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Progress report on animal bones from 16-22 Coppergate, York, to the end of July 1983

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Because of the large volume of bone recovered from Coppergate and the consequent length of time required for its analysis, this report has been prepared to review progress up to the end of July 1983 and to suggest priorities for the next phase of the study. This is not a descriptive report and should not be quoted in publications without discussion with the author.

To date, 27 samples have been recorded, totalling some 32000 pieces of bone. A further six samples have been identified and sorted preparatory to recording. Most of these samples are dated to the period of Viking settlement (late 9th - 10th century), although a few have been examined which immediately pre- and post-date this period. The samples relate to buildings at the front (north end) of the site, the yards around and behind them, and a large open area to the back of the site. Twelve of the samples are from pits, and an internal report on these has been prepared. The remaining 15 samples are from large accumulations on the floors of buildings, and from surfaces around buildings. The excellent preservation of very large volumes of bone has made selection of samples quite difficult. The policy adopted to date has been to concentrate on the largest available groups of bone within the period being studied. Phasing of the site is still in

progress, and work on amalgamated small contexts will have to wait until phasing is at a more advanced stage.

Numbers of fragments identified to the major taxa are listed in Table 1. The overall similarity of the samples is striking, with little variation in the proportions of cattle, sheep and pigs. Cattle bones are predominant in all samples, the more so in samples 19719, 19739 and 19743, which are relatively early in date and are from the back of the site away from the buildings. Sheep bones outnumber those of pig in all but three of the samples - 3W352, 13716 and 13147. These last two were from the upper levels of fills within a 10th century sunken-floored building, the other from immediately below a late 9th century wattle structure. 13716 and 13147 are particularly characterised by a high proportion of pig metapodials and cranial fragments, and sheep and cattle ribs. These same elements have been found to be more abundant in samples within or immediately associated with buildings, and this apparent association is one line of enquiry which will be further pursued.

Apart from the three main domesticates, other species are quite scarce. Horse, goat, cat and dog are frequent, although never abundant. Again, two of the early samples (19739 and 19743) are unusual in showing a higher abundance of horse. Frequent specimens of butchered horse bones seem to indicate that horse was being eaten. Brown hare occurred in six samples, although it does not appear to have figured large in the diet. Red deer remains are frequent,

although it should be noted that this species is almost exclusively represented by pieces of cut-up antler.

The proportions of gnawed and abraded material vary. Abraded, in this context, is taken to mean fragments of bone which were subjectively much more battered than was the norm for the rest of the sample. Given the excellent preservation of most samples, this identification was not as intuitive as might at first seem to be the case. A small proportion of fragments in every sample showed a much higher degree of surface abrasion, and often a different colour, to the rest of the sample. Gnawing was very clearly marked on many specimens. Note was taken of the spacing and size of individual tooth-marks. On this basis, the majority of gnawing was attributable to dogs, although a few specimens were found which had clearly been subject to gnawing by cats. No convincing cases of rodent gnawing have been found to date, a surprising result in view of the evidence that mice (mainly Mus musculus) and rats (Rattus rattus) were common pests in this period. An interesting observation concerns the three samples from the back of the site, 19719, 19739 and 19743. These were stratified immediately above one another, 19743 being the lowest, in what were probably Anglian levels, and 19719 the highest, possibly in the early Viking period. Gnawed specimens were relatively infrequent in 19743, more frequent in 19739 and most frequent in 19719. It is tempting to suggest that as the intensity of occupation of the site increased, the extent to which dogs 'worked over' rubbish heaps also increased, although until better dating evidence is available for this

part of the site, this observation can be nothing more than speculation.

Most cattle and sheep were slaughtered as young adults, with few very young or very old individuals. Pigs were killed at an earlier stage of growth, most mandibles being attributable to pigs between 1 and 2 years old, with some aged 2 to 3 years and few younger or older individuals. Indications of disease or injury are few, the only regular feature being lower-limb arthropathy among the cattle bones, although even this was quite uncommon. A number of non-metrical genetic traits have been recorded, including the frequency of absence of the lower 2nd premolar in cattle and sheep. Cases of absent LP2 have been infrequent, although one sample (19739) had four absences out of 19 cattle mandibles.

To summarise results to date, the evidence points to a reliance on beef, with cattle and sheep being brought in from outside the city. It is possible that some pigs, at least, were raised on the tenements at Coppergate, as a survey of bones recovered from bulk-sieving has produced a number of records of foetal and neonatal pig bones. Butchery was a rather unsystematic affair, with no cleaving of carcasses into sides. The most notable feature is that many cattle limb-bones were split longitudinally in the medio-lateral plane to expose the marrow cavity. Other bones show evidence of have been chopped into small pieces, and it seems likely that these were bound for the stock-pot. The disposal of bones was rather haphazard: some

went into pits, some into heaps in the tenement yards, and some was trampled into floors. Differences in content from sample to sample are subtle, but some systematic variation is becoming clear, and further work may permit interpretation of these differences in terms of human behaviour.

