

TABLE 18: PERCENTAGES OF GROUPED SKELETAL ELEMENTS OF CATTLE FROM SELECTED FEATURE GROUPS

	Internal contexts			External contexts		
	A9	BFW	G-K	F189	F504 & 518	F573 & 115
Phase	3-5	3-5	3-5	5	5	4/2
n	29	30	61	62	125	67

	%	%	%	%	%	%
Head	21	23	20	21	15	36
Foot	24	18	17	18	13	24
Body	55	54	63	61	72	40
Mandible	14	8	5	6	9	24
Loose teeth	3	8	10	11	6	6
Vertebrae	28	15	10	21	24	10
Small bones	14	11	10	13	8	11
Metapodials	10	7	7	5	5	7

TABLE 19: PERCENTAGE OF GROUPED SKELETAL ELEMENTS OF RABBIT & HARE FROM
SELECTED FEATURE GROUPS

	Internal contexts				External contexts
	A9	A10	A12	A1	F573 & 189
Phase	3-5	3-5	4-5	2-5	4-5
n	23	7	15	12	9

	%	%	%	%	%
Head	-	-	-	8	11
Foot	-	29	-	17	33
Body	100	71	100	75	56
Mandible	-	-	-	-	11
Loose teeth-	-	-	-	8	-
Vertebrae	26	14	-	8	11
Small bones-	-	14	-	-	-
Metapodials-	-	29	-	8	33

TABLE 20: PERCENTAGES OF GROUPED SKELETAL ELEMENTS OF DOMESTIC FOWL FROM
SELECTED FEATURE GROUPS

	Internal contexts				External contexts		
	A9	A12	A1	A5	F186	F189	F504 & 518
Phase	3-5	4-5	2-5	3-5	5	5	5
n	289	74	43	24	41	15	27

	%	%	%	%	%	%	%
Head	-	-	-	4	-	-	-
Foot (a)	5	8	7	13	15	13	22
Body (b)	95	92	93	83	85	87	78

a	Metatarsus and phalanges						
b	Excluding ribs						

TABLE 21: FREQUENCY IN SITE CONTEXTS OF COMPLETE MANDIBLES, FOURTH DECIDUOUS
PREMOLARS, OR THIRD MOLARS OF OTHER MANDIBLES

	Cattle	Pig	Sheep

Internal contexts			
A9	(2)	3	-
A12	-	4	1
A1	-	1 (1)	-
A3	-	1 (1)	-
A4	(2)	-	-
A5	(3)	1(4)	-
A14	-	-	(1)
F	-	3	1
G	-	-	(1)
H	-	(1)	1
W	-	1	-

Total	0 (+7) = 714	(+7) = 213	(+2) = 5

External contexts			
Phase 2	3	4	1
3/1	1	3	2
4/2	7	6	4
5	9	10	5
5 (F186)b	3	2	5
5(F119)c	3	4	5
	-----	-----	-----
	26	29	22
	-----	-----	-----
Indeterminate4		6	2

- a) Bracketed figures indicate records which might not be classified properly as part of an internal context eg. may represent intrusive debris during construction or demolition of buildings.
- b) F186 is demolition debris above domestic buildings
- c) F119 is demolition debris above farm buildings

TABLE 22: FRAGMENT FREQUENCIES OF BONES AND SHELLS AMONG SIEVED DEBRIS FROM EXTERNAL AND INTERNAL CONTEXTS (a)

	Moat F279/2	Building A9: F512 & F639
	Phase 2	Phases 4 & 5
Cattle	2	-
Sheep	2	2
Pig	2	15
Hare	1	1
Rabbit	1	1
House mouse	-	4
Black rat	1	-
Unident. mammal	66	438
Domestic fowl	8	33
Domestic goose	1	7
Domestic pigeon	1	9 (?10)
Quail	-	1 (?3)
Snipe	-	1
Woodcock	-	1?
Passerine	-	14
Unident. bird	7	162
Shark or ray	-	1
Thornback ray	-	1
Herring	-	156
Eel	-	117
Salmon/trout	1	-
Tench	-	1
Roach	-	1
Cyprinid sp.	2	16
Cod	1	15
Gadoid	-	3

Perch	-	1
Scad	-	1
Flatfish	-	1
Unidentified fish	nc	nc
Oyster	-	c. 265 (fragmentary)
Mussel	15	c. 210 (fragmentary)
Cockle	-	7
Eggshell (bird)	c5	36

a Each group of results is from the sieving of between 1-2 buckets of soil.

