BLN/P

TOWER HILL (GOODMANS YARD)

THE ANIMAL BONES

The Mammal Bones

A total of 1,286 mammal bones was recovered, the following species were identified; ox (Bos sp.), sheep (Ovis sp.), pig (Sus sp.), horse (Equus sq.), dog (Canis sp.), cat (Felis sp.) and hare (Lepus sp.), measurements were taken whenever possible according to Jones (1976) and von den Driesch (1976) (see table).

The chart below indicates the number of bones for each species in each deposit. Fragments termed 'ox' or 'sheep sized' have been added to the categories ox and sheep respectively. Loose teeth and rib fragments have been included in the count.

THE DARK EARTH (Late Roman with some later admixture)

ox	sheep	pig	horse	unidentifiable	
67	13	11	4	172	= 267

EARLIER DEPOSITS (Late C2nd to early C3rd)

ox	sheep	pig	horse	unidentifiable	
15	4	4	13	15	= 51

LATE C3RD TO EARLY C4TH

ox	sheep	pig	horse	dog	cat	hare	unidentifiable	
411	34	94	5	21	2	2	399	= 968

Ox was the predominant species (forming 38% of the mammal bone) both numerically and even more so in terms of meat contribution. All parts of the skeleton were represented and butchery marks were common.

Butchery was frequently observed on mandibles chopped around the area of the gonion, possibly for the removal of the cheek meat and the tongue, as well as chopping around the diastema and under the alveoli of the molars.

Scapulae were chopped through the joint surface, the proximal surfaces of radii, tibiae, and metapodials were often chopped along their posterior surfaces, possibly as a result of chopping the joint above. The distal condyles on the posterior surface of the femur were also chopped. The os coxae were chopped around the area of the acetabulum.

All the ox bones were mature and fully fused.

Sheep were present in low numbers, (4%), and butchery was noted on a number of long bones. Most of the bones were mature except for 2 immature mandible fragments.

Pig formed 8% of the total, many of the bone fragments were still porous, and some were from neonatal individuals. It is common for pig to have a higher proportion of immature bone than ox or sheep since its prime function is as a meat producer. Butchery was observed in the form of chop marks through the frontals of the skull, and through the mandibles at the area of the alveoli of the premolars. Many of the long bones also showed chop marks.

A number of horse bones were recovered, Context 186 yielded the partial skull, and the mandible of a small individual, the skull measurements compared closely with the complete Roman horse skull from Quakers Burial Ground, Staines, (Chapman in press). This individual appeared to be horse rather than donkey, indicated by the 1st molar of the mandible (Armitage 1979). The atlas, axis and 3 cervical vertebrae which all articulated were also present. Measurement of a horse radius from context 180 suggested an individual with a withers height of 146 cms which is approximately 13 hands (Kieswalter).

The only instance of pathology was seen on a dog femur, where exostosis covered the proximal area of the shaft. The shoulder heights of dog gave a range of 33 to 57 cms, which is within the Romano-British range given by Harcourt (Harcourt 1974).

The Bird Bones

A total of 77 bird bones was recovered, the following species were identified; domestic fowl (Gallus sp.), duck (Anas sp.) and goose (Anser sp.).

THE DARK EARTH

dom f.	duck	goose	unidentifiable	
1	1	4	3	= 9

EARLIER DEPOSITS

goose	
1	= 1

LATE C3RD TO EARLY C4TH

dom f.	duck (cf mallard)	duck (cf golden eye)	goose	immature	unidentifiable	
31	1	3	13	5	14	= 67

Measurements were taken whenever possible according to Jones 1976, all these bones probably represent domestic food refuse.

The Fish Bones

A total of 9 fish bones was recovered, 8 of which were from context 175. Seven of these belonged to a flatfish, probably sole (Solea solea) representing one individual, and the vertebral centrum of a bream (Abramis brama) was also recovered.

The Shellfish

A total of 764 fragments of shellfish was recovered, and the following species were identified; oyster (Ostrea edulis), whelk (Buccinum undatum), mussel (Mytilus sp.), cockle (Cardium edule), carpet shell (Venerupis deccussata), limpet (Patella vulgata) and one Cepaea shell.

THE DARK EARTH

	whelk	mussel	cockle	Cepaea	
oyster	4	5	3	1	= 125
35 upper valves					
65 lower valves					
12 indeterminate					

EARLIER DEPOSITS

	mussel	
oyster		
7 upper valves	4	= 40
25 lower valves		
4 indeterminate		

LATE C3RD TO EARLY C4TH

oyster	whelk	mussel	cockle	carpet shell	limpet	
186 upper valves	9	5	4	5	1	= 599

The mussel, oyster, whelk, cockle, carpet shell and limpet may have been collected for food from around the shoreline and in the case of oysters from deeper water.

