

CANADIAN ZOOARCHAEOLOGY / ZOOARCHÉOLOGIE CANADIENNE

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Editor's Notes / Note de L'Éditeure

Welcome to Fall of the new millenium!
I am very grateful to Donna Naughton for her photo-essays of age sequences of domestic and wild mammals, photographed from the Canadian Museum of Nature's collections. We have featured these in the last 3 issues, but this issue will include the last in these photo-essays for the time being, unless any of our subscribers request other animals.

I am on sabbatical in BC, and am planning to focus the next issue on BC coast topics. Stay tuned!

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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Cover by Debbie Yee Cannon

Transitions in Zooarchaeology: New Methods and New Results:

A Summary of Session Papers presented at the Canadian Archaeological Association Annual Conference, May 2000

by Kathlyn Stewart,
Canadian Museum of Nature

At the most recent Canadian Archaeological Association meetings, held in Ottawa in May, 2000, a session took place entitled *Transitions in Zooarchaeology: New Methods and New Results*, co-chaired by Kathy Stewart and Fran Stewart. Eleven papers were presented and the session was well attended throughout. Following are short summaries of the papers, taken in part from the abstracts.

The first speaker was Suzanne Needs-Howarth, presenting a paper by herself and Evelyne Cossette entitled *Operator bias in zooarchaeological recovery*. The authors used remains from a Middle Woodland and a Late Woodland site to state that zooarchaeological recovery can be unintentionally biased by people screening in the field. Excavations and recovery at the Middle Woodland site were aimed at uncovering biases in both the field and in the laboratory. No such experiment was undertaken during excavation and recovery at the Late Woodland site. Comparison of the remains recovered from the two sites suggests that different factors may be at play in determining retrieval of fish remains.

The next presenter was Greg Monks, who in his paper *Cumulative sampling: a new approach to sampling ichthyofaunas* focussed on characterizing richness and diversity in a faunal fish assemblage. He posed the question: how much of an excavated assemblage must be examined in order for

that assemblage's richness and diversity to be accurately identified? The completely identified Macoah (DfSi-5) assemblage was used to examine several approaches to characterizing assemblage richness and diversity in order to identify the methods that may be appropriate under certain conditions. The purpose of his study is to help analysts to evaluate an assemblage in terms of their research aim and choose the method(s) most likely to help achieve that aim.

The third speaker was Kathy Stewart, who with co-authors Gary Coupland and Donna Naughton, discussed the content of auger samples in their paper *Faunal micro-remains (primarily fish) from northern Northwest Coast sites (British Columbia)*. The faunal remains, mainly fish, recovered from the auger samples taken from 4 Northwest coast sites were screened through 3 different mesh sizes. Comparison of the fauna from the 3 meshes indicated that use of the smallest mesh did not improve identifiability enough to warrant the time expended identifying the fragments.

The next paper, presented by Evelyne Cossette, was entitled *Laurentian Archaic Animal Exploitation Strategies in the Ottawa River Valley: Morrison Island and Allumettes Island*. Cossette stated that despite little zooarchaeological data, most researchers have postulated a twofold seasonal pattern of animal exploitation for the Laurentian Archaic populations, based primarily on fishing in spring and summer, and hunting and trapping in the colder months. She suggested, based on her analysis of faunal remains from Morrison and Allumettes Island sites, that evidence gathered so far points to an opportunistic broad-based subsistence strategy as well as a suite of seasonally focused animal exploitation behaviors.

In his paper, *Using faunal remains to recognize and interpret prehistoric ceremonial deposits: an example from San Nicolas Island, California*, David Maxwell discussed an unusual burned feature containing thousands of animal bones, several fragmentary whale bone artifacts, and hundreds of shells. This feature was discovered during 1996 excavations at a coastal dune midden site on San Nicolas Island. The burned feature was interpreted as the residue of several ceremonial behaviours including: feasting, the removal of artifacts from systemic context following the conclusion of their use-lives, and ritual cleansing through burning. Maxwell stated that these behaviours were consistent with ethnographic descriptions of the Gabrieleno Mourning ritual, and this deposit may have represented a prehistoric example of a similar type of ritual.

