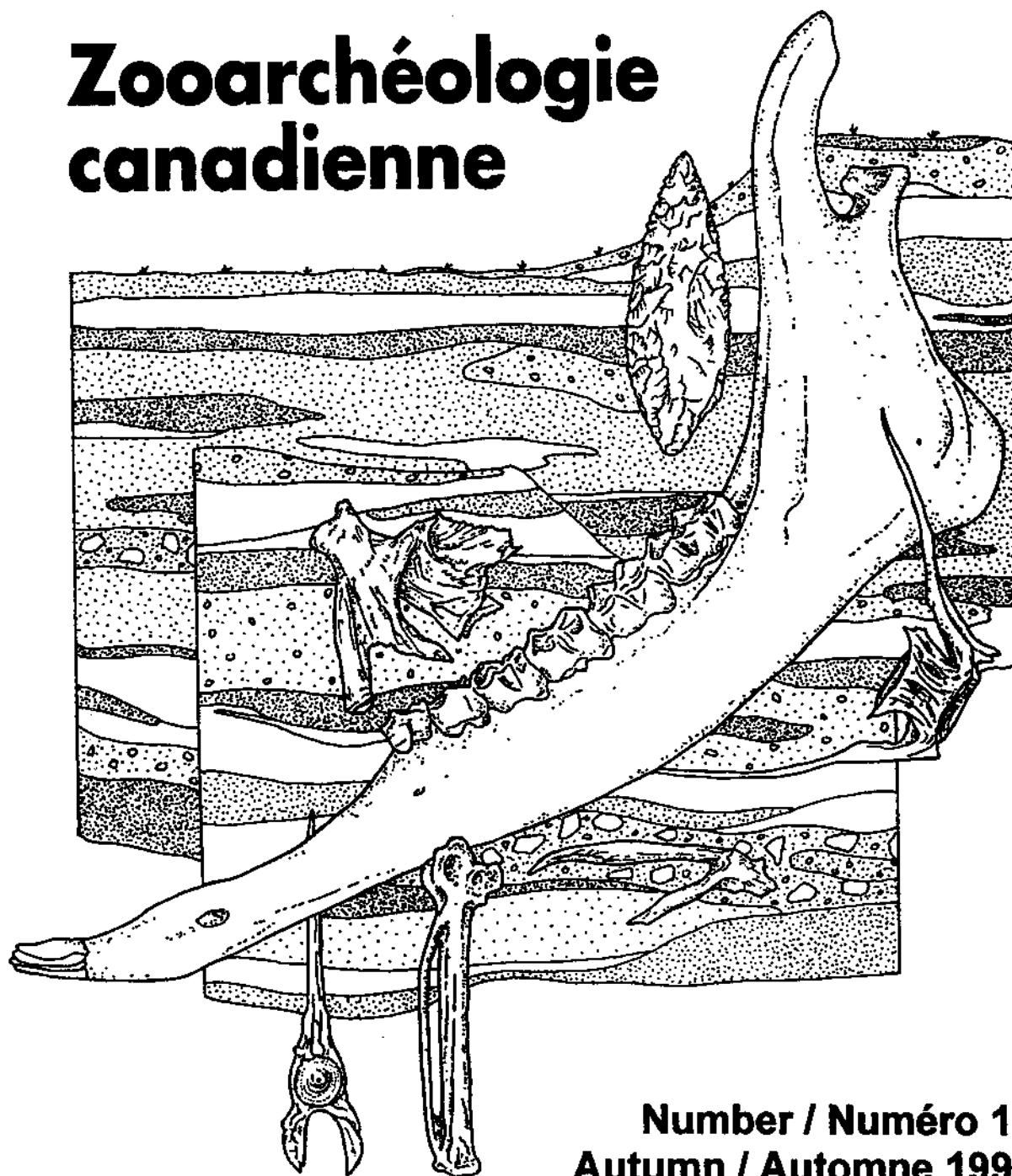


# Canadian Zooarchaeology

## Zooarchéologie canadienne



Number / Numéro 16  
Autumn / Automne 1999

## **CANADIAN ZOOARCHAEOLOGY / Zooarchéologie canadienne**

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### **EDITOR'S NOTE/NOTE DE L'ÉDITEUR**

Happy Fall! We are trying to bring a variety of themes to Canadian Zooarchaeology, and in this issue our feature is a photographic sequence of aged bones. Donna Naughton has photographed several bear and beaver elements with different ages, from the CMN collections, and presented them in this issue. In future issues she will do domestic animals, or possibly other classes of vertebrates (suggestions welcome!).

We also have short reports by Fran Stewart and Ariane Burke. As always, I welcome any field reports or reports on work in progress - just jot a few lines down and send it by email!

Thanks to Donna Naughton for putting this issue together, and to Francine Desmeules 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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Submissions are published in English or French.

Subscription costs (including GST) are:

Cdn \$8.50 - Individuals  
Cdn \$17.00 - Institutions  
US \$8.50 - Individuals

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*Cover by Debbie Yee Cannon*

## Faunal Papers at the 1999 CAA Annual Meeting in Whitehorse, Yukon

by Frances L. Stewart

Department of Anthropology, University of New  
Brunswick

The 1999 Annual Meeting of the Canadian Archaeological Association in Whitehorse began on Wednesday April 28 with a registration reception in the Beringia Interpretive Centre. This centre is full of dioramas. Of particular interest to zooarchaeologists, are those of extinct Pleistocene animals which include mounted skeletons as well as "in the flesh" models. The objects on display are replicas (apparently that accounts for the name "Interpretive Centre" as opposed to a museum) but they were good casts of the bones and it was very interesting to see just how big a giant beaver really was!

Most of the conference papers were on Arctic or British Columbian materials which was to be expected considering the location of the conference. This was also true of the faunal session which T. Max Friesen got off to a good start with his paper on "Dry Bones: Re-Thinking Binford's Drying Utility Index". After telling us that he had been pondering Binford's complex drying index as presented in his *Nunamiut Ethnoarchaeology* for several years, Max went on to show how he had devised a simpler formula for this index. When he tested his new formula on Binford's own data, Max got even better results than Binford had! Max also applied his formula to caribou bones he excavated from caches near Baker Lake, Nunavut, and found that his new index predicted the

observed element frequencies. Max's simplified index will be welcomed by many so it was good news to learn that he plans to publish his findings.

