FAUNAL REPORT

NUNAINGOQ SITE JCDE 1 QUEBEC

HOUSE 3 LEVEL C

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Faunal findings from House 3, Level C, at the Nunaingoq site (JcDe-1) in northern Quebec

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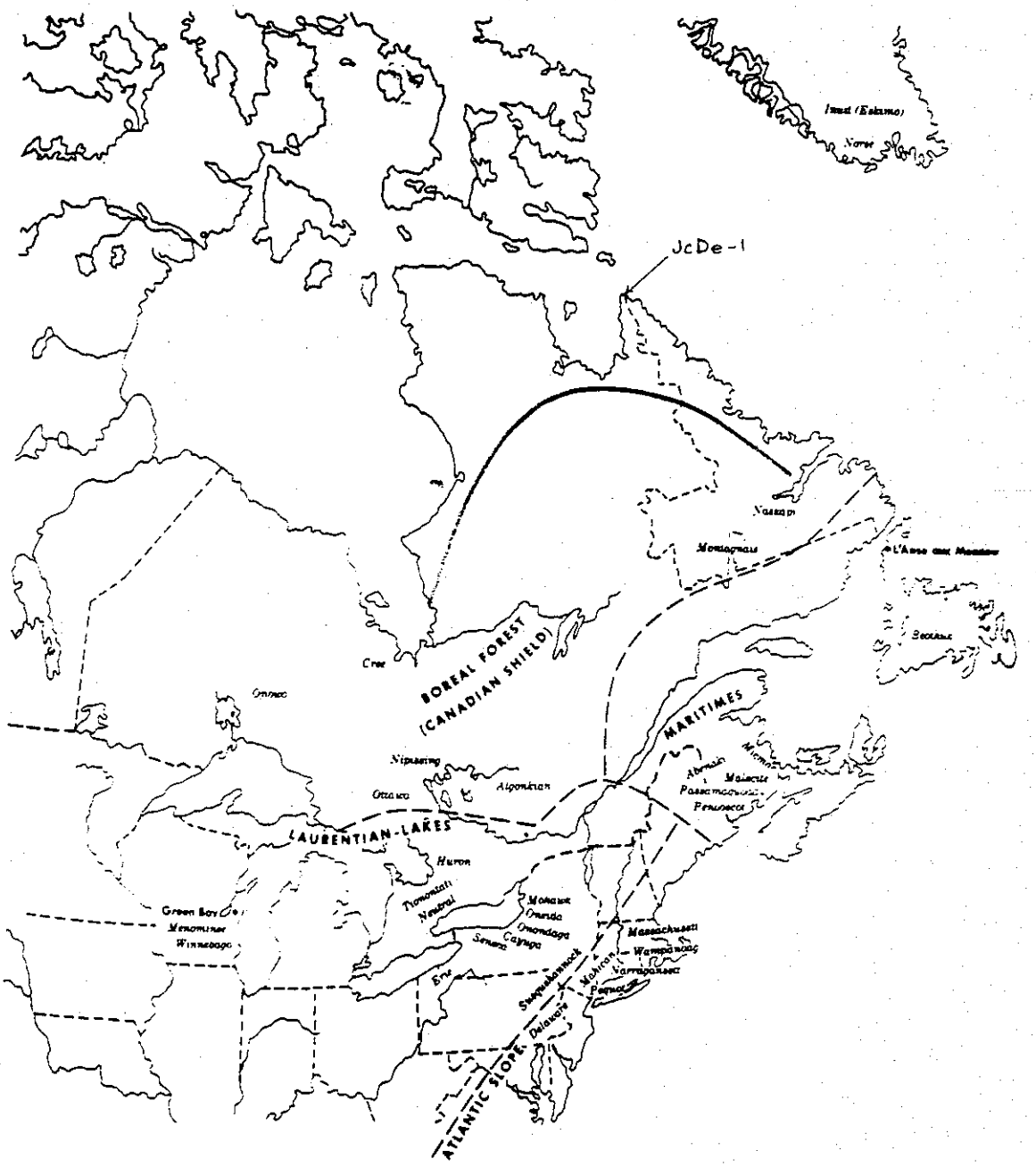


Figure 1

(After [illegible])

