

Zooarchaeology of Aðalstræti 14-16, 2001

Assessment Report of the Post-Medieval Contexts

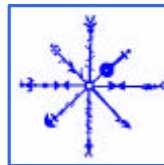
Clayton M. Tinsley

The City University of New York Graduate Center

&

Dr. Thomas H. McGovern

CUNY Northern Science & Education Center (NORSEC)



Abstract:

Small samples of post-Medieval animal bone were collected during the excavations of the Aðalstræti 14-16 site in 2001. This second stage assessment presents an overview of these Zooarchaeological materials and may indicate the value of further analysis of some of these contexts in future. The major contexts could be divided stratigraphically into four major phases (modern, 19th c., post- 1764 , and pre -1764 fire horizon). Only the two 18th century phases produced partially quantifiable sample sizes, but all phases showed the same general mix of domestic mammal (cattle, caprines, a few pig and horse), bird, mollusca, and fish (including at least some Atlantic cod and Haddock). While the collections can only be quantified in a limited way, their overall patterning closely resembles the much larger Early Modern collections from nearby Tjarnargata 3 C (Perdikaris et al. 2002).

NORSEC Laboratory Report Number 3

May 2002

Introduction

Located in the central historic district of downtown Reykjavik, Aðalstræti 14-16 was excavated January-June, 2001 because of planned construction in the area. Four hundred fifty square meters of the site area (1450 square meters) was excavated by Fornleifastofnun Íslands under the direction of Árbæsafrn. The excavations revealed a stratified series of deposits containing animal remains that extend from recent times back to the Settlement Period. This report presents a second stage assessment overview (following CUNY NORSEC terminology) of the animal bone collections (archaeofauna) from the upper (Early Modern) contexts (assessment of the Settlement Period/ Viking age contexts is presented in a separate report Tinsley & McGovern 2002b). Bone collections recovered from these upper, Early Modern contexts are modest in size, but the lower 17th-18th c contexts will justify eventual full analysis to compliment the extensive program of environmental sampling was undertaken as part of the Aðalstræti (AST) excavation. Preliminary excavation results and phasing information is reported in Roberts (2001). Note that this is a second stage assessment rather than a final report and that some conclusions presented may be modified by later research.

Methods: Due to the rescue nature of the excavation, all animal bones from these upper contexts were hand recovered without sieving but with a high standard of in trench recovery. All zooarchaeological data were recorded using the NABONE digital recording system (7th edition NABO 2002) with support of partial comparative collections at the FSI center in Reykjavík and at V. Stefánsson Arctic Inst. Akureyri. Note that the zooarchaeological term “caprine” refers to both sheep and goats together (which are impossible to distinguish on most bone elements) and is equivalent to other authors’ “Sheep/Goat” or “Ovis/Capra” categories. Fish, birds, and mollusca have only been assigned to family in this report pending further laboratory analysis.

Archaeofauna Summary

Animal bones were analyzed from four post-medieval phases: phase 9 (modern, post 1902), phase 8 (ca.1800-1900), phase 7 (ca.1764-1800) and phase 5/6 (ca. 1600-1764). The dating of the various phases from AST is still preliminary and awaits further artefactual and geophysical analysis (Roberts 2001).

=AST 14-16 Preliminary Summary

Figure 1

Taxon	Context			
	Modern	19th C.	Post 1764	Pre 1764
Cattle	6	2	18	17
Horse	0	0	1	0
Pig	1	0	1	7
Caprine	40	11	111	223
Birds Sp.	2	0	29	17
Fish Sp.	8	15	365	382
Mollusca Sp.	6	6	15	8
TOTAL NISP (identified fragments)	63	34	540	654
Large Terrestrial Mammal	1	2	17	49
Medium Terrestrial Mammal	7	8	160	214
Unidentified bone fragment	10	15	135	332
TOTAL TNF (all fragments)	81	59	852	1249

% ID 77.78 57.63 63.38 52.36

Sample Size: Many authors (Grayson 1984) have identified adequate sample size as the single most critical variable affecting the quantification of all archaeological bone collections, and it is clear that over-quantification of small samples strongly subject to stochastic “noise” from many sources can provide deceptive results. As with other categories of archaeological data, different research questions and different types of quantitative approaches require different minimum sample sizes. The NABO Zooarchaeology Working Group (ZWG) has produced a rough guide to matching sample size with appropriate level of analysis, which may be helpful here (Figure 2).