The next two papers used British Columbian data. First, Catherine Carlson spoke on faunal remains excavated in 1978 from a site on the northern end of Vancouver Island. Her paper was titled "A Place Where Chitons are Cooked: The Bear Cove Fauna in the Context of the Origins of the Northwest Maritime Culture". Catherine summarized the faunal material found at this site which included both non-shell and shell midden deposits, dating to as early as 8,200 B.P., and to a later post-4,000 B.P. component. The subtitle reveals Catherine's position that there was a coastal British Columbian culture that was maritime adapted as early as 8,200 B.P. The third paper in this session, co-authored by Farid Rahemtulla and Lisa Hodgetts, also considered faunal remains from coastal middens. It was titled "Terrestrial Mammals in Coastal Middens: Food or Tools?". Farid gave the presentation and stressed that artifactual faunal specimens should be analysed along with the non-artifactual skeletal remains. Farid and Lisa argue that coastal studies often emphasize sea mammal remains as indicators of diet and although land mammal remains are subject to similar analyses, the non-dietary products from land mammals are not given sufficient attention. The authors concluded that land mammal remains in coastal middens must not be considered as dietary refuse only. Their conclusion can be extended to non-coastal sites and other classes of animals as well.

The final paper in this session was Gerald Oetelaar's "Refining our Estimates of Season of Death from Cementum Annuli: The Relevance and Importance of Control Samples". And what a sample Gerry had! He was able to chose 102 mule deer from aged deer, shot on the same day each week, over four years, for his study of their cementum annuli growth. Gerry used the first mandibular molars and measured the widths of the annuli. From this data, Gerry was able to quantify the grow rates and devise a formula for determining the month of death of the deer based on the outer incremental width of the last annuli. While differences in annuli deposition across habitats and between species likely occur, this research is of interest to most of us because most North American faunal samples contain teeth of the deer family.

Although I chaired the faunal session, my "Neutral Iroquoians' Adaptions to Animal Resources in the Crawford Lake Region of Southern Ontario" was in another session. Using midden samples from three villages located about 50 km west of Toronto, I considered environmental differences and European intrusion as factors in the differences in these faunal samples. Apparently site location above or below the Niagara Escarpment and distance upriver from Lake Ontario were insignificant to fish procurement. Proximity to more wetlands appears to have enhanced duck and some mammal hunting. Possible influences of European trade and disease were noted in the bird remains and some fur-bearing mammals. Dogs might have increased over time too. This paper has been submitted for publication.

Other papers contained faunal information but due to scheduling conflicts, I missed hearing many of these. However, I did see Pat Sutherland's beautifully illustrated "Animals as Food and Magic: Palaeo-Eskimo Art and Economy" in which she demonstrated that the Palaeo-Eskimos had a great interest in animal skeletons as revealed in their depiction on many carvings. Pat recommended that we keep this in mind when excavating and interpreting skeletal materials. Several other papers included discussions of caribou remains and in the Beringia session, the worked bone controversy was revisited. In sum, there were plenty of papers to attract the attention of zooarchaeologists at this year's CAA meetings. Let's make sure the same is true for the meetings next year in Ottawa.

## A Zooarchaeologist on Sabbatical

*Following is a report by Dr. Ariane Burke on her activities while she was on sabbatical in France and elsewhere.*

**by Ariane Burke**

Department of Anthropology, University of Manitoba,  
Winnipeg, Manitoba

While on research leave from January until June, 1999, I accepted a visiting professorship at the Université de Paris VI, (Pierre et Marie Curie), in the Laboratoire d'Anatomie Comparée. While there I had light teaching and supervisory duties which included acting as advisor to two students completing their Mémoires de Maîtrise in animal biology (the equivalent of Honours B.Sc. papers).

They were: Mlle. Mallek, Rime "Origine et classification des mammifères", and Mlle. Cavaignac, Marjorie "Le retour à la vie aquatique chez les mammifères".

My main goal in accepting this position was to work with the "Groupe d'Etudes Squelettochronologiques" in the Comparative Anatomy laboratories of Paris VI and VII. This group of researchers, headed by Prof. de Ricqlès, is specifically devoted to the study of growth structures in biomineral tissues. This is the same laboratory where I was trained in tooth thin-sectioning for my dissertation research, under the supervision of Prof. Castanet. While with the group, I concentrated on the preparation of thin-sections of tooth and bone samples of pigs which had undergone hormone treatment in order to establish whether or not progesterone treatment has an effect on bone histology or the rate of growth of bone. This research is part of a larger study into the effects of progesterone on growth being carried out by Dr. H. Weiler, Human Ecology (U. of Manitoba), who made the tissue samples available to me. I hope that Dr. Weiler and I will be able to co-author a paper combining my results with her study of bone density using DEXA scans (Dual X-ray Scanning). This research will contribute to our understanding of the mechanisms of bone deposition and resorption and their interaction with hormone production. The application of the study of progesterone effects on bone histology lies mostly in the prevention of osteoporosis in humans. This type of research does not have any direct archaeozoological application, but it does demonstrate how archaeozoologists may develop skills which can be applied to other fields –

and even support the view that archaeology can be an "applied anthropology".

While in Paris, I also began a collaboration with Dr. Vera Eisenman, at the Muséum National d'Histoire Naturelle. Dr. Eisenman is an expert on equid phylogeny and we are examining the issue of the taxonomic affiliation of *Equus hydruntinus*. I studied *two E. hydruntinus* crania while conducting research in Crimea in 1994 which provide the first-ever nearly complete cranial measurements for this species. We hope to resolve the vexed question of whether or not this equid is a Hemione or a Stenonid horse once and for all.

While on leave I also gave invited papers on my research in Crimea at the University of Tübingen, Germany, at the University of North Texas and the University of Victoria. I also gave invited seminars at the Muséum National d'Histoire Naturelle, Laboratoire d'Archéozoologie (Paris) and at the Institut de Paléontologie Humaine (M.N.H.N., Paris) and the Laboratoire d'Anatomie Comparée, Université de Paris VI et VII (Paris).

At the end of my leave I travelled to Tunisia to complete research on the faunal remains of Leptiminius (an archaeological site being excavated by Dr. Stirling, Dept. of Classics, U. of Manitoba) and to initiate an ethnoarchaeozoological project of my own (an investigation of *Hallel* butchering practices). I then travelled to Crimea to discuss future collaborations with my Ukrainian colleagues and to examine new faunal material which will form the basis of a new research grant.