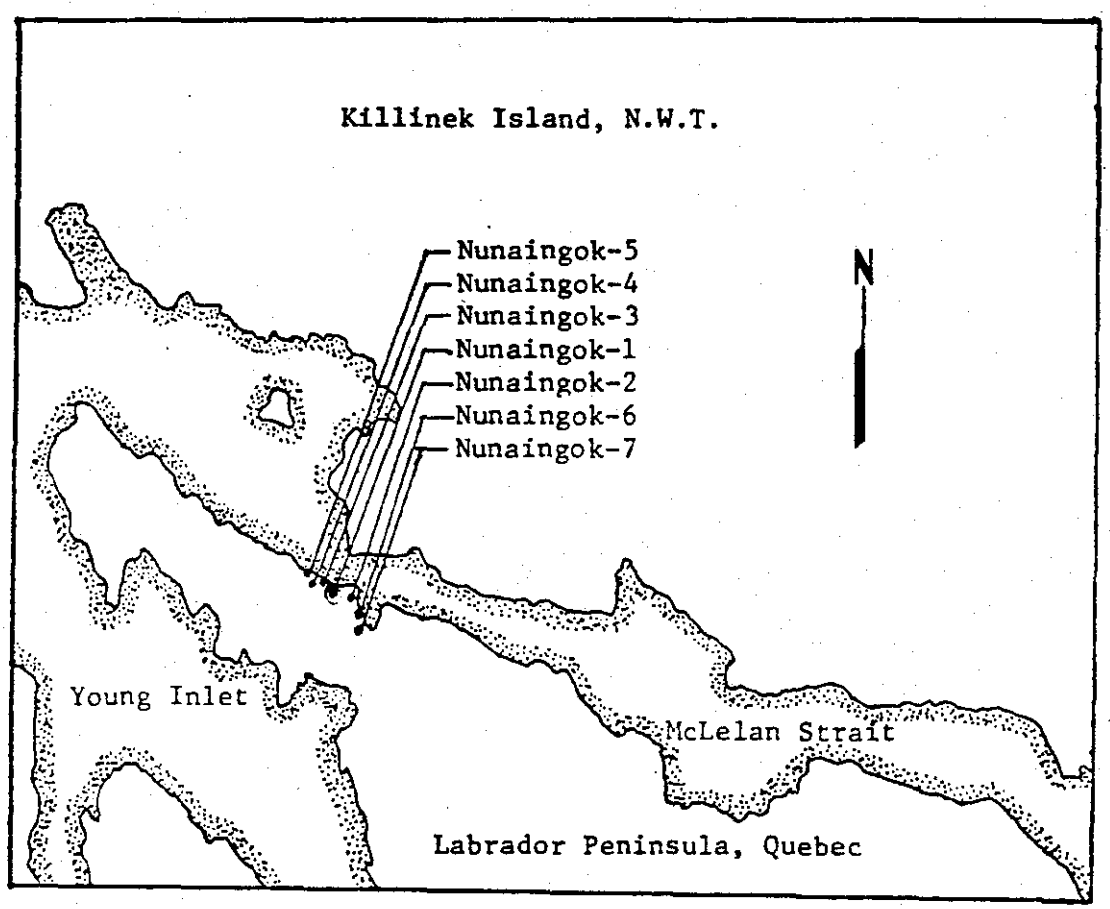


Figure 2 Nunaingok 1-7. Torngat Archaeological Project Survey, 1977 (modified after Killinek Island East, 1:50,000).

The Nunaingoq site (JcDe-1)

This brief report is based on four hundred faunal bones which have been identified to the minimum taxonomic designation of Family. The bones are sorted according to taxon and are displayed in Table 3.

All specimens are from JcDe-1, House 3, Level C. As can be seen from a preliminary scan of the identified specimens, the people who lived in the house which was excavated to form the basis of this report drew heavily upon the sea for their subsistence.

Situated at the northern tip of the Ungava peninsula, Quebec, (Figures 1 and 2) the site borders the south shore of McLelan Strait, through which tides of up to 30 feet surge, keeping the narrow strait ice-free all year long (Jordan 1985) and creating what is known as a polynya.

> Open water areas known as polynyas have in a number of cases been shown to be of great importance for the concentration of various economic food resources such as birds (eggs), several species of seals, and walrus. These resources in turn have attracted human hunting groups during several millenia of High Arctic occupation (Schledermann 1980:301).

