

Technical report: Biological remains from 8/9 and 10 The Market Place, Ripon, North Yorkshire (HARGM 10214)

by

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### **Summary**

Excavations at the rear of 8/9 and 10 The Market Place, Ripon, North Yorkshire were undertaken prior to the redevelopment of the site. Archaeological features and deposits dating from 11<sup>th</sup> century through to the early modern period were encountered.

Abundant wheat grains in the sample from Context 2085, were accompanied by quantities of charred and 'silicified' chaff, and formed an extremely unusual deposit. The mechanism whereby the cereal chaff became 'silicified' is not certainly know; perhaps this ash is most likely to represent material burnt in a bonfire.

The vertebrate remains examined in this report were mainly recovered from pit and post hole fills of  $12^{th}$ - $14^{th}$  century date. Over 300 fragments were identified including the remains of the major domestic mammals, birds and fish. Much of the assemblage represented domestic household refuse, although some butchery waste was present. Significant numbers of cat remains were dispersed throughout the deposits and some e.g. the concentrations of cat metapodials, may represent waste associated with the processing of animal skins, although no direct evidence from skinning marks was observed.

**Keywords**: 8/9 and 10 The Market Place; Ripon; North Yorkshire;  $10^{TH}$  Century to modern; medieval; plant remains; charred plant remains; vertebrate remains; ?skinning/fur preparation; ?antler working

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#### Introduction

Excavations at the rear of 8/9 and 10 The Market Place, Ripon, North Yorkshire (NGR: SE 3131 7128) were undertaken by York Archaeological Trust prior redevelopment of this centrally located site. Archaeological features and deposits dating from 10<sup>th</sup> century through to the early modern period were encountered. A number of sediment samples were taken during the archaeological investigations, which also produced four boxes (each approximately 20 litres) of animal bone. Most of the bone was recovered from rubbish, cess and latrine pits, and post-hole fills excavated within an area identified as the backyards of two burgage plots.

Following an assessment of the biological remains (Jaques *et al.* 2000), it was recommended that a basic archive, including biometrical data, be produced of all well-dated vertebrate material. Additionally, it was felt that the plant material from one sample (Sample 22, Context 2085) warranted further examination. Unfortunately, because of restrictions in project funding, no further work on the vertebrate remains from the samples was funded.

#### **Methods**

#### Sediment sample

The sediment sample was inspected in the laboratory during the assessment and its lithology was recorded, using a standard *pro forma*, prior to processing, following the procedures of Kenward *et al.* (1980; 1986), for recovery of plant macrofossils. The washover and residue were examined for plant remains. Material recovered during the assessment was examined in more detail as part of these analyses.

#### Vertebrate remains

The animal bones examined in this report represent material recovered by hand-collection from 35 of the 66 bone producing deposits, most of which were 12<sup>th</sup>-14<sup>th</sup> century in date. Material from those deposits which were described by the excavator as being of modern, mixed or uncertain date was excluded.

For the vertebrate remains, both from hand-collection and from the samples, data were recorded electronically directly into a series of tables using a purpose-built input system and *Paradox* software. Subjective records were made of the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Additionally, semi-quantitative information was recorded for each context concerning fragment size, dog gnawing, burning, butchery and fresh breaks.

Where applicable, fragments were identified to species or species group, using the reference collection of Palaeoecology Research Services. Detailed recording of the assemblage followed the protocol outlined by Dobney et al. (1999). Selected elements were recorded using the diagnostic zones method described by Dobney and Rielly (1988). Other fragments, (classified as 'unidentified') were, where possible, grouped into categories: large mammal (assumed to be horse, cow or large cervid), medium-sized mammal 1 (assumed to be sheep, pig or small cervid), medium-sized mammal 2 (assumed to be dog, cat, hare or equivalent-sized mammal), unidentified bird, and totally unidentified. In addition to fragment counts, total weights of bone were recorded for all identifiable and unidentifiable categories.

Caprovid tooth wear stages were recorded using those outlined by Payne (1973; 1987),

and those for cattle and pigs followed the scheme of Grant (1982). Cattle, pig and caprovid mandibles were assigned to the general age categories outlined by O'Connor (1989) and, in addition, caprovid mandibles and isolated teeth were also assigned to the age categories detailed by Payne (1973; 1987). Mandibles with incomplete tooth rows were assigned to age groups on the basis of comparison with the more complete aged mandibles from the assemblage. The same was true for loose deciduous 4<sup>th</sup> pre-molars (dp4) and third molars (M3).