## Bones of Known-Aged Beaver and Bear: a photo essay

by Donna Naughton  
Canadian Museum of Nature

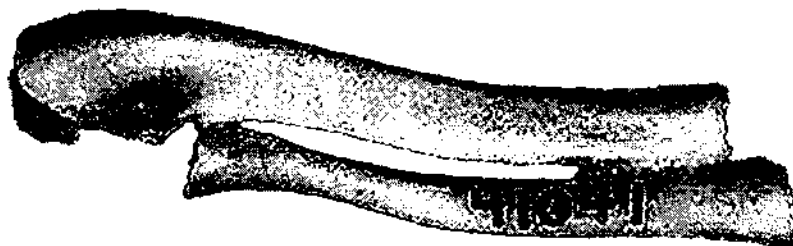
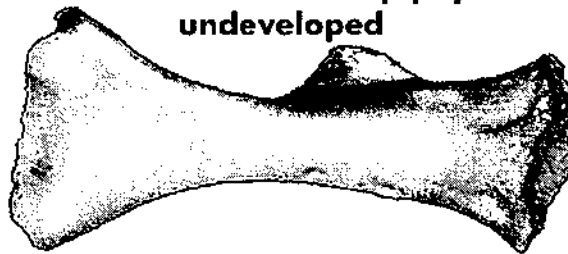
The following photographs illustrate the humerus, radius and ulna of known-aged individuals from the Osteology Collection of the Canadian Museum of Nature. In most cases the left forelimb was

photographed except where it was unavailable or damaged. Each page is independently scaled and contains the bones of a single individual identified by it's catalogue number. Each bone is shown in two views. The current paper includes examples of *Castor canadensis*, and *Ursus americanus*. Anticipated future efforts could include seals, canids, deer, sheep, goats, cattle, pigs and horses.

### ***Castor canadensis* - NMC 41041 - newborn female**



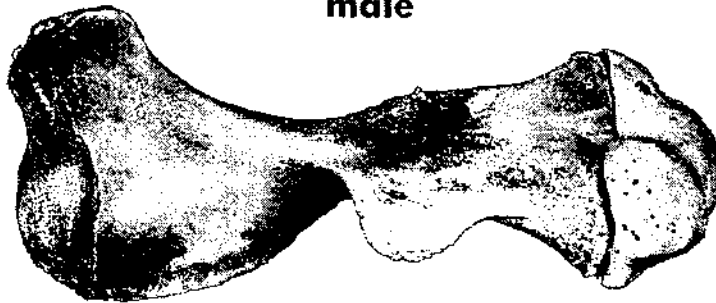
left humerus - epiphyses undeveloped



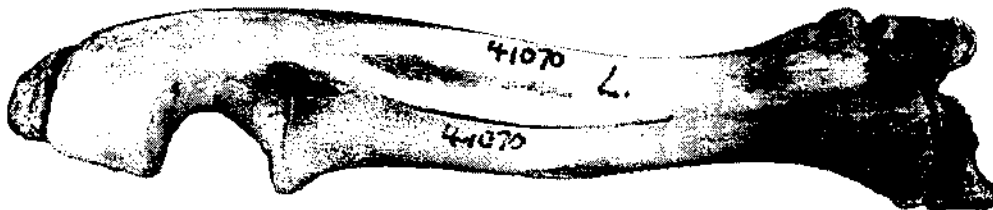
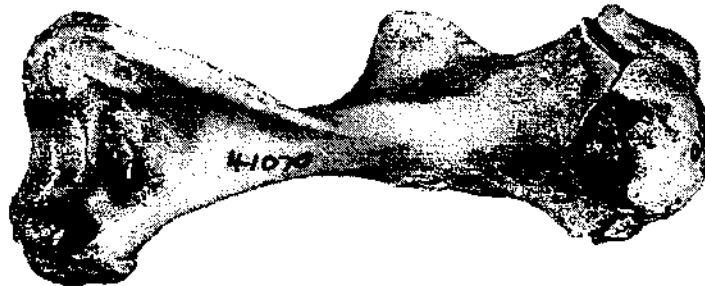
left radius and ulna - epiphyses undeveloped



***Castor canadensis* - NMC 41070 - 1/2 to 1 year old male**



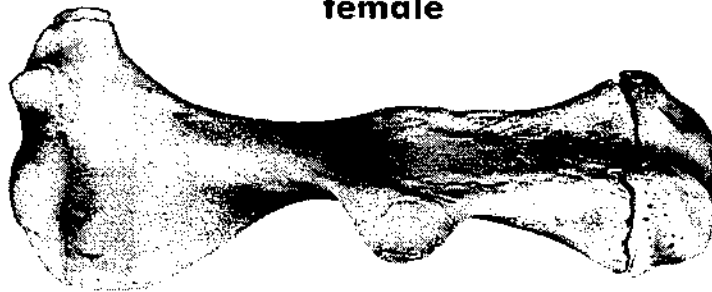
**left humerus - proximal epiphysis unfused  
distal epiphysis fused but fusion line still visible  
medial epicondyle unfused**



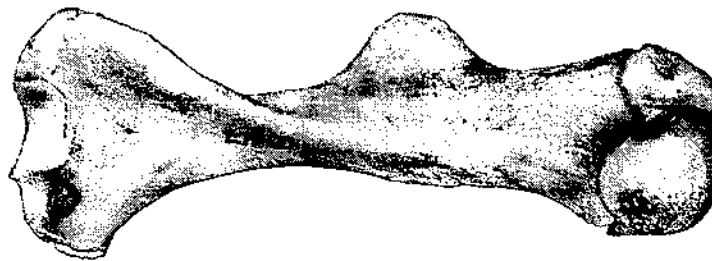
**left radius and ulna - all epiphyses unfused**