Kitty Emery, in her paper entitled *Convergent Results from Divergent Methods: A Tripartite Zooarchaeological Analysis of the Maya Collapse in Guatemala*, used multiple zooarchaeological techniques in the analysis of animal bones from sites in Guatemala to create overlapping tests of environmental and social models of the Classic “Maya collapse”. She reported that combined environmental reconstructions and isotopic analysis of land use revealed strong environmental stability throughout the occupation of the Petexbatun region. However, detailed analyses of worked bone from the region indicated changing systems of bone tool production, and suggested that “collapse” patterns were not a direct result of declining environmental conditions or dietary health, but instead reflected the shifting economic and political conditions of the period.

Rhonda Bathurst was the next presenter, with a paper entitled *Canine Health and Human*

Analogy: Dogs as Surrogate Indicators of Human Health Status. Bathurst’s paper contrasted and compared the results of the paleopathological analysis of domestic canid remains from two regions of Canada: the BC Northwest Coast and south-central Ontario. She suggested that dog remains share skeletal stresses similar to those found in contemporaneous human populations. Such evidence may illustrate other forms of stress not easily recognized on human skeletal remains. She suggested that dogs be considered therefore as independent indicators of health status in past human communities.

In the next paper, entitled *Season of Death Estimates for Bison bison as Inferred from Dental Cementum Increments: Implications for Investigating Archaeological Site Seasonality*, Trevor Peck presented a description of a control sample of bison teeth that allows the interpretation of bison dental cementum increments. The interpretation of the control sample produced a schedule in which incipient rapid-growth zones are first recognized in late March and persist until mid June; from mid June to as late as late October rapid-growth zones are deposited; as early as late October incipient slow-growth zones begin forming and last until mid December when slow-growth is evident; slow-growth continues being deposited until late March. The implications of this schedule for archaeologically recovered bison dental specimens was discussed using an example from the northern Plains.

Next, Ariane Burke presented a paper entitled *Butchery of a sheep in rural Tunisia (North Africa): repercussions for the study of patterns of bone disposal*, in which she described the process of killing and butchering a sheep in a small, rural village in Tunisia, from the perspective of the stigmata produced on bone. She stated that aside from the method

of killing and bleeding the animal, which is governed by *Hallel* principles, logical rules involving principles of least effort governed the processing of the carcass. The tools available, the manpower and the culinary traditions of the area also governed many of the decisions taken by the butcher. She noted that these data provide a basis for comparison with archaeozoological collections from a wide variety of similar cultural contexts, including late Byzantine settings in Tunisia.

Richard Morlan's paper, entitled *CARD: Canada's first answer to FAUNMAP*, described CARD, an acronym for the Canadian Archaeological Radiocarbon Database, a digital database made available on the world-wide web through the home page of the Canadian Archaeological Association (<http://www.canadianarchaeology.com>). He stated that it contains nearly 7500 radiocarbon dates, many of which are presented in their paleoenvironmental contexts on a related web site called Mapping Ancient History, hosted by the Geological Survey of Canada (<http://www.geoserv.org>). Morland noted that although CARD is oriented mainly toward the delivery of radiocarbon dates, it also records vertebrate faunas that are associated with the dated samples. This aspect of the database can be construed as Canada's first answer to FAUNMAP, a digital database of mammalian taxa that have been documented in more than 3200 archaeological and paleontological sites in continental U.S.A. Morland detailed some of the strengths and weaknesses of CARD as a vertebrate database, and described how to use this resource most effectively.

Frances Stewart was the last presenter, and in a paper entitled *Zooarchaeology: Where have we been and where are we going?* discussed both the session's papers and a view of the future of Canadian zooarchaeology. She noted that the 10 papers covered many

zooarchaeological topics with examples from around the world. In order to link these together and place them in a common tradition, Stewart's paper began with a brief review of the history of Zooarchaeology with special reference to Canada. She then focussed on current research with references made to the day's presentations. Stewart discussed the problems of faunal research being devalued again, and reduced financing for zooarchaeological research. Related to this, several suggestions for work on sampling techniques were made in various presentations, and more study of sampling was suggested as a good pragmatic approach for the future. Numerous other topics for future research and interpretations were suggested. Stewart concluded that the day's presentations had exemplified how far we have come in zooarchaeological research over the past 150 years, and that we now need to co-ordinate our research more closely with that of both physical and cultural anthropologists in order to address some of the "big questions" in anthropology. Finally, the presenters and the audience were thanked for their participation in this excellent zooarchaeological session.



