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FAUNAL REMAINS UNIT
DEPARTMENT OF ARCHAEOLOGY
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ANIMAL BONES FROM POOLE, DORSET

MEDIEVAL AND POST-MEDIEVAL LAYERS FROM SITES PM2,PM3,PM7,PM9,PM10 AND PM11

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Note: This report will be published in a Dorset Natural History and Archaeological Society Monograph. The whole bone report is therefore included here so that the excavator and editor can decide what will go for page printing.

LIST OF CONTENTS

MATERIAL AND METHODS

This report covers the analysis of about 8,000 bones from medieval, sixteenth century and later post-medieval layers from the following sites:

Poole Museums	2	1973	- Orchard Car Park
PM	2	1975	- Orchard Car Park (extension)
PM	3	1975	- Church Street
PM	7		- New Street
PM	9		- Thames Street
PM	10		- West Street
PM	11		- Town Cellars

The writer had earlier identified some of the fish and bird bones from the excavations in Thames Street and Town Cellars (Coy n.d.1 & 2). Mrs Jessica Winder made available her extensive earlier work on the material and Miss Mike Yonge her unpublished report on material from site 7. The writer subsequently looked at all the material and this report attempts to take all these results into consideration.

So that results from layers of similar date but on different sites could be examined together, a 4 or 5 figure context number was used in which the first two numbers were for site, using the PM numbers above. Because of the different numbering systems used on the sites, an annotated context number list was constructed showing what numbers in the archive refer to in terms of the archaeologists' layer definitions (revised 1980 version).

The methods used were those normally carried out at the Faunal Remains Unit (F.R.U.) using the comparative collection of mammals, birds and fishes in house but there were several more difficult identifications of birds where it was necessary to consult the collections of the British Museum (Natural History) Sub-Department of Ornithology at Tring and the writer is grateful for the advice of Mr Graham Cowles and to the Trustees of the British Museum for access to the collections. The approximate size of the fishes was estimated by comparison with fish of known weight in the modern collection in F.R.U.

Software produced by the Ancient Monuments Laboratory (Jones et al n.d.) was used to produce the context listing and context-ordered catalogue (CONLIS4 and CONMT845) which are available at Poole Museums and F.R.U. and the metrical catalogue (MET104) which is available at F.R.U. and in computer-readable form. The bones themselves are stored at Poole Museums. The work was carried out while F.R.U was in receipt of funding from the Historic Buildings and Monuments Commission.

OVERALL RESULTS

In order to quickly demonstrate the scope of the material, the variety of species, and the parts of the body utilised, the major results are given for the major period divisions: medieval, sixteenth century A.D., and later post-medieval contexts across all the sites. The subsequent discussion, however, goes through each site for a period-based discusssion as the phases of the different sites do not coincide exactly and the degree of analysis to which the results can be subjected is not uniform but is dependent upon the excavation techniques used and the quality of the record.

Tables 1-4 outline medieval results for horse, cattle, ovicaprid and pig; other mammals; birds and fish. Tables 5-8 do the same for sixteenth century contexts, and Tables 9-12 for the 17-19th Century A.D. contexts. The importance of the post-medieval layers is that some are securely dated and sealed.

It has not been possible to carry out any detailed taphonomic studies for this material as the methods used for the different sites were not uniform and there was not a consistent sampling strategy throughout. The results are, notwithstanding, of great interest for themselves as there have been few reports on Dorset material before this and the waterfront position of some of these sites makes them of key importance for our understanding of Wessex animal exploitation. It does mean, however, that detailed comparisons within the Poole material and with results from other sites should avoid taking the results too far as taphonomic checks for the comparability of the samples are not always possible.

The sample of measurements from the material was not great but all measurements are stored in computer-readable form and at F.R.U. as metrical printout. The idea of preparing a measurement catalogue for this material was discarded when sample sizes proved to be below 10 in most groupings and therefore not really worth the calculation of means and coefficients of variation, which would be necessary for comparison with other sites. All measurements were however compared with medieval measurement catalogues for medieval Southampton (Bourdillon personal communication) and 12th-13th Century Western Suburbs, Winchester (Coy n.d.3). Sixteenth Century measurements were compared with those from 16th Century Southampton (Bourdillon personal communication).

Generally measurements are not surprising but some large cattle in all periods are worth further investigation as Wessex work proceeds. Some of these show deformities which are probably the result of use for traction and the results are illustrated by figures and Plates in the text where they are discussed. Where possible size comparisons are given in the contextual sections and anything remarkable is noted there.

In the same way ageing data have all been recorded but as they are so few they are referred to in the contextual sections.

SITE BY SITE ANALYSIS

ORCHARD CAR PARK PM 2 1973

Material came from a single sealed pit Feature 37 dated between about 1680 and 1720. Although there were only 47 bones they are of a wide range of species. The usual common domestic ungulates, cattle, sheep or goat, and pig, are represented. Five of the cattle bones are from calf.

There is a complete skull of a small immature dog with milk dentition (Plate 1). Even allowing for its immaturity this dog evidently is from a miniature type with a pronounced 'stop' and shortening of the tooth row. It will be sent for specialist study. A small fragment of maxilla from an adult dog also in the pit may be of the same type.

Domestic cat skull, jaws and scapula in the pit are from two

TABLE 1 DOMESTIC UNGULATES PM SITES MEDIEVAL

	horse	cattle	sheep *	pig	c-size	s-size	TOTAL
horn core	-	-	3	-	-	-	3
cranium	-	19	12	21	13	20	85
hyoid	-	2	-	-	-	-	2
maxilla	-	6	3	8	-	-	17
mandible	-	38	27	33	5	1	104
vertebra	-	55	26	16	47	14	158
rib	-	60	19	4	82	161	326
scapula	-	31	11	12	18	3	75
humerus	-	18	9	16	5	-	48
radius	-	13	20	5	2	-	40
ulna	-	4	1	17	1	-	23
pelvis	1	15	12	11	6	-	45
femur	-	16	12	6	2	2	38
patella	-	2	-	-	-	-	2
tibia	-	13	40	4	6	1	64
fibula	-	-	-	5	-	-	5
carpal/tarsal	-	16	3	9	-	-	28
metapodial	-	62	36	17	1	-	116
phalanx	-	48	-	7	-	-	55
loose teeth	-	21	18	11	-	1	51
l.b.fragments	-	-	-	-	160	93	253
fragments	-	-	-	-	113	76	189
TOTAL	1	439	252	202	461	372	1727