***Castor canadensis* - NMC Z-117 - 1 1/2 to 2 years old  
female**



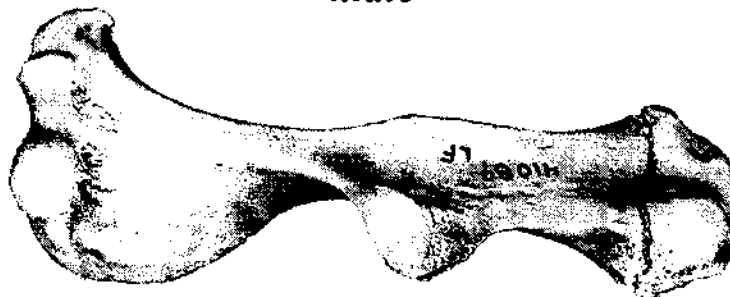
**left humerus - proximal epiphysis unfused  
distal epiphysis fused  
medial epicondyle unfused**



**left radius and ulna - all epiphyses unfused**



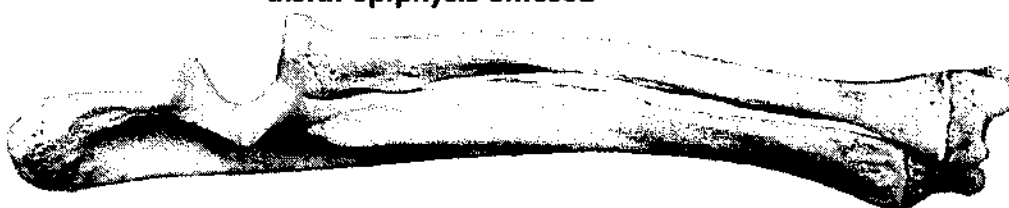
***Castor canadensis* - NMC 41089 - 3 years old  
male**



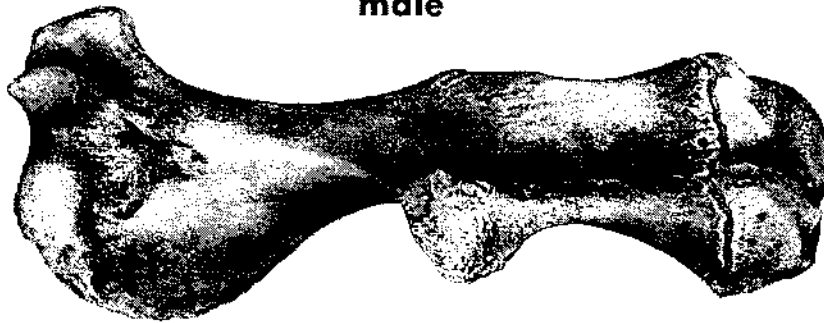
**left humerus - proximal epiphysis unfused  
distal epiphysis fused  
medial epicondyle fused**



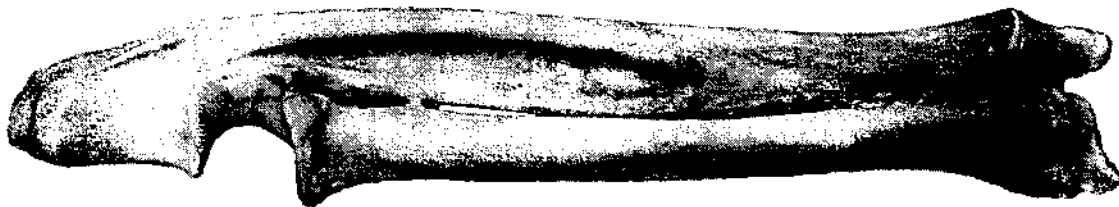
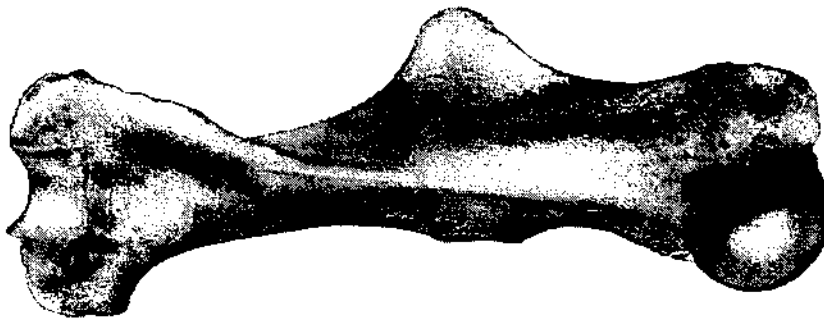
**left radius - proximal epiphysis unfused  
distal epiphysis unfused  
left ulna - proximal epiphysis fused but fusion line still visible  
distal epiphysis unfused**



***Castor canadensis* - NMC 75094 - approx. 3 1/2 years old male**



**left humerus - proximal epiphysis partly fused  
distal epiphysis fused  
medial epicondyle fused**

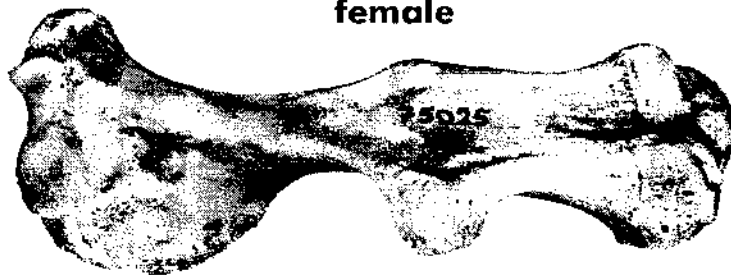


**left radius - proximal epiphysis fused but fusion line partly visible  
distal epiphysis unfused**

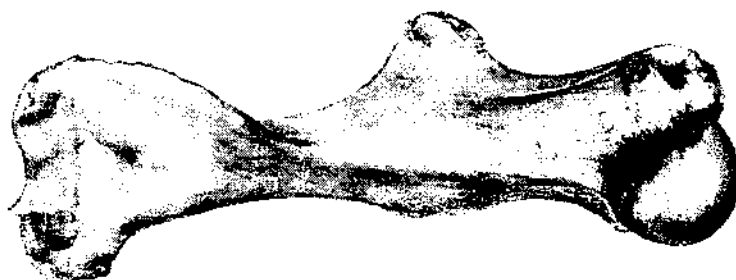
**left ulna - proximal epiphysis fused but fusion line partly visible  
distal epiphysis unfused**



