE
Cereal/large POACEAE – basal rachis node	–	16	2	–	–
Cereal/large POACEAE – rachilla	–	4	–	–	–
Cereal/large POACEAE – culm base	–	1	–	–	–
Cereal/large POACEAE – culm node	–	23	–	–	–

## COLEOPTILE/ DETACHED EMBRYO

Cereal/large POACEAE – coleoptile (estimate m.n.i.)	18	35	506M	102M	228M
cf. Cereal/large POACEAE – coleoptile (estimate m.n.i.)	–	–	–	–	–
Cereal/large POACEAE – detached embryo	1	41	18M	–	218M
cf. Cereal/large POACEAE – detached embryo	3	–	–	–	–

## OTHER CROPS

cf. <i>Vicia</i> sp./ <i>Pisum sativum</i> L.	–	–	2M	–	–
<i>Linum usitatissimum</i> L. – capsule fragment	–	1	–	4M	–

## WEED/WILD PLANTS

<i>Ranunculus</i> spp.	–	–	–	2M	–
<i>Papaver rhoeas</i> L./ <i>dubium</i> L./ <i>argemone</i> L.	–	1	–	–	–
<i>Atriplex</i> spp.	–	1	–	2M	–
<i>Chenopodium</i> spp./ <i>Atriplex</i> spp.	–	–	–	–	2M
cf. <i>Agrostemma githago</i> L. – calyx tip	–	–	2M	2M	2M
<i>Silene</i> sp.	1	–	–	–	–

SAMPLE NUMBER	11110	11113	11166	11473	13097
<i>Polygonum aviculare</i> L.	-	3	-	2M	-
<i>Polygonum</i> cf. <i>aviculare</i> L.	-	1	-	-	2M
<i>Polygonum</i> spp./ <i>Rumex</i> spp./ <i>Carex</i> spp.- indet. internal structure	-	2	-	-	2M
<i>Rumex</i> spp.	-	9	42M	-	14M
<i>Vicia</i> spp./ <i>Lathyrus</i> spp.	-	3	-	-	4M
cf. <i>Vicia</i> spp./ <i>Lathyrus</i> spp.	-	-	-	-	-
<i>Melilotus</i> spp./ <i>Medicago</i> spp./ <i>Trifolium</i> spp.	-	8	-	-	-
FABACEAE – indeterminate pod fragment	-	-	2M	-	-
cf. <i>Campanula</i> sp.	-	1	-	-	-
<i>Galium</i> spp.	1	1	-	-	-
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	1	3	2M	-	8M
ASTERACEAE – indeterminate	-	-	-	2M	-
<i>Carex</i> spp. – 3-sided	-	1	-	-	-
<i>Lolium</i> sp. – caryopsis	-	-	8M	8M	-
<i>Lolium</i> sp. – rachis node	-	-	4M	2M	-
<i>Avena</i> sp.	-	1	-	-	-
<i>Avena</i> sp. – floret base	1	1	-	-	-
<i>Avena</i> sp. – awn (estimate m.n.i.)	1E	(++)	2M	2M	4M
<i>Avena</i> sp. – pedicel	-	4	-	-	-
cf. <i>Avena</i> sp. – floret	-	-	2M	-	-
<i>Avena</i> sp./ <i>Bromus</i> sp.	-	1	16M	4M	-
<i>Bromus</i> sp.	-	1	6M	2M	-
cf. <i>Bromus</i> sp.	-	1	-	-	-
POACEAE – indeterminate small caryopsis	-	1	2M	2M	8M
POACEAE – indeterminate medium caryopsis	2	7	46M	58M	40M
POACEAE – indeterminate rachis node	-	-	2M	-	6M
Unidentified – calyx	-	8	-	-	-
Unidentified – seed coat/pod (fragments)	2	-	-	-	-
Unidentified – stalk	-	1	-	-	-
Unidentified – thorn	-	1	-	-	-
Unidentified	-	40	4M	4M	2M
Indeterminate	-	19	78M	-	58M
<b>TOTAL IDENTIFICATIONS</b>	<b>352</b>	<b>1738</b>	<b>8962</b>	<b>2273</b>	<b>6496</b>

Table 93 Charred plant remains from the early/middle Roman phase at Northfleet villa

SAMPLE NUMBER	12001	12003	12008	12207
SUB-GROUP	12317	12317	12317	
FEATURE NUMBER	11574	11512	11574	19312
CONTEXT NUMBER	11530	11532	11563	19341
CONTEXT TYPE	Wood-lined pit	Wood-lined pit	Wood-lined pit	Ditch
PHASE	E/MRO	E/MRO	E/MRO	E/MRO
PROPORTION SORTED	100%	100%	100%	1.56% (=1/64th)
MULTIPLIER FOR MEDIUM FLOT RESULTS (indicated as M by score)				
SAMPLE VOLUME (l)	20	10	20	18
FLOT VOLUME (ml)	60	15	100	2600
SEEDS PER LITRE	78	58	209	29589
LATIN BINOMIAL				
CEREAL GRAIN				
<i>Hordeum</i> sp. – hulled	7	1	2	6
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L.	–	1	–	–
<i>Triticum spelta</i> L.	2	3	1	1
<i>Triticum aestivum</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. – type	–	–	4	–
<i>Triticum</i> sp. – indeterminate	12	9	22	37
<i>Triticum</i> sp. – germinated	–	–	6	2
<i>Triticum</i> sp. – indeterminate tail grain	–	–	3	36
Cereal – indeterminate	36E	8	20E	40
Cereal – indeterminate germinated	–	–	–	6
Cereal/large POACEAE – indeterminate	37E	16	25E	–
Cereal/large POACEAE – indeterminate germinated	–	–	–	1
CEREAL CHAFF				
<i>Hordeum vulgare</i> L. – six-row rachis node	–	2	3	–
<i>Hordeum</i> sp. – indeterminate rachis node	13	1	19	147
<i>Hordeum</i> sp. – awn	–	–	–	(+)
cf. <i>Hordeum</i> sp. – rachis node	–	–	5	–
<i>Secale cereale</i> L. – rachis node	–	–	–	1
<i>Triticum spelta</i> L. – spikelet fork	5 = 5gb	–	19 = 21gb	366 = 528gb + 161r
<i>Triticum spelta</i> L. – terminal spikelet fork	2 = 4gb	–	–	5 = 10gb
<i>Triticum spelta</i> L. – glume base	311	107	790E	2904
<i>Triticum spelta</i> L. – glume/lemma fragments	(+)	–	(+)	(+++)
<i>Triticum spelta</i> L./ <i>aestivum</i> L. – type rachis node	–	–	–	3
<i>Triticum spelta</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. – type rachis node	–	–	–	43
<i>Triticum aestivum</i> L. – type rachis node	–	–	–	10
<i>Triticum aestivum</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. – type rachis node	–	–	1	–
<i>Triticum durum</i> Desf./ <i>turgidum</i> L. type – rachis node	–	1	2	–
<i>Triticum</i> sp. – spikelet fork	1 = 2gb	1 = 1gb + 1r	14 = 22gb	–
<i>Triticum</i> sp. – glume base	492E	128	1201E	2004
<i>Triticum</i> sp. – rachis node	238E	92	812E	341
<i>Triticum</i> sp. – basal rachis node	–	1	8	17
<i>Triticum</i> sp. – glume/lemma fragments	(+)	–	(+)	(+++)
<i>Triticum</i> sp. – awn	–	–	(+)	(+++)
Cereal – indeterminate rachis internode	250E	–	877E	–
Cereal – indeterminate basal rachis node	2	1	8	–
Cereal/large POACEAE – rachis internode	–	108	–	248
Cereal/large POACEAE – basal rachis node	–	–	–	74
Cereal/large POACEAE – rachilla	8	–	16	62
Cereal/large POACEAE – culm node	–	2	–	11
cf. Cereal/large POACEAE – culm node	–	1	1	–
COLEOPTILE/DETACHED EMBRYO				
Cereal/large POACEAE – coleoptile (estimate m.n.i.)	12	6	167	716
cf. Cereal/large POACEAE – coleoptile (estimate m.n.i.)	–	–	–	–
Cereal/large POACEAE – detached embryo	15	1	9	20
cf. Cereal/large POACEAE – detached embryo	3	–	–	–
OTHER CROPS				
<i>Vicia</i> sp./ <i>Pisum sativum</i> L.	–	2	–	–
<i>Linum usitatissimum</i> L. – capsule fragment	–	3	–	–
WEED/WILD PLANTS				
<i>Pteridium aquilinum</i> (L.) Kuhn – leaf tips	–	–	–	1
<i>Papaver rhoeas</i> L./ <i>dubium</i> L./ <i>argemone</i> L.	–	–	–	5