Bones of known aged dogs: 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 Mammal Collection of the Canadian Museum of Nature. 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. All the specimens are husky-type

dogs, most from the north of Canada, collected in the 1950's.

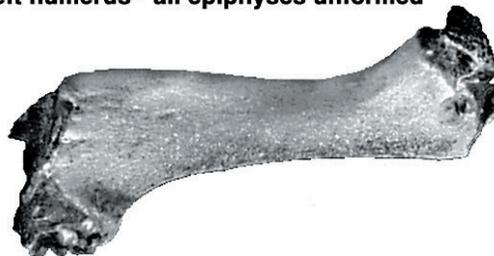
There are eight females and six males illustrated. The CMN collections did not contain a full sample of known aged males consequently there is a gap in the series between the 7 days old specimen and the 18 month old specimen.

Author's note - Should any reader have a skeleton which could fill that gap I would be eager to borrow it. An addendum would follow in a later issue.

Canis familiaris - NMC 43210 - 1 day old female



left humerus - all epiphyses unformed



left radius and ulna - all epiphyses unformed

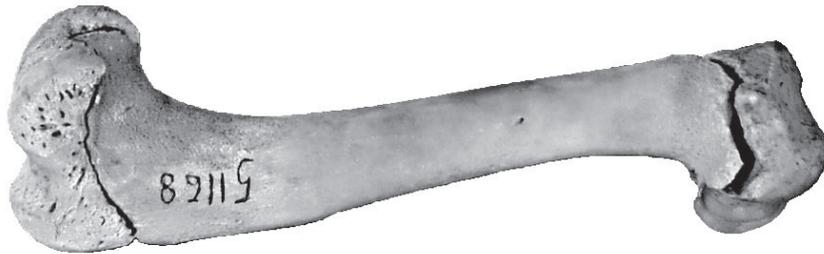
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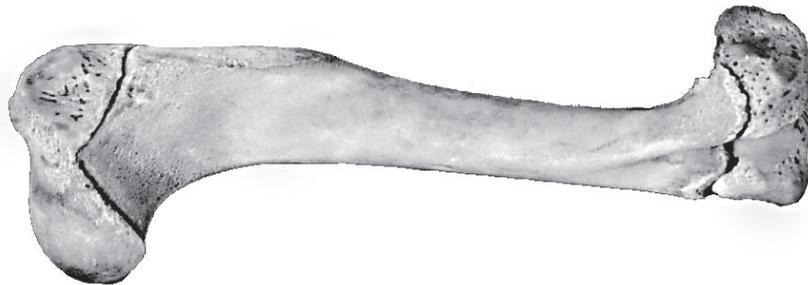


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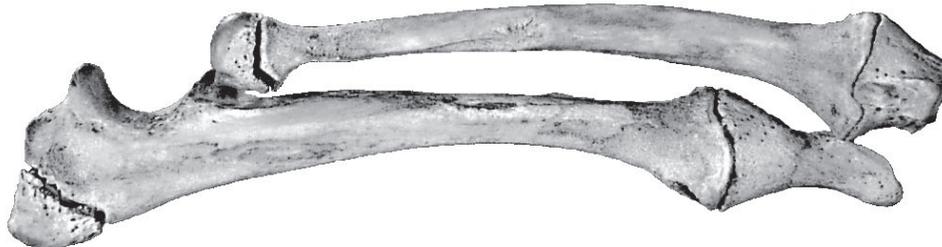
***Canis familiaris* - NMC 51168 - 5 month old female**



left humerus - all epiphyses unfused



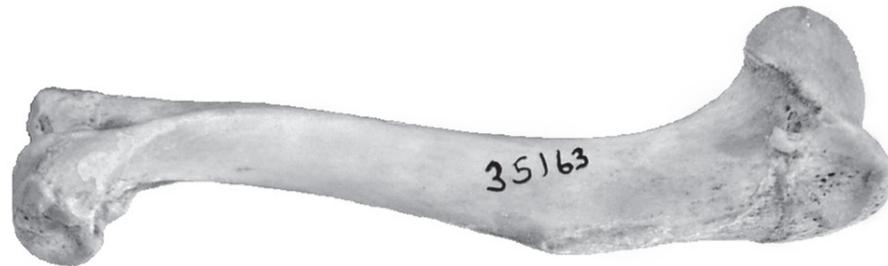
left radius and ulna - all epiphyses unfused



