

Tooth wear of calf mandibles from the Icelandic ZooArch reference collection

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Icelandic
ZooArch



Landbúnaðarháskóli
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Nóvember 2019
Landbúnaðarháskóli Íslands

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Rit Lbhí nr. 121

Publisher: Agricultural University of Iceland (Landbúnaðarháskóli Íslands)

Place: Reykjavík

ISSN 1670-5785

ISBN 978-9979-881-92-6

Picture on front page:

Left mandible from male neonatal calf M122. Scale 5 cm. Photo by: Albína Hulda Pálsdóttir

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Tooth wear of calf mandibles from the Icelandic ZooArch reference collection

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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).

	M119 Right mandible	M119 Left mandible
Tooth	Wear stage	Wear stage
dp ₂	1/2 - tooth half erupted	E - tooth erupting through bone
dp ₃	U - tooth almost at full height but unworn	U - tooth almost at full height but unworn
dp ₄	U - tooth almost at full height but unworn	U - tooth almost at full height but unworn
M ₁	C - perforation in crypt visible	C - perforation in crypt visible

M119 Right mandible - photos



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



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

	M122 Right	M122 Left
Tooth	Wear stage	Wear stage
dp ₂	E - tooth erupting through bone	E - tooth erupting through bone
dp ₃	U - tooth almost at full height but unworn	U - tooth almost at full height but unworn
dp ₄	U - tooth almost at full height but unworn	U - tooth almost at full height but unworn
M ₁	C - perforation in crypt visible	C - perforation in crypt visible

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.

Specimen number	Species Latin	Species English	Breed	Sex	Age	Hindfoot length	Tail length	Ear notch	Total length	Cause of death	Location of origin	Date of birth	Date of death	Date of collection
M119	<i>Bos taurus</i>	Cattle	Icelandic dairy cattle.	Male	Neonatal, died at birth.	36 cm	35 cm	12 cm	192 cm	Died during birth; there were twins and one died.	Hvanneyrarbúið. AUI Dairy Farm.	22.11.2015	22.11.2015	24.11.2015
M122	<i>Bos taurus</i>	Cattle	Icelandic dairy cattle.	Male	Neonatal, 2 days old.	42 cm	40 cm	13 cm	Not measured, too heavy.	Died due to unknown causes. Unusually large at birth.	Hvanneyrarbúið. AUI Dairy Farm.	01.01.2016.	3.1.2016	4.1.2016

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