Figure 2

Archaeofauna Size (NISP)
NABO ZWG Rough Guide

Level of Analysis	Sample Size			
	<= 300 NISP	300-1000 NISP	>1000 NISP	>5,000 NISP
Species list	x	x	X	x
Relative % of Major Taxa		x	X	x
Relative % of Minor Taxa			X	x
Metrical, Aging Analyses				x

The post-medieval faunal assemblage totals 1291 fragments (NISP) which can be assigned to taxon (NISP), and additionally contained 69 fragments that could only be identified as “large terrestrial mammal (cattle/horse sized)”, 389 fragments identified as “medium terrestrial mammal (sheep/goat/pig/large dog sized)”, and 492 completely unidentifiable fragments. When subdivided into appropriate phases, per-context sample numbers are well below 100 NISP for the Modern and 19th c. levels, but within the suggested 300-1000 NISP range for major taxon relative percentage for the Post and Pre 1764 contexts. We suggest that these earlier contexts receive further study when this becomes possible.

Recovery, Identification, Fragmentation:

Unlike faunal samples that have been collected via sieving, the average bone fragment size for all of Early Modern AST samples is relatively large (2-5cm) and is normally distributed across the size categories (0-1cm, 1-2cm, 2-5cm, 5-10cm and >10cm). (**Figure 3**). Hand picked collections also tend to have a higher percentage of identifiable elements, as even very experienced excavators tend to develop a search image that favors recovery of larger and more complete bone fragments. The contrast between AST Early Modern Period hand recovered identification rate (average c 63%) and the floated and 1 mm mesh sieved AST Viking Period identification rate (c 4%) in part reflects extreme fragmentation of the AST Viking Period collections as well as the fine mesh employed (see discussion in Tinsley & McGovern 2002b). A more typical dry sieved (4 mm mesh) collection from Hrísheimur (McGovern & Perdikaris 2002) has a 34% NISP identification rate more common to average Icelandic dry sieved collections. Faunal collections that are sieved also tend to produce fragment size distributions skewed toward the smaller fragment size categories (see Payne 1972 for discussion) and this result has been observed in other sieved collections from Iceland (Amorosi 1997, Tinsley 1999, 2002a, 2002b, Perdikaris et al. 2002).