Sea mammal remains from JcDe-1-3C include harbour seal *(Phoca vitulina)*, ringed seal *(Phoca hispida)*, harp seal *(Phoca groenlandica)*, grey seal *(Haliocoerus grypus)*, bearded seal *(Erignathus barbatus)*, and walrus

(Odobenus rosmarus). Land mammals include dog *(Canis familiaris)* (possibly two breeds), wolverine *(Gulo gulo)* (represented by one femur), arctic fox *(Vulpes lagopus)*, and caribou *(Rangifer tarandus).* Finally, bones of the polar bear *(Ursus maritimus)*, who probably spends as much time on ice and in water as he does on solid land, were found. Polar bears were probably attracted to polynyas for the same principal reason that humans were, namely, the abundance of sea mammals.

Thirteen of the fourteen houses excavated at the JcDe-1 site had their entrance tunnels oriented towards McLelan strait, facing north; only House 3 was oriented with its entrance tunnel facing southwest (Stewart 1979:28). The reasons for this anomaly remain unclear.

The chronological and cultural association of the faunal remains from JcDe-1-3C are not indicated in Stewart's (1979) report. Evidence of multiple occupations were found and the layers were mixed, a common phenomena in sites located in periglacial areas, where cryoturbation plays havoc with stratigraphy. The lithic evidence from the site analysed by Jordan (1985:1) reveals "sufficient diagnostic specimens ... to indicate that Pre-Dorset, Groswater Dorset, Middle Dorset, Late Dorset, ... in addition to Neo-Eskimo" groups occupied the site. Jordan (1985:1) believes

that JcDe-1 (Nunaingoq 1) "functioned as one of the most important sites in the Killinek region for the past 3000-4000 years." The wide range of lithic material from diverse quarry sources, including Southhampton Island to the west, and Newfoundland to the southeast, "suggests broad interactions over large distances" (Jordan 1985:22).

Osteometric Analysis

Two reasonably intact dog skulls from this faunal sample merit close attention for several reasons. Healed fractures of the saggital crests of both, and a healed depressed fracture of the right frontal bone in the smaller skull are pathological conditions suggestive of frequent and severe beating. Unhealed circular perforations in the left frontal and parietal bones of the smaller skull are the same distance apart as the upper canines of a husky or a wolf, suggesting that one of these larger canids may have killed the smaller dog during a fight or scavenged it post-mortem. Whatever the events that unfolded, it is clear that both the dogs in question endured rough treatment at the hands of their masters, and at the teeth of their fellow dogs, during their lives. This phenomena is suggested by Arnold (1979) and given a thorough treatment by Park (1987).

Due to the apparent size difference between the two skulls, both of which are of adult animals, osteometric analysis has been carried out with the view to establishing whether the smaller dog falls within the range of measurements of the standard Canadian Husky. Dr. Howard Savage provided the skulls of six huskies of known sex, which had been active as sled-dogs during their lifetimes. Incidentally, these six skulls exhibited the same types of healed fractures noted in the two archaeological specimens. The skull of an arctic wolf *(Canis lupus arctos)* was also included in the osteometric sample.

Six dimensions of the nine skulls in the sample (one wolf, six huskies, and two archaeological specimens) were measured. The dimensions are illustrated in Figure 3 (dimension 5 is the length of the hard palate). All measurements were taken twice with a sliding caliper and the average of the two readings calculated. Ratios were calculated for 1 over 2, 5 over 3, and 6 over 4. The measurements and the calculations are presented below (all measurements in centimetres).

It is apparent from Table 1 that the JcDe-1-3C-1:2 skull is closest in size to the female husky, but it is significantly smaller than all the male husky dog skulls in all dimensions. From Table 2 it is evident that the

female husky skull has the highest ratios of all the huskies in two categories (5/3 and 6/4), whereas the JcDe-1-3C-1:2 skull is in line with the male huskies in these two ratio categories.