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***Canis familiaris* - NMC 35163 - 9 month old female**



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**right humerus - proximal epiphysis partly fused
distal epiphysis almost all fused
medial epicondyle almost all fused**



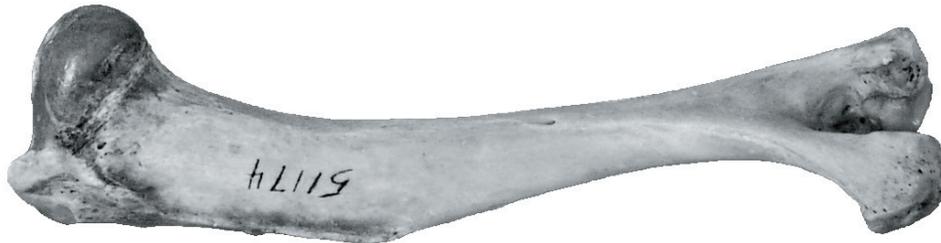
**right radius - proximal and distal epiphyses partly fused
right ulna - proximal epiphysis almost all fused
distal epiphysis partly fused**

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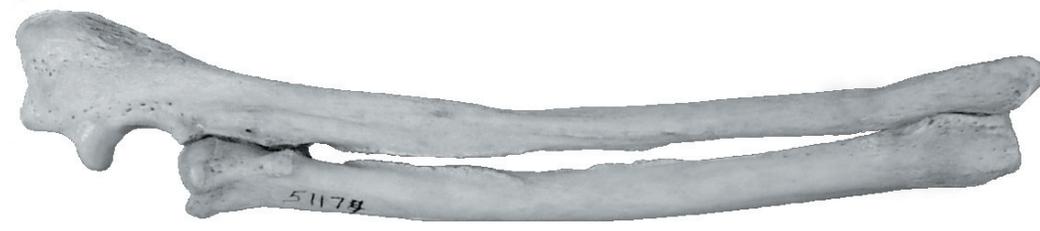
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***Canis familiaris* - NMC 51174 - 1 year old female**



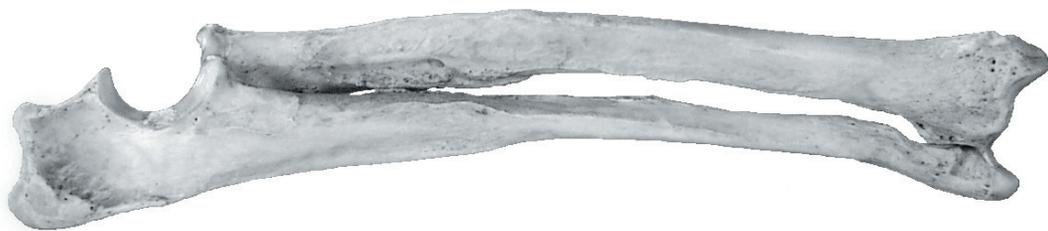
**left humerus - proximal epiphysis partly fused
distal epiphysis and medial epicondyle fused**

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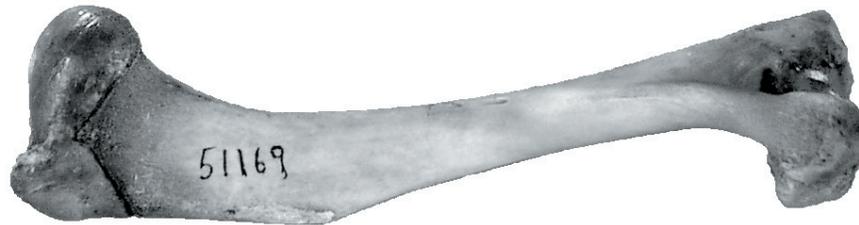
left radius and ulna - all epiphyses fused

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***Canis familiaris* - NMC 51169 -13 month old female ***



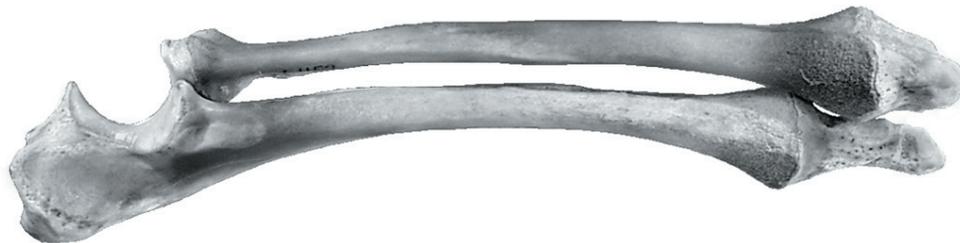
**left humerus - proximal epiphysis unfused
distal epiphysis almost all fused
medial epicondyle fused**

