Zooarchaeology of Aðalstræti 14-16, 2001

Assessment Report of the Post-Medieval Contexts

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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).

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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 Árbæsan. 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 Reykjavik 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).

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

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>&lt;= 300 NISP</th>
<th>300-1000 NISP</th>
<th>&gt;1000 NISP</th>
<th>&gt;5,000 NISP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Analysis</td>
<td>Species list</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Relative % of Major Taxa</td>
<td>x</td>
<td>X</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Relative % of Minor Taxa</td>
<td>X</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Metrical, Aging Analyses</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

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).
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).

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)
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.

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