* INCLUDES 39 DEFINITE SHEEP BONES AND 1 GREAT METAPODIAL

TABLE 2 OTHER MAMMALS PM SITES MEDIEVAL

	1	2	3	4	5	6	7	8	TOTAL
antler	-	1	-	-	-	-	-	-	1
skull	-	-	-	2	1	-	-	-	3
maxilla	-	-	-	-	1	-	-	-	1
mandible	-	-	-	4	1	-	-	-	5
vertebra	-	-	-	11	9	-	-	-	20
rib	-	-	-	21	26	-	-	-	47
scapula	-	-	-	5	9	-	-	-	14
humerus	-	1	-	3	2	-	-	-	6
radius	-	-	-	4	2	-	-	-	6
ulna	-	-	-	4	4	-	-	-	8
pelvis	-	-	2	3	4	1	-	-	10
femur	-	1	-	5	2	-	-	-	8
tibia	1	-	1	6	3	-	1	1	13
fibula	-	-	-	3	-	-	-	-	3
carpal/tarsal	-	1	-	1	-	-	-	-	2
metapodial	-	-	-	8	4	-	-	2	14
phalanx	-	1	-	-	-	-	-	3	4
TOTALS	1	5	3	80	68	1	1	6	165

KEY

1 Red deer, Cervus elaphus

2 Fallow deer, Dama dama

3 Domestic dog

4 Domestic cat

5 Rabbit, Oryctolagus cuniculus

6 Mole, Talpa europaea

7 Black rat, Rattus rattus

8 Other

TABLE 3 BIRDS PM SITES MEDIEVAL

	1	2	3	4	5	6	7	8	9	TOTAL
skull	-	-	1	-	-	-	-	-	-	1
vertebra	1	-	-	-	-	-	-	-	-	1
sternum	-	-	-	1	-	-	-	-	-	1
furcula	-	-	1	-	-	-	-	-	-	1
scapula	5	-	5	-	-	-	-	-	-	10
coracoid	7	2	1	-	-	-	-	-	-	10
humerus	5	5	2	-	-	-	-	-	1	13
radius	8	3	-	-	-	-	-	1	1	13
ulna	7	2	2	-	-	-	1	-	1	13
pelvis	2	-	-	-	-	-	-	-	-	2
femur	5	2	2	-	-	-	-	-	-	9
tibio-tarsus	10	-	1	-	-	-	-	-	2	13
carpo-metacarpus	2	6	2	-	-	-	-	-	-	10
tarso-metatarsus	13	-	-	-	1	-	-	1	-	15
phalanx	1	1	-	-	-	1	-	-	-	3
other	-	-	-	-	-	-	-	-	12	12
TOTALS	66	21	17	1	1	1	1	2	17	127

KEY

1 Domestic fowl

2 Domestic goose

3 Duck (all species)

4 Brent goose, Branta bernicla

5 Coot, Fulica atra

6 Grey heron, Ardea cinerea

7 Partridge, Perdix perdix

8 Pigeon, cf Columba livia

9 Other

TABLE 4 FISH PM SITES MEDIEVAL

	1	2	3	4	5	6	7	8	TOTAL
cranial	-	3	-	-	-	-	-	-	3
vomer	-	-	-	-	-	2	-	-	2
parasphenoid	-	3	-	-	-	-	-	-	3
palatine	-	1	-	-	-	-	-	-	1
maxillary	-	3	-	1	-	-	-	-	4
dentary	-	11	-	2	-	1	-	-	14
articular	-	15	-	-	-	-	-	-	15
pterygoid	-	3	-	-	-	-	-	-	3
hyomandibular	-	3	-	-	-	-	-	-	3
quadrate	-	4	1	-	-	-	-	-	5
preoperculum	-	3	-	-	-	-	-	-	3
suboperculum	-	1	-	-	-	-	-	-	1
interoperculum	-	1	-	-	-	-	-	-	1
post-temporal	-	2	-	-	-	-	-	-	2
ceratohyal	-	3	-	-	-	-	-	-	3
branchiostegal	-	11	1	-	-	-	-	-	12
cleithrum	1	-	-	-	1	-	-	1	3
supracleithrum	-	1	-	-	-	-	-	-	1
ceratobranchial	-	4	-	-	-	-	-	-	4
vertebra	-	15	1	-	-	-	1	-	17
fin ray	-	-	-	-	-	-	-	20	20
fragment	-	-	-	-	-	-	-	45	45
TOTALS	1	87	3	3	1	3	1	66	165

KEY

1 Haddock, Melanogrammus aeglefinus

2 Ling, Molva molva

3 Cod family, Gadidae

4 Hake, Merluccius merluccius

5 Wrasse, Labridae

6 Conger eel, Conger conger

7 Dogfish, Scyliorhinidae

8 Unidentified fish

TABLE 5 DOMESTIC UNGULATES PM SITES SIXTEENTH CENTURY A.D.

	horse	cattle	sheep	pig	c-size	s-size	TOTAL
horn core	-	-	7	-	-	1	8
cranium	-	12	28	17	24	27	108
hyoid	-	4	3	-	-	-	7
maxilla	-	6	9	13	-	-	28
mandible	-	41	25	22	3	1	92
vertebra	-	63	54	12	55	28	212
rib	1	87	27	2	66	213	396
sternum	-	2	-	-	2	-	4
scapula	-	29	21	7	23	3	83
humerus	-	18	28	3	5	5	59
radius	-	11	42	5	5	-	63
ulna	-	13	11	6	2	1	33
pelvis	-	18	40	4	15	2	79
femur	2	13	20	6	3	8	52
patella	-	1	-	-	-	1	2
tibia	-	20	40	7	21	9	97
fibula	-	-	-	11	-	-	11
carpal/tarsal	2	46	8	7	1	-	64
metapodial	1	44	23	18	-	-	86
phalanx	-	47	3	9	-	-	59
loose teeth	5	38	21	14	-	-	78
l.b.fragments	-	1	1	-	204	290	496
fragments	-	2	-	-	103	103	208
TOTAL	11	516	411	163	532	692	2325

TABLE 6 OTHER MAMMALS PM SITES SIXTEENTH CENTURY A.D.

	1	2	3	4	5	6	7	8	9	TOTAL
skull	-	-	-	-	1	-	-	1	-	2
mandible	-	-	-	-	2	-	-	2	-	4
vertebra	-	-	-	-	14	1	-	-	-	15
rib	-	-	-	-	23	-	-	-	-	23
scapula	-	-	1	-	2	3	1	-	-	7
humerus	-	-	-	-	2	3	1	-	-	6
radius	-	2	-	1	2	-	-	-	-	5
ulna	1	3	2	-	2	4	-	-	-	12
pelvis	-	-	-	-	-	1	1	-	-	2
femur	-	1	-	-	-	8	2	-	1	12
tibia	1	1	-	-	-	7	1	-	1	11
metapodial	-	2	1	1	1	2	2	-	-	9
phalanx	2	-	-	1	-	-	-	-	-	3
TOTALS	4	9	4	3	49	29	8	3	2	111

KEY

1 Red deer, Cervus elaphus

2 Fallow deer, Dama dama

3 Roe deer, Capreolus capreolus

4 Domestic dog

5 Domestic cat

6 Rabbit, Oryctolagus cuniculus

7 Brown Hare, Lepus capensis

8 Black rat, Rattus rattus

9 Other

TABLE 7 BIRDS PM SITES SIXTEENTH CENTURY A.D.