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**left radius - proximal and distal epiphyses partly fused
left ulna - proximal and distal epiphyses partly fused**

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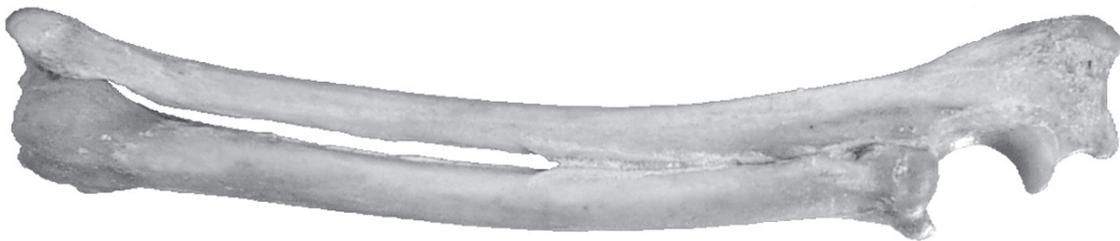
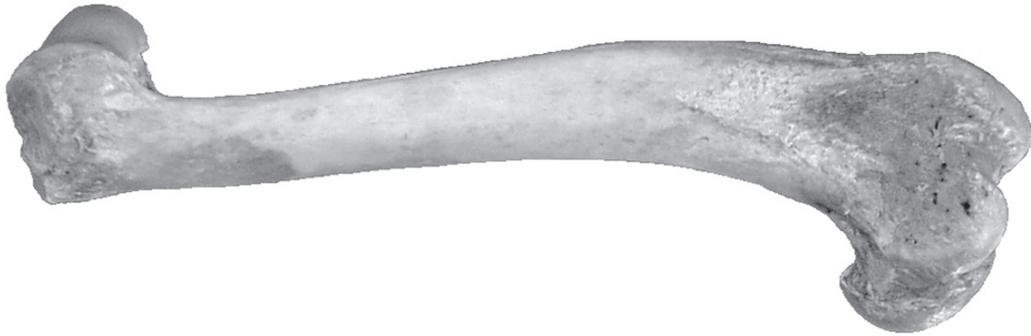
*** emaciated and pregnant**

***Canis familiaris* - NMC 35157 - 2 year old female**



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**right humerus - proximal epiphysis almost all fused
distal epiphysis and medial epicondyle fused**



right radius and ulna - all epiphyses fused

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***Canis familiaris* - NMC 35153 - 3 year old female**



left humerus - all epiphyses fused



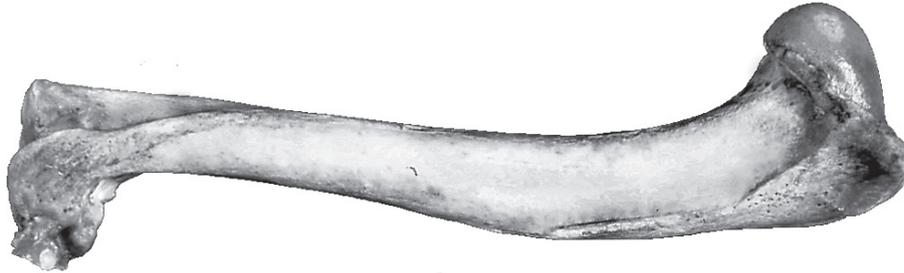
left radius and ulna - all epiphyses fused, note old healed injury on mid-shaft of ulna

proximal

distal



***Canis familiaris* - NMC 36154 - 6 year old female**



right humerus - all epiphyses fused

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**right radius - all epiphyses fused
right ulna - proximal epiphysis fused
distal epiphysis abnormally unfused
and displaying none of the related porosity**

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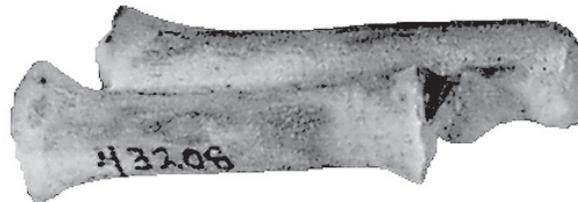