SAMPLE NUMBER	12001	12003	12008	12207
PAPAVERACEAE – indeterminate	–	–	–	1
cf. <i>Urtica dioica</i> L.	–	–	1	–
<i>Chenopodium</i> spp.	3	–	–	–
<i>Atriplex</i> spp.	–	–	2	–
<i>Montia fontana</i> L.	–	–	–	1
<i>Agrostemma githago</i> L.	2	–	1	2
cf. <i>Agrostemma githago</i> L. – calyx tip	–	–	4E	11
cf. <i>Agrostemma githago</i> L. – internal structure	–	1	–	–
cf. <i>Silene</i> sp. (large-seeded)	1	–	–	–
<i>Polygonum</i> spp.	1	1	1	–
<i>Polygonum</i> spp./ <i>Rumex</i> spp./ <i>Carex</i> spp.– indet. internal structure	4	–	4	1
<i>Fallopia convolvulus</i> (L.) Á. Löve	–	–	1	–
<i>Rumex</i> spp.	10	5	4	18
<i>Rumex</i> spp. – tubercle	–	–	–	4
<i>Vicia</i> spp./ <i>Lathyrus</i> spp.	2	1	1	1
cf. <i>Vicia</i> spp./ <i>Lathyrus</i> spp.	–	–	–	–
<i>Melilotus</i> spp./ <i>Medicago</i> spp./ <i>Trifolium</i> spp.	3	–	3	–
FABACEAE – indeterminate (immature)	–	–	–	2
FABACEAE – indeterminate pod fragment	–	–	–	6
cf. <i>Geranium</i> sp.	–	–	–	1
<i>Torilis</i> sp.	–	–	–	1
APIACEAE – indeterminate	–	–	1	1
cf. APIACEAE – indeterminate	2	–	–	–
<i>Euphrasia</i> sp./ <i>Odontites</i> sp.	1	–	–	–
<i>Prunella vulgaris</i> L.	–	–	–	1
<i>Galium</i> cf. <i>mollugo</i> L. – type	–	–	2	–
<i>Carduus</i> sp./ <i>Cirsium</i> sp. – internal structure	1	–	–	4
<i>Lapsana communis</i> L.	–	–	–	5
<i>Anthemis cotula</i> L.	2	–	–	–
cf. <i>Anthemis cotula</i> L./ <i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	1	–	–	–
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	1	–	10	13
ASTERACEAE – indeterminate	–	–	–	6
<i>Carex</i> spp. – 2-sided	1	–	–	–
<i>Lolium</i> sp. – caryopsis	2	–	1	243
<i>Lolium</i> sp. – floret base	–	–	–	2
<i>Lolium</i> sp. – rachis node	–	–	–	50
cf. <i>Poa annua</i> L. – type	3	1	3	–
<i>Avena</i> sp.	1	–	–	4
<i>Avena</i> sp. – floret base	–	–	3	12
<i>Avena</i> sp. – awn (estimate m.n.i.)	1	1	3	1
<i>Avena</i> sp. – pedicel	–	1	–	70
cf. <i>Avena</i> sp.	–	–	–	3
<i>Avena</i> sp./ <i>Bromus</i> sp.	14	9	8	9
<i>Avena</i> sp./ <i>Bromus</i> sp. – germinated	–	–	–	–
<i>Bromus</i> sp.	13	2	6	2
POACEAE – indeterminate small caryopsis	2	6	–	6
POACEAE – indeterminate medium caryopsis	28	8	51	130
POACEAE – indeterminate large caryopsis	–	5E	–	2
POACEAE – indeterminate rachis node	–	–	–	55
Unidentified – bud	–	3	–	–
Unidentified – capsule fragment	–	1	–	–
Unidentified – seed coat/pod (fragments)	–	1	5	3
Unidentified	3	11	10	16
Indeterminate	12	25	11	200E
TOTAL IDENTIFICATIONS	1563	578	4182	8322

Table 94 Charred plant remains from the middle Roman phase at Northfleet villa

SAMPLE NUMBER	11104	11111	11142	11151	11161
SUB-GROUP	10508	15577		15577	15578
FEATURE NUMBER		10857		15076	15146
CONTEXT NUMBER	10481	10780	10060	15079	15169
CONTEXT TYPE	Layer in hypocaust	Post-hole East Range MRO	Layer East Range MRO	Post-hole East Range MRO	beam slot East Range MRO
PHASE					
PROPORTION SORTED	25%	50%	100%	100%	100%
MULTIPLIER FOR MEDIUM FLOT RESULTS (indicated as M by score)			x3		
SAMPLE VOLUME (l)	40	40	40	40	10
FLOT VOLUME (ml)	700	400	180	50	75
SEEDS PER LITRE	57	8	160	19	56
LATIN BINOMIAL					
CEREAL GRAIN					
<i>Hordeum</i> sp. – hulled	–	–	3	14	1
cf. <i>Hordeum</i> sp. – hulled	–	1	–	4	2
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L.	–	–	–	2	–
<i>Triticum spelta</i> L.	–	1	5	3	2
<i>Triticum</i> sp. – indeterminate	9	24	55	173	40E
<i>Triticum</i> sp. – germinated	–	8	–	7	1
cf. <i>Triticum</i> sp. – indeterminate	1	6	–	–	–
Cereal – indeterminate	9E	19E	75	100E	25E
Cereal – indeterminate germinated	–	–	3	3	–
Cereal/large POACEAE – indeterminate	16E	12E	90E	200E	50E
CEREAL CHAFF					
<i>Hordeum vulgare</i> L. – six-row rachis node	–	–	18M	–	–
<i>Hordeum</i> sp. – indeterminate rachis node	1	–	27M	–	3
cf. <i>Hordeum</i> sp. – rachis node	1	–	–	–	–
<i>Triticum spelta</i> L. – spikelet fork	–	–	2 = 4gb	1 = 2gb	1 = 1gb + 1r
<i>Triticum spelta</i> L. – glume base	14	2	894M	57	51
<i>Triticum spelta</i> L. – glume/lemma fragments	(+)	–	(+)	(+)	(+)
<i>Triticum aestivum</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. – type rachis node	–	–	3M	–	–
<i>Triticum</i> sp. – spikelet fork	2 = 4gb + 2r	–	8 = 12gb + 4r	5 = 6gb + 3r	1 = 2gb
<i>Triticum</i> sp. – glume base	85	15	2079M	76	126
<i>Triticum</i> sp. – rachis node	42	15	1122M	28	83
<i>Triticum</i> sp. – basal rachis node	–	–	–	–	1
<i>Triticum</i> sp. – glume/ lemma fragments	(+)	(+)	(+)	(+)	(+)
Cereal – indeterminate rachis internode	–	–	1494M	7	94
Cereal – indeterminate basal rachis node	–	–	3M	7	–
Cereal/large POACEAE – rachis internode	35	–	33M	–	–
COLEOPTILE/DETACHED EMBRYO					
Cereal/large POACEAE – coleoptile (estimate m.n.i.)	5	11	99M	39	25
Cereal/large POACEAE – detached embryo	–	1	6M	9	4
OTHER CROPS					
<i>Vicia</i> sp./ <i>Pisum sativum</i> L.	1	–	–	1	–
cf. <i>Vicia</i> sp./ <i>Pisum sativum</i> L.	–	–	1	–	–
WEED/WILD PLANTS					
<i>Ranunculus acris</i> L./ <i>repens</i> L./ <i>bulbosus</i> L.	1	–	–	–	–
<i>Ranunculus</i> spp.	–	–	–	–	3
<i>Papaver</i> cf. <i>argemone</i> L. – capsule top	–	–	–	1	–
<i>Papaver rhoeas</i> L./ <i>dubium</i> L./ <i>argemone</i> L.	–	–	–	–	1
<i>Chenopodium</i> spp.	–	–	–	–	2
<i>Atriplex</i> spp.	–	–	21M	–	–
CHENOPODIACEAE/CARYOPHYLLACEAE – indeterminate	–	–	–	–	1
<i>Cerastium</i> spp.	–	–	–	–	–
cf. <i>Cerastium</i> spp.	–	–	–	–	–
<i>Agrostemma githago</i> L.	–	–	–	2	–
<i>Silene</i> sp.	1	1	–	–	–
CARYOPHYLLACEAE – indeterminate	1	–	–	–	1
<i>Polygonum aviculare</i> L.	–	–	24M	–	–



SAMPLE NUMBER	11104	11111	11142	11151	11161
<i>Polygonum</i> cf. <i>aviculare</i> L.	–	–	–	1	–
<i>Polygonum</i> spp./ <i>Rumex</i> spp./ <i>Carex</i> spp.– indet. internal structure	1	2	9M	–	–
<i>Rumex</i> spp.	9	–	30M	4	–
<i>Bryonia dioica</i> Jacq.	–	–	6M	–	–
<i>Vicia</i> spp./ <i>Lathyrus</i> spp.	–	4	3M	3	3
<i>Melilotus</i> spp./ <i>Medicago</i> spp./ <i>Trifolium</i> spp.	–	1	–	1	1
FABACEAE – indeterminate (immature)	–	–	9M	–	1
<i>Lithospermum arvense</i> L. – ?ancient	–	–	6M	–	–
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	1	–	18M	–	–
<i>Lolium</i> sp. – caryopsis	–	–	30M	–	–
<i>Lolium</i> sp. – rachis node	–	–	3M	–	–
<i>Avena</i> sp.	–	–	15M	–	–
<i>Avena</i> sp. – floret base	–	–	3M	–	–
<i>Avena</i> sp. – awn (estimate m.n.i.)	1	–	6M	–	–
<i>Avena</i> sp. – pedicel	–	–	12M	–	–
<i>Avena</i> sp./ <i>Bromus</i> sp.	3	–	27M	1	–
<i>Bromus</i> sp.	1	–	6M	–	–
POACEAE – indeterminate small caryopsis	–	–	3M	–	1
POACEAE – indeterminate medium caryopsis	–	4	129M	7	18
Unidentified – bud–scar	1	–	–	–	–
Unidentified – concreted vegetative material (fragments)	–	–	–	–	3
Unidentified – fruit stone (fragment)	–	1	–	–	–
Unidentified – seed coat/pod (fragments)	18	–	–	–	–
Unidentified	45	6	24M	1	3
Indeterminate	262	22	–	–	2
TOTAL IDENTIFICATIONS	570	156	6414	762	555

Table 95 Charred plant remains from the middle Roman phase at Northfleet villa (continued)