Mammal bones were described as 'juvenile' if the epiphyses were unfused and the associated shaft fragment appeared spongy and porous. They were recorded as 'neonatal' if they were also of small size. Epiphysial fusion data are presented using the categories of O'Connor (1989).

Measurements follow von den Driesch (1976) unless otherwise specified. Additional measurements, not detailed by von den Driesch, follow those described by Dobney *et al.* (1996). Withers heights were estimated using calculations devised by Foch (1966), Matolsci (1970), and Kiesewalter (in von den Driesch and Boessneck 1974).

#### **Results**

Sediment sample

A full list of the plant remains and other components recorded from this sample can be found in Table 1.

**Context 2085** [dump, dated 14<sup>th</sup>/15<sup>th</sup> century] Sample 22/T (2 kg sieved to 300 microns with washover)

Moist, black (but rubbing dark brown), soft (working thixotropic and somewhat plastic), very humic, ?charcoal-rich silt. Fragments of large mammal bone, charred twigs,

?mortar/lime, ?ash, and ?burnt soil were present in the sample.

The small residue of about 25 cm<sup>3</sup> consisted of sand, gravel, an iron object (or perhaps an iron-rich concretion) and a little burnt and unburnt bone. The small washover of about 250 cm<sup>3</sup> was very distinctive, however, in being dominated by charcoal (to 20 mm) with quite well-preserved charred grains of bread wheat (Triticum 'aestivo-compactum') and much fine 'silicified' ash. Amongst these were rachis and rachilla fragments of free-threshing wheat and many awns, as well as traces of chaff from barley (Hordeum) and rye (Secale cereale L.). There were virtually no charred weed seeds (except the moderate numbers of small Vicia) and only a very few uncharred seeds, one of which, greater celandine (Chelidonium majus L.) is a species typically found at the foot of a wall.

#### Hand-collected vertebrate remains

In all, a total of 934 fragments were recorded, of which (excluding the part pig and cat skeletons) 321 fragments were identified to species. Table 2 lists the contexts from which bone was recorded, whilst Table 3 shows the range of species identified. As can be seen from Table 3, the vertebrate assemblage was grouped into a number of different chronological periods according to pottery spot dates and stratigraphic information supplied by the excavator. Most of the bones were recovered from deposits of 13th-14th century date, with more broadly dated deposits (10<sup>th</sup>-13<sup>th</sup> and 12<sup>th</sup>-14<sup>th</sup> century) producing much of the remainder. Assemblages from each individual group were not particularly large and as a result of this, and the overlap between the broader chronological periods represented, it was not possible to observe trends through time; for the most part the assemblage is discussed as a whole. The following account provides some general comments regarding the composition of the vertebrate remains; however, the small size

and the variability of the preservation of the assemblage must be borne in mind

#### Preservation

Most fragments were recorded as being of good or fair preservation, although some variability was noted within the assemblages from some contexts. A small component that was rather battered in appearance was apparent within the material from many of the deposits, whilst several fragments exhibited rounded edges or were very eroded. Colour, on the other hand, was the least variable property, and bones within individual contexts tended to be quite homogeneous. Differences in preservation did not appear to be directly related to either chronological period or context type.

In general, the assemblage was moderately fragmented although, material from several deposits showed extensive fresh breakage, as opposed to damage caused in antiquity. Little dog gnawing of the bones was evident.

Butchery marks were observed on the bones of all the main domestic mammals, including horse. Evidence of butchery took the form of split cattle shaft fragments, and longitudinally chopped cattle and caprovid vertebrae. The latter demonstrates the practise of splitting carcasses and is a feature quite commonly found in medieval assemblages. Single horncores (representing sheep, goat and cattle), with chops to the base of the core or on associated cranium fragments, were also noted from Context 2068, 2088, 2093, 2142 and 2176. The horncores had all been deliberately removed from the skull, with the intention, one presumes, of using the horn.

A series of fine knife marks was recorded on both the anterior and posterior shaft of a horse metatarsal. This may provide evidence of skinning. One horse ulna did appear to have been chopped, possibly suggesting carcass dismemberment for the utilisation of the meat. Several of the cod vertebrae identified from Context 2110 showed evidence of butchery. The edges of the centrum of some of the vertebrae had been cut away, along with varying amounts of neural spine.