The tentative conclusion to be drawn from this comparitive study is that both JcDe-1-3C-1:1 and JcDe-1-3C-1:2 are male dog skulls and that they represent two distinct breeds of dog. Considering Jordan's(1985:22) observation that lithic material at this site came from quarry sources in both Newfoundland and Labrador, we might consider the possibility that dogs were also procured from areas to the south of the Nunaingoq site. The obvious test for this hypothesis is to expand the sample to include skulls from male and female Labrador dogs: the Black Lab, the Golden Lab, and the Yellow Lab. I once owned a Yellow Lab and I would be the last person to wish any one of these fine dogs an early demise, but as skulls become available as a result of natural deaths, they could be used to shed some light on the possibility that members of their noble breed may once have served their masters in most northern Ungava.

Table 1. Canid skull osteometrics

Skull	1	2	3	4	5	6
JcDe-1-3C-1:1	22.35	12.95	4.82	4.70	11.02	20.13
JcDe-1-3C-1:2	17.94	10.90	3.62	3.85	8.33	16.46
FA 203-26 (male)	22.70	13.03	4.65	4.34	11.43	20.46
FA 203-28 (female)	19.93	11.81	3.93	3.65	10.23	18.63
FA 203-29 (male)	21.81	13.11	4.73	4.41	11.08	20.16
FA 203-30 (male)	21.40	13.35	4.73	4.30	10.75	19.61
FA 203-31 (male)	21.58	13.11	4.64	4.32	10.49	20.02
FA 203-32 (male)	21.51	12.52	4.35	4.18	10.64	19.94
FA 202-1 (male wolf)	26.79	14.08	5.02	4.53	13.15	22.94

Table 2. Canid skull osteometric ratios

Skull	1/2	5/3	6/4
JcDe-1-3C-1:1	1.73	2.29	4.29
JcDe-1-3C-1:2	1.64	2.30	4.28
FA 203-26 (male)	1.74	2.46	4.71
FA 203-28 (female)	1.69	2.60	5.09
FA 203-29 (male)	1.66	2.34	4.57
FA 203-30 (male)	1.60	2.27	4.56
FA 203-31 (male)	1.64	2.26	4.63
FA 203-32 (male)	1.72	2.45	4.77
FA 202-1 (male wolf)	1.90	2.62	5.06

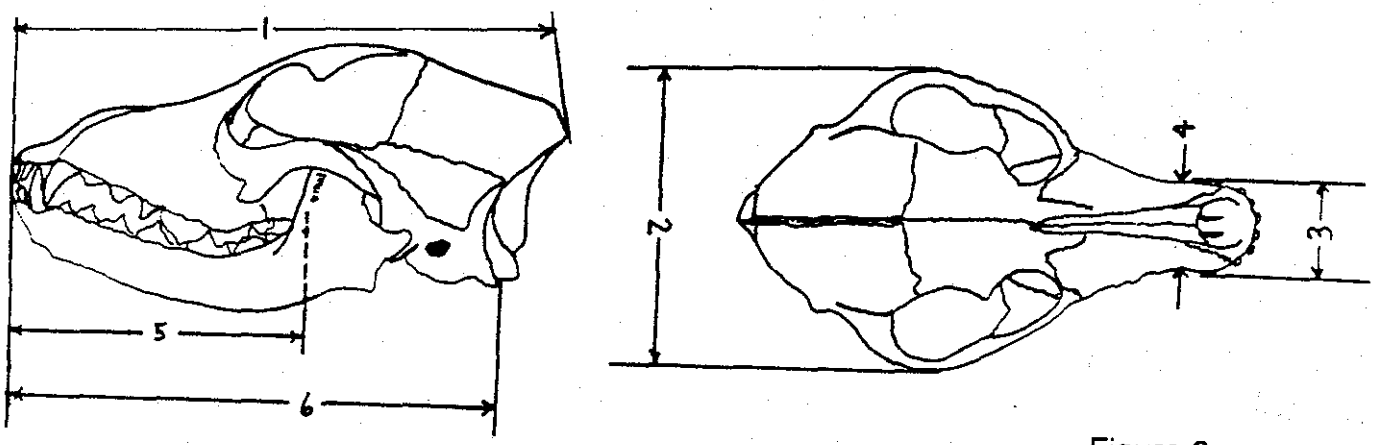


Figure 3

References Cited

Arnold, C. D.
1979 Possible evidence of domestic dog in a Paleoeskimo context. Arctic 32(3):263-265.