***Castor canadensis* - NMC 75025 - approx. 7 years old  
female**

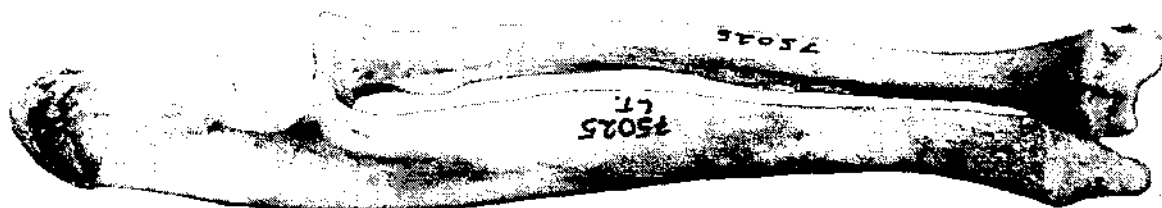


**left humerus - proximal epiphysis fused but fusion line still visible  
distal epiphysis fused  
medial epicondyle fused**



**left radius - proximal epiphysis fused  
distal epiphysis fused but fusion line still visible**

**left ulna - proximal epiphysis fused but fusion line still partly visible  
distal epiphysis fused but fusion line still visible**



***Castor canadensis* - NMC 75096 - approx. 14 years old  
male**



**right humerus - all epiphyses fused**



**left radius and ulna - all epiphyses fused**



***Ursus americanus* - NMC 75103 - cub (less than one year old)  
male**



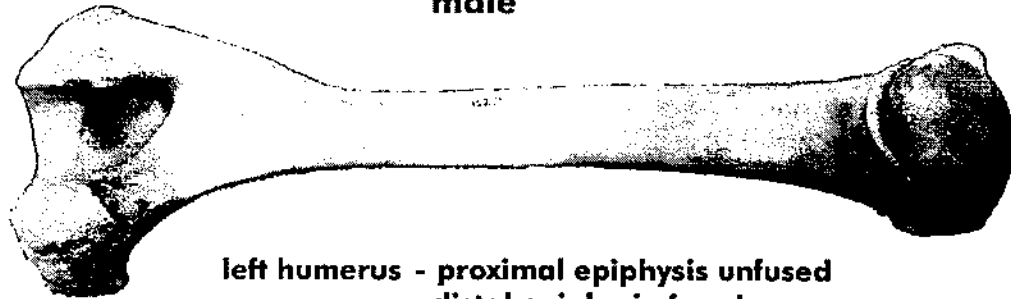
**left humerus - epiphyses unfused**



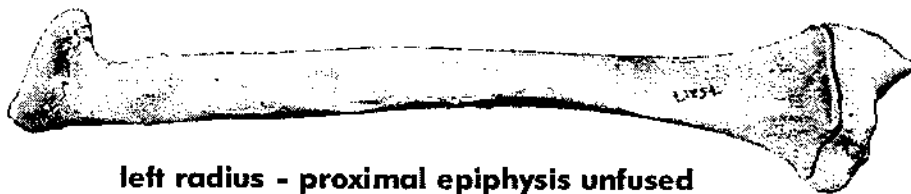
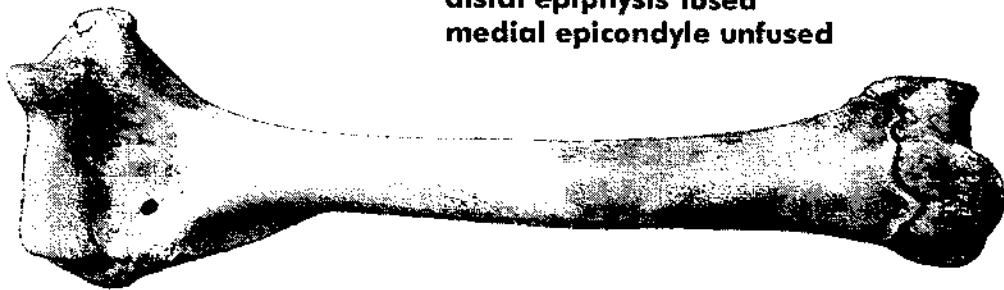
**left radius and ulna - epiphyses unfused**



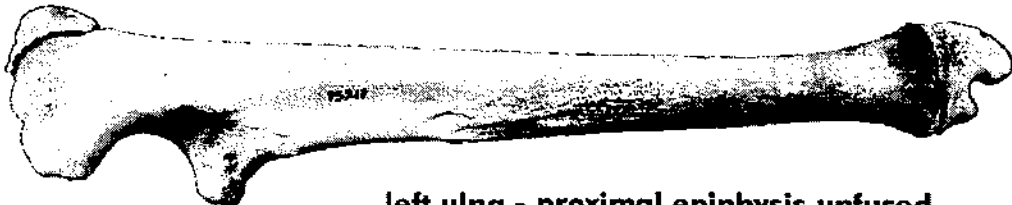
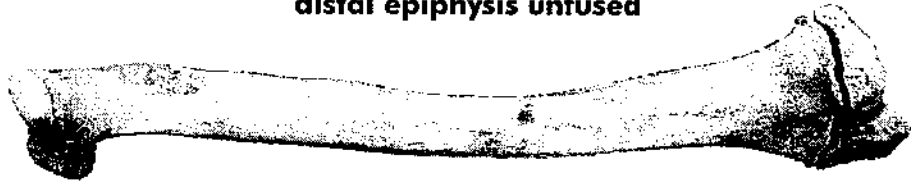
***Ursus americanus* - NMC 75217 - 2-2 1/2 years old male**



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



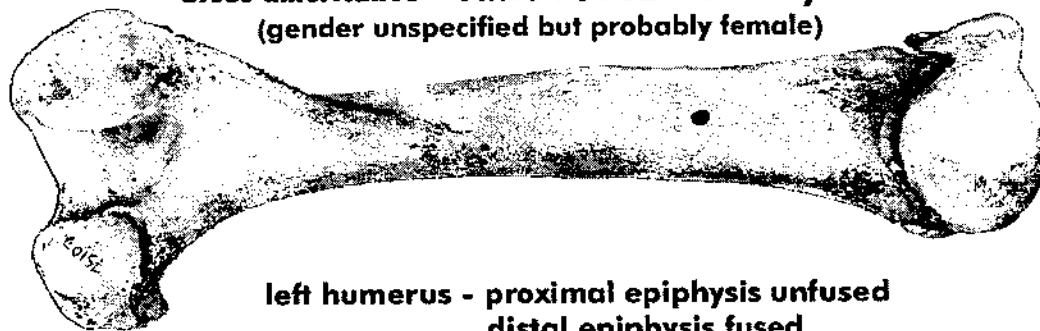
**left radius - proximal epiphysis unfused  
distal epiphysis unfused**