SAMPLE NUMBER	11162	11247	11444	11484	13036
SUB-GROUP	15578		15577	16803	16731
FEATURE NUMBER	15147	15654	15963	15474	16170
CONTEXT NUMBER	15170	15657	15990	15499	16522
CONTEXT TYPE	Beam slot	Pit	Pit East Range	Ditch	Cistern
PHASE	East Range				
PROPORTION SORTED	MRO	MRO	MRO	MRO	MRO
	100%	100%	50%	100%	1.25% (=1/8th)
MULTIPLIER FOR MEDIUM FLOT RESULTS (indicated as M by score)	x2	x2		x2	x5
SAMPLE VOLUME (l)	10	2	40	20	1
FLOT VOLUME (ml)	140	30	200	50	950
SEEDS PER LITRE	42	577	89	90	70960
LATIN BINOMIAL					
CEREAL GRAIN					
<i>Hordeum</i> sp. - hulled	–	2	20	1	4
cf. <i>Hordeum</i> sp. - hulled	1	1	3	–	–
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L.	–	9	1	1	–
<i>Triticum aestivum</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. - type	–	–	–	–	–
<i>Triticum</i> sp. - indeterminate	17	57	241	30	68
<i>Triticum</i> sp. - germinated	–	–	23	1	6
Cereal - indeterminate	9	34E	200E	50MgE	300MgE
Cereal - indeterminate germinated	–	–	3	3	–
Cereal/large POACEAE - indeterminate	12ME	60ME	75E	50MgE	250MgE
Cereal/large POACEAE - indeterminate germinated	–	–	–	–	10
CEREAL CHAFF					
<i>Hordeum vulgare</i> L. - six-row rachis node	–	–	–	–	20M
<i>Hordeum</i> sp. - indeterminate rachis node	–	–	3	10M	50M
<i>Hordeum</i> sp. - awn	–	–	–	–	–
cf. <i>Hordeum</i> sp. - rachis node	–	–	1	2M	10M
<i>Hordeum</i> sp./ <i>Triticum</i> sp. - rachis internode	–	6M	–	–	–
<i>Triticum spelta</i> L. - spikelet fork	–	5 = 6gb + 2r	1 = 2gb	–	10 = 20gb gE
<i>Triticum spelta</i> L. - glume base	1	118M	73	200MgE	1500MgE
<i>Triticum spelta</i> L. - glume/lemma fragments	–	(+++)	(++)	–	(++)
<i>Triticum spelta</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. - type rachis node	–	–	–	–	4
<i>Triticum aestivum</i> L. - type rachis node	–	–	–	2M	–
<i>Triticum</i> sp. - spikelet fork	1 = 2gb	3 = 6gb	8 = 13gb + 1r	11 = 16gb + 3r	–
<i>Triticum</i> sp. - glume base	60M	324ME	365	600MgE	1500MgE
<i>Triticum</i> sp. - rachis node	60M	200M	400E	500MgE	2500MgE
<i>Triticum</i> sp. - glume/lemma fragments	–	–	(++)	–	(++)
<i>Triticum</i> sp. - awn	–	–	(+)	–	(+)
Cereal/large POACEAE - rachis internode	50M	212M	144E	–	1500MgE
Cereal/large POACEAE - basal rachis node	–	6M	–	2M	5M
Cereal/large POACEAE - rachilla	–	2M	1	–	–
Cereal/large POACEAE - culm node	2	–	–	2M	5M
cf. Cereal/large POACEAE - culm node	–	2	–	–	–
COLEOPTILE/DETACHED EMBRYO					
Cereal/large POACEAE - coleoptile (estimate m.n.i.)	2M	24M	85	240M	580M
Cereal/large POACEAE - detached embryo	–	26M	19E	16ME	10M
OTHER CROPS					
<i>Vicia</i> sp./ <i>Pisum sativum</i> L.	–	1	1	–	–
WEED/WILD PLANTS					
<i>Atriplex</i> spp.	2M	–	–	–	10M
<i>Chenopodium</i> spp./ <i>Atriplex</i> spp.	–	–	–	–	5M
cf. <i>Stellaria media</i> L.	–	–	–	–	5M
<i>Cerastium</i> spp.	–	2M	1	–	–
<i>Agrostemma githago</i> L.	8M	–	2	–	–
cf. <i>Agrostemma githago</i> L. - calyx tip	–	–	4	–	5M
CARYOPHYLLACEAE - indeterminate	–	–	–	2M	–
<i>Polygonum</i> cf. <i>aviculare</i> L.	–	–	–	–	5M
<i>Polygonum</i> spp.	–	–	1	–	–
<i>Polygonum</i> spp./ <i>Rumex</i> spp./ <i>Carex</i> spp. - indet. internal structure	8M	–	2	2M	–
<i>Rumex</i> spp.	12M	–	3	6M	15M

SAMPLE NUMBER	11162	11247	11444	11484	13036
MALVACEAE - indeterminate	2M	-	-	-	-
<i>Vicia</i> spp./ <i>Lathyrus</i> spp.	16M	-	3	-	-
<i>Melilotus</i> spp./ <i>Medicago</i> spp./ <i>Trifolium</i> spp.	2M	-	1	-	15M
<i>Anthemis cotula</i> L.	-	2M	-	-	-
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	-	2M	-	-	55M
ASTERACEAE - indeterminate	2M	-	-	-	-
cf. <i>Eleocharis palustris</i> (L.) Roem. & Schult./ <i>uniglumis</i> (Link) Schult.	2M	-	-	-	-
<i>Carex</i> spp. - 2-sided	2M	-	-	-	-
<i>Lolium</i> sp. - caryopsis	2M	4M	-	-	25M
<i>Lolium</i> sp. - rachis node	-	2M	-	-	10M
<i>Avena</i> sp.	-	-	2	-	-
<i>Avena</i> sp. - floret base	-	2M	2	-	-
<i>Avena</i> sp. - awn (estimate m.n.i.)	-	2ME	2E	4ME	5ME
<i>Avena</i> sp./ <i>Bromus</i> sp.	2M	4ME	-	2M	40M
<i>Bromus</i> sp.	-	-	-	-	5M
POACEAE - indeterminate small caryopsis	6M	-	1	-	25M
POACEAE - indeterminate medium caryopsis	126M	10ME	35	38M	210M
POACEAE - indeterminate large caryopsis	-	1	9	6	-
Unidentified - concreted vegetative material (fragments)	-	-	-	-	25M
Unidentified - leaf	-	2M	-	-	-
Unidentified	2M	16M	7	-	-
Indeterminate	7	-	26	-	60M
TOTAL IDENTIFICATIONS	417	1153	1780	1794	8870

Table 96 Charred plant remains from the middle Roman phase at Northfleet villa (continued)

SAMPLE NUMBER	13037	13060	13067	21122
SUB-GROUP	16731	16731	16640	
FEATURE NUMBER	16170	16170	16593	20432
CONTEXT NUMBER	16524	16586	16595	20433
CONTEXT TYPE	Cistern	Cistern	Post-pipe East Range	Pit (assoc. w/ hearth 20748)
PHASE	MRO	MRO	MRO	MRO
PROPORTION SORTED (see note Table 92)	6.25% (=1/16th)	1.25% (=1/8th)	100%	25%
MULTIPLIER FOR MEDIUM FLOT RESULTS (indicated as M by score)	x3	x4		
SAMPLE VOLUME (l)	30	40	20	20
FLOT VOLUME (ml)	1900	800	250	300
SEEDS PER LITRE	1662	1839	27	76

## LATIN BINOMIAL

## CEREAL GRAIN

<i>Hordeum</i> sp. – hulled	4	–	–	1
cf. <i>Hordeum</i> sp. – hulled	1	–	–	1
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L.	2	2	–	–
<i>Triticum spelta</i> L.	12	3	4	7
<i>Triticum spelta</i> L. – within spikelet	8	–	2	–
<i>Triticum spelta</i> L. – germinated	3	–	–	–
<i>Triticum</i> sp. – indeterminate	99	27	62	42
<i>Triticum</i> sp. – germinated	–	7	13	1
<i>Triticum</i> sp. – indeterminate tail grain	2	–	–	–
<i>Triticum</i> sp. – indeterminate germinated tail grain	3M	–	–	–
Cereal – indeterminate	50M	23M	–	25E
Cereal – indeterminate germinated	1	–	75gE	–
Cereal/large POACEAE – indeterminate	–	160ME	50gE	50E

## CEREAL CHAFF

<i>Hordeum vulgare</i> L. – six-row rachis node	–	28M	–	–
<i>Hordeum</i> sp. – indeterminate rachis node	–	36M	–	–
<i>Hordeum</i> sp. – awn	(+)	(+)	–	–
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. – glume base	–	1	–	–
<i>Triticum spelta</i> L. – spikelet fork	68 = 98gb + 31r	25 = 31gb + 15r	2 = 3gb + 1r	2 = 3gb
<i>Triticum spelta</i> L. – terminal spikelet fork	1 = 2gb	1 = 1gb	–	–
<i>Triticum spelta</i> L. – glume base	700MgE	743M	50Ge	16
<i>Triticum spelta</i> L. – glume/lemma fragments	(+++)	(+++)	–	–
<i>Triticum spelta</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. – type rachis node	–	8M	–	–
<i>Triticum aestivum</i> L. – type rachis node	–	4M	–	–
<i>Triticum</i> sp. – spikelet fork	(37 = 57gb + 16r)	(31 = 46gb + 3r)	(5 = 10gb)	–
<i>Triticum</i> sp. – glume base	900MgE	3296M	100gE	38E
<i>Triticum</i> sp. – rachis node	300MgE	832M	100gE	19E
<i>Triticum</i> sp. – basal rachis node	78M	48M	–	1
<i>Triticum</i> sp. – glume/lemma fragments	(+++)	(+++)	–	–
<i>Triticum</i> sp. – awn	(+++)	(+++)	–	–
Cereal/large POACEAE – rachis internode	300MgE	2612M	15gE	12
Cereal/large POACEAE – basal rachis node	–	60M	–	–
Cereal/large POACEAE – rachilla	–	152M	–	–
Cereal/large POACEAE – culm base	3M	–	–	3
Cereal/large POACEAE – culm node	15M	24M	–	14

## COLEOPTILE/DETACHED EMBRYO

Cereal/large POACEAE – coleoptile (estimate m.n.i.)	339MgE	556gE	19E	8
Cereal/large POACEAE – detached embryo	12M	72M	3	2

## OTHER CROPS

<i>Vicia</i> sp./ <i>Pisum sativum</i> L.	–	–	3	8
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## WEED/WILD PLANTS

<i>Ranunculus acris</i> L./ <i>repens</i> L./ <i>bulbosus</i> L.	–	–	–	1
<i>Papaver rhoeas</i> L./ <i>dubium</i> L./ <i>argemone</i> L.	–	4M	–	–
PAPAVERACEAE				
<i>Atriplex</i> spp.	–	–	–	3
<i>Chenopodium</i> spp./ <i>Atriplex</i> spp.	–	–	–	1
CHENOPODIACEAE/CARYOPHYLLACEAE				
<i>Agrostemma githago</i> L.	–	–	6	–
cf. <i>Agrostemma githago</i> L. – calyx tip	–	–	2	–
<i>Silene</i> sp.	–	–	1	5