The main priority for the next phase of work will be to establish whether there are any differences between samples of bone from the wattle buildings and from the sunken-floored buildings, and whether comparison of contemporaneous samples will show any clear tenement-to-tenement differences. This will require the examination of a much larger volume of material than would normally be required in order merely to characterise bone deposits phase by phase. However, the results will provide a rare opportunity to study spatial variation with a high degree of resolution, with the obvious limitation that the site only samples one small part of the city.

KEY

1	context number
2	horse
3	cattle
4	sheep
5	goat
6	red deer
7	fallow deer
8	roe deer
9	pig, domestic
10	pig, wild
11	cat
12	dog
13	hare
14	human
15	other domestic
16	other wild game
17	other wild incidental
18	other
19	fish
20	bird
21	amphibian and reptile
22	unidentified
23	identified
24	TOTAL
25	abraded fragments
26	gnawed fragments
27	% abraded/identified
28	% gnawed/identified

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
8007	19739	30	809	175	3	0	0	0	79	0	0	12	0	0	0	0	0	0	0	13	0	200	1121	1321	12	34	1.07	3.03
8007	99901	1	484	246	0	4	0	0	106	0	1	5	0	2	0	0	0	0	0	5	0	520	854	1374	8	12	0.94	1.41
8007	21554	1	465	170	1	0	0	0	103	0	2	6	0	0	0	0	0	0	0	39	0	245	787	1032	4	21	0.51	2.67
8007	29263	2	1057	389	7	5	0	0	263	0	1	28	4	1	0	0	0	0	0	91	0	450	1848	2298	18	31	0.97	1.68
8007	15311	11	840	230	3	3	0	0	185	0	5	7	0	4	0	0	0	0	0	0	0	400	1288	1688	8	18	0.62	1.40
8007	13147	3	871	294	1	3	0	0	511	1	2	1	0	0	0	0	0	0	0	160	0	1000	1847	2847	2	12	0.11	0.65
8007	13716	1	842	255	2	3	0	1	481	0	4	4	0	0	0	0	0	0	0	128	0	1000	1721	2721	4	16	0.23	0.93
8007	15176	1	698	365	1	3	0	0	179	0	4	3	0	0	0	0	0	0	0	44	0	390	1302	1692	11	42	0.84	3.23
8007	20131	3	633	245	0	2	0	1	172	0	1	1	1	3	0	0	1	0	0	33	0	575	1098	1673	9	15	0.82	1.37
8007	19719	9	660	174	2	1	0	1	73	0	0	7	0	2	0	0	0	0	0	18	0	120	947	1067	26	40	2.75	4.22
8007	19743	35	741	216	9	1	0	0	74	0	2	0	0	1	0	0	0	0	0	11	0	110	1090	1200	7	22	0.64	2.02
8007	30352	1	1177	208	0	13	0	0	320	2	2	0	0	0	0	0	0	0	0	50	0	250	1773	2023	18	108	1.02	6.09
8007	8453	0	368	142	2	1	0	0	78	0	2	1	0	0	0	0	0	0	0	0	0	200	595	795	3	13	0.50	2.18
8007	27389	4	892	334	0	3	0	0	210	1	0	6	3	1	0	1	0	0	2	85	0	399	1542	1941	5	74	0.32	4.80
8007	31064	7	470	142	4	8	0	1	61	0	4	0	0	1	0	0	0	0	0	16	0	280	714	994	37	11	5.18	1.54
8007	31524	1	150	39	0	0	0	0	11	0	0	0	0	2	0	0	0	0	0	5	0	82	208	290	4	4	1.92	1.92
8007	27478	7	162	66	1	0	0	0	15	0	1	0	0	0	0	0	0	0	0	10	0	61	262	323	10	5	3.82	1.91
8007	28573	4	641	184	1	1	0	0	38	0	0	1	1	3	0	0	0	0	25	9	0	311	908	1219	13	15	1.43	1.65
8007	27920	0	270	61	1	3	0	0	53	0	0	0	1	0	0	0	0	0	0	24	0	92	413	505	10	17	2.42	4.12
8007	37089	0	390	112	0	1	0	0	61	0	5	1	0	0	0	0	0	0	5	35	0	130	610	740	12	22	1.97	3.61
8007	11509	0	81	65	4	1	0	0	28	0	4	0	0	1	0	0	0	0	7	25	0	70	216	286	0	6	0	2.78
8007	15436	3	224	47	1	0	0	2	33	0	2	5	0	0	0	0	0	0	0	0	0	97	317	414	10	12	3.15	3.79
8007	11767	0	96	77	1	0	0	1	47	0	1	0	1	1	0	0	0	0	20	34	0	119	279	398	3	8	1.08	2.87
8007	28729	2	333	142	0	1	0	0	80	0	1	0	0	2	0	0	0	0	2	36	0	191	599	790	10	21	1.67	3.51
8007	32885	7	406	154	2	0	0	0	55	0	0	1	0	0	0	0	0	0	0	12	0	190	637	827	26	13	4.08	2.04
8007	14184	2	744	244	0	4	0	0	163	0	0	5	0	0	0	0	0	0	0	64	0	400	1226	1626	13	37	1.06	3.02
8007	14973	2	688	375	0	2	0	0	278	0	1	4	0	1	0	0	0	0	0	145	0	600	1488	2088	21	43	1.41	2.89