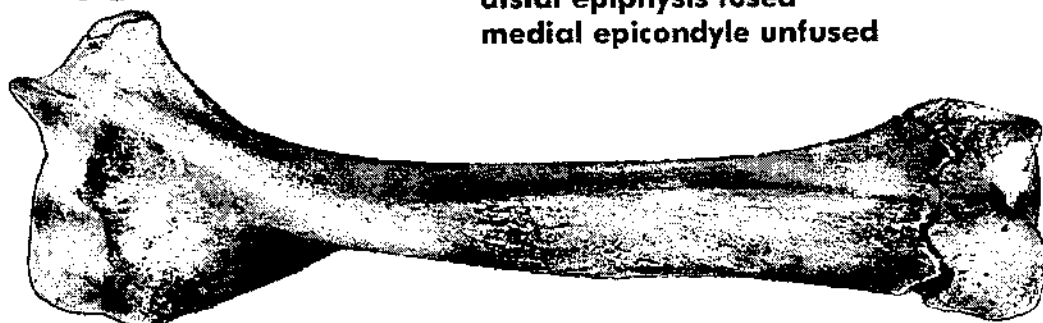
**left ulna - proximal epiphysis unfused  
distal epiphysis unfused**



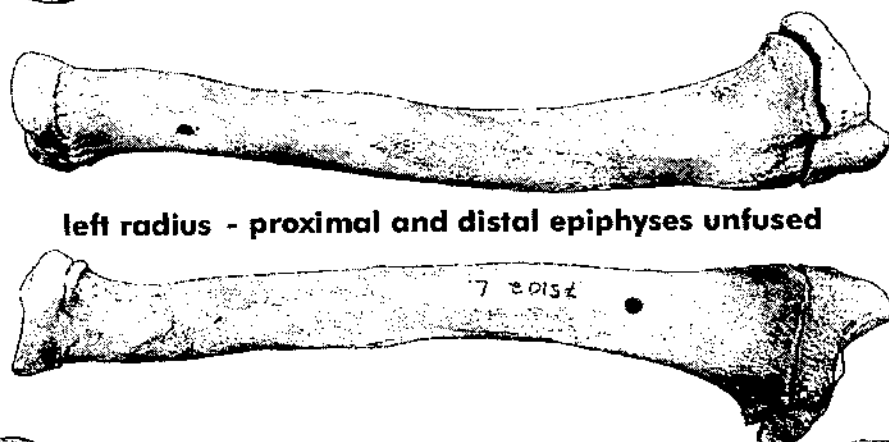
***Ursus americanus* - NMC 75102 - 3 to 4 year old**  
(gender unspecified but probably female)



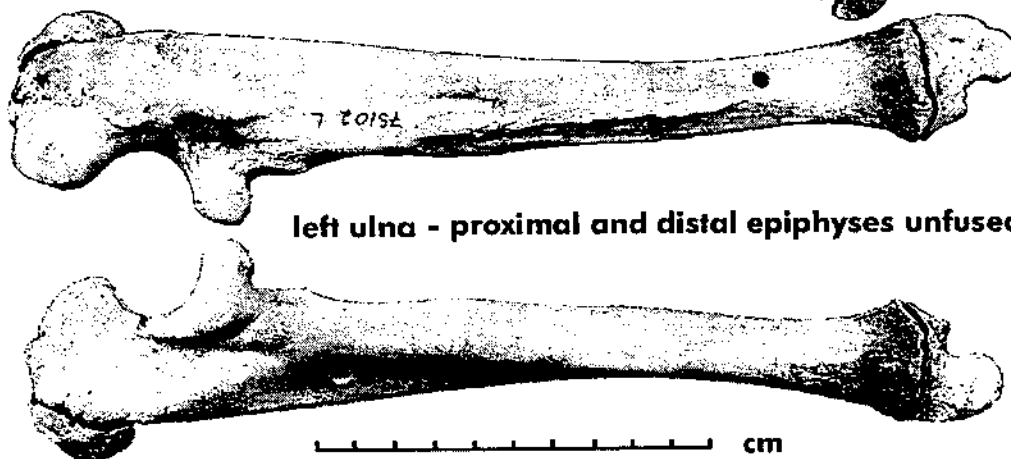
**left humerus - proximal epiphysis unfused  
distal epiphysis fused  
medial epicondyle unfused**



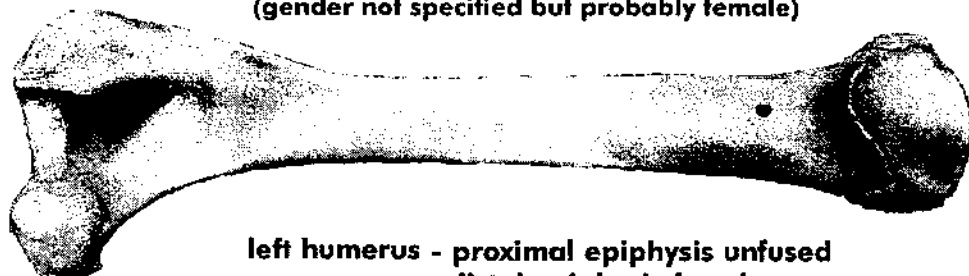
**left radius - proximal and distal epiphyses unfused**



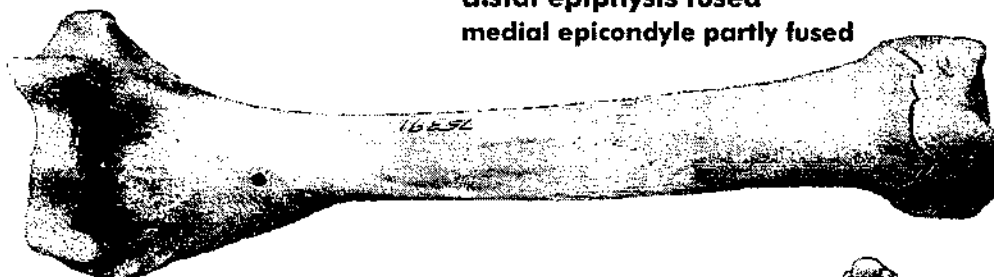
**left ulna - proximal and distal epiphyses unfused**



