Tooth wear of calf mandibles from the Icelandic ZooArch reference collection

Albína Hulda Pálsdóttir
Tooth wear of calf mandibles from the Icelandic ZooArch reference collection

Albína Hulda Pálsdóttir

Nóvember 2019
Landbúnaðaráháskóli Íslands
Tooth wear of calf mandibles from the Icelandic ZooArch reference collection

Rit LbhÍ nr. 121

Publisher: Agricultural University of Iceland (Landbúnaðarháskóli Íslands)
Place: Reykjavík
ISSN 1670-5785

Picture on front page:
Left mandible from male neonatal calf M122. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir
Contents
List of Figures ............................................................................................................................................ 3
List of Tables ............................................................................................................................................... 3
Introduction ............................................................................................................................................... 4
M119: Male calf, died at birth .................................................................................................................. 5
  M119 Right mandible - photos ............................................................................................................. 5
  M119 Left mandible - photos ............................................................................................................. 7
M122: Male calf, 2 days old ..................................................................................................................... 9
  M122 Right mandible - photos ........................................................................................................... 9
  M122 Left mandible - photos ........................................................................................................... 11
References ................................................................................................................................................ 15
List of Figures

Figure 1: Right mandible from calf M119 seen from above. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir. .......................................................... 5

Figure 2: Right mandible from calf M119 seen from the buccal side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.......................................................... 6

Figure 3: Left mandible from calf M119, lingual side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir...... 7

Figure 4: Left mandible from calf M119, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir...... 7

Figure 5: Left mandible from calf M119, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir...... 8

Figure 6: Right mandible from calf M122, lingual side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir... 9

Figure 7: Right mandible from calf M122, buccal side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir. 10

Figure 8: Right mandible from calf M122, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir. 10

Figure 9: Left mandible from calf M122, buccal side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.. 11

Figure 10: Left mandible from calf M122, buccal side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.. 11

Figure 11: Left mandible from calf M122, lingual side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir. 12

Figure 12: Left mandible from calf M122, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir. 12

Figure 13: Left mandible from calf M122, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir... 13

List of Tables

Table 1: Tooth wear stage of the mandibles from calf M119 following Grant (1982). ......................... 5

Table 2: Tooth wear stage of the mandibles from calf M122 following Grant (1982). ......................... 9

Table 3: Records of the two neonatal calves from the Icelandic ZooArch reference collection......... 14
Tooth wear of calf mandibles from the Icelandic ZooArch reference collection

Data collected by: Albína Hulda Pálsdóttir, zooarchaeologist, Agricultural University of Iceland
Date: 7th of November 2019
For: Lena Strid, Lund University, Institute of Archaeology and Ancient History

Introduction

This report documents the wear stages of mandibular teeth of the calf skeletons in the Icelandic ZooArch reference collection. The purpose of the data collection is to refine the aging of cattle mandibles from very young animals, as a part of Lena Strid’s PhD project on vellum production and use in Scandinavia in the medieval period.

Currently, there are two complete calf (Bos taurus) skeletons in the Icelandic ZooArch reference collections from individuals with known age at death. Both calves are of the Icelandic cattle breed and come from the Agricultural University of Iceland (AUI) Dairy Farm, Hvanneyrarbúið. Full information about each specimen can be found in Table 3. The skeletons were prepared by first being de-fleshed and then cleaned with water maceration as is the standard preparation method for the Icelandic ZooArch reference collection (Pálsdóttir & Skúladóttir, 2016, 2018).

Tooth wear was recorded for right and left mandibles from both individual following Grant (1982). The mandibles were also photographed from various angles with a scale.
**M119: Male calf, died at birth**

Calf M119 was a male that died at birth. The cow had twins one of which survived but the other one died. Only deciduous premolars had erupted in the mandible of calf M119 and none of them showed any wear, see Table 1.

Table 1: Tooth wear stage of the mandibles from calf M119 following Grant (1982).