	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
beak	1	2	-	-	-	-	-	-	-	-	-	-	3
sternum	4	-	2	-	-	-	-	-	-	-	-	2	8
furcula	3	-	-	-	-	-	-	-	-	-	-	-	3
scapula	3	1	1	-	-	-	-	-	-	-	-	-	5
coracoid	9	-	2	-	-	-	-	-	-	-	-	-	11
humerus	16	-	5	-	-	1	-	-	-	-	-	1	23
radius	7	4	5	-	-	-	-	1	-	-	1	2	20
ulna	13	2	6	-	-	-	-	-	1	-	1	-	23
pelvis	-	1	-	-	-	-	-	-	-	-	-	-	1
synsacrum	-	1	-	-	-	-	-	-	-	-	-	-	1
femur	9	2	1	-	-	-	-	-	-	-	-	2	14
tibio-tarsus	12	2	-	1	-	-	1	-	-	1	-	3	20
carpo-metacarpus	1	4	6	-	-	-	-	-	-	-	-	-	11
tarso-metatarsus	9	2	-	-	1	-	1	-	-	-	-	1	14
phalanx	-	1	-	-	-	-	-	-	-	-	-	3	4
other	-	-	-	-	-	-	-	-	-	-	-	13	13
TOTALS	87	22	28	1	1	1	2	1	1	1	2	27	174

KEY

1 Domestic fowl

2 Domestic goose

3 Duck (all species)

4 Brent goose, Branta bernicla

5 Coot, Fulica atra

6 Moorhen, Gallinula chloropus

7 Swan, Cygnus sp

8 Herring/Lesser black-back gull, Larus argentatus/fuscus

9 Guillemot, Uria aalge

10 Woodcock, Scolopax rusticola

11 Pigeons (all species)

12 Other

TABLE 8 FISH PM SITES SIXTEENTH CENTURY A.D.

	1	2	3	4	5	6	7	8	9	TOTAL
alisphenoid	-	-	-	-	-	-	1	-	-	1
ethmoid	-	-	-	-	-	-	1	-	-	1
parasphenoid	-	2	1	-	-	-	-	-	1	4
premaxillary	1	-	-	-	-	1	1	-	-	3
dentary	-	1	-	1	-	-	3	-	-	5
articular	-	2	-	-	-	-	-	-	2	4
hyomandibular	-	-	-	-	1	-	1	-	-	2
quadrate	-	3	-	-	-	-	2	-	-	5
urohyal	-	-	-	-	-	-	1	-	-	1
suboperculum	-	-	-	-	-	-	2	-	-	2
interoperculum	-	-	-	-	-	2	-	-	-	2
post-temporal	-	1	-	-	-	-	-	-	-	1
ceratohyal	-	-	-	-	-	-	1	-	-	1
branchiostegal	-	1	-	-	-	-	1	-	2	4
cleithrum	1	1	-	-	-	-	1	-	-	3
supracleithrum	3	2	-	-	-	-	-	-	-	5
vertebra	-	30	-	-	-	-	2	1	-	33
fragment	-	-	-	-	-	-	-	-	38	38
TOTALS	5	43	1	1	1	3	17	1	43	115

KEY

1 Cod, Gadhus morhua

2 Ling, Molva molva

3 Hake, Merluccius merluccius

4 Garfish, Belone belone

5 Sea bream, Sparidae

6 Wrasse, Labridae

7 Conger eel, Conger conger

8 Dogfish, Scyliorhinidae

9 Unidentified fish

TABLE 9 DOMESTIC UNGULATES PM SITES POST-MEDIEVAL

	horse	cattle	sheep *	pig	c-size	s-size	TOTAL
horn core	-	-	2	-	-	-	2
cranium	-	39	49	14	40	29	171
hyoid	-	2	2	-	-	1	5
maxilla	-	11	8	4	-	-	23
mandible	-	29	40	20	2	4	95
vertebra	-	99	47	21	127	18	312
rib	2	166	11	8	61	135	383
sternum	-	4	4	-	1	-	9
scapula	-	31	37	9	20	-	97
humerus	1	28	31	18	5	3	86
radius	-	30	48	4	6	-	88
ulna	1	24	6	9	4	-	44
pelvis	1	52	31	13	27	1	125
femur	2	40	32	15	8	3	100
patella	-	3	-	-	-	-	3
tibia	1	53	38	8	33	2	135
fibula	-	-	-	3	-	-	3
carpal/tarsal	6	60	7	11	-	-	84
metapodial	-	50	24	10	-	2	86
phalanx	5	53	3	4	-	-	65
loose teeth	6	37	19	13	-	-	75
l.b.fragments	-	-	-	-	132	50	182
fragments	-	-	-	-	190	120	310
TOTAL	25	811	439	184	656	368	2483

* 101 fragments were identified to sheep, 1 metapodial was goat

TABLE 10 OTHER MAMMALS PM SITES POST-MEDIEVAL

	1	2	3	4	5	6	7	8	TOTAL
antler	1	-	-	-	-	-	-	-	1
skull	-	-	2	37	-	-	-	-	39
maxilla	-	-	2	3	-	-	-	-	5
mandible	-	-	2	23	-	-	-	-	25
vertebra	-	-	7	57	-	-	-	-	64
rib	-	-	3	25	-	-	-	1	29
sternum	-	-	2	1	-	-	-	-	3
scapula	-	1	1	15	1	-	-	-	18
humerus	-	-	5	23	-	-	-	-	28
radius	-	-	3	17	-	-	-	-	20
ulna	-	1	6	18	1	-	-	-	26
pelvis	-	-	3	13	2	-	1	-	19
femur	-	1	4	28	4	-	-	-	37
tibia	-	2	4	28	3	1	-	-	38
fibula	-	-	1	13	-	-	-	-	14
carpal/tarsal	-	1	4	1	-	-	-	-	6
metapodial	1	3	10	29	-	-	-	-	43
phalanx	-	-	3	-	-	-	-	-	3
loose teeth	-	-	2	4	-	-	-	-	6
TOTALS	2	9	64	335	11	1	1	1	424