SAMPLE NUMBER	13037	13060	13067	21122
<b>CARYOPHYLLACEAE</b>				
<i>Polygonum</i> spp.	3M	–	1	–
<i>Rumex</i> spp.	–	20M	3	2
<i>Rumex</i> spp. – tubercle	–	12M	–	–
cf. MALVACEAE – indeterminate	–	–	1	–
<i>Vicia</i> spp./ <i>Lathyrus</i> spp.	–	–	1	7
<i>Melilotus</i> spp./ <i>Medicago</i> spp./ <i>Trifolium</i> spp.	–	16M	1	4
<b>APIACEAE</b>				
<i>Euphrasia</i> sp./ <i>Odontites</i> sp.	–	4M	–	–
cf. <i>Campanula</i> sp.	–	–	–	1
<i>Anthemis cotula</i> L.	–	–	1	–
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	9M	44M	–	–
<b>ASTERACEAE – indeterminate</b>				
<i>Eleocharis palustris</i> (L.) Roem. & Schult./ <i>uniglumis</i> (Link) Schult.	–	4M	–	–
<i>Carex</i> spp. – 2–sided	–	–	–	2
<i>Lolium</i> sp. – caryopsis	–	28M	–	–
<i>Lolium</i> sp. – rachis node	3M	12M	–	–
<i>Avena</i> sp.	9M	–	–	–
<i>Avena</i> sp. – floret base	3M	4M	–	1
<i>Avena</i> sp. – awn (estimate m.n.i.)	3M	–	1	2
<i>Avena</i> sp. – pedicel	–	8M	–	1
cf. <i>Avena</i> sp.	3M	–	–	–
<i>Bromus</i> sp.	–	8M	–	1
POACEAE – indeterminate small caryopsis	–	–	1	4
POACEAE – indeterminate medium caryopsis	9M	80M	7	19
POACEAE – indeterminate large caryopsis	6M	12M	–	–
POACEAE – indeterminate culm node	–	–	–	3
POACEAE – indeterminate culm base	–	–	–	1
Unidentified – bud	–	–	–	3
Unidentified – bud–scar	–	–	–	1
Unidentified – calyx	–	4M	–	–
Unidentified – stalk	–	–	–	1
Unidentified	3M	80M	–	8
Indeterminate	30M	–	–	44
<b>TOTAL IDENTIFICATIONS</b>	<b>3117</b>	<b>9194</b>	<b>539</b>	<b>380</b>

Table 97 Charred plant remains from the late Roman phase at Northfleet villa

SAMPLE NUMBER	11133	11138	11140	11201	12169
SUB-GROUP	15580	15580	16632	16698	12591
FEATURE NUMBER			10264	10205	
CONTEXT NUMBER	10586	10747	10660	10203	19202
CONTEXT TYPE	Layer East Range	Layer East Range	Layer East Range	Ditch	Corndrier/ Malting Oven
PHASE	LRO	LRO	LRO	LRO	LRO
PROPORTION SORTED	100%	50%	50%	6.25% (=1/16th)	3.125% (=1/32nd)
MULTIPLIER FOR MEDIUM FLOT RESULTS (indicated as M by score)			x2	x3	
SAMPLE VOLUME (l)	8	10	40	4	40
FLOT VOLUME (ml)	100	225	150	1010	2900
SEEDS PER LITRE	42	508	78	64188	1864

## LATIN BINOMIAL

## CEREAL GRAIN

<i>Hordeum</i> sp. - hulled	–	45	–	2	9
<i>Hordeum</i> sp. - hulled germinated	–	8	–	–	1
cf. <i>Hordeum</i> sp. - hulled	2	12E	–	–	–
<i>Triticum</i> cf. <i>dicoccum</i> Schübl.	–	2	–	2	–
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L.	–	32	1	–	–
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L. - germinated	–	8	–	–	–
<i>Triticum spelta</i> L.	3	53	2	1	128
<i>Triticum spelta</i> L. - germinated	–	17	–	1	277
<i>Triticum</i> sp. - indeterminate	35	747E	35	42	290
<i>Triticum</i> sp. - germinated	2	84	7	8	–
<i>Triticum</i> sp. - indeterminate tail grain	–	–	–	15ME	–
Cereal - indeterminate	12	383	40ME	–	215
Cereal - indeterminate germinated	–	11	–	19	27
Cereal/large POACEAE - indeterminate	50	500E	80ME	150ME	150E
Cereal/large POACEAE - indeterminate germinated	–	–	12M	5	–

## CEREAL CHAFF

<i>Hordeum vulgare</i> L. - six-row rachis node	–	–	–	26	–
<i>Hordeum</i> sp. - indeterminate rachis node	1	–	–	39	1
<i>Hordeum</i> sp. - awn	–	–	(+)	(+)	–
cf. <i>Hordeum</i> sp. - rachis node	–	–	–	3	–
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L. - glume base	–	–	–	1	–
<i>Triticum spelta</i> L. - spikelet fork	–	1 = 2gb + 1r	6 = 11gb + 2r	154 = 137gb + 17r	75 = 122gb + 17r
<i>Triticum spelta</i> L. - spikelet fork with grain	–	–	–	2 = 4gb	–
<i>Triticum spelta</i> L. - glume base	36	39	50gE	1597	45
<i>Triticum spelta</i> L. - glume/ lemma fragments	(+)	(+)	–	(++++)	–
<i>Triticum spelta</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. - type rachis node	–	–	4	4	–
<i>Triticum aestivum</i> L. - type rachis node	–	–	–	1	–
<i>Triticum aestivum</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. - type rachis node	–	–	–	12	–
<i>Triticum</i> sp. - spikelet fork	–	6 = 9gb	5 = 10gb	106 = 146gb + 64r	71 = 132gb + 4r
<i>Triticum</i> sp. - terminal spikelet fork	–	–	–	(1 = 2gb)	–
<i>Triticum</i> sp. - glume base	36	71	200MgE	4500MgE	160
<i>Triticum</i> sp. - rachis node	75	101	200MgE	6000MgE	111
<i>Triticum</i> sp. - basal rachis node	–	–	4M	48	–
<i>Triticum</i> sp. - glume/lemma fragments	–	–	–	(++++)	(++)
Cereal - indeterminate basal rachis node	–	–	6M	–	–
Cereal/large POACEAE - rachis internode	25	47	30M	1500MgE	101
Cereal/large POACEAE - basal rachis node	–	–	–	3M	1
Cereal/large POACEAE - rachilla	–	2	–	15M	2
Cereal/large POACEAE - culm base	–	–	–	–	–
Cereal/large POACEAE - culm node	1	–	–	9M	–

## COLEOPTILE/DETACHED EMBRYO

Cereal/large POACEAE - coleoptile (estimate m.n.i.)	27	203	98M	984M	138
cf. Cereal/large POACEAE - coleoptile (estimate m.n.i.)	–	–	–	90ME	–
Cereal/large POACEAE - detached embryo	–	56	4M	15M	43

## OTHER CROPS

<i>Vicia</i> sp./ <i>Pisum sativum</i> L.	–	–	4	–	–
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SAMPLE NUMBER	11133	11138	11140	11201	12169
<b>WEED/WILD PLANTS</b>					
<i>Pteridium aquilinum</i> (L.) Kuhn - leaf tips	-	-	-	9M	-
<i>Papaver rhoeas</i> L/ <i>dubium</i> L./ <i>argemone</i> L.	-	-	2M	6M	-
<i>Chenopodium</i> spp.	-	3	-	-	-
<i>Chenopodium</i> spp./ <i>Atriplex</i> spp.	-	-	-	6M	-
cf. <i>Cerastium</i> spp.	-	-	4M	-	-
<i>Agrostemma githago</i> L.	-	8	-	-	4
cf. <i>Agrostemma githago</i> L. - calyx tip	2	1	-	3M	-
cf. <i>Agrostemma githago</i> L. - internal structure	-	-	-	3M	-
<i>Silene</i> sp.	-	-	-	-	2
<i>Polygonum</i> spp.	-	-	2M	-	-
<i>Rumex</i> spp.	2	-	50M	9M	6
<i>Vicia</i> spp./ <i>Lathyrus</i> spp.	1	10	466M	-	15
cf. <i>Vicia</i> spp./ <i>Lathyrus</i> spp.	-	-	6M	-	-
<i>Melilotus</i> spp./ <i>Medicago</i> spp./ <i>Trifolium</i> spp.	-	-	2M	3M	-
FABACEAE - indeterminate (immature)	-	-	-	12M	-
FABACEAE - indeterminate pod fragment	-	-	-	30M	-
APIACEAE - indeterminate	-	-	-	3M	9
<i>Veronica hederifolia</i> L.	-	-	2M	-	-
<i>Galium</i> spp.	1	1	-	-	-
<i>Centaurea</i> sp.	-	-	-	-	1
<i>Lapsana communis</i> L.	-	-	-	3M	-
<i>Anthemis cotula</i> L.	-	-	-	-	154
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	-	-	-	18M	-
ASTERACEAE - indeterminate	-	-	-	-	7
<i>Juncus</i> spp.	-	-	-	3M	-
<i>Eleocharis palustris</i> (L.) Roem. & Schult./ <i>uniglumis</i> (Link) Schult.	-	-	-	-	-
<i>Lolium</i> sp. - caryopsis	-	-	6M	84M	1
<i>Lolium</i> sp. - rachis node	-	-	-	12M	-
<i>Avena</i> sp.	-	1	-	-	7
<i>Avena</i> sp. - germinated	-	1	-	-	-
<i>Avena</i> sp. - floret base	-	4	-	12ME	1
<i>Avena</i> sp. - awn (estimate m.n.i.)	1	1	2M	9ME	1
<i>Avena</i> sp. - pedicel	-	1	-	42ME	1
cf. <i>Avena</i> sp.	-	-	6M	-	-
<i>Avena</i> sp./ <i>Bromus</i> sp.	-	-	14M	15M	54
<i>Avena</i> sp./ <i>Bromus</i> sp. - germinated	-	-	-	-	2
<i>Bromus</i> sp.	-	-	16M	-	29
<i>Bromus</i> sp. - germinated	-	-	-	-	2
cf. <i>Bromus</i> sp.	-	-	28M	-	-
POACEAE - indeterminate small caryopsis	-	-	-	9M	23
POACEAE - indeterminate medium caryopsis	12	10	52M	39M	7
POACEAE - indeterminate large caryopsis	-	3	-	-	-
POACEAE - indeterminate rachis node	-	-	-	15M	-
Unidentified - concreted vegetative material (fragments)	3	-	-	-	-
Unidentified	1	1	4M	-	-
Indeterminate	7	61	100ME	150ME	30
<b>TOTAL IDENTIFICATIONS</b>	<b>336</b>	<b>2539</b>	<b>1562</b>	<b>16047</b>	<b>2330</b>