#### Species representation

Table 3 shows the range of species represented for all periods. Whilst small quantities of bird and fish remains were present, the hand-collected assemblages were dominated by the major domestic species (cattle, caprovids and pigs), with unusually, cat remains also providing a significant proportion of the assemblage.

When considering the main domesticates only, caprovid remains were more numerous than the bones of either cattle or pigs. However, over half of the unidentified fraction consisted of large mammal remains (assumed to be mainly cattle), which would clearly increase the importance of cattle within the assemblage. Pigs were less well represented, but included the skeleton of a neonatal individual from Context 2149. Another part skeleton of a piglet was identified within the assemblage from Context 4009, whilst several further deposits (Contexts 2070, 2164, 2176 and 4002) also contained skeletal elements representing very young individuals.

Goat horncores (Contexts 2068, 2075, 2088, 2093, 2099 and 2149) and ?goat metapodials and phalanges (Contexts 2097, 2099 and 4010) were recorded within the caprovid remains. Despite careful comparison with modern reference specimens, other skeletal elements were not identified.

Cat remains were scattered throughout the deposits but were particularly abundant from Context 2107. This post-pit fill produced 28 cat bones, of which 24 were metapodials (representing at least 6 individuals). Other medieval pit and post-pit fills also yielded cat bones. Some of these remains included, or were exclusively, metapodials (Contexts 2070,

2092, 2099, 2109, 2110 and 2146), whilst others (Contexts 2093 and 4009) appeared to be part skeletons, with the major limb bones and pelves present. Most of the individuals represented were adult but a few were clearly juvenile. Although no knife marks were observed on any of the cat bones, it seems likely that some of these groups (e.g. the metapodials from Context 2107) represent the waste from the preparation of furs or skins.

Birds were present in only very small quantities and represented by fowl and goose, with a possible black grouse (cf. *Lyrurus tetrix* (L.)) humerus noted from Context 2107, and a duck beak identified from Context 2178.

Antler fragments representing red deer (*Cervus elaphus* L.), fallow deer (*Dama dama* L.) and roe deer (*Capreolus capreolus* (L.)) were recovered from Contexts 2087, 2107 and 2142. The absence of post-cranial elements suggests that these fragments may be related to craft activities rather than indicating food waste.

The deposits also produced small numbers of fish bones, most of which were Gadidae, those identified to species being cod (*Gadus morhus* L.). A group of 11, vertebrae, representing one large cod of between 1 and 1.5 metres in length, were recovered from Context 2110.

## Skeletal element representation

Detailed interpretation of the skeletal element representation was hindered by the small size of the assemblage. However, skeletal elements present for cattle, caprovids and pigs, did suggest that all parts of the animals were represented. Overall, similar numbers of meatbearing (e.g. humerus, radius, pelvis and femur) and non-meat bearing elements (e.g. mandibles, metapodials and phalanges) were recorded, with the numerous shaft, vertebra and rib fragments within the unidentified fraction representing the rest of the carcasses.

Three of the four goose remains identified were carpometacarpus fragments. This element forms part of the wing and would generally be removed prior to cooking. In contrast, the chicken bones are those which represent the parts of the bird that would have produced the most meat, e.g. sternum and tibiotarsus. However, all the bird remains are indicative of household refuse (both kitchen and table). Fish were exclusively represented by vertebrae, most of which were precaudal.

A detailed examination of the remains from ten deposits, which produced 40 or more fragments, did not indicate any obvious patterns of disposal. On the contrary, whatever the initial function of the various pits, they proved to be very useful for the disposal of general rubbish, be it waste from primary butchery or kitchen/consumption refuse.

## Age-at death

Age-at death data derived from dental eruption and attrition and epiphysial fusion, were rather scant for the major domesticates even when the data from all represented periods was amalgamated. Dental data for cattle was limited to a single mandible (Context 2176) with a partial tooth row and one isolated first or second mandibular molar. Both were heavily worn and the animals represented are likely to have been mature. Caprovid mandibles mostly represented individuals, typically between two and four years of age based on Payne's categories (1973, 1987). An isolated third molar (Context 2111) also fell within this age group. An exception to this was a mandible recovered from Context 2149. The data provided by this tooth row suggested the presence of a lamb of less than 6 months old. This individual was recovered from the same deposit from which the complete skeleton of a neonatal pig was identified. A second pig mandible from a neonatal individual was recorded from Context 2100, while the remaining two pig mandibles represented one subadult and one adult.