KEY

1 Red deer, Cervus elaphus

2 Fallow deer, Dama dama

3 Domestic dog

4 Domestic cat

5 Rabbit, Oryctolagus cuniculus

6 Brown hare, Lepus capensis

7 Brown rat, Rattus norvegicus

8 Other

TABLE 11 BIRDS PM SITES POST-MEDIEVAL

	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
skull	3	-	1	-	-	-	-	-	-	-	-	-	4
beak	-	-	-	-	-	-	1	-	-	-	-	-	1
sternum	4	-	-	-	-	-	-	-	-	-	-	1	5
furcula	-	-	1	-	-	-	-	-	1	-	-	-	2
scapula	-	-	1	-	-	-	-	-	-	-	-	-	1
coracoid	6	-	1	-	-	-	-	-	-	1	-	-	8
humerus	6	2	4	-	1	1	-	2	-	1	1	-	18
radius	1	2	3	-	-	-	-	-	-	-	-	-	6
ulna	5	2	1	1	1	-	-	1	-	2	-	-	13
pelvis	3	1	-	-	-	-	-	1	-	-	-	-	5
synsacrum	2	-	-	-	-	-	-	1	-	-	-	-	3
femur	9	-	-	-	-	-	-	-	-	-	-	1	10
tibio-tarsus	10	-	1	-	-	-	-	1	-	-	-	1	13
carpo-metacarpus	2	4	-	-	-	-	-	1	-	1	-	-	8
tarso-metatarsus	18	1	-	-	-	2	-	-	-	-	-	-	21
phalanx	-	2	-	-	-	-	-	-	-	-	-	1	3
other	-	-	-	-	-	-	-	-	-	-	-	11	11
TOTALS	69	14	13	1	2	3	1	7	1	5	1	15	132

KEY

1 Domestic fowl

2 Domestic goose

3 Duck (all species)

4 Brent goose, Branta bernicla

5 Coot, Fulica atra

6 Cormorant, Phalacrocorax carbo

7 ? Stork, Ciconia sp

8 Common gull, Larus canus

9 Guillemot, Uria aalge

10 Carrion crow, Corvus corone

11 Pigeon, Columba sp.

12 Other

TABLE 12 FISH PM SITES POST-MEDIEVAL

	1	2	3	4	5	6	7	8	TOTAL
cranial	-	-	-	-	2	-	-	-	2
dentary	-	2	-	-	-	-	-	2	4
cleithrum	7	-	1	-	-	-	-	-	8
postcleithrum	2	-	-	-	-	-	-	-	2
vertebra	10	2	-	1	-	1	1	1	16
fin ray	-	-	-	-	-	-	-	1	1
fragment	-	-	-	-	-	-	-	12	12
TOTALS	19	4	1	1	2	1	1	16	45

KEY

1 Cod, Gadhus morhua

2 Ling, Molva molva

3 Cod family, Gadidae

4 Mullet, Mugilidae

5 Plaice or flounder, Pleuronectes platessa/Platichthyes flesus

6 Skate or ray, Rajidae

7 Dogfish, Scyliorhinidae

8 Unidentified fish

individuals. The skull represents a large animal but with too small a canine tooth to be wild.

Wild species present are the mallard, Anas platyrhynchos; common guillemot, Uria aalge; a cod, Gadus morhua, of less than a kilo; and a species of mullet, Mugilidae, of slightly more than half a kilo.

The bird bones in particular were extremely well-preserved, the guillemot wishbone being still slightly pliable. There is a pathological domestic fowl pelvis bearing numerous small flat bony lumps which has also been sent for specialist attention (Plate 2).

ORCHARD CAR PARK (EXTENSION) PM 2 1975

The 113 bones from 10 contexts provided relatively uncontaminated medieval groups dated to the 13th -15th Century. Food species are domestic cattle, sheep, pig, goose, and fowl. Two further species, rabbit and pigeon, which would probably at this time have been controlled for food, in warrens and dovecotes, respectively, were present. The bones of the latter were examined very carefully alongside comparative specimens at F.R.U. and the British Museum (Natural History) and matched most closely feral and domestic pigeons rather than the wild form of the rock dove, Columba livia. A species of wrasse is represented by a supraoccipital bone which is larger than one from a 1.3 kg fish in the F.R.U. collections. In addition to oysters, which are being reported on by Jessica Winder there were fragments of common whelk, cockles, winkles and a species of pecten in these bags. Two tibia fragments are of a species of rat (probably black rat) and a smaller rodent, possibly a vole. Grey heron is represented by a wing digit and cat by a vertebra.

Cattle, sheep and pig bones show evidence of butchery and although this very small sample contains bones from all parts of the body, most of the bones are ribs from sheep-sized animals with anterio-posterior chopping and unidentifiable fish fin rays.

A sheep radius had proximal joint exostoses suggesting the animal was of a fair age and a pig jaw was of an adult male with the third molar in wear.

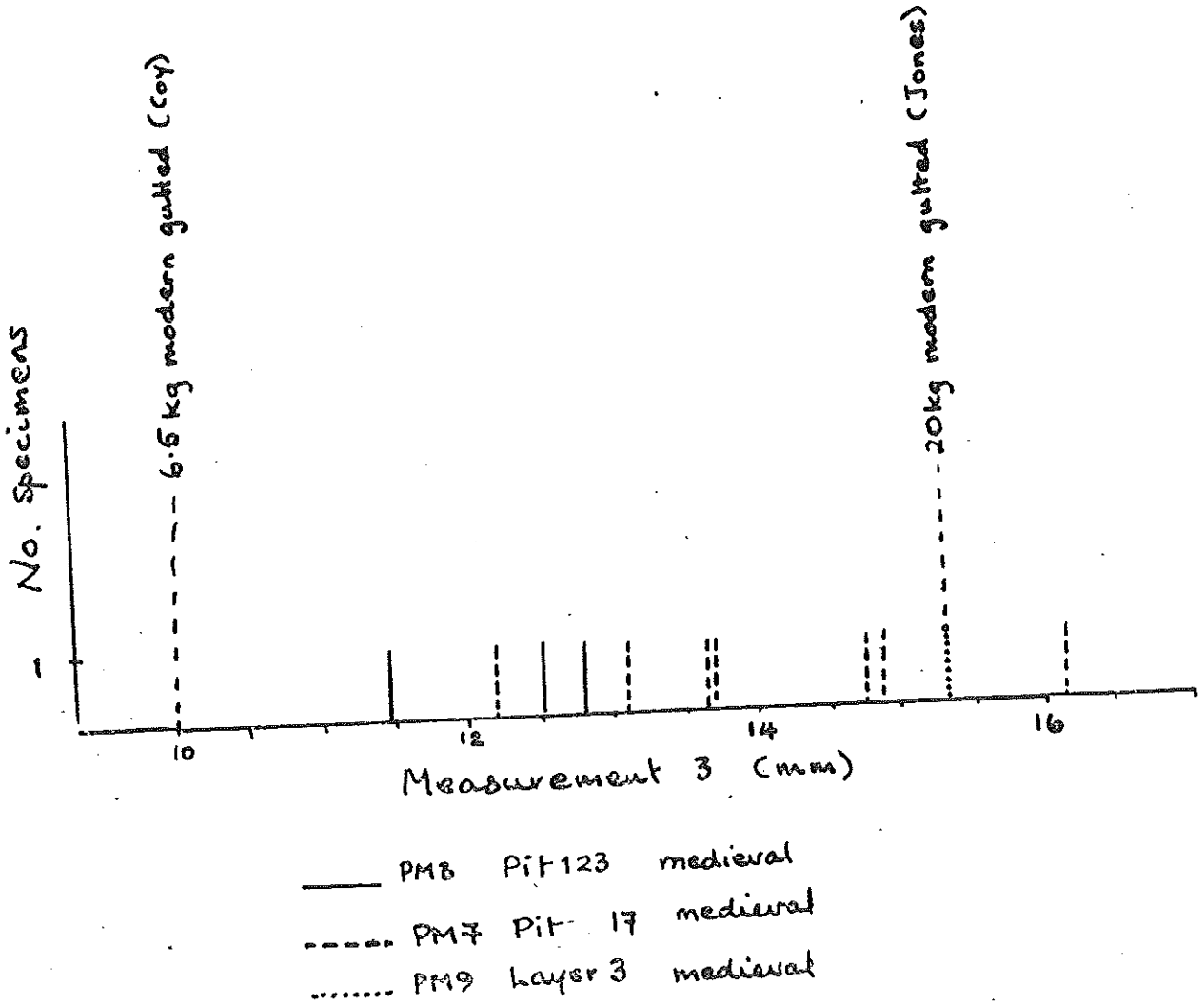
The results from these contexts are amalgamated with those from the other uncontaminated medieval layers in Tables 1-4.