Table 98 Relative proportion of plant categories for all Roman samples from Northfleet villa

	SAMPLE No	SUB-GROUP	FEATURE NUMBER	CONTEXT NUMBER	CONTEXT TYPE	CEREAL GRAIN	CEREAL CHAFF	GERMINATED GRAIN/ COLEOPTILE/ DETACHED EMBRYO	OTHER CROPS	WEED/ WILD	UNIDENT/ INDET	TOTAL IDENTIFICATIONS	SEEDS/ LITRE
EARLY ROMAN	11110	16726	10663	10755	Pit	3.1%	88.1%	6.3%	0.0%	2.0%	0.6%	352	9
	11113	10165	10165	10801	Ditch	41.2%	47.2%	4.6%	0.1%	2.9%	4.0%	1738	695
	11166		15226	15212	Pit	45.0%	46.6%	6.0%	0.0%	1.5%	0.9%	8962	3585
	11473	16723	16032	16033	Ditch	2.2%	89.0%	4.5%	0.2%	3.9%	0.2%	2273	2273
	13097		16650	16651	Post-hole 1st Roman BLDG	62.6%	28.2%	6.9%	0.0%	1.4%	0.9%	6496	650
ERO/ MRO	12001	12317	11574	11530	Wood-lined pit	6.0%	84.8%	1.9%	0.0%	6.3%	1.0%	1563	78
	12003	12317	11512	11532	Wood-lined pit	6.6%	77.2%	1.2%	0.9%	7.1%	7.1%	578	58
	12008	12317	11574	11563	Wood-lined pit	1.9%	90.5%	4.4%	0.0%	2.6%	0.6%	4182	209
	12207		19312	19341	Ditch	1.4%	78.9%	9.0%	0.0%	8.1%	2.6%	8322	29,589
MIDDLE ROMAN	11104	10508		10481	Layer in hypocaust	6.1%	32.3%	0.9%	0.2%	3.3%	57.2%	570	57
	11111	15577	10857	10780	Post-hole	40.4%	20.5%	12.8%	0.0%	7.7%	18.6%	156	8
	11142			10060	Layer East Range	3.6%	88.8%	1.7%	0.0%	5.6%	0.4%	6414	160
	11151	15577	15076	15079	Post-hole	65.1%	24.4%	7.6%	0.1%	2.6%	0.1%	762	19
	11161	15578	15146	15169	Beam slot East Range	21.6%	65.2%	5.4%	0.0%	6.3%	1.4%	555	56
	11162	15578	15147	15170	Beam slot East Range	9.4%	42.0%	0.5%	0.0%	46.0%	2.2%	417	42
	11247		15654	15657	Pit	14.7%	76.7%	4.3%	0.1%	2.7%	1.6%	1153	577
	11444	15577	15963	15990	Pit	30.6%	56.3%	7.3%	0.1%	3.8%	1.9%	1780	89
	11484	16803	15474	15499	Ditch	7.6%	74.5%	14.5%	0.0%	3.3%	0.0%	1794	90
	13036	16731	16170	16522	Cistern	7.1%	80.2%	6.9%	0.0%	4.9%	1.0%	8870	70,960
	13037	16731	16170	16524	Cistern	5.8%	80.2%	11.4%	0.0%	1.5%	1.1%	3117	1662
	13060	16731	16170	16586	Cistern	2.3%	86.4%	6.9%	0.0%	3.5%	0.9%	9194	1839
	13067	16640	16593	16595	Post-pipe East Range	21.9%	51.8%	20.4%	0.6%	5.4%	0.0%	539	27
	21122		20432	20433	Pit (assoc. w/ hearth 20748)	33.2%	27.9%	2.9%	2.1%	18.9%	15.0%	380	76
LATE ROMAN	11133	15580		10586	Layer East Range	30.4%	51.8%	8.6%	0.0%	6.0%	3.3%	336	42
	11138	15580		10747	Layer East Range	70.2%	10.7%	14.9%	0.0%	1.7%	2.4%	2539	508
	11140	16632	10264	10660	Layer East Range	10.1%	33.1%	7.7%	0.3%	42.1%	6.7%	1562	78
	11201	16698	10205	10203	Ditch	1.3%	88.6%	7.0%	0.0%	2.1%	0.9%	16047	64,188
	12169	12591		19202	Corn dryer/ malting oven	34.0%	29.9%	20.8%	0.0%	14.0%	1.3%	2330	1864

NB Grey shading indicates the dominant (ie, accounting for &gt;50% of all identifications) plant category for a particular sample

Table 99 Comparison of presence/absence charred plant remains recovered from all Roman and Saxon phases at Northfleet villa [what is Sax A and Sax B]

PHASE	Habitat Coding – need key	Early Roman	Early/middle Roman	Middle Roman	Late Roman	Saxon (5th–6th century)	Saxon 6th–7th century)	English Common Name
<b>LATIN BINOMIAL</b>								
<b>CEREAL GRAIN</b>								
<i>Hordeum</i> sp. - hulled	Cu	■	■	■	■	■	■	Hulled barley
<i>Hordeum</i> sp. - hulled germinated	Cu	■	■	■	■	■	■	Germinated hulled barley
cf. <i>Hordeum</i> sp. - hulled	Cu	■	■	■	■	■	■	Possible hulled barley
<i>Triticum</i> cf. <i>dicoccum</i> Schübl.	Cu	■	■	■	■	■	■	Possible emmer
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. - germinated	Cu	■	■	■	■	■	■	Possible germinated emmer
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L.	Cu	■	■	■	■	■	■	Emmer/spelt
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L. - germinated	Cu	■	■	■	■	■	■	Germinated emmer/spelt
<i>Triticum spelta</i> L.	Cu	■	■	■	■	■	■	Spelt
<i>Triticum spelta</i> L. - within spikelet	Cu	■	■	■	■	■	■	Spelt grain still within spikelet
<i>Triticum spelta</i> L. - germinated	Cu	■	■	■	■	■	■	Germinated spelt
<i>Triticum aestivum</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. - type	Cu	■	■	■	■	■	■	Free-threshing wheat - type
<i>Triticum</i> sp. - indeterminate	Cu	■	■	■	■	■	■	Indeterminate wheat
<i>Triticum</i> sp. - indeterminate, compact type	Cu	■	■	■	■	■	■	Indeterminate wheat - compact form
<i>Triticum</i> sp. - germinated	Cu	■	■	■	■	■	■	Indeterminate wheat
<i>Triticum</i> sp. - indeterminate tail grain	Cu	■	■	■	■	■	■	Germinated indeterminate wheat
<i>Triticum</i> sp. - indeterminate germinated tail grain	Cu	■	■	■	■	■	■	Germinated indet. wheat tail grain
cf. <i>Triticum</i> sp. - indeterminate	Cu	■	■	■	■	■	■	Possible wheat
Cereal - indeterminate	Cu	■	■	■	■	■	■	Indeterminate cereal
Cereal - indeterminate germinated	Cu	■	■	■	■	■	■	Germinated indeterminate cereal
Cereal/large POACEAE - indeterminate	?Cu	■	■	■	■	■	■	Indeterminate cereal/large grass
Cereal/large POACEAE - indeterminate germinated	?Cu	■	■	■	■	■	■	Germinated indet. cereal/large grass
<b>CEREAL CHAFF</b>								
<i>Hordeum vulgare</i> L. - six-row rachis node	Cu	■	■	■	■	■	■	Six-row barley rachis node
<i>Hordeum</i> sp. - indeterminate rachis node	Cu	■	■	■	■	■	■	Indeterminate barley rachis node
<i>Hordeum</i> sp. - awn	Cu	■	■	■	■	■	■	Barley awn
cf. <i>Hordeum</i> sp. - rachis node	Cu	■	■	■	■	■	■	Possible barley rachis node
<i>Hordeum</i> sp./ <i>Secale cereale</i> L. - rachis node	Cu	■	■	■	■	■	■	Barley/rye rachis node
<i>Hordeum</i> sp./ <i>Triticum</i> sp. - rachis internode	Cu	■	■	■	■	■	■	Barley/wheat rachis internode
<i>Secale cereale</i> L. - rachis node	Cu	■	■	■	■	■	■	Rye rachis node
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. - glume base	Cu	■	■	■	■	■	■	Possible emmer glume base
<i>Triticum dicoccum</i> Schübl./ <i>spelta</i> L. - glume base	Cu	■	■	■	■	■	■	Emmer/spelt glume base
<i>Triticum spelta</i> L. - spikelet fork	Cu	■	■	■	■	■	■	Spelt spikelet fork
<i>Triticum spelta</i> L. - spikelet fork with grain	Cu	■	■	■	■	■	■	Spelt spikelet fork with intact grain
<i>Triticum spelta</i> L. - terminal spikelet fork	Cu	■	■	■	■	■	■	Terminal spelt spikelet fork
<i>Triticum spelta</i> L. - glume base	Cu	■	■	■	■	■	■	Spelt glume base
<i>Triticum spelta</i> L. - glume/lemma fragments	Cu	■	■	■	■	■	■	Spelt glume/lemma fragments
<i>Triticum spelta</i> L./ <i>aestivum</i> L. - type rachis node	Cu	■	■	■	■	■	■	Spelt/ bread wheat type rachis node