Jordan, Richard
1985 "Paleo-Eskimo occupations of Nunaingok 1-7, Killinek region, Arctic Quebec." Manuscript on file at Bryn Mawr College Department of Anthropology Bryn Mawr, Pa., 44 pages.

Park, Robert W.
1987 Dog remains from Devon Island, N.W.T.: archaeological and osteological evidence for domestic dog use in the Thule culture. Arctic 40(3):184-190.

Schledermann, Peter
1980 Polynyas and Prehistoric Settlement Patterns. Arctic 33(2):292-302.

Stewart, Henry
1979 "Rapport de la Mission Nunainguq 78 (KIL.3-JcDe-1)" Manuscript on file at Laboratoire D'Archéologique de l'UQAM, Montreal, 37 pages.

Table 3. Faunal remains from JcDe-1-3C-1.

Catalogue no.	Taxon	Element	Side	Age	Remarks
399	CANIDAE SP.	TIBIA	L		EPIPHYSIS
179	CANIS FAMILIARIS	MANDIBLE	R	ADU	
3	CANIS FAMILIARIS	MANDIBLE	L	ADU	MATCHES #2
2	CANIS FAMILIARIS	SKULL		ADU	OLD DOG
7	CANIS FAMILIARIS	MANDIBLE	L	IMM	
8	CANIS FAMILIARIS	MANDIBLE	R	IMM	
188	CANIS FAMILIARIS	HUMERUS	R		
189	CANIS FAMILIARIS	HUMERUS	L		
1	CANIS FAMILIARIS	SKULL		ADU	HLD FRCTRS
4	E. BARBATUS	MANDIBLE	R	ADU	
5	E. BARBATUS	MANDIBLE	L	ADU	
211	E. BARBATUS	COSTAL CRT		ADU	
194	E. BARBATUS	METATARSAL	L	ADU	4TH
119	E. BARBATUS	HUMERUS	R	ADU	
107	E. BARBATUS	FEMUR	L	ADU	CUT MARKS
255	E. BARBATUS	PATELLA	L		
253	E. BARBATUS	CALCANEUM	R		
209	E. BARBATUS	CLAW CORE	R		
120	E. BARBATUS	HUMERUS	R	IM+	
213	E. BARBATUS	COSTAL CRT		ADU	
212	E. BARBATUS	COSTAL CRT		ADU	
82	E. BARBATUS	INNOMINATE	R	IM+	
21	E. BARBATUS	MAXILLA	R	IM+	
293	E. BARBATUS	RIB	R		
234	E. BARBATUS	HUMERUS	L		CUT MARK
18	E. BARBATUS	OCCIPETAL		IM+	
17	E. BARBATUS	MAXILLA	R	IM+	
96	E. BARBATUS	BACULUM		ADU	
22	E. BARBATUS	MAXILLA	L		
24	E. BARBATUS	MAXILLA	R		
225	E. BARBATUS	SCAPULA	R		
102	E. BARBATUS	TIBIA	R	ADU	
229	E. BARBATUS	HUMERUS	R	ADU	
42	E. BARBATUS	RIB	R	ADU	
224	E. BARBATUS	SCAPULA	R	IMM	
279	E. BARBATUS	MAXILLA			
150	GULO GULO	FEMUR	L	ADU	
148	H. GRYPUS	ULNA	L	IMM	
210	H. GRYPUS	METACARPAL	L	ADU	1ST
385	ODOBENUS ROSMARUS	TOOTH			
382	ODOBENUS ROSMARUS	TOOTH			
384	ODOBENUS ROSMARUS	TOOTH			
381	ODOBENUS ROSMARUS	TOOTH			
163	ODOBENUS ROSMARUS	MAXILLA			FRAG.
164	ODOBENUS ROSMARUS	MAXILLA			FRAG
383	ODOBENUS ROSMARUS	TOOTH			
43	P. GROENLANDICA	RIB	R	ADU	
44	P. GROENLANDICA	RIB	R	ADU	
223	P. GROENLANDICA	SCAPULA	L	ADU	
35	P. GROENLANDICA	AUD BULLAE	R		

Table 3. Faunal remains from JcDe-1-3C-1. (continued)