CHURCH STREET PM 3 1975

The 449 bones from 20 contexts of medieval date have been included in Tables 1-4. Food species represented include domestic cattle, sheep, pig, goose and fowl. Rabbit and fallow deer are also represented, the former have already been discussed for PM 2, the latter, probably also introduced by the Normans, were probably at this time kept in deer parks. The humerus of fallow deer found comes from Feature 81 and is chopped medio-laterally at the distal joint. Species which are represented and may also have been used for food are a large duck which was found in 3 features (it matches the mallard, Anas platyrhynchos, but could be domestic), a smaller species of wild duck, brent goose, coot, conger eel, ling (found in 4 features), and hake (in 2). The size of the ling is shown on Figure 1. Feature 129 contained cockles, winkle and common whelk shells. Domestic dog and cat bones are also present.

FIGURE 1 Ling Articular Measurements

Measurement 3, greatest medio-lateral breadth (Morales & Rosenlund)



About 10% of the cattle bones are of calf, some of them butchered. Although all parts of the body of the domesticates are represented a high proportion of the remains are fragmentary ribs and unidentifiable longbone fragments. Of the 18 cattle vertebral fragments, 2 axis, a cervical and 2 thoracics show midline axial splitting, there is also some evidence for this in sheep. Butchery marks, mostly chopping rather than knife-cuts, are generally common on the bones of the cattle, sheep and pig. Cattle ribs were chopped through in an anterio-posterior direction.

The cattle show a wide range of sizes and is possible that the large ones are draught animals. Three metacarpus bones from this site illustrate this (Figure 2). One fits into the scatter of presumed female animals from 12-13th Century Western Suburbs, Winchester, and the other two show a greater distal width, one with considerable splaying (Plate 3) which may be at least partly the result of use for traction (Coy n.d.3). Supporting evidence comes from a first phalanx of cattle with unusually well-developed muscle-attachments and slightly deformed proximal joint surface (Plate 4). One immature pig pelvis fragment (in Feature 13) was large enough to be from wild boar but this should be discounted if later contamination is likely.

The domestic fowl tarsometatarsus found in Feature 118 was from a large cock bird, with a total length of 94mm that is only exceeded in our records by an example from sixteenth century Southampton (Bourdillon personal communication).

There were a few jaws of the common ungulates which contributed ageing data to the general results for the medieval data and were generally from mature animals with all 3 molars in wear.

Pathological bones on this site comprised the large cattle metacarpus described above which showed some distal anterior exostoses (Plate 3), a cattle lumbar vertebra, and a distorted pig third metacarpal with proximal joint surface showing exostoses and and arthritic damage. Such conditions reinforce the mature age of the animals suggested by tooth wear evidence.

NEW STREET PM 7

This material had been reported on earlier by Mike Yonge. The 245 medieval bones from Feature 17 were computer coded and the results for this feature added to the other medieval results outlined in Tables 1-4. Ditch Layer 12 only produced evidence of cockles, winkles, oysters and the bivalve Venerupis decussata.

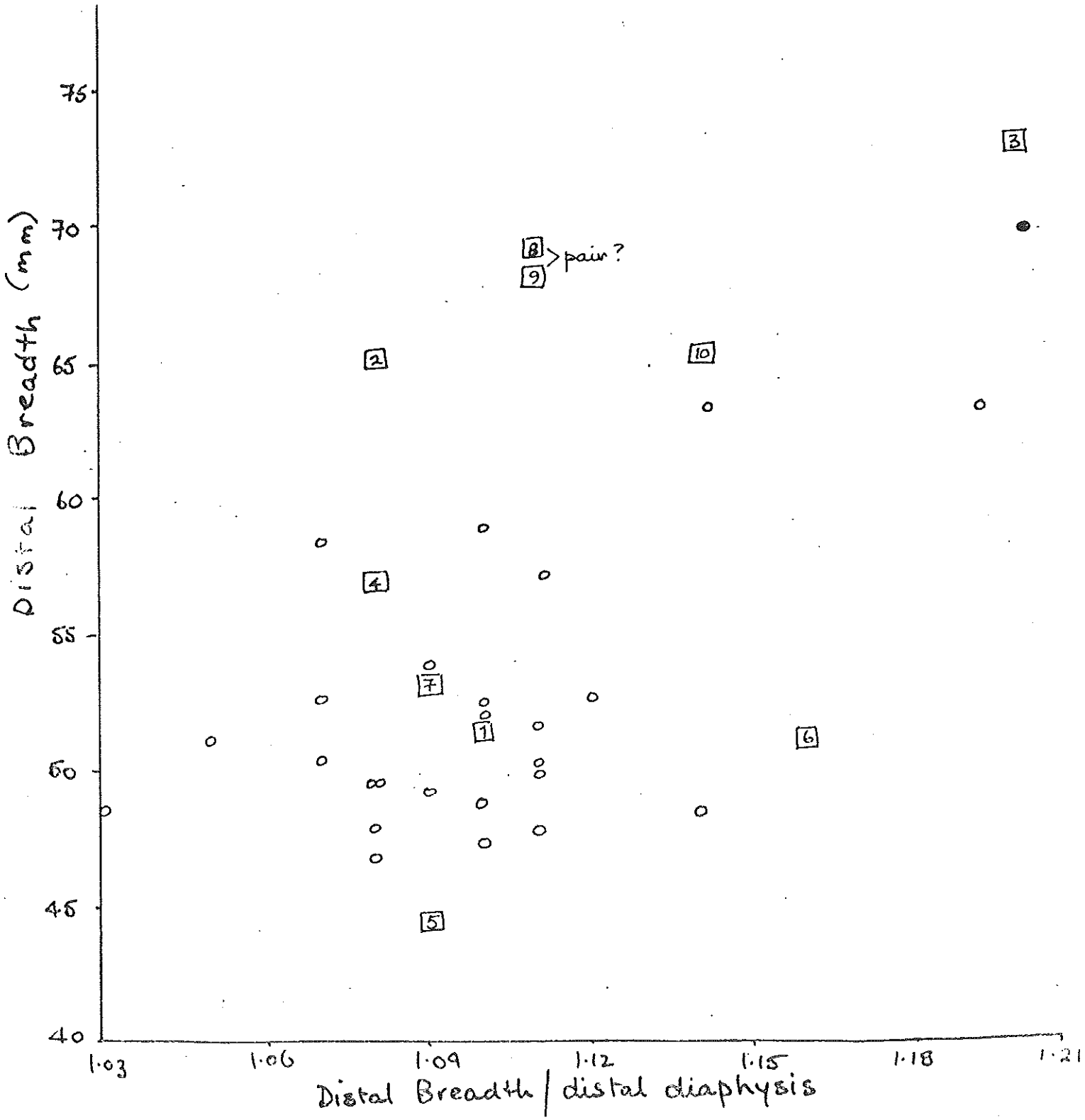
Midline splitting of the carcase was noted for cattle and pig and some of the cattle and 2 of the cattle bones were calf.