Epiphysial fusion data for cattle from all periods supported the very limited dental data, in that most of the animals represented were adult when they were killed. Data from the caprovid remains showed no evidence for the slaughter of very young animals of less than 12 months, and correlated with the mandibles, in that most animals were killed before the age of 4. Most pig skeletal elements were unfused, with the exception of some of the early fusing bones, e.g. distal humerus and proximal radius. Few pigs, therefore, reached maturity, and most were probably slaughtered between the ages of 1 and 2, once they had reached prime meat weight.

#### Biometrical data

There were insufficient measurements for detailed analysis and discussion; an archive of all the measurements taken can be found in the Appendix. However, it was possible to calculate estimates of the withers heights from the greatest length measurements of four complete sheep bones, all of 13<sup>th</sup>-14<sup>th</sup> century date. These produced height values of 542.7mm, 606.9mm, 613.0mm and 611.6mm. The first three values were calculated from radii, and the fourth from a metatarsal. The values, when compared with those from other sites of similar date (Jaques et al. 2002; Bond and O'Connor 1999), show that most of these individuals fall towards the upper end of the size range for animals of this period.

Measurements from two horse bones (a radius and a femur) provided withers height estimations (Kiesewalter in von den Driesch and Boessneck 1974) which indicated animals standing at 13.3 and 14.1 hands (one 'hand' = 4 inches).

## **Discussion**

Plant remains from the sediment sample

The abundant wheat grains in the sample from Context 2085, were accompanied by quantities of charred and 'silicified' chaff, and formed an extremely unusual deposit. The mechanism whereby the cereal chaff became 'silicified' is not certainly know, though it has been discussed by Robinson and Straker (1990); perhaps this ash is most likely to represent material burnt in a bonfire. Other examples are from various Roman sites: Welton Wold, near Kingston-upon-Hull, East Riding of Yorkshire and Thenford, near Banbury, Northamptonshire, described by Robinson and Straker (ibid.), and Elloughton (also near Hull, Hall et al. 2002); for the medieval period, Robinson and Straker describe material from Grove Priory in Bedfordshire and allude to further material from Wharram Percy in the East Riding of Yorkshire, and there are records of silicified grass chaff from a site in Gargrave, North Yorkshire (Hall 1983) and of various silicified plant remains from Abbots Worthy, Hampshire (Carruthers 1992) in a Saxon context and at Dean Moor, South Devon by Levy and Taylor (1958). Such remains, especially the more delicate chaff components like awns and glume fragments, are probably often overlooked except when present, as at this site in Ripon, in a rather high concentration.

#### Vertebrate remains

The small assemblage of vertebrate remains from the excavations at 8/9 and 10 The Market Place, Ripon, is not unlike the many assemblages recovered from medieval urban sites in York (Bond and O'Connor 1999) and Beverley (Scott 1991; 1992). The range of species identified from the medieval deposits at Ripon was quite limited and the diet of the inhabitants in this area was clearly based on the consumption of domestic mammals. Limited age-at-death data suggested that cattle were killed once their 'working life' was over, i.e. after their milk and offspring productivity waned or they were no longer of use as traction beasts. Most sheep seemed to have been killed between 2 and 4 years, and would

therefore have contributed several fleeces before being slaughtered for meat. They appeared to have represented fairly small unimproved individuals as typically found throughout the region at this period (O'Connor 1995). Pig bones recovered representing neonatal or juvenile individuals were common, with part skeletons recovered from two of the deposits. These remains probably represent individuals who died as a result of 'natural causes' within a short time of birth and are evidence of the rearing of pigs within the town. This was a common enough practice in the medieval period and resulted in many laws being issued which pertained to the prevention of straying and destruction by pigs (Rixson 2000).

Bird remains were rather scarce but suggest that goose, chicken and duck were occasional additions to the diet. Although fish remains were also identified, their importance cannot be ascertained because hand-collection inevitably results in the under-representation of fish and bird. It is clear, however, from the assessment (Jaques et al. 2000) that species, other than cod (Gadus morhua L.) and gadids, were eaten. The remains of herring (Clupea harengus L.), eel (Anguilla anguilla (L.)), smelt (Osmerus eperlanus (L.)), and thornback ray (Raja clavata L.) were identified from the samples; these are species typically found in great numbers from other medieval urban sites, in Hull for example (Carrott et al. 2001) and herring, in particular, is generally classed as a staple of the medieval diet (Locker 2000).