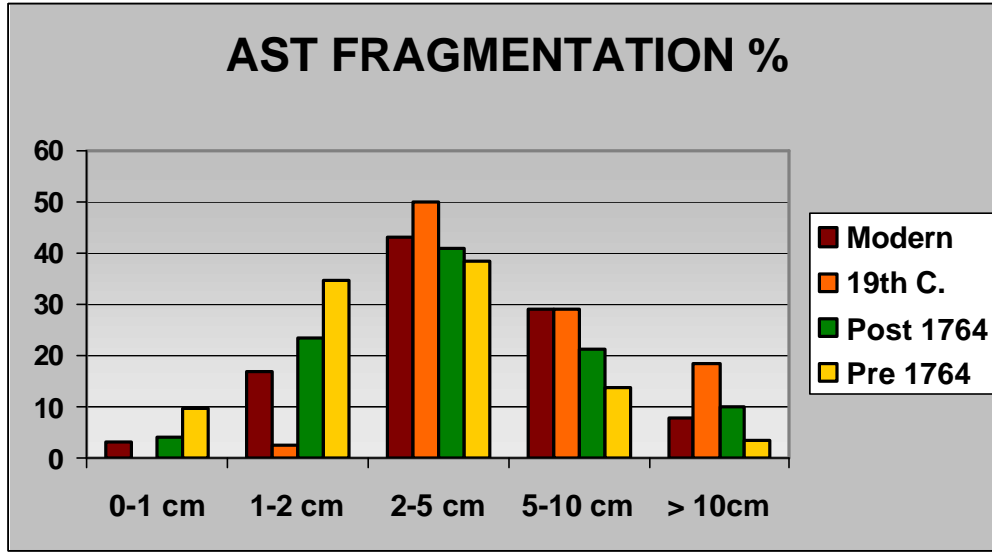
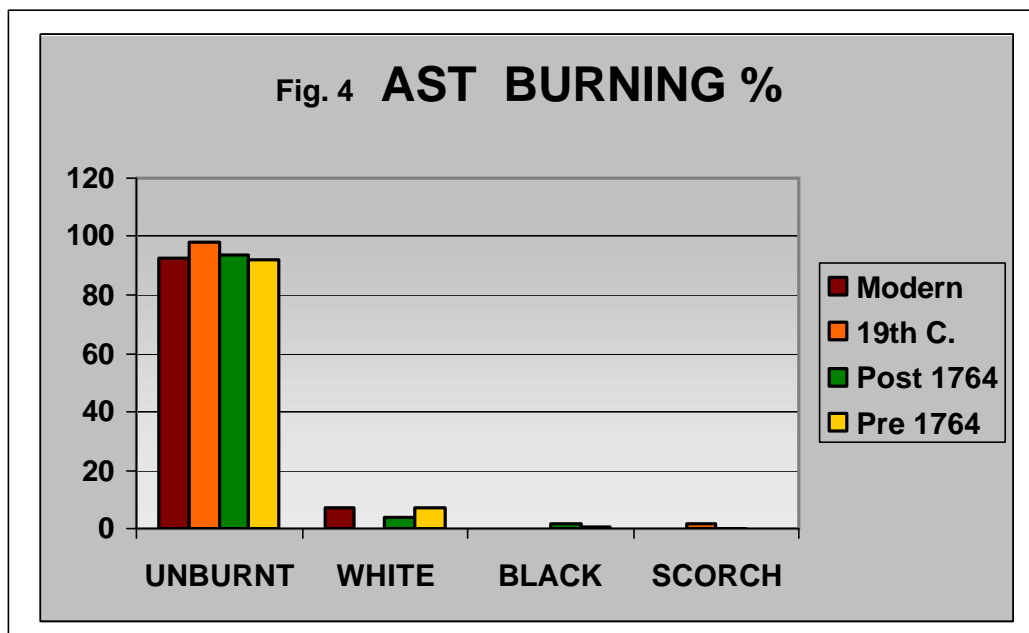


Figure 3

Making use of the standard NABONE analysis package, samples were scored for such taphonomic factors that effect the preservation of bone (see Lyman 1994, for review) indicators as degree of burning and gnawing. Strong similarities were noted across the various burn categories (unburnt, white/calcined, black, and scorched) with over 90% of all fragments belonging to the unburnt category. (Figure 4) This distribution of burned bone is a strong contrast to the almost entirely white burned AST Viking Age contexts, but is similar to patterns observed in the Early Modern Tjarnargata 3C archaeofauna (Perdikaris et al. 2002). Small amounts of rodent and dog gnawing were present in all contexts, again paralleling observations made on the TJR 3C collections.



Species Present in Quantifiable Contexts

An analysis of the major taxa in the two larger 17th-18th c. contexts reveals a pattern of resource utilization that has been previously documented for Early Modern Reykjavik (Perdikaris et al. 2002). In both quantifiable contexts (**Figure 5**) the collections are approximately 60-70 % fish and ca 20-30% domestic mammal, with trace elements of bird and mollusca. This overall pattern is again comparable to the larger TJR 3 C archaeofauna. The only wild mammal bone fragment was one seal bone not identifiable to species from the Post 1764 context and two rat mandibles (Pre 1764 context).