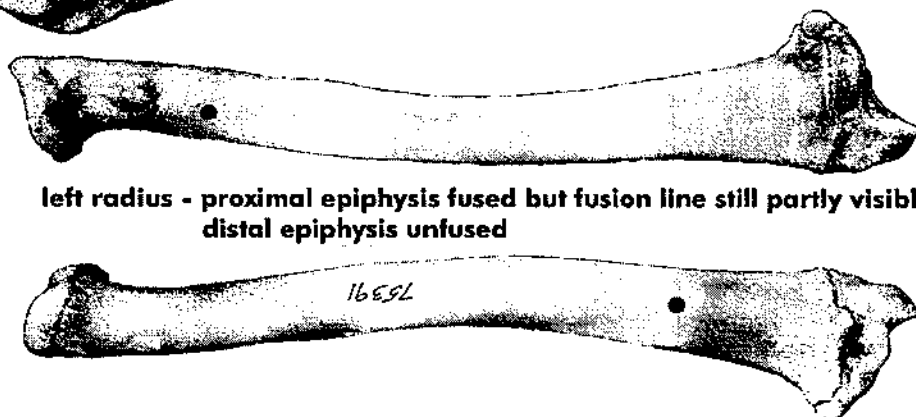
***Ursus americanus* - NMC 75391 - adult**  
(gender not specified but probably female)



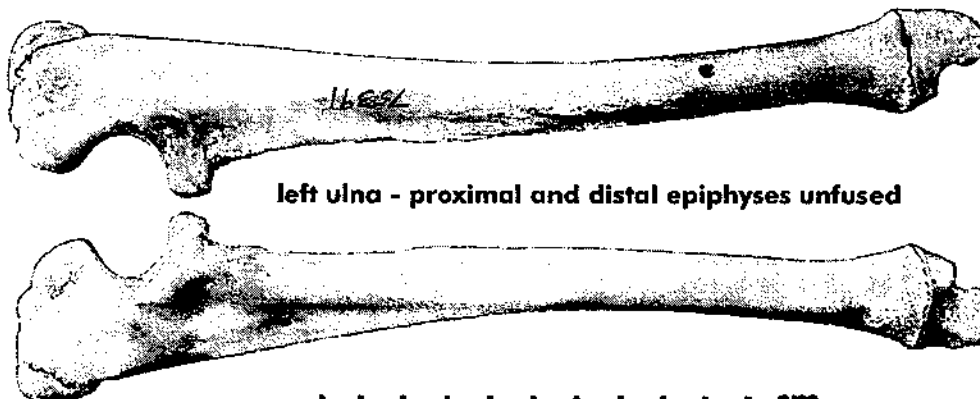
**left humerus - proximal epiphysis unfused  
distal epiphysis fused  
medial epicondyle partly fused**



**left radius - proximal epiphysis fused but fusion line still partly visible  
distal epiphysis unfused**

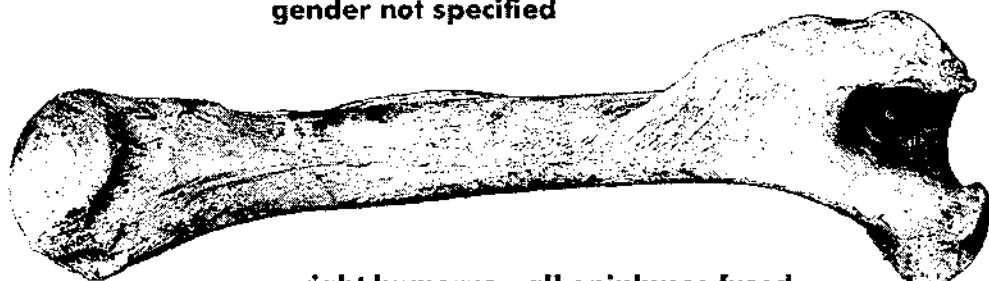


**left ulna - proximal and distal epiphyses unfused**

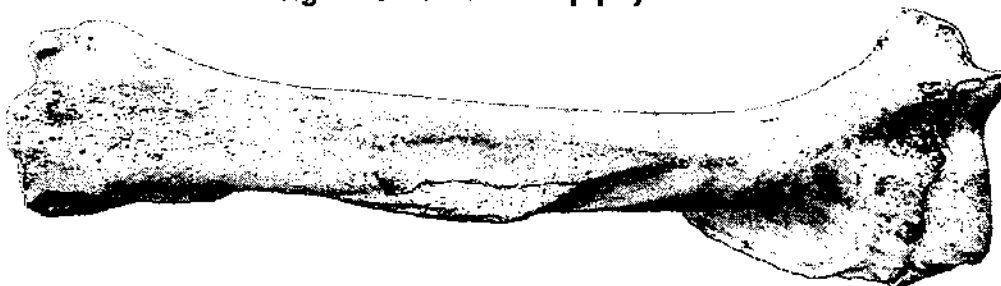


cm

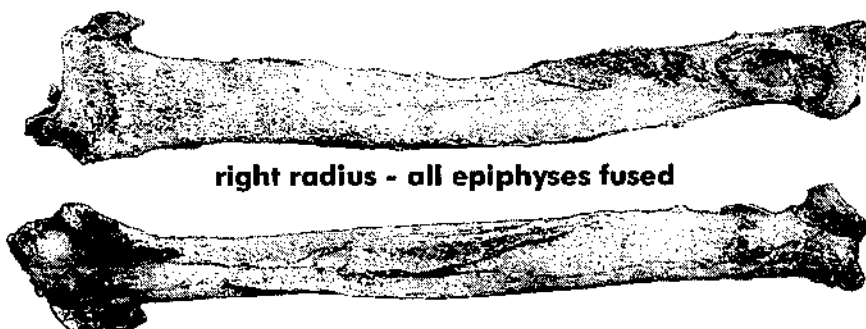
***Ursus americanus* - NMC uncatalogued - old adult  
gender not specified**



