EDITOR'S NOTE/NOTE DE L'ÉDITEURE

A Happy New Millenium to everyone! We are continuing our photographic sequence of aged bones by Donna Naughton, a mammalologist here at the Museum. I have heard very positive comments about these photos, and if anyone wants to see particular species which we haven't covered, please let us know. We have an extensive osteological collection here.

We also are publishing a short article by Dick Morlan and David Morrison describing a vestigial narwhal tooth; these types of articles are of immense value to our readers, and I urge anyone who wants to send in similar short reports and/or photos, to do so.

Next issue we are publishing an article on zooarchaeology in Newfoundland, the long list of our series of articles on regional Canadian zooarchaeology.

I hope everyone has productive field seasons this year, and please send us in any long or short field reports which may be of interest to our readers.

Thanks to Donna Naughton for putting this issue together, and to Francine Desmewes for editorial assistance.

Kathlyn Stewart, Editor

Canadian Zooarchaeology is published twice a year at the Canadian Museum of Nature, News, letters, articles, books or papers for review should be sent to:

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Cover by Debbie Yee Cannon
The Unicorn’s Secret

by Richard E. Morlan
and
David A. Morrison

Canadian Museum of Civilization

“The narwhal is the basis of the fabulous medieval unicorn” (Banfield 1977: 251). Indeed the singularity of the narwhal tooth is entrenched, redundantly, in its scientific name, *Monodon monoceros* Linnaeus. It is well known to mammalogists that the narwhal actually has two teeth. Banfield (1977: 251) describes them:

The striking feature of the narwhal is the presence of a long, spirally twisted horn, which projects through the upper lip of the male. This is a maxillary tooth. In both sexes of the adult narwhal only a single pair of teeth are present in the upper jaw. In the female these usually remain embedded in the gum, but the left maxillary tooth in the male grows in a clockwise direction through the gum and may attain a length of 9 feet. The right tooth usually remains suppressed, but sometimes it is the one that grows, or sometimes both become elongate. Occasionally a female may have a short tusk.

To the zooarchacologist the male narwhal’s second tooth, or both teeth of the female, may represent the unicorn’s secret. Few osteological reference collections contain a series of narwhal skulls, and fewer still contain a narwhal skull that has been prepared or happens to reveal the suppressed teeth. This may be related to the limited range of the animal in Canadian waters (Banfield 1977: 256). Yet these teeth may be found in faunal assemblages from archaeological sites, and they can be difficult to identify. The Nunguvik site collection from Baffin Island, now being re-studied by Patricia Sutherland, contains at least seven examples, some of them whittled or otherwise cut-marked. Nunguvik was excavated by the late Father Guy-Mary Rousselière who followed the then-common practice of recording native-assisted field identifications of the animal bones and retaining only worked or peculiar specimens in the collection. There was no budget for storing or shipping faunal assemblages from such a remote site (see Gordon 1994). Therefore the numerical significance of seven narwhal teeth cannot be assessed, but they may have been kept in the collection because of the evident modifications on some of them or because of uncertainty about their identity. The site catalogue lists all of them as bacula.

Frankly, we also thought they might be bacula, but a visit to the Osteology Collections in the Canadian Museum of Nature turned up no matching baculum among the sea mammals, as these specimens from Nunguvik were too dense, too straight, too long, and too finely tapered. Some, but not all, looked like ivory, and we found no match for them.

Serendipity saved the day. One of us (DAM) happened to relax that
evening by leafing through a book on whales, written and beautifully illustrated for children (Papastravrou 1993). There, in a colour photograph, was an exact match for the Nunguvik specimens which are about 10-20 cm long. The sketch in Figure 1 is based on the photograph, and it represents a narwhal maxilla viewed from the ventral side. Only part of the long left tooth is shown. The suppressed right tooth lies entirely within the maxillary bone. Note the knobby, angular root at the base, quite unlike the hollow root of the elongated tooth in the adjacent alveolus. This angular root is present to various degrees on the Nunguvik specimens and permits sorting by side. Note also the straightness of the tooth and its gradual taper to a point. A photograph of one of the Nunguvik specimens appears in Figure 2. Such teeth have also been illustrated in the Danish literature (e.g., Rosing 1986).

Unlike the elongated tusk of the narwhal, the suppressed teeth are longitudinally grooved or fluted without any evidence of a spiral form. This makes sense, because the spiral form of the long tusk is a means of making it grow straight (Kingsley and Ramsay 1988). Since the suppressed teeth do not extend beyond the gumline, there is no need for a spiral form and no opportunity for it to develop one. The lack of a spiral form makes these suppressed teeth difficult to identify, especially since they are hidden inside narwhal skulls where they may remain "the unicorn's secret."