<table>
<thead>
<tr>
<th>Tooth</th>
<th>M119 Right mandible</th>
<th>M119 Left mandible</th>
</tr>
</thead>
<tbody>
<tr>
<td>dp2</td>
<td>1/2 - tooth half erupted</td>
<td>E - tooth erupting through bone</td>
</tr>
<tr>
<td>dp3</td>
<td>U - tooth almost at full height but unworn</td>
<td>U - tooth almost at full height but unworn</td>
</tr>
<tr>
<td>dp4</td>
<td>U - tooth almost at full height but unworn</td>
<td>U - tooth almost at full height but unworn</td>
</tr>
<tr>
<td>M1</td>
<td>C - perforation in crypt visible</td>
<td>C - perforation in crypt visible</td>
</tr>
</tbody>
</table>

**M119 Right mandible - photos**

![Figure 1: Right mandible from calf M119 seen from above. Scale 5 cm. Photo by: Albina Hulda Pálsdóttir.](image)
Figure 2: Right mandible from calf M119 seen from the buccal side. Scale 5 cm. Photo by: Albina Hulda Pálsdóttir.
**M119 Left mandible - photos**

*Figure 3: Left mandible from calf M119, lingual side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.*

*Figure 4: Left mandible from calf M119, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.*
Figure 5: Left mandible from calf M119, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.
**M122: Male calf, 2 days old**

Calf M122 was a male that died suddenly when it was 2 days old. The calf was unusually large; his mother was one of the largest cows at Hvanneyrarbúið. The calf had only consumed beestings from its mother when it died. Only deciduous premolars had erupted in the mandible of calf M122 and none of them showed any wear, see Table 2.

*Table 2: Tooth wear stage of the mandibles from calf M122 following Grant (1982).*

<table>
<thead>
<tr>
<th>Tooth</th>
<th>Wear stage</th>
<th>M122 Right</th>
<th>Wear stage</th>
<th>M122 Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>dp₂</td>
<td>E - tooth erupting through bone</td>
<td></td>
<td>E - tooth erupting through bone</td>
<td></td>
</tr>
<tr>
<td>dp₃</td>
<td>U - tooth almost at full height but unworn</td>
<td></td>
<td>U - tooth almost at full height but unworn</td>
<td></td>
</tr>
<tr>
<td>dp₄</td>
<td>U - tooth almost at full height but unworn</td>
<td></td>
<td>U - tooth almost at full height but unworn</td>
<td></td>
</tr>
<tr>
<td>M₁</td>
<td>C - perforation in crypt visible</td>
<td></td>
<td>C - perforation in crypt visible</td>
<td></td>
</tr>
</tbody>
</table>

**M122 Right mandible - photos**

*Figure 6: Right mandible from calf M122, lingual side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.*
Figure 7: Right mandible from calf M122, buccal side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.

Figure 8: Right mandible from calf M122, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.
M122 Left mandible - photos

Figure 9: Left mandible from calf M122, buccal side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.

Figure 10: Left mandible from calf M122, buccal side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.
Figure 11: Left mandible from calf M122, lingual side. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.

Figure 12: Left mandible from calf M122, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.
Figure 13: Left mandible from calf M122, basal view. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir.
Table 3: Records of the two neonatal calves from the Icelandic ZooArch reference collection.

<table>
<thead>
<tr>
<th>Specimen number</th>
<th>Species Latin</th>
<th>Species English</th>
<th>Breed</th>
<th>Sex</th>
<th>Age</th>
<th>Hindfoot length</th>
<th>Tail length</th>
<th>Ear notch</th>
<th>Total length</th>
<th>Cause of death</th>
<th>Location of origin</th>
<th>Date of birth</th>
<th>Date of death</th>
<th>Date of collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>M119</td>
<td><em>Bos taurus</em></td>
<td>Cattle</td>
<td>Icelandic dairy cattle.</td>
<td>Male</td>
<td>Neonatal, died at birth.</td>
<td>36 cm</td>
<td>35 cm</td>
<td>12 cm</td>
<td>192 cm</td>
<td>Died during birth; there were twins and one died.</td>
<td>Hvanneyrarbúið. AUI Dairy Farm.</td>
<td>22.11.2015</td>
<td>22.11.2015</td>
<td>24.11.2015</td>
</tr>
</tbody>
</table>
References