TABLE 23:WEIGHT OF SIEVED BONES FROM INTERNAL AND EXTERNAL CONTEXTS

	Moat F279/2	Building A9: F512 & F639

Total weight of bones	0.181 kg	0.131 kg
% by weight	%	%
Cattle	21.8	-
Sheep	6.4	0.5
Pig	5.5	6.0
Rabbit & Hare	0.2	1.5
Rodent	+	0.2
All mammal	95.5	63.6
All bird	2.1	17.6
All fish	2.4	18.8
Index percentage of shell weight compared to weight of bones:		
	%	%
Oyster	-	38.7
Mussel	3.5	20.9
Cockle	-	0.8
Eggshell (bird)	+	0.5

TABLE 24: FRAGMENT SIZE DISTRIBUTION OF ALL MAMMAL BONES IN SIEVED SAMPLES (a)

size class (cm) 0-1 1-2 2-3 3-4 4-5 5-6 6-7 10-11

Moat F279/2	13	12	9	6	3	1	1	-
A9 F512	11	49	10	4	1	-	-	-
A9 F639	197	129	18	6	2	1	-	1

a Excluding newly broken fragments

TABLE 25: ABUNDANCE OF RODENT BONES IN TWO SIMILAR DEPOSITS F186 & F126

No. of Fragments No. of mandibles

Black rat	10	1
Apodemus sp.	76	11
House mouse	9	5
Field vole	46	12
Shrew	6	3
Mole	1	-

Also present were 24 bones of frog, 23 of small passerine birds, one of buzzard, other scattered bones and the remains of a domestic goose (F186).

TABLE 26: MINIMUM NUMBER OF INDIVIDUALS (MNI) AS ESTIMATED FROM MANDIBLE DATA AND LOOSE TEETH (PHASES 1-5)

	MNI	%	Fragments/Individual
Cattle	19	27.1	33.5
Sheep	16	22.9	19.6
Pig	27	38.6	18.5
Horse	2	2.9	10.5
Dog	3	4.3	5.0
Cat	2	2.9	3.5
Rabbit	1	1.4	c. 34.0
	70	100.1	

Red, roe and fallow deer, hare and stoat are represented by skeletal elements other than mandibles. Rabbit and hare are almost certainly under represented by estimate of MNI. Rodent bones were not considered here (but see Table 25)

TABLE 27: FREQUENCIES AND PERCENTAGES

IMMATURE AND OSSIFIED BONES OF DOMESTIC BIRD SPECIES

Phase	1-3/3		4/2-5 incl.		
	Imm.	Oss.	% of adults	Imm.	Oss.
			% of adults		% of adults
Domestic fowl	6092	61%	196	452	70%
Domestic goose	565	93%	15	277	95%
Domestic duck/ mallard	- 7	100%	4	24	86%

Domestic pigeon142 2% 106 1 1%

TABLE 30:SELECTED MEASUREMENTS OF PIG BONES (mm)

n r x s

 Width of distal jumerus (Bd):

CHHF	3	36-4440.7	
OXA 12 (a)	15	33-4937.8	4.11

Length of astragalus:

CHHF	6	38-4843.3	(3.78)
OXH 12-16	8	35-4039.6	(2.50)

Length of 3rd metacarpal (Bd):

CHHF	4	73-8075.3	(3.20)
OXA 11-15 (a)	5	64-8975.8	(11.10)

Length of 4th metatarsal:

CHHF	2	98-101e99.5	
OXA 11-14 (a)	8	75-9284.9	(6.03)

a Unpublished data from medieval Church Street, Oxford

TABLE 31:SELECTED MEASUREMENTS OF BONES

FALLOW, RABBIT, CAT, STOAT AND BLACK RAT (mm)

	n	r	x	s

Fallow				
AstragalusGLI	2	36-3837	-	
tibia dw	1	32		
Rabbit (GL)				
humerus	6	58-6561.5	(2.26)	
femur	4	79-8581.3		
tibia	1	89		
Cat (a)				
humerus Bd	2	16-1716.5		
Stoat				
tibia GL	1	37		
Black rat (GL)				
humerus	2	25-2625.5		
femur	2	31-3332.0		

a See also measurements of cat skeletons, m ...

TABLE 32:SELECTED MEASUREMENTS OF BIRD BONES

	n	r	x	s

Domestic fowl (GL)				
Humerus	22	61-8871.0	5.54	
Femur	11	67-9078.5	6.47	
Tibiotarsus	8	85-117102.8	(10.85)	
Metatarsus	9	62-8576.8	(8.53)	
Domestic goose (GL)				
Femur	5	80-8682.6	(3.13)	
Metacarpus	4	90-10396.3		
Metatarsus	1	93		
Tibiotarsus	1	102		
Radius	1	148		
Mallard/domestic duck (GL)				
Metacarpus	3	59	59.0	
Meatarsus	2	47-5048.5		
Domestic pigeon				
Femur (GL)	1	44	44.0	

TABLE 33: PRESENCE OF MEDULLARY BONE IN DOMESTIC FOWL

	Femur		Tibiotarsus		
	Present	Absent	present	Present	Absent
Phase 1-3	2	4	33	3	9
4-5	3	25	11	5	50
					25
					9