PHASE	Habitat Coding – need key	Early Roman	Early/middle Roman	Middle Roman	Late Roman	Saxon (5th–6th century)	Saxon 6th–7th century)	English Common Name
<i>Triticum spelta</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. - type rachis node	Cu							Spelt/macaroni or rivet wheat type rachis node
<i>Triticum aestivum</i> L. - type rachis node	Cu							Bread wheat type rachis node
<i>Triticum aestivum</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L. - type rachis node	Cu							Free-threshing wheat type rachis node
<i>Triticum durum</i> Desf./ <i>turgidum</i> L. type - rachis node	Cu							Macaroni/rivet wheat rachis node
<i>Triticum</i> sp. - spikelet fork	Cu							Indeterminate wheat spikelet fork
<i>Triticum</i> sp. - terminal spikelet fork	Cu							Indeterminate wheat terminal spikelet fork
<i>Triticum</i> sp. - glume base	Cu							Indeterminate wheat glume base
<i>Triticum</i> sp. - rachis node	Cu							Indeterminate wheat rachis node
<i>Triticum</i> sp. - basal rachis node	Cu							Indeterminate wheat basal rachis node
<i>Triticum</i> sp. - glume/lemma fragments	Cu							Indeterminate wheat glume/lemma fragments
<i>Triticum</i> sp. - awn	Cu							Indeterminate wheat awn
Cereal - indeterminate rachis internode	Cu							Indeterminate cereal rachis internode
Cereal - indeterminate basal rachis node	Cu							Indeterminate cereal basal rachis node
Cereal/large POACEAE - rachis internode	?Cu							Indeterminate cereal/large grass rachis internode
Cereal/large POACEAE - basal rachis node	?Cu							Indet. cereal/large grass basal rachis node
Cereal/large POACEAE - rachilla	?Cu							Indeterminate cereal/large grass rachilla
Cereal/large POACEAE - glume	?Cu							Indeterminate cereal/large grass glume
Cereal/large POACEAE - culm base	?Cu							Indeterminate cereal/large grass culm base
Cereal/large POACEAE - culm node	?Cu							Indeterminate cereal/large grass culm node
cf. Cereal/large POACEAE - culm node	?Cu							Possible indet. cereal/large grass culm node
<b>COLEOPTILE/DETACHED EMBRYO</b>								
Cereal/large POACEAE - coleoptile (estimate m.n.i.)	?Cu							Indeterminate cereal/large grass sprout
cf. Cereal/large POACEAE - coleoptile (estimate m.n.i.)	?Cu							Possible indet. cereal/large grass sprout
Cereal/large POACEAE - detached embryo	?Cu							Detached indet. cereal/large grass embryo
cf. Cereal/large POACEAE - detached embryo	?Cu							Possible indet. cereal/ large grass detached embryo
<b>OTHER CROPS</b>								
<i>Vicia faba</i> L. var. <i>minor</i>								Vetch/garden pea
<i>Vicia</i> sp./ <i>Pisum sativum</i> L.	Cu							Possible vetch/garden pea
cf. <i>Vicia</i> sp./ <i>Pisum sativum</i> L.	Cu							Flax or linseed
<i>Linum usitatissimum</i> L. - capsule fragment	Cu							
<b>TREE/ SHRUB</b>								
<i>Corylus avellana</i> L. - nutshell fragments	H/S or Wo							
<b>WEED/WILD PLANTS</b>								
<i>Pteridium aquilinum</i> (L.) Kuhn - leaf tips	Wo or Mo							Bracken
<i>Ranunculus acris</i> L./ <i>repens</i> L./ <i>bulbosus</i> L.	G/Wa							Meadow/creeping/bulbous buttercup

PHASE	Habitat Coding – need key	Early Roman	Early/middle Roman	Middle Roman	Late Roman	Saxon (5th–6th century)	Saxon 6th–7th century)	English Common Name
<i>Ranunculus</i> spp.	-							Buttercup
<i>Papver</i> cf. <i>argemone</i> L. - capsule top	Aw							Possible prickly poppy
<i>Papaver rhoeas</i> L./ <i>dubium</i> L./ <i>argemone</i> L.	Aw							Common/long-headed/prickly poppy
PAPAVERACEAE - indeterminate	-							Poppy Family
cf. <i>Urtica dioica</i> L.	D/Cu							Possible common nettle
<i>Chenopodium</i> sp.	Typically D/Cu							Goosefoot
<i>Atriplex</i> spp.	Typically D/Cu							Orache
<i>Chenopodium</i> spp./ <i>Atriplex</i> spp.	Typically D/Cu							Goosefoot/orache
CHENOPODIACEAE/CARYOPHYLLACEAE - indet.	-							Goosefoot/pink Family
<i>Montia fontana</i> L.	Wm							Blink
cf. <i>Stellaria media</i> L.	D/Cu							Possible common chickweed
<i>Cerastium</i> spp.	D/Cu							Mouse-ear
cf. <i>Cerastium</i> spp.	D/Cu							Possible mouse-ear
<i>Agrostemma githago</i> L.	Aw							Corncockle
cf. <i>Agrostemma githago</i> L. - calyx tip	Aw							Possible corncockle
cf. <i>Agrostemma githago</i> L. - internal structure	Aw							Possible corncockle
<i>Silene</i> sp.	-							Campion
cf. <i>Silene</i> sp. (large-seeded)	-							Possible campion
CARYOPHYLLACEAE - indeterminate	-							Pink Family
<i>Persicaria</i> spp.	Typ Gwa or Wm							Knotweed
<i>Polygonum aviculare</i> L.	D/Cu							Knotgrass
<i>Polygonum</i> cf. <i>aviculare</i> L.	D/Cu							Possible knotgrass
<i>Polygonum</i> spp.	-							Knotgrass
<i>Polygonum</i> spp./ <i>Rumex</i> spp./ <i>Carex</i> spp.- indet. internal structure	-							Indeterminate knotgrass/dock/sedge
<i>Fallopia convolvulus</i> (L.) Á. Löve	D/Cu							Black bindweed
<i>Rumex</i> spp.	Typically D/Cu or G/Wa							Dock
<i>Rumex</i> spp. - tubercle	Typically D/Cu or G/Wa							Dock
<i>Malva</i> spp.	Typ G/Wa							Mallow
MALVACEAE - indeterminate	-							Mallow Family
cf. MALVACEAE - indeterminate	-							Possible mallow Family
<i>Bryonia dioica</i> Jacq.	H/S							White bryony
cf. <i>Thlapsi arvense</i> L.	Aw							Possible field penny-cress
<i>Brassica</i> cf. <i>rapa</i> L.	Wm/Wa							Possible wild turnip





PHASE	Habitat Coding – need key	Early Roman	Early/middle Roman	Middle Roman	Late Roman	Saxon (5th–6th century)	Saxon 6th–7th century)	English Common Name
POACEAE - indeterminate culm node	-							Grass Family
POACEAE - indeterminate culm base	-							Grass Family
<b>UNIDENTIFIED</b>								
Unidentified - bud	-							Unidentified bud
Unidentified - bud-scar	-							Unidentified bud-scar
Unidentified - calyx	-							Unidentified calyx
Unidentified - capsule fragment	-							Unidentified capsule fragment
Unidentified - concreted vegetative material (fragments)	-							Unidentified concrete vegetative material
Unidentified - leaf	-							Unidentified leaf
Unidentified - mineralized seed	-							Unidentified mineralized seed
Unidentified - fruit stone (fragment)	-							Unidentified fruit stone
Unidentified - seed coat/pod (fragments)	-							Unidentified seed coat/pod
Unidentified - stalk	-							Unidentified stalk
Unidentified - thorn	-							Unidentified thorn

Key: Habitat codes

A = arable; Aw = arable weed; Cu = cultivated; D = disturbed ground, wasteland; G = grassland; H = hedgerow; S = scrub; Wa = waste ground; Wm = wetland/marsh; Wo = woodland

Table 101 List of woody taxa for late Iron Age to Roman Springhead

Taxon	Common name	Comments
<i>Acer campestre</i>	Field maple	
<i>Alnus glutinosa</i>	Alder	
<i>Betula pendula/pubescens</i>	Silver/downy birch	
<i>Carpinus betulus</i>	Hornbeam	
cf. <i>Castanea sativa</i>	Cf. Sweet chestnut	Introduced
<i>Clematis vitalba</i>	Traveller's-joy/old man's beard	
<i>Cornus</i> sp.	Dogwood	
<i>Corylus avellana</i>	Hazel	
<i>Fraxinus excelsior</i>	Ash	
<i>Ilex aquifolium</i>	Holly	
<i>Laburnum</i> sp.	Laburnum	Introduced
Pomoideae	Pomaceous fruits	Group of shrubs including <i>Cotoneaster</i> , <i>Sorbus</i> , <i>Pyrus</i> , <i>Crataegus</i>
Pomoideae ( <i>Crataegus</i> type)	Pomaceous fruits (hawthorn type)	Sub-group of the Pomoideae includes <i>Pyrus</i> , <i>Crataegus</i> , <i>Malus</i>
Pomoideae (cf. Maloideae)	Pomaceous fruits (cf. apple/quince/pear)	Not normally distinguished from <i>Crataegus</i> type, but assemblage large and exceptionally well preserved
<i>Prunus avium</i>	Bird cherry	
<i>Prunus spinosa</i> type	Blackthorn	Type includes <i>P. spinosa</i> , <i>P. domestica</i>
<i>Prunus</i> sp.	Cherries	
<i>Quercus</i> sp.	Oak	
<i>Salix/Populus</i> sp.	Willow/aspen or poplar	The two taxa are anatomically indistinguishable
<i>Taxus baccata</i>	Yew	Coniferous
<i>Ulmus</i> sp.	Elm	
<i>Viburnum</i> sp.	Viburnum	Include native types <i>V. lantana</i> and <i>V. opulus</i>



Table I02 Wood charcoal identifications for Springhead (ARC SPH00)