It should be noted that the large ling reported on by Andrew Jones (Mike Yonge's report) is comparable in size with others found since in medieval layers at Poole and that one of the cranial fragments from this estimated 20kg fish in PM 7 was centrally split suggesting that the bones might be from a preserved side of ling and therefore not necessarily local as was implied by Jones (Figure 1).

The pit dated c.1760-70 (Feature 20)was also studied earlier by Mike Yonge but the 68 fragments have now been computer recorded and included in results for Post-medieval bones in Tables 9-12. Some of the cattle bones in this pit were from a very large animal. It is quite likely that by this time signs of the improvement of cattle would be obvious and this large size is

FIGURE 2 Cattle Metacarpus Measurements

o WINCHESTER early medieval
● Christchurch 17-18th C
[1]-[6] Poole medieval [3] shows deformity through use
[7]-[10] Poole 16th C [6] is very gracile



not surprising. It has been noted elsewhere in Wessex for this period when well-dated post-medieval material has become available, e.g. at Christchurch (Coy 1983). The pit also contained parts of a skull of calf, presumably a delicacy although no signs of butchery were noted.

An atlas, axis, several cervicals and sacrum had been split midline and ribs sawn into sections anterio-posteriorly. Atlas, axis and some thoracic vertebrae of the ovicaprid remains also showed midline splitting. The single pig bone was butchered.

A humerus of coot was additionally found for this feature.

THAMES STREET PM 9

Well over half of all the bones from the Poole sites came from the Thames Street excavations. They came from all three periods considered in this report.

Medieval Deposits

There were 1,136 bones from 14 contexts dated to the Medieval Period which are included in Tables 1-4 and represent domestic cattle, sheep, pig, goose, duck and fowl which were all no doubt eaten. Other edible species are red deer, fallow deer, rabbit, partridge, a species of wild duck, ling (in 3 contexts), cod, conger eel, haddock, and hake (1 context each). Horse, dog and cat are present and the first, represented by a pelvis, showed butchery. There is a possibility that one of the goose bones (an ulna in Layer 3) is from a wild species such as the white-front, Anser albifrons. There was a large lobster claw in Layer 3.

There was an unusually large fragment of cattle femur for this period in Layer 3 and this could be evidence of contamination with later material. Once again though the cattle were of a wide size range. Although there were several cattle metacarpals as large as those which showed distal splaying in other assemblages none could be added to Figure 2 as their distal parts were missing. The only distal metacarpus measured and added was in fact an exceptionally small one, smaller than anything found at medieval Southampton or Winchester. But a large metatarsus with distal distortion possibly resulting from use for traction is illustrated in Plate 5 alongside a similarly large, but normal, post-medieval example from Thames Street.

There were very few mandibles but cattle and pig shows evidence for the presence of very young animals. Sheep does not. Once again in a medieval deposit a proportion of the cattle bones (8% here) were from calf and in this case some were butchered. The pig bones apart from the evidence of piglet demonstrate animals up to the stage when the third molar comes into wear. The sheep mandibles are all from animals with well worn molars which would have been several years old or elderly.

The cattle bones were extensively butchered with both choppers and knives and there were 4 cases of midline splitting on the 21 vertebrae (2 of them axes). There was also evidence of midline splitting in sheep and pig vertebrae, some of it off-centre, and occasional evidence of paramedian axial butchery - to one side of the vertebral body.

Bone fragments were from all parts of the body and did not show a significant distribution between species and anatomies

from the overall results for the medieval bones shown in Table 1, with one exception. There was a high value for pig ulna in these layers, which contained 15 of the 17 from medieval layers as a whole. This is too great to be a feature of survival and it is suggested that, although butchery was only recorded for two of them, they may be from shoulder hams. Although not obviously porous none of the ulnae had the proximal epiphysis fused. This is quite usual for pig finds on archaeological sites as this bone does not fuse for at least 3 years. The maximum breadth of the coronoid process on the four measurable ones ranged from 17.6 - 20.6 mm and compares poorly with a recent 12-13th Century sample from Winchester where 7 bones gave a range of 18-26 mm. It is possible that some admixture of wild boar in the Winchester suburbs might account for at least some of this (Coy n.d.3).

Pathological occurrences included the distorted distal metatarsus of cattle already mentioned (Plate 5), a second phalanx of cattle with arthritic damage to the proximal joint surface and exostoses, and a slightly distorted sheep proximal metatarsus. One sheep/goat jaw showed malocclusion and another a periodontal condition (Plate 6).

The dog was a medium sized animal which compared well with a 15 kg modern specimen, 0.48 m at the shoulder, in the F.R.U. collections.

The ling bones were from large fish (Figure 1), one even larger than the New Street example estimated by Andrew Jones as having a 20 kg gutted weight. The cod skull came from a 2 kg fish.

Sixteenth Century

Over 2,700 bones from 7 contexts were recorded and form the largest sample from Poole and the major ingredient of Tables 5-8. It is interesting to contrast the results with those from the medieval house above as these two samples provide a contrast in living standards.