TABLE 34: EVIDENCE OF SPURRED METATARSI (a) OF DOMESTIC FOWL

	Spurred	With Scar	Unspurred	% male
Phase 1-3	2	2	-	100
Phase 4 & 5	6	3	5	62

a fully ossified bones only

TABLE 1: HARDINGS FIELD MOATED MANOR, CHALGROVE: GRADING OF PRIORITIES FOR REPORTING ON BONES

A: MINIMUM REPORT	B: SUPPLEMENTARY TOPICS
C: IDEAL COVERAGE	(A + B)
(A + B + C)	
1 Description of overall Collection	
2. Degree of bone preservation	
and degradation	
a) Fragment frequencies, % s	3. Fish & Bird Bones
b) Min. No. Indivs.	(if money for relevant specialist)
	4. Skeletal element analysis
	a) Sheep
b) Other species	
5. Sieved remains (quantity?)	6. Articulated remains (if any)
7. Intrasite variability	
Species/class of debris	
a) per feature type	
8. Fragmentation analysis Size	
(c. 500 contexts)	
variation across site: supporting	
b) per building or room	c) Skeletal element analysis
evidence for 7.	
- for activity areas and building functions(location of butchery areas)	
(minimal study)	
9. Animal Size and Sex	
a) Major species	
b) Selected measurements	c) Other measurements
10.Pathology notes	
11.Slaughtering patterns	
a) From mandibles	
(i) one method of estimation	(ii) two methods
	b) from epiphysial fusion
	(i) cat, rabbit, deer, sheep
(iii) other large species	
	12.Butchery patterns
	a) pig, rabbit, domestic fowl
b) common species	
13.Animal husbandry & economy	
a) regional context	
b) urban-rural contrast	
c) as medieval farm	
d) comparison with documentary evidence	

TABLE 2: FRAGMENT FREQUENCIES OF GENERAL CLASSES OF BONES AND SHELLS AT DIFFERENT PHASES, EXCLUDING SIEVED DEBRIS

Phase group	1	2	3/1	3/2	3/3	4/14/2	5	3-5	
Period	prec 1255- 1300		1310- 1330		1330- 1400		c1370 1400		1458-
	1255	1300	1330		1400		1485		1500
Large & medium sized mammal 1333 129			12	227	253	8	14	5	778c
Unidentified mammal 2771 217			12	406	533	10	86	-	1474
Total 4104 346			24	633	786	18	100	5	2252
% Identified 48 37			50	36	32	44	14	100	35
Burnt bones 12 -			-	2	7	-	-	-	7
% burnt 0.4 -			-	0.3	0.9	-	-	-	0.3
Small mammal, i.e. hare & rabbit 65 2				4	11	-	-	-	38
Small mammal, i.e. chiefly 163a 6 rodents			-	3	2	-	1	-	35c
All birds recorded 860c 92			9	33	297	7	62	1	629
All fish recorded 98 3			1	2	10	-	10	-	204
Frog 32b 3			-	14	1	-	-	-	8
Marine molluscs 1392 50			2	84	142	-	10	3	582
Freshwater mussel 2 - Anodonta sp.			-	-	-	-	-	-	-

a including stoat (1)

b excluding toad (2)

c excluding skeletons

Table 1 Cont'd/...

ESTIMATE OF PREPARATION TIME OF REPORT

20-40 days
50-80 days or more

30-50 days

CONDITIONS OF REPORT PREPARATION AND ESTIMATES

- a) Data collection directed toward useful aims and not for itself.
 - b) Report aims to describe salient features of collection and show the relevance of the bones to the general site archaeology.
 - c)
 - i) Recording of bones roughly estimatable
 - ii) Data processing: no computing facilities for table preparation (c. 500 contexts)
 - iii) Data analysis: Hewlett Packard 97 now available for any routine statistical testing
 - iv) Writing up time always difficult to estimate at beginning.
- Synthesis tends to be ad hoc within general contexts of bones studies, site requirements, and extent of findings at intermediateLevel of analysis.

TABLE 2: FRAGMENT FREQUENCIES OF GENERAL CLASSES OF BONES AND SHELLS AT DIFFERENT PHASES, EXCLUDING SIEVED DEBRIS

Phase group	1	2	3/1	3/2	3/3	4/1	4/2
5 3-5							
Period	pre	c 1255-1300		1310-	1330-	c1370	1400
1458- 1300-		1255 1300				1330	
1400		1485		1500			

Large & medium sized mammal	12	227	253	8	14	5	778c
129							1333
Unidentified mammal	12	406	533	10	86	-	1474
2771 217							
Total	24	633	786	18	100	5	2252
4104 346							
% Identified	50	36	32	44	14	100	35
48 37							
Burnt bones	-	2	7	-	-	-	7
12 -							
% burnt	-	0.3	0.9	-	-	-	0.3
0.4 -							
Small mammal, i.e. hare & rabbit		4	11	-	-	-	38
65 2							
Small mammal, i.e. chiefly	-	3	2	-	1	-	
35(c) 163(a) 6							
rodents							
All birds recorded	9	33	297	7	62	1	629
860(c) 92							
All fish recorded	1	2	10	-	10	-	204
98 3							
Frog	-	14	1	-	-	-	8
32b 3							
Marine molluscs	2	84	142	-	10	3	582
1392 50							
Freshwater mussel	-	-	-	-	-	-	-
2 -							
Anodonta sp.							