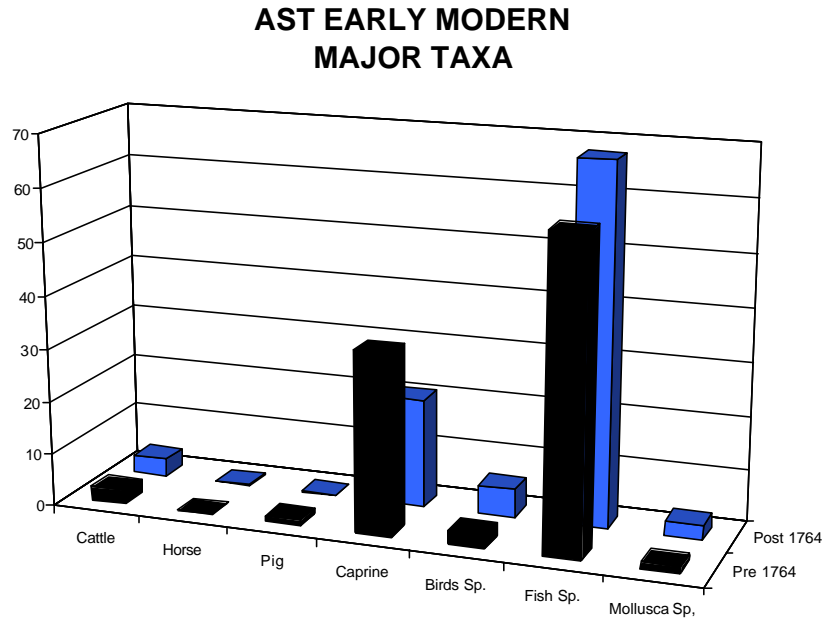


Figure 5

Domesticates : Domestic mammal bones in the two quantifiable contexts are largely a mix of caprines and cattle. In the Pre 1764 context the ratio of caprine bones to cattle bones is about 6 caprine to 1 cow, while the Post 1764 ratio shifts to 13 caprines per cow. A few pig bones (likely remains of imported ham rather than live pigs) are present in both contexts (Figure 6)

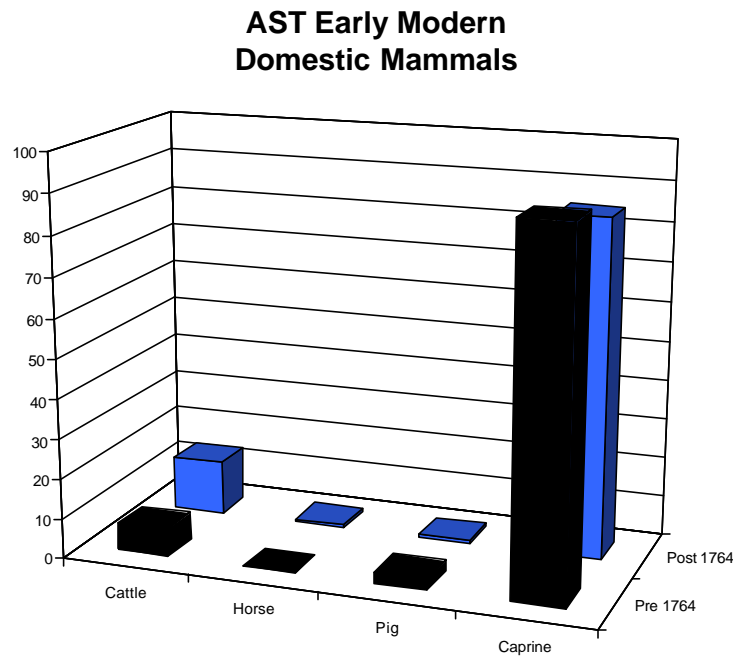


Figure 6

Butchery: While a full analysis of butchery pattern will require a larger collection and more intensive analysis, a few observations may be noted. Biperforated caprine metapodials (cannon bones) were common, following a strategy of marrow extraction that seems to have become widespread in the North Atlantic after ca AD 1100 (Bigelow 1993) but which may have earlier origins in mainland Scandinavia (Inge Emhoff pers com 2002). As in the medieval period, most of the 17th-18th c mammals were butchered using heavy cleavers or axes for primary dismemberment. Only in the modern period is there evidence of saws being used in the processing of the animals into individual portions for consumption.

Aging: Even with the larger samples of the Pre and Post 1764 time periods, very little aging evidence was present. Mandible tooth rows from both cattle and sheep/goat represented both fully adult individuals as well as those less than a year (Grant 1982, Hilson 1986). Several examples of neonatal (less than a year) cow and sheep/goat were noted.

Discussion

Recent high quality excavations in the downtown Reykjavik area have begun to fill a void in our understanding of the zooarchaeology of early urban Iceland. The very large archaeofauna from Tjarnargata 3C (Perdikaris et al. 2002) was the first completely studied fully urban collection in Iceland, and this preliminary investigation indicates many similarities with this larger collection. The more recent AST Early Modern archaeofauna has better chronological control, but very small sample sizes make valid basic taxon frequency comparisons between contexts

difficult. This report provides a general impression of the AST early modern archaeofauna, and suggests the importance of recovering more well dated Early Modern animal bones from this critical portion of the city. More work can usefully be done on the 17th-18th c collections, especially in species identification and metrical analysis of the fish remains.