Although a wider variety of food species was exploited than in the earlier phase of Thames Street (29 compared with 21), the actual percentage of fragments which came from the less common species fell. In this phase only 18% of identifiable bones coming from these species compared with 21% in the medieval phases. The percentage of bird bones fell from 9% to 6%, of fish from 11% to 9% and uncommon food mammals from 6% to 4%. Specific ratios for the 3 common domesticates - cattle, sheep and pig - also altered with more emphasis on cattle and sheep at the expense of pig. The necessary checks on retrieval for further analysis of this sort are not possible in retrospect, however, and it should be pointed out that normally samples would be compared in greater detail for taphonomic factors before such percentages are given an airing. A quick check on the identifiability of the two samples shows, for example, that medieval sample was slightly more identifiable than the sixteenth century one. Sieving would also tend to bias retrieval of the bird and fish element of the diet.

Horse is definitely represented now, an incisor comes from a 10 year old animal and a fragment of femur suggests a horse rather than a pony. Cattle, sheep and pig bones are the majority and found in all features in a butchered state. There is no trace of goat but many positive identifications of sheep so all sheep/goat bones have been included in that category. Other food

species are domestic goose and fowl; red, fallow and roe deer (found butchered); rabbit and some traces of brown hare; and a wide range of birds and fish. Layer 2 contained, in addition to all the species so far mentioned, conger eel, cod, hake, ling (in most layers), sea bream, and wrasse; and brent goose, swan, teal (Anas crecca), a large duck comparable in size with mallard (Anas platyrhynchos), a smaller wild species of duck (Anas sp), moorhen, woodcock, gull, and wood pigeon. There was a claw of a very large edible crab, Cancer pagurus, in Layer 2.

Context 10 contained only a proportion of these species but contained a vertebra of a dogfish. Layer 19 contained an even more restricted range but included an immature bone of pigeon (Columba sp.). Pit material from Feature 43 included remains of ballan wrasse (Labrus berÝgylta), pochard (Aythya ferina), coot, and guillemot. Feature 53 contained the only find of garfish for Poole.

Dog remains were confined to Layer 2 and cat only notable as a partial skeleton in Feature 53. In Layer 2 there was a very well-preserved skull and mandibles of the black rat although there is slight doubt of its provenance.

Four cattle metacarpus measurements are plotted on Figure 2. One fits the small range for the medieval but the others (two may be a pair) are large but apparently normal, not showing the signs of heavy use of those in the medieval deposits. If these are securely dated then this suggests that at this period large cattle, in use for food, were around and were not being specially bred for traction. This fits with the larger animals we know were around in Southampton at this time, after the smaller beasts of the Medieval Period and with the very large cattle for salt beef that were found aboard the Mary Rose.

The sheep measurements are more numerous than usual for these sites because of the bigger sample and a detailed comparison with results from Southampton is posssible for some bones (Table 13). This demonstrates that a similar range of sizes was present in the 16th Century at both places but that maxima at Poole are so far slightly lower. The measurements, however, are not very different from medieval measurements from elsewhere as sheep sizes in Wessex during the medieval period and 16th Century are uniformly low having undergone a drop after the Middle Saxon period which shows a wider range and includes much larger sheep than this (Bourdillon 1979). The medieval sample from Poole is too small to compare in detail with the 16th Century sample. Sheep withers heights are included in Table 14, the high value for Poole being caused by a single rather long tibia.

About 10% of the cattle bones are from calf, which is represented in several layers. But only one bone shows butchery and as this is an astragalus this may only indicate skinning. In Layer 2 there was a rare find, the vestigial lateral metapodial of cattle which would normally only be developed in the bull. Sheep remains range from lamb bones to an elderly sheep with a periodontal condition , in this case probably because of its great age - these were both in Layer 2. In Layers 2 and 10 there was a total of 9 mandibles - all with well-worn teeth and giving numerical values for toothwear of 40 - 47 (Grant 1975 [redacted]). Piglet bones were in both Layers 2 and 10. Otherwise pig ageing data is from jaws and shows animals with an erupting dentition, none of which have the third molar yet in wear.

Butchery of all 3 common ungulates seems to have involved an

TABLE 13 A selection of 16th C sheep bone measurements (mm)

	16th C Poole			16th C Southampton	
n	range	mean	n	range	mean
scapula minimum neck					
7	15.5 - 21.1	17.9	35	16.8 - 22.9	18.8
Humerus breadth trochlea					
18	23.8 - 29.6	26.1	23	23.5 - 30.4	26.8
Humerus distal breadth					
20	25.2 - 32.4	28.1	33	24.2 - 32.0	28.3
Radius proximal width					
13	26.6 - 31.1	29.2	41	26.0 - 33.2	29.3
Withers height ranges					
4	0.45 m - 0.68 m		76	0.47 m - 0.62 m	

almost universal use of median axial splitting, although samples for pig are small. Plate 7, however shows that this may have taken place in two stages as the cut through the centrum and that through the thoracic spine are in different planes. All the butchery is carried out efficiently and more consistently than is normally seen in medieval samples. Cattle ribs are similarly cut into small sections, one of which is also included in Plate 7.

Pathological specimens noted were a periodontal condition alongside the first molar in a cattle jaw and a deformed distal joint surface on a sheep humerus, possibly caused by strain put on this joint from pathology elsewhere as the medial joint area had developed a much deeper form than usual. The medial joint surface itself was developing scratches during movement and the animal may have been in some pain (Plate 8). One sheep radius is somewhat bowed compared with the norm. A pig maxilla contains a very cramped premolar row.

The fish represented in these layers varied in size widely. Conger eel bones comparable with those from a 16 kg specimen came from Layer 2 and Features 50 and 53. Layer 2 also contained some smaller bones consistent with a specimen about 8 kg. But much smaller congers (of about 3.5 and 2.7 kg) came from Feature 43 and Layer 10, respectively. In the same way, cod of 2.2, 6, and more than 14 kg are probably represented and ling of about 6 to over 9 kg. It is possible that some of the smaller fish and the conger eels were locally caught but that large cod and ling were preserved fish.

Later Post-medieval

A sample of about 1,200 18th and 19th Century bone was scanned from 9 contexts in Area I and 3 in Area II. The most important part of this exercise was to attempt a definition, in terms of size, butchery, and other criteria, of a sample of this date. Such material is rarely either dateable or collected. Only by such a study can we become secure in our analysis of late medieval and 16th to 18th Century material which is important in terms of the development of animal husbandry and public interest. In rescue excavations in urban areas the ability to quickly recognise late material like this is extremely useful so that limited excavation resources are not wasted collecting 19th and 20th Century samples which are not required. The material from this and associated samples in other sites from the 17th, 18th and 19th Centuries is summed in Tables 9-12. Details of this late phase will not be given here except to add that very large animals were represented as well as quite distinctive butchery.

WEST STREET PM 10

A total of 1,617 bones from 3 layers of an 18th century pit (Area 4, Feature 1) are a most important sample as they are dated to c.1720-1750. Table 14 shows the common species and their elements represented . In addition to this the food species include red and fallow deer, brown hare, domestic goose and fowl, pigeon, skate or ray, plaice or flounder, cod and ling.