a including stoat (1)

b excluding toad (2)

c excluding skeletons

TABLE 3: FRAGMENT FREQUENCIES OF MAMMAL BONES FROM DIFFERENT PHASES, EXCLUDING SIEVED BONES

Phase	1	2	3/1	3/2	3/3	4/1	4/2	5	3-5
TOTAL									
Cattle 1005	1	85	78	1	2	3	256	532	47
Sheep/goat 579	2	30	61	5	3	-	142	313	23
Pig 1056	8	94	105	2	9	2	357	430	49
Horse 35	1	9	1	-	-	-	3	18	3
Dog 26	-	3	5	-	-	-	6	11(b)	1
Cat 19	-	3	-	-	-	-	3(b)	10(b)	3
Red deer 4	-	-	-	-	-	-	-	4	-
Fallow 34	-	3	3	-	-	-	11	15	2
Roe 1	-	-	-	-	-	-	-	-	1
Rabbit 101	1	4	10	-	-	-	28	56	2
Hare 21	-	-	1	-	1	-	10	9	-
Stoat 1	-	-	-	-	-	-	-	1	-
Black rat 65	-	1	2	-	-	-	35(b)	22	5
Apodemus sp. 78	-	-	-	-	-	-	-	77	1
Mus sp. 9	-	-	-	-	-	-	-	9	-
Arvicola 1 terrestris	-	1	-	-	-	-	-	-	-
Field vole-	1	-	-	-	-	-	46	-	47

Shrew	-	-	-	-	-	-	-	6	-
6									

Mole	-	-	-	-	-	-	-	2	-
2									

a No antler recorded for any species of deer
b Counts exclude part skeletons, except of rodents which were
indeterminable

TABLE 4: FRAGMENT FREQUENCIES OF BIRD FROM BOTH SIEVED AND UNSIEVED DEPOSITS SPECIES

Phase	1	2	3/1	3/2	3/3
4/1	4/2	5	3-5	Sieved samples	
Grey heron <i>Ardea cinerea</i> L.	-	-	-	-	-
-	2	8	-	-	-
Mute swan <i>Cygnus olor</i> (Gmelin)	-	-	-	-	-
-	1(?2)	?1	-	-	-
Domestic/Greylag goose <i>Anser anser</i> (L.)-	8	57	2	3	-
69	142(a)	18	8		
Wild goose SP (P)	2	?1	?1	-	-
-	-	1(?2)	-	-	-
Indet. goose	-	-	-	-	-
-	-	5	-	-	-
Teal <i>Anas crecca</i> L.	-	-	-	-	-
-	4	4	-	1	
Domestic/wild mallard <i>Anas platyrhynchos</i> L.	-	-	7	-	-
-	7	21	-	1	
Pochard <i>Aythya ferina</i> (L.)	-	-	-	-	-
-	-	?1	-	-	-
Tufted duck <i>A. fuligula</i> (L.)	-	-	1	-	-
-	?1	-	-	-	-
Indet. duck sp.	-	-	-	-	-
-	-	1	-	-	-
Buzzard <i>Buteo bueo</i> (L.)	-	-	-	-	-
-	-	1	-	-	-
Domestic Fowl <i>Gallus gallus</i> L.	6	15	117	2	11
1	272	348	28	50	
Peafowl <i>Pavo cristatus</i> L.	-	-	-	-	-
-	1	-	-	-	-
Partridge <i>Perdix perdix</i> (L.)	-	-	2	1	-
-	4 (?5)	13	1	-	
Quail <i>Coturnix coturnix</i> (L.)	-	-	-	-	-
-	1	-	-	1 (?3)	
Moorhen <i>Gallinula chloropus</i> (L.)	-	-	-	-	-
-	-	-	-	2	
Lapwing <i>Vanellus vanellus</i> (L.)	-	-	1	-	-
4	-	-	-		

Golden plover	Pluvialis apricaria (L.)	-	-	1	-	-
-	-	1	-	-		
Snipe	Gallinago gallinago (L.)	-	-	-	-	-
-	3	4 (?5)	-	1		
Woodcock	Scolopax rusticola L.	-	-	3	-	-
-	2	-	-	?1		
Unidentified	Scolopacid	-	-	-	-	-
-	1	-	-	-		

TABLE 4: Cont'd...FRAGMENT FREQUENCY OF BIRD SPECIES AMONG SIEVED AND UNSIEVED DEPOSITS

Phase	1	2	3/1	3/2	
3/3	4/1	4/2	5	3-5	Sieved samples

Indet, Wader sp.	-	-	-	-	-
-	-	1	-	-	-
Herring/lesser black-backed gull, <i>Larus argentatus</i>	-	-	-	-	-
Pontoppidan/ <i>L. fuscus</i> L.	-	-	-	-	-
-	-	1	-	-	-
Domestic pigeon <i>Columba livia</i>	1	41(?46)	-	-	-
-	33	72	4 (?5)	20	-
Barn Owl, <i>Tyto alba</i> (Scopoli)	-	-	-	-	-
-	-	-	4	-	-
Blackbird/Fieldfare <i>Turdus merula</i> L./ <i>T.pilaris</i> L.	-	-	1	-	-
-	-	1	4	-	4
Redwing <i>Turdus iliacus</i> Brehm	-	-	-	-	-
-	-	1(?4)	-	-	-
Song thrush <i>Turdus philomelos</i> Brehm	-	-	-	-	?1
-	-	-	-	-	?1
Unidentified small passerlines	-	-	-	-	-
-	-	6	22	-	11
Jackdaw <i>Corvus monedula</i> L.	-	-	-	-	-
-	-	-	2	-	-
Crow/rook <i>Corvus corone</i> L./ <i>frugilegus</i> L.	-	-	-	-	-
-	-	-	5	-	-
indet. frags.	-	8	52	2	-
48	-	213	194	40	169

a excluding 76 bones of one goose
b all bones identified by Enid Allison

TABLE 5: FREQUENCIES OF IDENTIFIED FISH BONES BY PHASE GROUP (UNSIEVED) AND FROM SIEVED SAMPLES

Phase Sieved samples	Unsieved remains					Total	(see Table 22)
	3/1	4/2	5	3-5	2-5		