Sample no.	Feature	Context	Phase	Description	Comments	weight of charcoal g	weight of charcoal IDd g	<i>Acer campestre</i>	<i>Alnus glutinosa</i>	<i>Betula pendula/pubescens</i>	<i>Clematis vitalba</i>	<i>Corylus avellana</i>	<i>Corylus avellana</i> r*wd	<i>Fraxinus excelsior</i>	<i>Fraxinus excelsior</i> r*wd	<i>Laburnum</i> sp.	Pomoideae	Pomoideae ( <i>Crataegus</i> type)	Twigwood cf. Pomoideae	<i>Prunus avium</i>	<i>Prunus spinosa</i> type	<i>Prunus</i> sp.	Twigwood cf. <i>Prunus</i> sp.	<i>Quercus</i> sp.	<i>Quercus</i> sapwood	<i>Quercus</i> r*wd	<i>Quercus</i> twigwood	<i>Salix/Populus</i> sp.	<i>Taxus baccata</i>	<i>Ulmus</i> sp.	Juvenile <i>Ulmus</i> sp.	Unidentifiable	Unidentifiable twigwood	Total identified	% assemblage IDd by weight	
8003	3027	3028	LIA	Pit	Firm fresh, all small frags. A few friable due to mineralisation	13	4	12	1	0	0	8	1	1	0	0	8	0	0	2	1	0	0	11	0	0	0	0	0	0	0	0	2	0	47	31
8264	2711	2712	RB	Corn/crop dryer	Several frags >20 mm, firm & fresh, rarely mineralised. 22 quick-grown oak frags. Scan shows rest of sample dominated by <i>Quercus</i>	120	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	292	7	1	0	0	0	0	0	0	0	300	35	
8408	5405	5411	RB	Pot used as an oven	Sample rooty but macroscopic remains interesting, presence of numerous (unid) charred buds. Charcoal dominated by 1-2 year twigwood used as fuel/ tinder in pot	4	1.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4	0	0	15	0	0	0	0	0	3	24	38	
8495	5906	5906	RB	Layer: temple floor	4 frags quick-grown, 4 branching. Scan shows rest of sample dominated by <i>Quercus</i> . Large fragmentary sample, some frags >30 mm, rarely vitrified	136	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204	2	1	0	0	0	0	0	0	0	207	54	
8512	5917	-	RB	Tank lining	V large sample, somewhat fragmentary but several frags 20-50 mm. 1 <i>Quercus</i> quick grown	130	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	0	1	0	0	0	0	0	0	0	126	38	
8518	5942	-	RB	Pot oven	Small sample but good condition	6	3	4	0	0	0	10	5	0	0	0	0	0	0	0	0	0	0	45	0	0	0	0	0	0	0	0	1	0	65	50
8587	6345	6355	RB	Cremation	Firm fresh charcoal, several large frags	9	5	0	0	0	0	9	0	0	1	0	5	0	0	0	0	0	0	32	0	5	3	0	1	3	0	0	2	61	56	
8620	6607	6612	RB	Grave	All frags part vitrified	4	4	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	14	1	10	0	0	0	0	1	2	0	33	100	
8621	6610	-	RB	Box burial (cremation)	<i>Acer</i> dom roundwood/ juvenile.	3	2.5	11	0	0	1	4	2	1	0	1	0	6	0	0	0	0	16	1	0	0	2	0	1	0	0	1	47	83		
8625	6015	-	RB	Hearth	Small sample but good condition. <i>Quercus</i> roundwood important (poss more too small to tell) 2=3yr, 1>2yr, 3=2yr, 3>1yr, 1>4yrs, 1=7yrs	7	4	1	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	35	0	11	0	0	0	0	2	0	1	0	55	57
8021	3217	3190	LS	Corn/ crop dryer	Pomoideae dom 7yrs, 20-25 mm diameter, <i>Corylus</i> roundwood 10yr Charcoal very good condition, large frags	44	13	2	0	7	0	22	2	0	0	0	0	30	0	0	0	0	0	4	0	0	0	1	0	0	0	1	0	69	30	
8091	3475	3481	LS	Corn/crop dryer	Small frags, mod condition, some mineralized	4	3	8	4	5	0	0	0	0	0	0	0	12	0	0	0	1	0	5	0	0	0	0	0	0	0	4	0	39	75	

Table I03 Wood charcoal identifications for Springhead (ARC SHN02)

Sample no.	Feature	Context	Phase	Description	Comments	weight of charcoal sample g	weight of charcoal IDd g	<i>Acer campestre</i>	Twigwood cf. <i>Acer campestre</i>	<i>Betula pendula/pubescens</i>	<i>Carpinus betulus</i>	cf. <i>Castanea</i>	<i>Clennatis vitalba</i>	<i>Cornus</i> sp.	<i>Corylus avellana</i>	<i>Corylus avellana</i> r'wd	<i>Corylus avellana</i> twigwood	<i>Fraxinus excelsior</i>	<i>Fraxinus excelsior</i> r'wd	<i>Fraxinus excelsior</i> twigwood	<i>Ilex aquifolium</i> r'wd	Pomoideae	Pomoideae ( <i>Crataegus</i> type)	Pomoideae (cf. Maloideae)	Pomoideae twigwood (cf. <del>Malus</del> )	Twigwood cf. Pomoideae	<i>Prunus avium</i>	<i>Prunus</i> sp.	Twigwood cf. <i>Prunus</i> sp.	<i>Quercus</i> sp.	cf. <i>Quercus</i> sp.	<i>Quercus</i> sapwood	<i>Quercus</i> r'wd	<i>Quercus</i> twigwood	herbaceous stem cf Rosaceae hip	<i>Salix/Populus</i> sp.	<i>Ulmus</i> sp.	<i>Ulmus</i> sp. Twigwood	<i>Viburnum</i> sp twigwood	Unidentifiable	Unidentifiable twigwood	Bark	Charred mass/ parenchyma	Total no. fragments identified	%assemblage IDd by weight				
14066	10950	10969RB		with slag in pit, smithy waste	Condition fair though some with extensive redep of minerals (prob Fe), large frags. 25% of oak vitrified	37	18	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	130	0	8	3	0	0	0	0	0	0	0	0	0	0	0	1	146	49	
14132	11388	11383RB		linear roadside ditch	Charcoal-rich layer in upper fill of ditch believed to just pre-date adjacent smithy. Smithy waste/other?	6	3	0	1	1	1	0	2	0	3	0	1	3	0	0	0	0	3	0	0	0	0	0	0	5	17	0	0	1	1	3	0	2	2	0	3	1	0	50	50				
14159	-	12223RB		Pot burial	Inhumation burial in large storage vessel	14	7	5	1	1	0	0	0	0	5	0	0	2	0	0	0	0	2	0	0	0	0	1	0	39	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	60	50		
14181	-	12351RB		Temple floor	Charcoal v good condition, some large frags, <i>Quercus</i> dom incl 4 sapwood	7	3.5	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	3	0	0	0	0	0	0	0	52	0	0	0	3	0	0	3	0	3	1	0	1	0	75	50			
14202	-	12352RB		Temple floor	Clean fresh, several large frags	21	10	20	0	0	0	1	0	0	30	1	0	0	0	0	0	1	0	16	0	0	0	0	2	0	28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	48
14151	11892	11896MRB	SFB	adjacent to aisled structure (barn?)	Pomoideae in excellent preservation, can suggest cf. <i>Malus/Sorbus</i> sp. If is food storage context, former likely	4	2	0	0	1	0	0	0	1	0	0	0	0	6	0	1	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	54	50		

Table I04 Summary of Roman charcoal samples from Northfleet (ARC EBB01)

Phase	Category	Feature type
Early Roman	Other	Ditch
Middle Roman	Leisure	Hypocaust, cistern and bath-house x5
		Aisled structures/ villa contexts x4
	Domestic	Well
		Pit x2
Industry	Lime kiln x4	
	Other	Clay-lined tank
		Gully
		Ditch x2
Late Roman	Leisure	Hypocaust, cistern and bath-house x1
	?Domestic	Aisled structures/villa contexts x2

Table I05 List of woody taxa for Roman Northfleet

Taxon	Common name	Comments
<i>Acer campestre</i>	Field maple	
<i>Alnus glutinosa</i>	Alder	
<i>Betula pendula/pubescens</i>	Silver/ downy birch	
<i>Cornus</i> sp.	Dogwood	
<i>Corylus avellana</i>	Hazel	
<i>Fagus sylvatica</i>	Beech	
<i>Fraxinus excelsior</i>	Ash	
<i>Hedera helix</i>	Ivy	
<i>Ilex aquifolium</i>	Holly	
cf. <i>Pinus</i> sp.	Cf. pine	Coniferous
Pomoideae	Pomaceous fruits	Group of shrubs including <i>Cotoneaster</i> , <i>Sorbus</i> , <i>Pyrus</i> , <i>Crataegus</i>
Pomoideae ( <i>Crataegus</i> type)	Pomaceous fruits (hawthorn type)	Sub-group of the Pomoideae includes <i>Pyrus</i> , <i>Crataegus</i> , <i>Malus</i>
<i>Prunus avium</i>	Bird cherry	
<i>Prunus spinosa</i> type	Blackthorn	<i>Prunus spinosa</i> type includes <i>P. spinosa</i> , <i>P. domestica</i>
<i>Prunus</i> sp.	Cherries	
<i>Quercus</i> sp.	Oak	
<i>Rosa</i> sp.	Rose	
<i>Salix/Populus</i> sp.	Willow/aspens or poplar	The two taxa are anatomically indistinguishable
<i>Ulmus</i> sp.	Elm	

Table 106 Wood charcoal identifications Northfleet (ARC EBB01)