Variability of preservation and angularity was observed within material from many deposits, possibly implying the presence of some redeposited or residual bone in varying amounts. However, the remains did suggest that a number of sources were responsible for the accumulations of debris. Much of the waste was clearly domestic in origin, with many meat-bearing elements identified. Bird and fish remains are also indicative of household refuse and the bones recovered here are typically those disposed of during food preparation and consumption. Although the

presence of butchery waste was recorded, there were no large concentrations of bone which would have suggested butchering was being undertaken on a commercial scale.

Small components of the assemblage may represent craft activities, but only on a small 'cottage industry' scale. Significant numbers of cat remains were dispersed throughout the deposits and some e.g. the concentrations of metapodials, may represent waste associated with the processing of animal skins, although no direct evidence from skinning marks was observed. One method of skinning cats was to remove the paws and then to pull the skin up over the body (Smith 1998). The skin was then cut free from the carcass across the skull where there was little flesh; hence the commonly observed knife marks on the frontal, nasal and orbital areas of the skull of cats from medieval deposits (Serjeantson 2000; Luff and Moreno Garcia 1995; O'Connor 1989; Johnstone et al 1997). Unfortunately, only a single, unmarked fragment of skull was identified from the site at Ripon, the metapodials, however, may have been left attached to the pelt and subsequently removed and discarded during processing.

Documentary evidence confirms the use of cat fur in the medieval period for trimmings and linings or as a cheap alternative to more expensive furs such as ermine (Veale 1966). Records exist for the export of cat skins to Flanders by London fellmongers in the late 14<sup>th</sup> century (Veale 1966), whilst there is also evidence for their export from Youghal in Ireland at the same period (McCormick 1988). If cats were being skinned for their fur in Ripon, then it was being undertaken on a far smaller scale.

The presence of goat horncores and phalanges, with no indication of other parts of the skeleton, perhaps provides some evidence for horn working or the utilisation of goat skins. This is a little tentative and it may be that the rest of the carcasses were disposed of elsewhere. Other craft activities, such as antler

working, are hinted at, but again, the evidence is scant.

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Table 1. Plant remains and other components from excavatios at 8/9 and 10 The Market Place, Ripon, North Yorkshire (HARGM 10214), Context 2085, Sample 22. Taxonomic order and nomenclature follow Tutin et al. (1964-80). 'Amount' was scored on a four-point scale from 1: one or a few remains to 4: abundant remains, a major component of the sample. Plant material was preserved by anoxic 'waterlogging' unless otherwise indicated.

Taxon, vernacular name and parts recorded	Amount	Notes
Ranunculus cf. sardous Crantz (?hairy buttercup)		
charred achene(s)	1	
Chelidonium majus L. (greater celandine) seed(s)	1	
Leguminosae (pea family) charred pod(s) and/or pod fragment(s		max dimension 5 mm
Vicia sp(p). (vetches, etc.) charred seed(s)	2	
Stachys sp(p). (woundworts) nutlet(s)	1	
Matricaria perforata Mérat (scentless mayweed) charred achene(s)	1	
Gramineae/Cerealia (grasses/cereals) charred culm node(s)	1	
charred culm fragment(s)	1	
Cerealia indet. (cereals) charred awn(s)/awn fragment(s)	1	
silicified awn(s)/awn fragment(s)	2	
silicified chaff fragment(s)	3	
Triticum 'aestivo-compactum' (bread/club wheat)		
charred caryopsis/es	2	
Triticum sp(p). (wheats)	_	
charred free-threshing rachis fragment(s)	1	
charred glume(s)	1	
silicified rachis fragment(s)	1	
Secale cereale L. (rye) silicified lemma margins	1	
cf. S. cereale charred caryopsis/es	1	
Hordeum sp(p). (barley) charred rachis fragment(s)	1	
Trovacam sp(p). (carrey) charred racins fragment(s)	-	
Other components		
'ash beads'	1	
ash concretions	2	max dimension 5 mm
bone fragments	1	max dimension 25 mm
burnt bone fragments	1	max dimension 20 mm
burnt fish bone	1	max dimension 4 mm
charcoal	2	max dimension 20 mm
cinders	1	max dimension 30 mm
coal	1	max dimension 5 mm
eggshell fragments	1	max dimension 2 mm
fish bone	1	max dimension 5 mm
gravel	1	max dimension 30 mm
iron-rich concretions	1	
sand	1	
twig fragments	1	max dimension 15 mm

Table 2. List of contexts from which vertebrate remains were recorded. Key: Date = pottery spot date or stratigraphic date (not final dating); Total = total number of fragments recorded.