Canis familiaris - NMC 43208 - 7 day old male

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right humerus - all epiphyses unformed



right radius and ulna - all epiphyses unformed

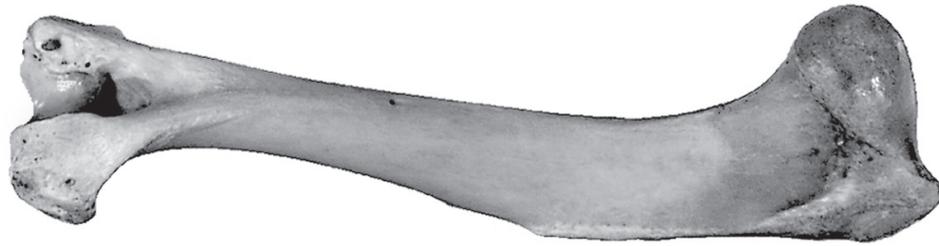
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***Canis familiaris* - NMC 35219 - 18 month old male**

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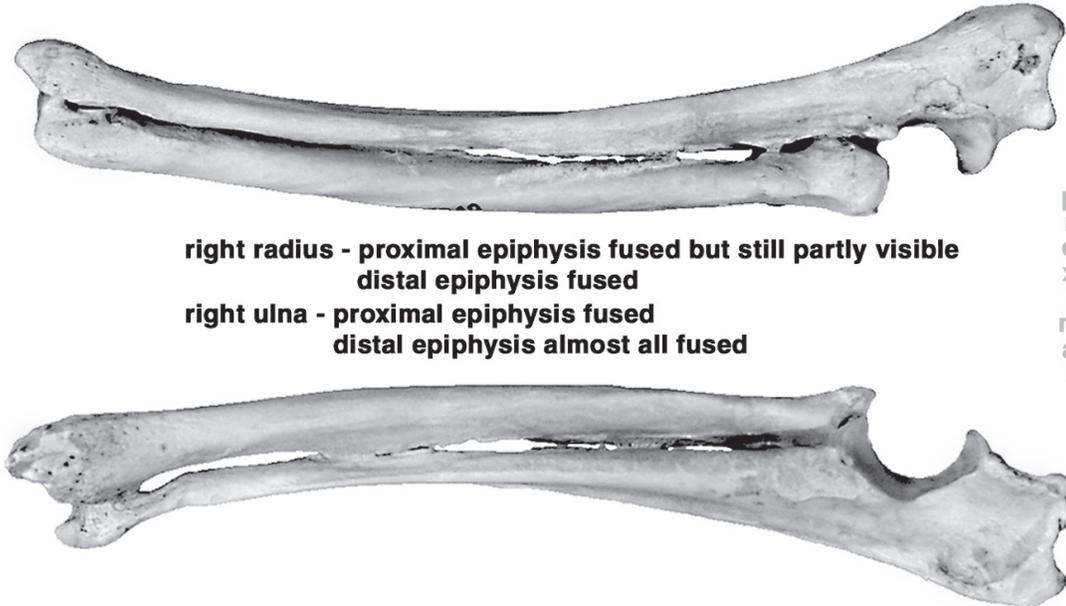
**right humerus - proximal epiphysis fused but still partly visible
distal and medial epiphyses fused**



**right radius - proximal epiphysis fused but still partly visible
distal epiphysis fused**

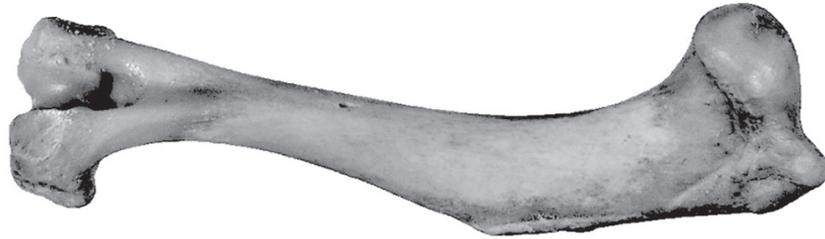
**right ulna - proximal epiphysis fused
distal epiphysis almost all fused**