FRESHWATER SPECIES							
Tench <i>Tinca tinca</i>	-	1	-	-	1	1	
Chub <i>Leuciscus cephalus</i>	-	1	-	-	1	-	
Roach <i>Rutilus rutilus</i>	-	-	-	-	-	1	
Cyprinid sp.	-	14	2	-	16	20	
Perch <i>Perca fluviatilis</i>	-	2	2	-	4	1	
FRESHWATER/MIGRATORY SPECIES							
Salmon/trout <i>Salmo</i> sp.	-	-	-	1	1	1	
Eel <i>Anguilla anguilla</i>	5	-	-	2	7	117	
MARINE SPECIES							
Spurdog <i>Squalus acanthias</i>	-	-	-	1	1	-	
Thornback ray/Roker <i>Raja clavata</i>	-	-	-	-	-	1	
Elasmobranch	-	-	-	1	1	1	
Herring <i>Clupea harengus</i>	-	-	-	-	-	156	
Conger eel <i>Conger conger</i>	2	5	1	1	9	-	
Cod <i>Gadus morhua</i>	-	7	4	4	15	16	
Haddock <i>Melanogrammus aeglefinus</i>	-	2	1	-	3	-	
Gadoid sp.	-	-	1	2	3	3	
Gurnard sp.	-	1	-	-	1	-	

TABLE 5: Cont'd/...FREQUENCIES OF IDENTIFIED FISH BONES BY PHASE GROUP
(UNSIEVED) AND FROM SIEVED SAMPLES

Phase Sieved samples	Unsieved remains					
	3/1	4/2	5	3-5	Total	2-5
(see Table 22)						
Bass <i>Dicentrachus labrax</i>	-	-	3	-	3	-
Scad <i>Trachurus trachurus</i>	-	-	-	-	-	1
Flatfish sp.	-	1	-	-	1	1
TOTAL	7	34	14	12	67	320

The results include F923/1 among the sieved debris, as well as the data in Table 22. They exclude unidentified remains of fish which were not counted by the identifier but which are incorporated into the general results presented in Tables 1 and 7-15.

TABLE 6: FRAGMENT FREQUENCIES OF MARINE SHELLS AND MINIMUM NUMBER OF INDIVIDUALS

Phase			1	2	3/1	3/3	4/1	4/2	5
3-5	Total								

Oyster	Ostrea edulis f		2	32	135	10	3	496	1243
45	1966								
		MNI(a)	1	21	68	3	3	216	575
29									
Mussel	Mytilus edulis f		-	46	7	-	-	74	129
3	259								
		MNI	-	10	4	-	-	29	64
2									
Whelk	Buccinum undatum f		-	1	-	-	-	11	11
-	23								
		MNI	-	1	-	-	-	11	11
-									
Cockle	Cerastoderme edule f		-	5	-	-	-	1	9
2	17								
		MNI	-	3	-	-	-	1	5
1									

a MNI based on simple counts of adductor muscle scar. Estimates comparable to those of mammals might be equivalent to 110-130% of the figures given here.

TABLE 7: PERCENTAGE REPRESENTATION OF BONES AND SHELLS IN DIFFERENT PHASE GROUPS

Phase	1	2	3/1	4/2	5	All phases
No of mammal bones (n)	13	231	264	816	1398	2881
	%	%	%	%	%	%
Cattle	8	34.9				
Sheep	15	13	23	17	22	20.1
Pig	62	41	40	44	31	36.7
Horse	8	3.9	0.4	0.4	1.3	1.2
Dog	-	1.3	1.9	0.7	0.8	0.9
Cat	-	1.3	-	0.4	0.7	0.7
Red deer	-	-	-	-	0.3	0.1
Fallow	-	1.3	1.1	1.3	1.1	1.2
Roe	-	-	-	-	-	+
Rabbit	8	1.7	3.8	3.4	4.0	3.5
Hare	-	-	0.4	1.2	0.6	0.7
Relative abundance of other groups of bones expressed as index % of n:						
Domestic fowl	46	6.5	44	33	25	27.8
Domestic goose	-	3.5	22	8.5	10	10.4
Other dom. spp. (max estimate)	8	0.4	18	5.0	6.7	6.7
Wild birds	16	-	3.4	3.8	7.0	4.4
Fish (Table 1)	8	0.9	3.8	25	4.4	11.4
Oyster	15	14	51	61	89	68.2
Marine mussel	-	20	3	9	9	9.