Sample no.	Subgroup	Feature	Context	Phase	Description	Comments	weight of charcoal g	weight of charcoal IDd g	<i>Acer campestre</i>	<i>Alnus glutinosa</i>	<i>Betula pendula/pubescens</i> cf. <i>Betula</i> sp.	twigwood cf. <i>Betula</i> sp.	<i>Carpinus betulus</i>	<i>Cornus</i> sp. R'wd	<i>Corylus avellana</i>	<i>Corylus avellana</i> r'wd	<i>Fagus sylvatica</i> r'wd	<i>Fagus sylvatica</i>	cf. <i>Frangula alnus</i>	<i>Fraxinus excelsior</i>	<i>Hedera helix</i>	<i>Ilex aquifolium</i>	cf. <i>Pinus</i> sp.	Pomoideae (inc r'wd)	Pomoideae twigwood/cf	Pomoideae ( <i>Crataegus</i> type)	<i>Prunus avium</i>	cf. <i>Prunus avium</i>	<i>Prunus spinosa</i> type	<i>Prunus</i> sp. Cf. <i>P. spinosa</i>	<i>Prunus</i> sp.	<i>Prunus</i> sp. R'wd	<i>Quercus</i> sp.	<i>Quercus</i> r'wd	<i>Quercus</i> twigwood	cf. <i>Quercus</i> twigwood	<i>Rhamnus cathartica</i>	<i>Rosa</i> sp.	<i>Salix/Populus</i> sp.	<i>Ulmus</i> sp./ cf. <i>Ulmus</i> sp.	Unidentifiable	Unidentifiable twigwood	Total identified	% assemblage IDd by weight			
11113	16723	10165	10801	ERB	Ditch	Dump of burnt material - deliberate backfill	38	12	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	35	0	0	0	0	0	0	0	0	0	0	142	32	
11104	10508	-	10481	MRB	Layer	Deposit from use of hypocaust. Oak dominated by large frags of young mature/ large roundwood	104	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	197	0	0	0	0	0	0	0	0	0	0	200	24		
11111	15577	10857	10780	MRB	Post-hole	Post-hole from eastern aisled structure (built c 160-200). very large oak fragments, (including rest of sample scanned). Post	141	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	65	57	
11125	16801	10849	10973	MRB	Kiln	Construction of lime kiln in Villa Phase 2, C14 dates use to between 140-170 AD. Large sample of small fragments	27	7	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	1	0	5	0	100	0	0	0	0	0	0	0	0	0	0	0	0	111	26	
11155	15578	15031	15032	MRB	Layer	Fill of beam slot, eastern aisled structure. Large charcoal sample of small frags. Large fresh pieces esp <i>Acer</i> , <i>Prunus</i> , Pomoideae (some >15 yrs), oak scrapper, not beam	35	20	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	0	0	0	0	14	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	100	57
11164	16801	10849	15177	MRB	Kiln	lime kiln fill - base	12	6	0	59	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	100	50	
11171	16801	10849	15252	MRB	Kiln	Fissured/ flaky charcoal, large, some vitrified but several so well preserved have bark with lichen apparent	21	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	50	81	
11179	16801	10849	15177	MRB	Kiln	A few oak pieces are vitrified	9	4	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	62	2	2	0	0	0	0	0	0	2	0	104	44		
11266	-	15449	15614	MRB	Pit	Fill of clay-lined tank. Huge sample, scan of rest of sample suggests all oak. All pieces >2 mm. Roundwood oak 5yrs	1050	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	238	5	0	0	0	0	0	0	0	0	0	0	244	2		
11444	15577	15963	15990	MRB	Post-hole	Eastern aisled structure. Nearly all oak, likely post, single piece oak twigwood used for radiocarbon	26	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	0	2	2	0	0	0	2	0	0	0	0	102	38		
11449	10330	10795	10794	MRB	Bath-house	Bath-house room C14. Charcoal fragmentary	55	5	1	2	3	0	0	0	5	0	0	0	0	0	6	0	0	0	2	0	0	4	0	0	0	5	0	113	10	0	0	0	0	0	0	0	0	0	151	9	
11451	10330	10795	16060	MRB	Flue	Bath-house room. All oak incl. roundwood	12	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	15	0	0	0	0	0	0	0	0	0	0	102	42		
11479	16723	16037	16039	MRB	Ditch	Second ditch fill. Small, fragmentary, grain dominated	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0	82	60	
11483	16516	16090	16091	MRB	Well	Dump deposit in wood-lined well. Oak roundwood includes 25 yr but narrow rings, diameter only 15 mm. Restricted/ slow growth	122	15	0	1	30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	47	20	2	0	0	0	0	0	0	0	1	0	104	12	
13013	-	10569	10570	MRB	Pit	Dark humic silt used to level pit? Sample grain and rachis dominated, little charcoal	1	1	0	0	0	0	0	0	3	0	0	0	0	0	36	1	0	0	2	0	0	0	0	0	1	0	20	0	0	0	0	0	0	0	0	0	0	0	63	100	
13037	16731	16170	16524	MRB	Well	Grain rich, only >4 mm charcoal extracted/ weighed. Oak roundwood 5 yr	37	22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	4	0	0	0	0	0	0	0	0	0	0	100	59		
13061	16731	16170	16596	MRB	Well	Silting layer. Charcoal generally good condition, some only part charred	32	20	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195	20	0	0	0	0	0	0	1	0	0	0	218	63		



Table I07 The shell assemblages from the analysed groups at Springhead and Northfleet

SITE	PHASE	GROUP TYPE	GROUP	CTXS	OY LV	OY UMLV	OY RV	OY UMRV	OY MNI	WHELK	PERI-WINKLE	MUSSEL MNI	COCKLE MNI	CARPET SHELL MNI	TOTAL
ARC SPH00	Roman	Beam slot building		5	108	106	117	86	223	4	2	54	2	0	285
ARC SPH00	Roman	Pit alignment	300073	11	110	136	164	119	296	9	2	29	2	0	338
ARC SPH00	Roman	Ritual shaft	2856	6	123	102	145	96	263	0	0	32	1	0	296
ARC SPH00	Roman	Tank	300128	1	16	12	23	5	28	0	0	0	0	1	29
ARC SPH00	Roman	Temple 1	300268	1	28	14	21	22	43	0	0	0	0	0	43
ARC SPH00	Roman	Totem post	12435	2	13	9	16	5	22	1	0	32	1	0	56
ARC SPH00	Roman	Viewing Platform 1		5	41	54	33	48	99	0	0	42	2	0	143
ARC SPH00	Roman	Viewing Platform 2		10	284	286	338	267	622	1	2	171	6	0	802
ARC SPH00	Roman	Pit	300130	6	118	120	120	101	266	4	0	140	2	1	413
ARC SPH00	Roman	Pit	300214	1	66	75	85	56	141	0	1	29	1	0	172
ARC SPH00	Roman	Pit	300215	1	8	30	15	35	50	0	0	0	0	0	50
ARC SPH00	Roman	Pit	300216	1	51	37	52	22	88	0	1	4	1	0	94
ARC SHN02	Roman	Pit		10	104	130	74	85	233	1	1	11	0	0	246
ARC SHN02	Roman	Quarry	300370	3	35	36	40	28	71	0	0	6	1	0	78
ARC SHN02	Roman	Roadside ditch		6	43	48	37	48	94	0	2	131	1	1	229
ARC SHN02	Roman	SFB	300555	2	12	9	14	6	21	0	0	0	0	0	21
ARC EBB01	Roman	Quarry pit	16807	1	47	47	41	26	94	0	0	0	0	0	0
ARC EBB01	Roman	Wood-lined pit	12317	7	1	2	4	4	10	0	0	0	2	0	0
ARC EBB01	Roman	Pit	20776	1	16	38	11	20	54	0	0	3	0	0	0
	Saxon	Corn/crop dryer	300260	2	25	60	24	67	107	0	0	0	0	0	107
TOTAL				82	1249	1351	1374	1146	2825	20	11	684	22	3	3565

Key: OY oyster; LV left valve; RV right valve; UMRV unmeasureable right valve; UMLV unmeasureable left valve; MNI minimum number of individuals

Table I08 Physical characteristics and traces of infestation on the measured shells

Feature type	Oyster R V	Oyster L V	<i>Polydora Ciliata</i>	<i>Cliona celata</i>	Barnacles	Polyzoa	Bore holes	Thin	Thick	Chamb -ered	Chalky dep.	Worn	Flaky	Colour/ stain	Oysters attached	Irreg. shape	Notches
Beam slot	117	108	28	0	5	1	1	18	5	4	52	60	8	34	30	38	54
Pit alignment	164	110	52	0	0	2	0	26	1	0	40	113	41	71	5	48	54
Ritual shaft	145	123	66	0	9	5	0	37	12	8	53	62	44	43	17	46	71
Tank	23	16	11	0	4	0	0	4	1	2	9	10	2	0	9	6	7
Temple	21	28	9	0	1	0	0	8	0	2	14	19	4	3	3	18	13
Totem post	16	13	8	0	0	0	0	4	2	1	14	7	1	5	4	8	5
Viewing Platform 1	34	42	19	0	0	0	0	7	1	0	14	27	9	5	3	15	14
Viewing Platform 2	340	284	65	0	37	7	0	69	17	2	169	153	51	11	43	124	136
300130	120	118	35	2	9	3	0	37	13	1	58	59	16	13	28	60	57
300214	85	66	7	0	0	1	0	21	1	0	18	45	5	7	21	31	39
300215	15	8	5	0	0	0	0	1	0	0	10	14	7	4	0	2	0
300216	52	51	4	0	18	0	0	6	5	0	36	19	9	5	10	17	23
Pit	75	104	46	3	8	1	0	25	2	0	57	98	32	7	6	59	43
Quarry	40	35	25	1	0	0	0	13	1	0	12	45	14	4	0	25	8
Roadside ditch	40	40	11	1	1	0	0	17	2	0	8	58	19	16	0	25	12
SFB	14	12	5	0	0	0	0	7	3	0	4	12	3	2	1	9	4
Early Roman quarry	41	47	70	2	2	0	0	27	2	0	13	44	22	0	3	17	29
Wood-lined pit	3	1	0	0	0	0	0	0	0	0	0	3	2	0	0	0	1
Early Roman pit	27	11	17	0	0	0	0	8	1	0	2	17	4	0	0	6	13
Corn/crop dryer	24	25	5	0	0	0	0	3	7	0	27	18	13	4	0	10	1
Total	1381	1247	488	9	94	20	1	338	76	20	610	883	306	234	183	564	584

Key: LV left valve RV right valve