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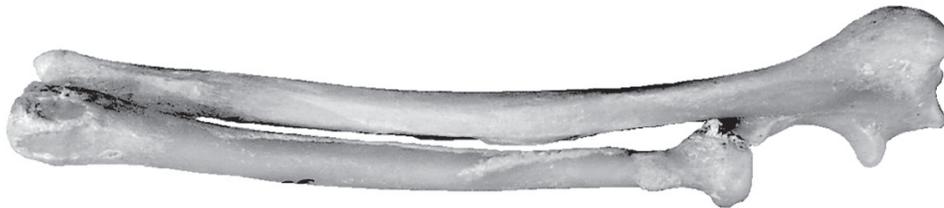
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***Canis familiaris* - NMC 35156 - 2 year old male**



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**right humerus - proximal epiphysis fused but still partly visible
distal epiphysis and medial epicondyle fused**



**right radius - proximal epiphysis fused but still faintly visible
distal epiphysis fused
right ulna - proximal epiphysis fused
distal epiphysis fused but still partly visible**

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***Canis familiaris* - NMC 35159 - 3 year old male**



right humerus - all epiphyses fused



**right radius - proximal epiphysis fused but still visible, distal epiphysis fused
right ulna - proximal epiphysis fused, distal epiphysis fused**



cm

***Canis familiaris* - NMC 36085 - 4 year old male**



right humerus - all epiphyses fused

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right radius - all epiphyses fused

right ulna - all epiphyses fused but distal epiphysis is still slightly visible



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***Canis familiaris* - NMC 35223 - 6 year old male**



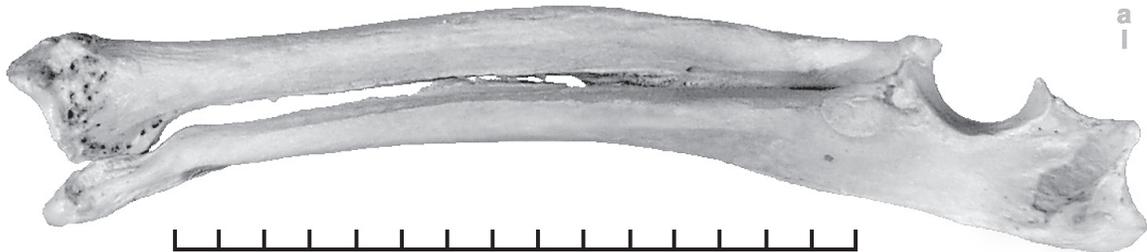
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right humerus - all epiphyses fused



**right radius - all epiphyses fused
right ulna - all epiphyses fused**

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Forthcoming Conferences/ Conférences à Venir

2001

Annual Meeting of the
Canadian Archaeological Association
9-13 May, 2001
Banff Centre for Conferences
Banff, Alberta
www.banffcentre.ab.ca

Deadlines

Session Proposals – December 1, 2000
Paper Abstracts – February 1, 2001
Accommodation reservations – March 1, 2001

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Fax: (403) 282-9567
e-mail: nicholls@ucalgary.ca

Recent Publications/ Publications récentes

Bochenski, Z.M. and Tomek, T. 2000. Identification of bones of galliform hybrids. *Journal of Archaeological Science* 27(8):691-698.

Cannon, A. 2000. Assessing variability in Northwest Coast salmon and herring fisheries: Bucket-auger sampling of shell midden sites on the central coast of British Columbia. *Journal of Archaeological Science* 27(8):725-738.

Crockford, S.J. 1997. Osteometry of Makah and Coast Salish Dogs.

Archaeology Press, Simon Fraser University, 133 pages.

Davis, S.J.M. 2000. The effect of castration and age on the development of the Shetland sheep skeleton and a metric comparison between bones of males, females and castrates. *Journal of Archaeological Science* 27(5):373-390.

Dobney, K. and Ervynck, A. 2000. Interpreting developmental stress in archaeological pigs: the chronology of linear enamel hypoplasia. *Journal of Archaeological Science* 27(7):597-608.

Fafard, M. and Le Blanc, R. 1999. Dechyoonjik (MIVm-4) and traditional land use patterns on the Old Crow Flats, Yukon Territory. *Canadian Journal of Archaeology* 23(1/2): 29-50.

Grier, C. 1999. The organization of production in prehistoric Thule whaling societies of the central Canadian Arctic. *Canadian Journal of Archaeology* 23(1/2): 11-28.