It is not clear whether Cepaea were eaten, this one individual may have been part of the surrounding land fauna which became incorporated in the deposit.

General Conclusions

The small nature of the sample precludes any estimation of the relative contribution of different species to the diet during the Roman period but broadly speaking the deposits seem to represent well mixed deposits of food refuse, there appears to be little difference between the 3 deposits though this may be a factor of the small size of the sample rather than true homogeneity.

The Human Bones

A total of 40 human bones were recovered from 4 different contexts.

THE DARK EARTH

224
1 pair of calcanea
1 pair of tali
15 fragments of phalanges etc
1 proximal end of an ulna
1 skull fragment
2 proximal ends and shafts of tibiae } possibly a pair
2 distal ends of tibiae }
2 radius shaft fragments
1 midshaft and distal end of a humerus
2 ulna shaft fragments
1 fragment of os coxa
1 fragment of acetabulum
241
1 long bone shaft fragment
1 skull fragment

EARLIER DEPOSITS

186
1 skull fragment
2 femur shaft fragments
1 vertebral centrum
1 long bone shaft fragment
232
1 fragment of os coxa

All these bones were adult and quite robust. Anatomically they could all belong to a single adult male, but the stratigraphy suggests that it is more likely that at least 2 individuals are present.

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The Measurements
(for abbreviations see von den Driesch)

OX METACARPAL

Bp	90° at Bp	SD	90° at SD	Bd[1] at fusion	Bd[2] distal end of articulation	90° at Bd[2]
55.7	34.5	-	-	-	-	-
-	-	-	-	53.5	57.6	-
-	-	-	-	51.8	54.8	-
55.3	36.3	-	-	-	-	-
-	-	-	-	50.4	54.8	-
69.2	41.0	-	-	-	-	-
58.2	36.0	-	-	-	-	-
-	-	32.0	35.5	59.3	64.0	-
-	-	-	-	53.8	57.5	-
54.5	32.7	-	-	-	-	-
-	-	-	-	53.5	58.5	-
-	-	-	-	49.4	53.0	-

OX METATARSAL

-	-	29.0	26.0	54.0	53.5	-
-	-	25.5	26.0	49.2	50.1	-
49.0	44.4	-	-	-	-	-
46.2	45.0	-	-	-	-	-
-	-	29.0	25.4	50.8	54.0	-
43.5	42.5	-	-	-	-	-

OX TIBIA

Bp	90° at Bp	SD	90° at SD	Bd	Dd
98.2	88.0	-	-	-	-
-	-	43.0	29.8	-	-

OX MANDIBLE

10	13
l= 35.0	142.0
b= 13.5	

OX ASTRAGALUS

GLI	GLm	DI	Dm	Bd
60.0	54.2	30.4	29.5	36.4
62.2	58.9	35.0	30.2	41.5

PIG FEMUR

Bp	DC	SD	90° at SD
26.5	18.1	15.2	11.8

PIG RADIUS

Bp	90° at Bp	SD	90° at SD	Bd	90° at Bd
29.0	20.0	-	-	-	-

PIG ASTRAGALUS

GLI	GLm	DL	Dm	Bd
39.8	37.7	22.0	26.7	27.0

SHEEP FEMUR

Bp	DC	SD	90° at SD	Bd	90° at Bd
39.0	19.2	14.2	15.6	-	-

SHEEP RADIUS

Bp	90° at Bp	SD	90° at SD	Bd	90° at Bd
-	-	14.0	7.8	-	-
27.4	13.5	14.8	7.9	-	-

SHEEP METATARSAL

SD	90° at SD	Bd^1	Bd^2
13.0	11.8	23.8	23.6

SHEEP HUMERUS

GL	GLI	GLC	Bp	Dp	SD	Bd	BT
145.0	144.0	133.0	41.0	-	16.5	31.2	30.0

HORSE MANDIBLE

6	6a	7	7a	8	8a	9	10	11	12
151.2	148.0	74.2	71.2	77.9	76.8	l 29.3	l 24.3	l 23.2	l 20.2
						b 16.5	b 18.5	b 19.8	b 17.5