Context	Context type	Date	Total
2032	levelling	13-14thC	25
2044	soakaway fill - base	12-14thC	4
2049	levelling	12-14thC	29
2050	soakaway fill - ?cess	12-14thC	5
2051	pit fill	14thC	2
2052	pit fill	13-14thC	8
2056	pit fill	13-14thC	45
2066	latrine pit fill	13-14thC	15
2068	cess pit fill	13-14thC	6
2070	cess pit fill	13-14thC	49
2075	cess pit fill	13-14thC	9
2078	latrine pit fill	13-14thC	8
2087	post-hole fill	13-14thC	9
2088	post-hole fill	13thC	28
2092	post pit fill + packing	10-13thC	52
2093	pit fill (?rubbish)	12-14thC	85
2097	levelling - removed by machine	12-14thC	7
2099	pit fill (?rubbish)	11thC	43
2100	post-hole fill	14thC	42
2107	post pit fill + packing	10-13thC	104
2109	post-hole fill	13thC	35
2110	pit fill (?rubbish)	13-14thC	51
2111	floor - external surface	13-14thC	21
2123	post-hole fill	13-14thC	2
2138	layer	13-14thC	19
2142	levelling - removed by machine	12-14thC	38
2149	pit fill (?rubbish)	13-14thC	40
2151	pit fill	13-14thC	10
2162	post-hole fill	12-14thC	6
2164	mortar dump	13-14thC	17
2176	pit fill	13-14thC	58
2178	pit fill	12-14thC	17
4002	backfill	12-14thC	27
4009	clay fill/lining	12-14thC	6
4010	ditch fill	12thC	16

Table 3. Hand-collected vertebrate remains from excavations at 8/9 and 10 The Market Place, Ripon.

Species		10-13thC	11thC	12thC	12-14thC	13thC	13-14thC	14thC	Total
Canis f. domestic	dog	-	-	-	-	-	1	-	1
Felis f. domestic	cat	29	3	-	22	2	16	1	73
cf. Felis f. domestic	?cat	-	-	1	-	-	-	-	1
Equus f. domestic	horse	1	1	1	4	-	6	-	13
Sus f. domestic	pig	5	4	-	10	3	16	4	42
Cervid	deer	1	-	-	1	-	-	-	2
Cervus elaphus L.	red deer	-		-	-	-	1	-	1
Dama dama (L.)	fallow deer	-	-	-	-	-	1	-	1
Capreolus capreolus (L.)	roe deer	-		-	1	-	-	-	1
cf. Capreolus capreolus (L.)	?roe deer	-	-	-	-	-	1	-	1
Bos f. domestic	cattle	7	1	1	13	6	33	8	69
Caprine	sheep/goat	12	1	1	13	4	12	4	47
Capra f. domestic	goat	-	2	-	1	1	2	-	6
cf. Capra f. domestic	?goat	-		1	1	-	1	-	3
Ovis f. domestic	sheep	1	2	2	9	-	15	7	36
Anser sp.	goose	1	-	-	-	_	2	1	4
Anas sp.	duck		-	-	1	-	_	_	1
cf. Lyrurus tetrix (L.)	?black grouse	1	-	-	_	-	_	_	1
Gallus f. domestic	chicken	1	-	-	-	2	2	-	5
Gadus morhua L.	cod	-	-	-	-	_	13	_	13
Sub-total		59	14	7	76	18	122	25	321
Unidentified bird		-	3	-	3	_	8	-	14
Unidentified fish		-	-	_	-	=	3	_	3
Large mammal		60	9	4	70	28	123	15	309
Medium mammal 1		22	14	5	50	13	108	4	216
Medium mammal 2		-	-	-	3	_	1	_	4
Unidentified		15	2	-	19	4	27	_	67
Sub-total		97	28	9	145	45	270	19	613
Total		156	42	16	222	63	391	44	934