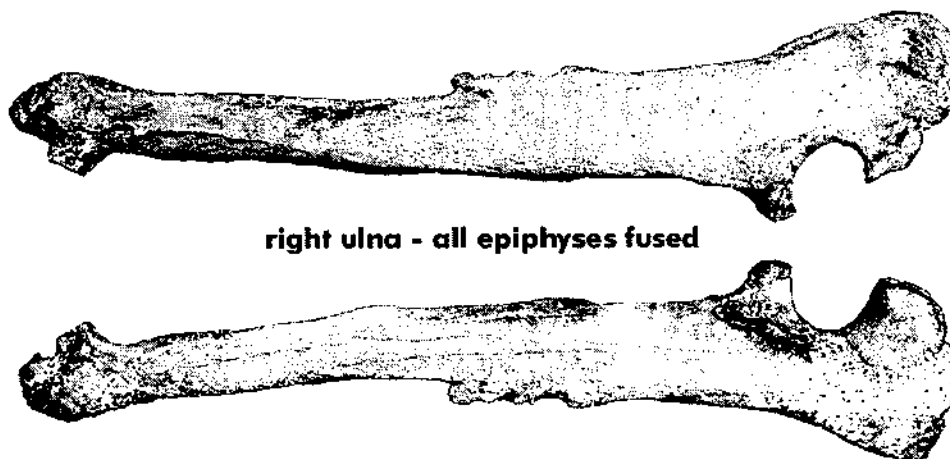
**right humerus - all epiphyses fused**



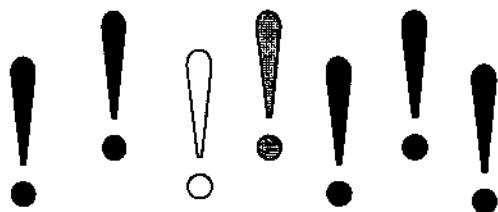
**right radius - all epiphyses fused**



**right ulna - all epiphyses fused**



 cm



## **FORTHCOMING CONFERENCES / CONFÉRENCES À VENIR**

The Society for Historical Archaeology and the Advisory Council on Underwater Archaeology would like to announce the SHA Quebec 2000

### **Conference on Historical and Underwater Archaeology**

January 4-9, 2000  
Québec Hilton Hotel, Québec City,  
Canada.

The Ostéothèque (Zooarchaeology laboratory in Montreal) would like to organize a session on historical zooarchaeology. If you think you might be interested in participating, please contact:

Evelyne Cossette  
E-MAIL: [evelyne.cossette@sympatico.ca](mailto:evelyne.cossette@sympatico.ca)  
PHONE: (514) 987-3000 #4022.

#### **For further conference information:**

Reginald Auger, program coordinator,  
CELAT, Université Laval, Québec  
E-MAIL: [reginald.auger@celat.ulaval.ca](mailto:reginald.auger@celat.ulaval.ca)  
FAX: (418) 656-5727

William Moss,  
Conference chair, Centre de  
développement économique et urbain,  
Ville de Québec, C.P. 700 Hauteville,  
Québec (Québec), G1R 4S9  
E-MAIL: [wmoss@riq.qc.ca](mailto:wmoss@riq.qc.ca)  
FAX: (418) 691-7853  
PHONE: (418) 691-6869

Ostéothèque is looking forward to  
welcoming all of you in Quebec!



### **32<sup>nd</sup> Annual Chacmool Conference**

11-14 November 1999  
*"Indigenous People and Archaeology"*  
University of Calgary  
Calgary, Alberta

**for more information contact:**  
1999 Chacmool Conference  
Department of Archaeology,  
University of Calgary, Calgary, AB  
T2N 1N4  
PHONE: (403) 220-7120  
E-MAIL: [chacmool@ucalgary.ca](mailto:chacmool@ucalgary.ca)  
web page:  
<http://www.ucalgary.ca/UofC/faculties/S/ARKY/chacmool.html>

#### **Sessions include:**

- ♦ "Strong Like Two People: Giving the Past a Future in Dogrib Education", chaired by A. Legat and T. Andrews.

or

- ♦ "Theoretical Foundations for Indigenous Archaeologies", chaired by G. Nicholas.
- ♦ "Burials and Repatriation of Human Remains - the Manitoba Experience", chaired by P.M. Badertscher.
- ♦ "Rights, Respect and Representation", chaired by Smith and Loring.
- ♦ "Indigenous World Views and the Archaeological Record"
- ♦ "Written Traditions"
- ♦ "Cooperation and Education: A Two-Way Street"
- ♦ "Archaeology, Tourism and Economics"



**33<sup>rd</sup> Annual Meeting  
Canadian Archaeological  
Association**

**May 3-7, 2000**

Crown Plaza Hotel, Ottawa, Ont.

The proposed conference theme is  
*"Transitions: Period of Change in the Past  
as well as Dynamic Periods within the  
practice of Archaeology in Canada".*

**For further information contact:**

Dr. Jean-Luc Pilon, Programme Chair,  
Canadian Museum of Civilization,  
P.O. Box 3100, Station B, Hull, Québec,  
Canada, J8X 4H2  
E-MAIL: jean-luc.pilon@civilization.ca  
PHONE: (819) 776-8192  
FAX: (819) 766-8300

\*\*\*\*\*

**Recent Publications/  
Publications récentes**

\*\*\*\*\*

- Ames, K.M. and Maschner, H.D.G.  
1999. Peoples of the Northwest  
Coast. Thames and Hudson, New  
York/London. 288 pp.
- Dupras, T.L. and Pratte, D.G. 1998.  
Cranimetric study of the Parsons  
crania from Midden 4 / feature  
245. Ontario Archaeology  
65/66:140-145.
- Fagan, B.M. 1998. Ancient North  
America: The Archaeology of a  
Continent. Second edition.  
Thames and Hudson, New  
York/London. 480 pp.
- Grier, C. 1999. Household archaeology  
at Dionisio Point. A prehistoric  
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## Requests, Exchanges, Notices / Demandes, Échanges, Avis

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The Zooarchaeology Home Page (ZHP) has been moved to a new server. Please update your bookmark:  
<http://borealis.lib.uconn.edu/zhp/>

If you are active in archaeological faunal analysis, consider visiting ZHP to add your name to the International Directory of Zooarchaeologists.



If you are interested in the archaeological site (QkHn-12) on Devon Island, Canadian high Arctic, being studied by the University of Waterloo, go to the internet site:

<http://arts.uwaterloo.ca/ANTHRO/rwpark/ArcticArchStuff/TL.html>

The principal archaeologist, Robert W. Park, provides up to date information including the most current faunal analysis.