13	14	22a	22b
l 21.8	l 29.3	83.2	63.2
b 16.8	b 14.2		

HORSE SKULL

14	31	32	34	36	37	38
178.0	58.5	57.3	73.5	33.5	36.0	99.0

HORSE AXIS

LCDe	LAPa	BFcr	BPacd	BPtr	SBV	BFcd	H
132.3	-	81.5	-	-	42.3	40.4	-

HORSE SCAPULA

SLC	GLP	LG	BG
62.0	89.2	56.9	46.0

HORSE RADIUS

GL inc ulna	GL	Bp	90° at Bp	SD	90° at SD	Bd	90° at Bd
420.0	337.0	79.0	45.0	36.5	26.1	70.0	44.2

HORSE 2ND PHALANX

GL	Bp	Tp	SD	90° at SD	Bd	90° at Bd
42.8	53.5	31.9	46.0	23.0	-	22.9
48.9	55.2	32.9	48.0	23.5	54.0	26.7

HORSE 3RD PHALANX

GL	GB	LF	BF	Ld	HP
-	-	25.5	54.7	-	-

DOG HUMERUS

GLC	BT	Bd	SD
81.5	16.7	21.2	7.9

DOG RADIUS

GL	Bp	90° at Bp	SD	90° at SD	Bd	90° at Bd	
142.0	17.0	10.0	11.0	7.0	21.2	12.0	shoulder height = 47 cms
175.0	18.7	12.5	13.8	7.5	25.2	14.0	= 58 cms
-	-	-	13.5	9.8	-	-	

DOG ULNA

CL	LO	DPA	SDO	BPC	
148.0	19.2	16.7	14.3	11.8	shoulder height = 42 cms
118.0	-	-	9.5	8.5	= 33 cms

DOG FEMUR

GL	Bp	90° at Bp	SD	90° at SD	Bd	90° at Bd	
160.0	32.5	16.5	11.5	10.5	27.2	29.0	shoulder height = 48 cms

DOG SCAPULA

HS	DHA	Ld	SLC	GLP	LG	BG
82.5	-	-	13.5	16.0	13.7	11.7

CAT HUMERUS

GL	GLI	GLC	Bp	Dp	SD	Bd	BT
-	-	-	-	-	6.5	18.2	12.5

BIRD MEASUREMENTS

DOMESTIC FOWL TIBIATARSUS

GL	Dip	Bd	SC	Lo	Dd	(Bp)
-	-	11.8	7.0	-	12.9	-
111.6	19.0	11.2	6.2	108.0	12.2	12.8
-	-	11.9	5.9	-	11.9	-
-	-	-	6.5	-	-	-
-	-	10.5	6.5	-	10.9	-

DOMESTIC FOWL TARSOMETATARSUS

GL	Bp	Bd	SC
80.0	12.8	12.9	6.2
-	14.9	-	7.5
-	-	-	5.2
-	11.7	-	5.7

DOMESTIC FOWL FEMUR

GL	Bp	Bd	SC	LM	Dp	Dd
77.9	15.2	14.8	7.0	74.5	11.0	11.7

DOMESTIC FOWL HUMERUS

Bp	SC
18.2	6.2

DOMESTIC FOWL ULNA

GL	Bp	SC	Did
81.0	10.8	5.8	9.4
76.9	9.2	4.5	-
-	8.7	-	-

DOMESTIC FOWL CORACOID

LM	BF
48.4	11.3
-	12.2

GOOSE ULNA

Bp	SC	Did
16.0	8.7	-
16.2	8.9	-
-	8.5	12.5

GOOSE SKULL

GH	SBO
38.3	21.2

GOOSE TIBIATARSUS

GL	Dip	Bd	SC	La	Dd	(Bp)
-	-	18.0	9.5	-	18.2	-

GOOSE TARSOMETATARSUS

GL	Bp	Bd	SC
-	-	21.2	8.9

GOOSE CARPOMETACARPUS

GL	L	Bp	Did	(BS)
84.8	-	21.2	-	-

GOOSE RADIUS

GL	Bd	SC
-	-	6.0

GOOSE SCAPULA

GL	DIC
94.5	19.5

DUCK Cf mallard CORACOID

GL	LM	Bb	BF
55.0	49.8	22.7	21.5

DUCK Cf Golden eye CARPOMETACARPUS

GL	L	Bp	Did	(BS)
43.9	43.9	11.2	5.5	5.5
43.7	43.7	10.4	6.0	-

DUCK Cf Golden eye TARSOMETATARSUS

GL	Bp	Bd	SC
34.1	-	8.2	4.0