TABLE 8: FREQUENCIES OF BONES AND SHELLS IN INTERNAL AND EXTERNAL CONTEXTS OF BUILDINGS

External contexts			Internal contexts						
Phase	3/1	4/2	1	2	3/1	3/2 &	4/2	5	All
2			5	All phases		3/3			phases (a)

Burnt			-	-	7	-	7	3	17
2	-	-	9	11					
Horse			1	1	1	-	1	7	14
8	-	-	11	19					
Cattle			1	22	49	3	76	138	336
63	29	150	394	636					
Pig			8	51	86	11	192	129	526
43	19	137	301	500					
Sheep			2	5	41	8	73	106	258
25	20	61	207	313					
Deer			-	-	2		5	6	16
3	1	4	13	21					
Dog			-	-	4	-	3	2	10
3	1	2	9	15					
Cat			-	2	-	-	1	5	11
1	-	2	4	7					
Rabbit & Hare			1	4	11	1	28	27	74
-	-	3	38	41					
Rodent			-	3	1	-	17	129	138
-	1	1	33	35					
Domestic fowl			6	2	83	13	240	228	572
10	-	20	139	169					
Domestic goose			-	2	90	5	64	78	239
7	2	4	45	58					
Other bird			3	5	115	51	259	232	665
4	2	31	125	162					
Fish			1	-	10	-	202	86	302
2	-	1	12	15					
Oyster			2	6	122	10	307	407	899
26	13	187	836	1062					
Mussel			-	10	7	-	73	103	196
36	-	1	26	63					

a including bones from groups of wider phase

TABLE 9: PERCENTAGE COMPARISONS OF BONES AND SHELLS IN INTERNAL AND EXTERNAL CONTEXTS OF BUILDINGS

External contexts			Internal contexts							
Phase			1	2	3/1	3/2 & 4/2	5	All	2	
3/1	4/2	5	All phases			3/3		phases		

% of identification			50	32	29	19	25	31	28.1	38
39	48	33	36.7							
% of burnt bones			-	-	1	-	1	+	0.5	1
-	-	+	0.3							
Total of cattle, horse, pig & sheep (n)			12	79	177	22	342	380	1134	139
68	348	913	1468							
% of horse			8	1	1	-	+	2	1.2	6
-	-	1	1.3							
% of cattle			8	28	28	14	22	36	29.6	45
42	43	43	43.3							
% of pig			67	65	49	50	56	34	46.4	31
28	39	33	34.1							
% of sheep			17	6	23	36	21	28	22.8	18
29	18	23	21.3							
Index % s of n Deer-			-	1	-	1	2	1.4	2	2
1	1	1.4								
Dog			-	-	2	-	1	1	0.9	2
2	1	1	1.0							
Cat			-	2	-	-	+	1	1.0	1
-	1	1	0.5							
Rabbit + Hare			8	5	6	5	8	7	6.5	-
-	1	4	2.8							
Rodent			-	4	1	-	5	34	13.8	-
2	+	4	2.4							
Domestic fowl			50	3	47	59	70	60	50.4	7
-	6	15	11.5							
Domestic goose			-	3	51	23	19	21	21.1	5
3	1	5	4.0							
Other bird			25	5	65	232	76	61	26.6	3
3	9	14	11.0							

Fish			8	-	6	-	59	23	26.6	1
-	+	1	1.0							
Oyster			17	8	69	46	88	107	79.3	19
19	54	92	72.3							
Mussel			-	15	4	-	21	27	17.3	26
-	+	3	4.3							

TABLE 12: RANK ORDER OF FREQUENCIES, PERCENTAGES AND PERCENTAGE INDICES GIVEN IN TABLES 10 AND 11;

(In order to determine the rooms or buildings most associated with cooking and eating)

G	H	I	J	K	M	P	Q	A R	A T	A W	A	A	A	A	A	A	B	D	F
							1	3	4	5	6	9	10	11	12	13	14		

No. of bones (highest=1) 3 11 8 4 24 1 7 19 2 14 16 6 17 5 13
 9 24 15 18 22 21 20 22 12 10

% identified (lowest=1) 1 4 7 17 23 2 5 20 14 7 21 11 18 5
 19 12 23 10 3 12 22 7 23 14 16

% burnt (highest=1) 5 8 8 8 8 7 8 8 5 2 8 8 8 3 8
 8 8 8 8 1 8 8 8 4 8

% sheep & pig (highest=1) 3 5 13 15 23 5 3 22 12 10 2 19 14 18
 10 16 23 16 20 23 7 20 1 7 9

% rabbit & hare 4 13 11 10 13 3 2 13 7 13 5 12 13 9
 13 7 13 13 13 1 13 13 13 6

% domestic fowl 4 12 5 12 17 2 3 17 9 14 6 15 10 11
 17 8 1 17 17 17 17 17 17 16 9

% domestic goose 7 6 5 12 14 3 1 14 8 14 4 10 9 13
 14 14 2 14 14 14 14 14 14 14 11

% fish 1 9 9 5 9 2 3 9 7 9 4 8 9 6
 9 9 9 9 9 9 9 9 9 9

% oyster 3 20 7 9 20 1 13 4 12 5 6 16 19 11
 20 8 20 13 15 20 20 7 9 2 17

Sum of rankings 31 88 73 92 151 26 45 126 76 88 72 105 117 81
 113 91 123 115 117 131 119 115 116 91 95

Order of ranking totals 2 8 5 12 25 1 3 23 6 8 4 14 19 7
 15 10 22 16 19 24 21 16 18 10 13

Rooms or buildings most associated with cooking and eating in rank order:-

A9 A1 A10 A14 A4 A12 F A3 A13 H T A5 W B G J Q R D K P I
 A11 M A6

General Notes

- a) Total number of bones indicates the greatest long term accumulation of bones near eating and cooking areas.
- b) % of burnt bones may indicate rooms associated with cooking.
- c) The low % of identified bones, the high % of sheep and pig, and the high % indices of rabbit and hare, domestic birds, oyster and fish indicate highest percentages of small sized bones and fragments in or near rooms used for cooking and eating.