Catalogue no.	Taxon	Element	Side	Age	Remarks
34	P. GROENLANDICA	AUD BULLAE	L		
222	P. GROENLANDICA	SCAPULA	L	ADU	
47	P. GROENLANDICA	RIB	L	ADU	
246	P. GROENLANDICA	SCAPULA	R		
221	P. GROENLANDICA	SCAPULA	R	ADU	
40	P. GROENLANDICA	RIB	R	ADU	2ND
220	P. GROENLANDICA	SCAPULA	L	ADU	
50	P. GROENLANDICA	RIB	R	ADU	
251	P. GROENLANDICA	TALUS	R		
32	P. GROENLANDICA	OCCIPETAL			
226	P. GROENLANDICA	SCAPULA	R		
26	P. GROENLANDICA	PALATINE	L		
256	P. GROENLANDICA	TARSAL	L		3RD
41	P. GROENLANDICA	RIB	L	ADU	3RD
182	P. GROENLANDICA	ULNA	R		
65	P. GROENLANDICA	ATLAS VERT		ADU	
67	P. GROENLANDICA	AXIS VERT		ADU	MATCHES #66
290	P. GROENLANDICA	RIB	L		
25	P. GROENLANDICA	PARIETAL	R	IMM	SUTR UNFUSD
66	P. GROENLANDICA	ATLAS VERT		ADU	OSTEOARTH
303	P. GROENLANDICA	RIB	R		
257	P. GROENLANDICA	STERNAL SG			
172	P. GROENLANDICA	TIBIA	R	IMM	
171	P. GROENLANDICA	TIBIA	L		
305	P. GROENLANDICA	RIB	L		
208	P. GROENLANDICA	METATARSAL	R		2ND
20	P. GROENLANDICA	FRONTAL		IMM	SUTR UNFUSD
159	P. GROENLANDICA	TIBIA	R		
158	P. GROENLANDICA	TIBIA	L		
156	P. GROENLANDICA	TIBIA	R		
152	P. GROENLANDICA	TIBIA	L	ADU	
23	P. GROENLANDICA	PARIETAL	L	IMM	SUTR UNFUSD
27	P. GROENLANDICA	OCCIPETAL	L		
52	P. GROENLANDICA	RIB	R	ADU	
53	P. GROENLANDICA	RIB	R	ADU	
145	P. GROENLANDICA	ULNA	L		
141	P. GROENLANDICA	RADIUS	L	IMM	
270	P. GROENLANDICA	METATARSAL	R		5TH
259	P. GROENLANDICA	METATARSAL	R		1ST
134	P. GROENLANDICA	PHALANX	L	ADU	
209	P. GROENLANDICA	METATARSAL	R		5TH
133	P. GROENLANDICA	METACARPAL	L		2ND
132	P. GROENLANDICA	METATARSAL	R		2ND
306	P. GROENLANDICA	RIB	L		
123	P. GROENLANDICA	TALUS	L	ADU	
19	P. GROENLANDICA	OCCIPETAL		IMM	SUTR UNFUSD
122	P. GROENLANDICA	TALUS	R	ADU	
98	P. GROENLANDICA	TIBIA	L	ADU	
99	P. GROENLANDICA	TIBIA	L	IMM	
121	P. GROENLANDICA	TALUS	R	ADU	

Table 3. Faunal remains from JcDe-1-3C-1. (continued)