References

- Amorosi, T. 1997. *Zooarchaeology and Global Change in Iceland*. PhD dissertation, CUNY
- Bigelow, G. 1984. *Subsistence in Late Norse Shetland: An Investigation into a Northern Island Economy of the Middle Ages*. Ph.D. dissertation, University of Cambridge
- Bigelow, G.F. 1993. Archaeological and ethnohistoric evidence of a Norse island food custom, in C. Batey et al. (eds). *The Viking Age in Caithness, Orkney, and the North Atlantic*, Glasgow U.P. pp 441-453.
- Binford, L.R. 1984. *Faunal Remains from Klasies River Mouth*. Academic Press: New York.
- Brain, C. K. 1981. *The Hunters or the Hunted: An Introduction to African cave Taphonomy*. The University of Chicago Press: Chicago
- Grant, A. 1982. The use of tooth wear as a guide to age domestic ungulates. In B. Wilson, C. Grigson & S. Payne (eds), *Ageing and Sexing Animal Bones from Archaeological Sites*. BAR 109, Oxford
- Grayson, D. K. 1984. *Quantitative Zooarchaeology*. Academic press, Orlando
- Hilson, S. 1986. *Teeth*. Cambridge Manuals in Archaeology, Cambridge University Press, Cambridge
- Lyman, R. L., 1994. *Vertebrate Taphonomy*. Cambridge University Press: New York
- NABO 2002. North Atlantic Biocultural Organization Zooarchaeology Working Group, NABONE Recording package 7th Edition, CUNY, NY.
- Payne, S. 1972. On the interpretation of bone samples from archaeological sites. In E.S. Higgs (ed), *Papers in Economic Prehistory*. Cambridge University Press, Cambridge
- Perdikaris, S., Amundsen, C. & McGovern T. 2002. *Report of Animal Bones from Tarnargata 3C, Rekjavik, Iceland*. NORSEC, CUNY.

- Roberts, H.M. (ed.) 2001. *Archaeological Excavations at Aðalstræti 14-18, 2001*. Fornleifastofnun Íslands: Reykjavík
- Tinsley, C.M. 1999. Preliminary report of 1997-1998 archaeofauna from Hofstaðir, *Archaeological Islandica* 2.
- Tinsley, C. M. 2002a. The Viking Settlement of Northern Iceland: A Zoological Perspective. *Environmental Archaeology* 6. Oxbow Press.
- Tinsley, C. M. 2002b. The Zooarchaeology of Settlement: Some Quantitative Questions. *Proceedings of the 21st Nordic Archaeology Conference*, Akureyri, Iceland
- Tinsley, C.M. & T.H. McGovern 2002 b *Zooarchaeology of Aðalstræti 14-16, 2001 Report of the Viking Period Animal Bones*, preliminary assessment report to FSI May 2002.
- CUNY Northern Science & Education Center Zooarchaeology Laboratory Reports*
All final reports are available with full data archive on CD and on line and may be used freely and cited
appropriately in research publications,
DRAFT reports are not finalized and circulate for comments only. This list is updated regularly, please contact
 Tom McGovern at nabo@voicenet.com for the latest versions.
- Perdikaris S, Colin Amundsen & T.H. McGovern
 2002 Report of Animal Bones from Tjarnargata 3C, Reykjavík, Iceland, NORSEC
Zooarchaeology Laboratory Reports, No 1.
- Clayton M. Tinsley, Thomas H. McGovern
 2002 Zooarchaeology of Aðalstræti 14-16, 2001, Report of the Viking Period
 Animal Bones *NORSEC Zooarchaeology Laboratory Reports No. 2*
- Clayton M. Tinsley, Thomas H. McGovern
 2002 Zooarchaeology of Aðalstræti 14-16, 2001 Assessment Report of the Post-
 Medieval Contexts *NORSEC Zooarchaeology Laboratory Reports No.3*
- McGovern, T.H, Sophia Perdikaris, Árni Einarsson , Jane Sidell
 2002 Inland Sites and Coastal Connections - P patterns of Wild Animal Exploitation in
 Settlement Age Mývatn District, Northern Iceland, *NORSEC Zooarchaeology*
Laboratory Reports No.4 DRAFT
- McGovern Thomas H
 2002 Report of Cattle and Sheep Skulls Recovered from Hofstaðir, Mývatnssveit N
 Iceland , *NORSEC Zooarchaeology Laboratory Reports No.5 DRAFT*
- McGovern, T.H. & Sophia Perdikaris
 2002 Preliminary report of animal bones from Hrísheimar N Iceland, *NORSEC*
Zooarchaeology Laboratory Reports No.6
- McGovern, T.H & Sophia Perdikaris
 2003 Report of Animal Bones from Selhagi, Mývatn District, Northern Iceland,
NORSEC Zooarchaeology Laboratory Reports No. 7.
- McGovern, T.H
 2003 Animal Bones from Vígishellir Cave, W Iceland *NORSEC Zooarchaeology*