Hoffman, B.W., Czederpiltz, J.M.C. and Partlow, M.A. 2000. Heads or tails: The zooarchaeology of Aleut salmon storage on Unimak Island, Alaska. *Journal of Archaeological Science* 27(8):699-708.

Hudson, D. and DePaoli, M. 2000. Excavation of the Six-Mile site (DkRn-5). *The Midden* 32(1):2-6.

Lewis, P.J., Gutierrez, M. and Johnson, E. 2000. *Ondatra zibethicus* (Arvicolinae, Rodentia) dental microwear patterns as a potential tool for palaeoenvironmental reconstruction. *Journal of Archaeological Science* 27(9):789-798.

Morlan, R.E. 1999. Canadian Archaeological Radiocarbon Database: establishing conventional ages. *Canadian Journal of Archaeology* 23(1/2): 3-10

Morlan, R.E. 2000. The Siruk Site: Alatna River, Alaska: A Koyukon winter house. *Arctic Anthropology* 37(1):43-59.

Morrison, D. 2000. Inuvialuit fishing and the Gutchiak site. *Arctic Anthropology* 37(1):1-42.

- Munson, P.J. 2000. Age-correlated differential destruction of bones and its effect on archaeological mortality profiles of domestic sheep and goats. *Journal of Archaeological Science* 27(5):391-408.
- Renouf, M.A.P. and Murray, M.S. 1999. Two winter dwellings at Phillip's Garden, a Dorset site in northwestern Newfoundland. *Arctic Anthropology* 36(1):118-132.
- Rick, T.C. and Erlandson, J.M. 2000. Early Holocene fishing strategies on the California coast: Evidence from CA-SBA-2057. *Journal of Archaeological Science* 27(7):621-634.
- Rogers, A.R. 2000. Analysis of bone counts by maximum likelihood. *Journal of Archaeological Science* 27(2):111-126.
- Rogers, A.R. 2000. On the value of soft bones in faunal analysis. *Journal of Archaeological Science* 27(7):635-640.
- Stephan, E. 2000. Oxygen isotope analysis of animal bone phosphate: method refinement, influence of consolidants, and reconstruction of palaeotemperatures for Holocene sites. *Journal of Archaeological Science* 27(6):523-536.
- Walthall, J.A. 1999. Mortuary behavior and early Holocene land use in the North American mid-continent. *American Archaeologist* 20(1):1-30.

Requests, Exchanges, Notices / Demandes, Échanges, Avis

Dogs Through Time

The proceedings volume from the 1st ICAZ Symposium on the History of the Domestic Dog, from the Victoria 1998 conference, is now available. Citation and ordering details for the proceedings are below:
ISBN 1 84171 089 X BRITISH
ARCHAEOLOGICAL REPORTS (BAR) INTERNATIONAL SERIES 889, 2000

ARCHAEOPRESS (29 papers, 353 pages, price ca. US\$63). TITLE: *Dogs Through Time: An Archaeological Perspective* SUBTITLE: *Proceedings of the 1st ICAZ Symposium on the History of the Domestic Dog (Eighth Congress of the International Council for Archaeozoology, August 23-29, 1998, Victoria B.C., Canada).*
EDITOR: Susan J. Crockford
ORDERING INFO: www.archaeopress.com
OR through: Hadrian Books Ltd.,
122 Banbury Rd., Oxford, England
Phone/Fax +44+1865-316916. The price at this publisher is £ 47 (approximately \$61.00US).

The volume contains much useful comparative information on morphometrics, genetics (2 papers), discussions on the processes of domestication and hybridization. A separate bibliography on dogs and wolves (stressing their prehistoric and historic occurrence, hybridization and domestication) is included.

CALL FOR PAPERS

The 4th ICAZ Bird Working Group Meeting will be held in Cracow, Poland, September 12-15, 2001. The conference will be concerned with all aspects of bird remains in archaeology: the exploitation of wild and domestic birds, changes in bird distributions in the prehistoric period, problems of identification, bone survival and depictions of birds in ancient arts. Papers and posters are invited. Interested participants are asked to contact the organizers to be put on the mailing list: Zbigniew M. Bochenski, Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Slawkowska 17, 31-016 Cracow, Poland. Fax: +48-12- 422 42 94; Email: bochenski@isez.pan.krakow.pl
Details and online registration form can be found at: <http://www.isez.pan.krakow.pl>