Acknowledgements

We thank the late Father Guy-Mary Rousselière for his dedication to the documentation of Canada's ancient history. Patricia Sutherland and Douglas Stenton brought this problem to our attention. We thank Darlene Balkwill for her assistance in the Osteology Collections at the Canadian Museum of Nature. Jean-Luc Pilon used a digital camera to capture Figure 2. The Canadian Museum of Civilization supported this work in sundry ways.
References


Bones of known aged white-tailed deer: a photo essay of front leg bones

by Donna Naughton

Canadian Museum of Nature

The following photographs illustrate the humerus, radius and ulna of known aged individuals from the Osteology Collection of the Canadian Museum of Nature. In most cases the left forelimb was photographed except where it was unavailable or damaged. Each page is independently scaled and contains the bones of a single individual identified by its catalogue number. Each bone is shown in two views.

*Odocoileus virginianus* - NMC 75247 - fetal female

left humerus - all epiphyses unfused or unformed

left radius - all epiphyses unfused or unformed

left ulna - all epiphyses unfused

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5 cm
*Odocoileus virginianus* - **NMC 75212** - 2 month old
gender unknown

left humerus - all epiphyses unfused

left radius - all epiphyses unfused
left ulna - all epiphyses unfused

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*cm*
*Odocoileus virginianus* - **NMC 41042** - 5 - 6 month old

gender unknown (probably female)

right humerus - proximal and medial epiphyses unfused

- distal epiphysis partly fused

right radius - proximal epiphysis fused, distal epiphysis unfused

right ulna - proximal and distal epiphyses unfused

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Scale: cm
*Odocoileus virginianus* - **NMC 75118** - 6 - 10 month old male

left humerus - proximal and distal epiphyses unfused
- medial epicondyle unfused

left radius - proximal epiphysis partly fused, distal epiphysis unfused
left ulna - proximal and distal epiphyses unfused

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**cm**
**Odocoileus virginianus - NMC 40158 - 10 - 11 months old male**

Left humerus - proximal epiphysis unfused
- medial epicondyle unfused
- distal epiphysis partly fused

Left radius - proximal epiphysis almost all fused, distal epiphysis unfused
Left ulna - proximal and distal epiphyses unfused

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Scale: cm
*Odocoileus virginianus* - **NMC 75332** - approx. 1 year old female

- Left humerus - proximal epiphysis unfused
  - Medial epicondyle and distal epiphysis partly fused

- Left radius - proximal epiphysis fused, distal epiphysis unfused
- Left ulna - proximal epiphysis unfused, distal epiphysis unfused

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**cm**
*Odocoileus virginianus* - NMC 41040 - 1 1/2 year old male

Left humerus - proximal epiphysis unfused
- medial epiphysis unfused
- distal epiphysis partly fused

Left radius - proximal epiphysis fused, distal epiphysis unfused
Left ulna - proximal epiphysis unfused, distal epiphysis unfused
*Odocoileus virginianus* - **NMC 39742** - approx. 2 1/2 years old

gender unknown (probably male)

left humerus - proximal epiphysis unfused
- distal epiphysis and medial epicondyle fused

left radius - proximal and distal epiphyses fused
left ulna - proximal epiphysis unfused, distal epiphysis unfused and missing

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1 cm
*Odocoileus virginianus* - **NMC 41030** - 41/2 year old female

Left humerus - proximal epiphysis almost all fused
- medial epicondyle and distal epiphysis fused

Left radius - proximal and distal epiphyses fused
Left ulna - proximal and distal epiphyses fused

1 cm
Odocoileus virginianus - NMC 40156 - adult over 5 years old male

left humerus - all epiphyses fused

left radius and ulna - all epiphyses fused

-- cm --
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2000

33rd Annual Meeting of the Canadian Archaeological Association
Crowne Plaza Hotel
Ottawa, Ont.
3-7 May 2000

CAA Session: Transitions in Zooarchaeology - New Methods and New Results.
Co-organisers: Kathy Stewart and Fran Stewart

1. Suzanne Needs-Howarth (No affiliation) and Evelyne Cossette, Université de Montréal: Operator bias in zooarchaeological recovery.
2. Greg Monks, University of Manitoba: Cumulative sampling: a new approach to sampling ichthyofaunas.

4. Evelyne Cossette, Université de Montréal: Laurentian Archaic Animal Exploitation Strategies in the Ottawa River Valley: Morrison Island and Allumettes Island.
7. Rhonda Bathurst, University of Western Ontario: Canine Health and Human Analogy: Regional comparisons of canine skeletal pathology.
11. Frances Stewart, St. Thomas University: Discussant: Zooarchaeology: Where have we been and where are we going?

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Francis Stewart's PhD thesis has been published and it can be purchased from the London Museum of Archaeology, Lawson-Jury Building, 1600 Attawandaron Road, London, Ontario, N6G 3M6, for $25.00 with $5.00 added for mailing. Her thesis is entitled: Proto-Huron/Petun and Proto-St. Lawrence Iroquoian Subsistence as Culturally Defined.

Orders can also be made by email to the secretary, Cindy Barrett, whose email address is: cbarrett@julian.uwo.ca