TABLE 13: DENSITIES OF BONES AND SHELLS PER SQUARE METRE OF DEPOSITS IN ROOMS OR BUILDINGS

A	A	A	A	A	A	A	A	A	A	A
12	13	14	1	3	4	5	6	9	10	11

Area of room or building m2			105	46	42	20	12	42	28	33
24	98	43								
Densities of bones or shells:-										
All mammal (a.) excl. rodent			5.8	1.5	3.6	27	0.1	43	5.5	0.5
10	0.4	0.5								
Rabbit & hare			0.1	-	+	0.3	-	0.6	0.3	-
0.2	-	+								
Domestic fowl			0.7	+	0.6	1.2	-	7.4	1.5	-
1.0	+	0.1								
Fish			1.1	-	-	0.6	-	3.7	0.5	-
0.1	-	0.1								
Oyster			1.0	-	0.4	3.5	-	12	0.4	0.3
1.0	0.1	0.2								
Burnt			+	-	-	0.1	-	+	-	-
+	-	-								

a) includes unidentified fragments

TABLE 13: Cont'd/...DENSITIES OF BONES AND SHELLS PER SQUARE METRE OF DEPOSITS IN ROOMS OR BUILDINGS

T	W	B	D	F	G	H	I	J	K	M

Area of room										
of building m2	41	15	46	110	87	15	67	266	23	
14	52									
Densities of bones or shells:-										
All mammal (a)										
excl. rodent	4.1	1.2	6.0	0.4	1.2	0.1	0.3	0.1	0.1	
4.2	1.6									
Rabbit & Hare	+	+	0.1	-	+	-	-	-	-	
-	0.1									
Domestic fowl	0.1	0.1	0.2	-	0.1	0.5	-	-	-	
0.1	0.1									
Fish	+	-	0.1	-	-	0.3	-	-	-	
-	-									
Oyster	0.3	0.7	0.5	-	0.1	0.1	+	+	-	
1.9	0.1									
Burnt	-	-	0.1	-	-	-	-	-	-	
0.1	-									

a) includes unidentified fragments

Oyster 11 68 23 10 9 50 102 200 212 18 55 1 10 6 6 2 7 51
7 22 1 185 34 282 196

Mussel - 7 8 - - 6 - 31 81 27 4 - - 1 34 - - 1
1 1 - 11 - 6 5

a) Number of identified and unidentified bones of mammals except
rodents.b)Excluding part skeletonc)including unidentified bird bones

KEY: M = Moat U = Upcast C = CourtyardD1 = DrainD2 = Dump S = Sump
G = Gully Y = Yard D3 = Domestic F = Farm

TABLE 15: PERCENTAGE COMPARISONS AMONG LARGER FEATURE GROUPS OF BONES AND SHELLS FROM INTERNAL AND EXTERNAL CONTEXTS

	Internal contexts of buildings												
	A1			A5			A9			A12		B	
	MF	MF	MF	L	L	L/P	F	/OL	MF	OL	RT	L	RT
Oven Phase 2-3	2-3	4/2	5	2	3-5	5	3/14/2	5		4/2	5	4/2	5

% of 13 identification	29	12	13	32	43	46	34	16	24	34	33	39	25
% if burnt bones 7.8	-	0.7	-	-	-	1.2	-	0.3	-	0.4	-	-	-
Total of cattle horse, pig & sheep 19	30	36	21	72	62	76	62	63	50	156	91	30	19
% of horse -	3	-	-	-	-	1	-	-	-	-	6	-	5
% of cattle 32	13	14	14	28	42	47	21	3	28	23	40	60	21
% of pig 26	53	53	52	67	52	36	60	86	52	54	28	23	5
% of sheep 42	30	33	33	6	7	16	19	11	20	23	28	17	68
Index %s of:-													
Deer -	-	-	-	-	5	-	2	-	-	2	2	7	-
Dog -	-	-	-	-	2	1	2	-	-	1	-	3	-
Cat -	-	3	5	3	5	4	-	-	-	-	-	-	-
Rabbit & hare -	3	19	10	6	2	-	2	21	18	3	10	-	5
Rodent -	3	(b)	10	4	2	159	-	5	12	6	1	10	-
Domestic fowl 11	10	100	95	-	44	17	53	277	248	33	26	10	11
Domestic goose 5	10	14	38	-	29	9	55	48	52	12	20	10	5

Other bird c	20	258	114	-	73	33	31	144	266	40	15	-	16
-													
Fish	37	214	129	7	2	8	-	175	102	4	-	3	-
5													
Oyster	37	189	110	14	15	66	165318	424		12	60	3	53
32													
Mussel	-	36	38	-	-	8	-	49	162	17	4	-	-
5													

Key:a Number of identified and unidentified bones of mammals except rodents
bExcluding part skeleton cIncluding unidentified bird bones
MF = Mixed Features L = Layers L/P = Layer/Pit F/OL = Floor/Occupation
Layers OL = Occupation Layers RT = Robber Trenches