Other finds are an adult and part-grown domestic dog, the former a little larger than the one in PM 9, and the skeletons of at least 10 cats and 3 kittens, cormorant, carrion crow, and the pelvis of a possible brown rat which if contemporary is very near the supposed date of the appearance of this species in

TABLE 14 COMMON UNGULATES FROM 1720-50 PIT

	cattle	calf	sheep	pig	c-size	s-size	TOTAL
cranium	32	8	48	4	16	21	129
hyoid	1	-	2	-	-	-	3
maxilla	3	1	-	-	-	-	4
mandible	10	1	16	8	1	4	40
vertebra	56	6	28	14	43	12	159
rib	70	-	10	8	6	50	144
sternum	4	-	4	-	-	-	8
scapula	8	5	21	2	-	-	36
humerus	10	5	13	5	-	-	33
radius	7	3	7	2	-	-	19
ulna	1	3	3	5	-	-	12
pelvis	16	6	12	10	6	1	51
femur	7	4	20	6	2	1	40
patella	1	-	-	-	-	-	1
tibia	11	4	10	3	21	-	49
carpal/tarsal	12	3	3	7	-	-	25
metapodial	8	11	11	1	-	-	31
phalanx	8	7	-	2	-	-	17
loose teeth	21	-	8	5	-	-	34
l.b.fragments	-	-	-	-	24	26	50
fragments	-	-	-	-	132	102	234
TOTAL	286	67	216	82	251	217	1119

Britain.

As well as oyster the Pit also contained remains of cockle, whelk, winkles and common mussel, Mytilus edulis.

In Table 14 calf is given separately from fully grown cattle as this seems to be a major item in the pit at 28% of the total cattle count, some of it butchered. There are at least 3 calves, one an enormous beast, almost as large in stature as a modern small Jersey cow and a foetal or new born animal. The cattle mandible evidence is sketchy but epiphyseal fusion shows that many of the grown animals were in their early years. The available sheep jaws are of mature animals with all three molars in full wear but the long bone fusion evidence , which is more extensive shows evidence of some animals in their first two years. Pig evidence, as usual shows growing animals with wear on only the first molar and with many unfused epiphyses. There are also a few piglet bones.

The cattle, sheep and pig had been split axially although there are the occasional exceptions. Cattle butchery was intense with most longbones showing chopping through the joint surfaces and ribs cut into sections. There was a fair concentration of head and foot fragments as well as trunk remains for all three species. The lack of sheep phalanges may be due to retrieval bias.

The results from this pit provide the only example from Poole where any calculations can be done on a reasonable sample for the investigation of taphonomic differences between layers. Layer one and Layer two in this pit do not show any differences in species or element representation of significance but the amount of fragmentation in the two layers is very different with the bones from the lower layer being less fragmented. In Layer 1 equal numbers of common ungulate bones are identifiable and not identifiable to species whereas in Layer 2 there are twice as many bones identifiable to species as are unidentifiable.

In addition to the enormous calf there are some very large bones of adult cattle, most of them from unmeasurable fragments, however. The few measurements on cattle which could be taken compare with maxima from 16th Century Southampton or exceed them. The same is true for the sheep measurements. The two whole bones produce withers heights of 0.59 and 0.67 m.

The red deer fragment is worked antler but the fallow deer bones are tibial fragments from an adult and an immature animal. There is no indication that the cats had been skinned.

The 46 bones of domestic fowl, many of them measurable, provide an important sample. They are large,but within the ranges for even 16th Century Southampton. The largest tarsometatarsus, with a greatest length of 94 mm, was from a cock bird and had had the spur cut.

The cod bones represent fish between 9 and 14 kg and the flatfish compares with a modern specimen of 370 g.

TOWN CELLARS PM 11

Medieval

Only 234 bones were recorded from 18 contexts, some dated to about 1300 and the other to the 14-15th Century. The results were added to others from the Medieval Period in the Poole archive but little can be said about any of the individual contexts. The results were polled with others from the Medieal Period in Tables 1-4. There is a small and gracile cattle

metapodial typical for the Medieval Period which is included in Figure 2.

The earlier contexts produced cattle, sheep, goat, pig, a fallow deer femur fragment and possible antler fragment of the same, and several bones of domestic fowl. A dogfish vertebra came from Layer 13.

The later contexts produced no goat bones but did contain remains of goose and rabbit.

Sixteenth Century

Only 25 bones from this site belong to this phase and the results were pooled with others from this period in Tables 5-8.

The species represented are cattle, sheep or goat, pig, domestic goose and fowl.

Later Post-medieval

The 197 fragments dated to the 17-19th Century were scanned for the reasons explained for the Post-medieval layers of PM 9. This proved an interesting exercise as the material contained diagnostic standard cattle and sheep butchery, much of it done with a saw probably dating to the 19th Century and bones of obviously domestic duck now distinct from the mallard.

The species represented are horse, cattle, sheep, goat, pig, domestic goose, duck and rabbit, and cod. Layer contained , as well as oysters, examples of common whelk and edible cockle.

CONCLUSIONS

The species represented in the medieval period show a wide-ranging diet including, not only the common domesticated animals, cattle, sheep, goat, pig, goose, fowl and duck; but the eating of species which were developed as additional food sources in the medieval period - fallow deer, rabbit and pigeon. Wild food sources were also used, remains of both wild birds and fish being found in the medieval pits. Both the wide-ranging species list and the evidence for the eating of calf suggest that people here were making the most of what was available. The food may have come from a variety of sources. Grey heron is a common product of falconry and there could have been use of falcons or hawks although no evidence of the birds themselves was found.

It is always difficult to know which birds were eaten at which period and the account above may be subjected to criticism by those with a wider or narrower feeding spectrum. Some birds not much eaten today were regarded as delicacies even in the 19th Century, for example the delights of early coot are described by Colonel Peter Hawker (1830).

The fish are on the whole large specimens and whereas some may have been caught on a small scale locally on lines, conger eel, common eel and wrasse, for example, it is likely that by this time there was considerable trade in saltfish along the South Coast and despite the proximity of the water at some of these sites a local origin should not be presumed (Coy 1982). Presumably even the close proximity of a wharf is irrelevant here as the import and sale of fish in medieval times was closely controlled.

The detailed recording of material from well-dated 16th Century and 18th Century contexts is a rare event in Wessex archaeology but important for our knowledge of the animal husbandry of the area which is incompletely documented. The 16th Century material from Thames Street and Town Cellars and that from the even later Pits from West Street and New Street were therefore fully-recorded. All other 18th - 19th Century dateable material was scanned in order to sort out recognisable criteria for this material which can be used, in association with data from other archaeological finds to put a quick date on material as layers are destroyed during development. The speed of destruction of urban Wessex in the 1980s makes this an urgent task.

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