Laboratory Reports, No. 8

McGovern, T.H

2003 Herding Strategies at Sveigakot, N Iceland:

an Interim Report, *NORSEC Zooarchaeology Laboratory Reports No.9 DRAFT*

Woollett, Jim & T.H. McGovern

2003 Interim Report of Animal Bones from the 2002 Excavations at Skálholt, S

Iceland, *NORSEC Zooarchaeology Laboratory Reports No.10*

Woollett, Jim & T.H. McGovern

2003 Interim Report of Animal Bones from the 2002 Excavations at Gásir, N Iceland,

NORSEC Zooarchaeology Laboratory Reports No 11

Edvardsson, Ragnar, Perdikaris S., T.H. McGovern, Colin Amundsen, Noah Zagor, Matt Waxman

2003 Hard times in NW Iceland : an 18th c archaeofauna from Finnbogastaðir*NORSEC Zooarchaeology Laboratory Reports no 12*

Brewington, Seth, Ramona Harrison, Colin Amundsen, Tom McGovern

2004 An early 13th c Archaeofauna from Steinbogi, Mývatnssveit, N Iceland,*NORSEC Zooarchaeology Laboratory Reports no 13*

Thomas H. McGovern

2004 An Archaeofauna from Háls, Southwestern Iceland, *NORSEC Zooarchaeology**Laboratory Reports no 14 DRAFT*

Colin Amundsen, Sophia Perdikaris, Matthew Brown, Yekaterina Krivogorskaya, Salena Modugno, Konrad Smiarowski, Shaye Storm, Malgorzata Frik, Monica Koczela, Thomas H. McGovern

2004 The 15th c Archaeofauna from Akurvík, an early Fishing Station in NWIceland, *NORSEC Zooarchaeology Laboratory Reports no 15*

Ramona Harrison, Seth Brewington, Jim Woollett, Thomas H. McGovern

2004 Interim Report of Animal Bones from the 2003 Excavations at Gásir,

Eyjafjörður, N Iceland, *NORSEC Zooarchaeology Laboratory Reports no 16*

Thomas H. McGovern, Colin Amundsen, Sophia Perdikaris, Ramona Harrison, Yekaterina Krivogorskaya

2004 An Interim report of a Viking-Age & Medieval Archaeofauna from Undir

Junkarinsflótti, Sandoy, Faroe Islands, *NORSEC Zooarchaeology Laboratory Reports**no 17*

Thomas H. McGovern, Orri Vésteinsson, Sophia Perdikaris, Colin Amundsen

2004 Zooarchaeology of Landnám: 9th-11th c Midden Deposits at Sveigakot, NIceland, *NORSEC Zooarchaeology Laboratory Reports no 18 DRAFT*

Thomas H. McGovern

2004 Report of animal bones from a pagan grave at Dadastaðir, N Iceland.

NORSEC Zooarchaeology Laboratory Reports no 19

Thomas H. McGovern

2004 Report of bones from a pagan grave at Saltvík N Iceland. *NORSEC**Zooarchaeology Laboratory Reports no 20.*

Thomas H. McGovern

- 2004 Report of bones from a pagan grave from Litla-Nupar, N Iceland.
NORSEC Zooarchaeology Laboratory Reports no 21.