Domestic goose	-	8	-	2	-	-	4	5	3
7	4								
Other bird(c)	-	5	3	23	16	3	7	15	6
21	10								
Fish	-	-	-	-	-	1	-	3	-
1	-								
Oyster	18	2	19	61	16	19	2	119	30
89	151								
Mussel	103	-	-	1	2	1	-	7	-
2	4								

a Number of identified and unidentified bones of mammals except
rodentsbExcluding part skeletoncIncluding unidentified bird bones

TABLE 16: PERCENTAGES OF GROUPED SKELETAL ELEMENTS OF SHEEP FROM SELECTED FEATRURE GROUPS

contexts		Internal contexts						External		
		A9 Dump	A10 CY	A12	A1	A5	BFW	G-K	MU	CY
F186	F189	F573	F578							
& F504										
Phase		3-5	3	4-5	2-5	2-5	3-5	3-5	2	4/2
5	5	5	5							
n		30	9	58	27	21	45	20	19	30
78	28	15	31							

%	%	%	%	%	%	%	%	%	%	%
Head		4	22	19	11	29	33	50	16	17
27	29	33	19							
Foot		13	-	10	11	19	13	15	11	10
19	7	20	10							
Body		83	78	71	78	52	53	35	74	73
54	64	47	71							
Mandible		3	-	9	4	10	13	10	-	10
8	18	13	10							
Loose		-	22	7	-	5	7	30	11	3
Teeth		13	3							
13	7									
Vertebrae		43	22	12	11	5	4	-	5	-
5	11	7	10							
Small bones		7	-	5	7	-	11	-	-	-
3	4	-	3							
Metapodials		7	-	5	4	19	2	15	11	10
17	4	20	3							
% index of										
degradation	(a)	20	40	48	33	24	51	65	58	63
42	54	60	45							

Key: MU = Moat Upcast

CY = Court Yard

a = Percentage of loose teeth and fragments of mandible, tibia and
radius

TABLE 17: PERCENTAGE OF GROUPED SKELETAL ELEMENTS OF PIG FROM SELECTED FEATURE GROUPS

	Internal contexts						External contexts		
	A9	A10	A12	A1	BFW	G-K	F573	F189	F504
& 578									
Phase	3-5	3-5	4/2	2-5	3-5	3-5	4/2	5	5
n	113	22	85	45	42	11	34	35	36

	%	%	%	%	%	%	%	%	%
Head	26	41	59	56	55	64	60	46	28
Foot	44	23	11	11	12	9	3	11	14
Body	30	36	31	33	33	27	47	43	58
Mandible	4	5	15	11	24	18	18	9	14
Loose teeth	14	32	27	33	26	27	9	26	11
Vertebrae	9	9	6	7	10	-	3	9	6
Small bones	12	9	7	9	5	9	3	6	-
Metapodials	32	14	4	2	7	-	-	6	14

TABLE 28:SELECTED MEASUREMENTS OF SHEEP BONES (mm)

	n	n	x	s		

Width of distal humerus (Bd):						
CHHF	13	28-33	29.54	1.71		
OX 12-15 (a)	37	25-31	29.16	1.42		
Width of distal tibia (Bd):						
CHHF	27	22-26	23.33	2.40		
OX 12-15	33	22-27	24.30	1.29		
Width of distal metacarpal (Bd):			Length of metacarpal (GL):			
CHHF	6	21-26	23.67	(1.86)	4	104-130114.5
OX 12-15	31	21-26	24.09	1.39	8	107-126115.9
Width of distal metatarsal (Bd):			Length of metatarsal (GL):			
CHHF	4	21-23	22.00	-	5	117-124121.4 (2.88)
OX 12-15	28	21-24	22.46	0.95	3	114-132124.3
Width of distal radius (Bd):						
CHHF	6	24-29	26.50	(1.64)	4	129-146137.3
OX 12-15	11	24-29	25.86	1.22	2	128-143135.5

a Data from The Hamel (OXH) and All Saints (OXAS) Oxford (Wilson 1980).
 Numbers additional to site group code, eg OX12-15, refer to the period
 AD e.g. to the 12th - 15th centuries.

TABLE 29:SELECTED MEASUREMENTS OF CATTLE BONES (mm)

	n	r	x	s		

Width of distal humerus (Bd):						
CHHF	2	76-92	84.0			
Width of distal tibia (Bd):						
CHHF	6	51-63	57.5	(5.61)		
OX 11-16	13	55-66	56.15	(4.62)		
Width of distal metacarpal (Bd):					Length (GL):	
CHHF	8	56-63	60.63	(2.18)	1	184
OX 12-16	12	44-67	53.33	6.27	1	205
Width of distal metatarsal (Bd)					Length (GL):	
CHHF	13	48-58	53.07	3.94	4	192-220
205.5						
OX 12-16 (a)	19	42-62	49.30	4.95	2	204-209
206.5						
(GL):					Length of radius	
					CHHF	6 57-67 62.0
(4.20)						
					OXH 12-16	11 56-62 58.6
2.06						

a Previously unpublished data from The Hamel, Oxford.

a Lack of structural definition of buildings or absence of bone evidence excludes some rooms from consideration

eg A2, A7 & A8

b Number of identified and unidentified mammal bones excluding those of rodent

→