Catalogue no.	Taxon	Element	Side	Age	Remarks
101	P. GROENLANDICA	TIBIA	L	IMM	
254	P. GROENLANDICA	PATELLA	R		
346	P. GROENLANDICA	CERV. VERT		ADU	7TH
11	P. GROENLANDICA	MANDIBLE	R	ADU	
309	P. GROENLANDICA	RIB	R		
308	P. GROENLANDICA	RIB	R		
12	P. GROENLANDICA	MANDIBLE	R	ADU	CUT MARK
13	P. GROENLANDICA	MANDIBLE	L	ADU	
112	P. GROENLANDICA	FEMUR	R	IMM	
278	P. GRONLANDICUS	TIBIA	R		
69	P. HISPIDA	T. VERTEBR		ADU	
68	P. HISPIDA	T. VERTEBR		ADU	
197	P. HISPIDA	PHALANX	L	ADU	3RD
142	P. HISPIDA	RADIUS	L	ADU	
114	P. HISPIDA	HUMERUS	L	ADU	
143	P. HISPIDA	RADIUS	R	IMM	
116	P. HISPIDA	HUMERUS	R	ADU	
195	P. HISPIDA	METATARSAL	L	ADU	3RD
247	P. HISPIDA	SCAPULA	R		
191	P. HISPIDA	CALCANEUM	R	ADU	
233	P. HISPIDA	HUMERUS	L		
146	P. HISPIDA	ULNA	R	IMM	
347	P. HISPIDA	T. VERTEBR		ADU	1ST
147	P. HISPIDA	ULNA	L	ADU	
231	P. HISPIDA	HUMERUS	L		
63	P. HISPIDA	ATLAS VERT		ADU	
126	P. HISPIDA	METATARSAL	R	ADU	4TH
113	P. HISPIDA	HUMERUS	R	ADU	
126	P. HISPIDA	METATARSAL	L	ADU	1ST
265	P. HISPIDA	METATARSAL	R		2ND
37	P. HISPIDA	RIB	L	ADU	11TH
70	P. HISPIDA	T. VERTEBR		ADU	
39	P. HISPIDA	RIB	L	ADU	7TH
84	P. HISPIDA	INNOMINATE	R	IM+	
46	P. HISPIDA	RIB	R	ADU	
153	P. HISPIDA	TIBIA	L	ADU	
49	P. HISPIDA	RIB	R	ADU	
154	P. HISPIDA	TIBIA	R	ADU	
219	P. HISPIDA	SCAPULA	L		
155	P. HISPIDA	TIBIA	L	ADU	
214	P. HISPIDA	MANDIBLE	L		
81	P. HISPIDA	C. VERTEBR		ADU	
15	P. HISPIDA	MANDIBLE	R	IM+	
258	P. HISPIDA	CAUD. VERT			
237	P. HISPIDA	FEMUR	L	IMM	
80	P. HISPIDA	C. VERTEBR		ADU	
232	P. HISPIDA	HUMERUS	R		
79	P. HISPIDA	C. VERTEBR		ADU	
36	P. HISPIDA	RIB	L	ADU	10TH
183	P. HISPIDA	ULNA	R		

Table 3. Faunal remains from JcDe-1-3C-1. (continued)

Catalogue no.	Taxon	Element	Side	Age	Remarks
38	P. HISPIDA	RIB	L	ADU	9TH
71	P. HISPIDA	T. VERTEBR		ADU	
48	P. HISPIDA	RIB	L		
72	P. HISPIDA	T. VERTEBR		ADU	
218	P. HISPIDA	TIBIA	R		
78	P. HISPIDA	T. VERTEBR		ADU	
345	P. HISPIDA	CERV. VERT		ADU	
75	P. HISPIDA	T. VERTEBR		ADU	
77	P. HISPIDA	T. VERTEBR		ADU	
228	P. HISPIDA	RADIUS	R	ADU	
51	P. HISPIDA	RIB	R	ADU	
14	P. HISPIDA	MANDIBLE	L	IM+	
230	P. HISPIDA	HUMERUS	R	ADU	
45	P. HISPIDA	RIB	L	ADU	
180	P. HISPIDA	MANDIBLE	R		
76	P. HISPIDA	T. VERTEBR		ADU	
73	P. HISPIDA	T. VERTEBR		ADU	
178	P. HISPIDA	TIBIA	L		
74	P. HISPIDA	T. VERTEBR		ADU	
117	P.HISPIDA	HUMERUS	R	IM+	
9	PHOCA VITULINA	MANDIBLE	R	IM+	
10	PHOCA VITULINA	MANDIBLE	L	IM+	
173	PHOCIDAE SP.	FIBULA	L		
174	PHOCIDAE SP.	FIBULA	R		
175	PHOCIDAE SP.	FIBULA	R	IMM	CUT MARKS
176	PHOCIDAE SP.	FIBULA	R		
177	PHOCIDAE SP.	FIBULA	L		
169	PHOCIDAE SP.	HUMERUS	L	IMM	
168	PHOCIDAE SP.	HUMERUS	L		
167	PHOCIDAE SP.	HUMERUS	R		
165	PHOCIDAE SP.	ULNA	L		
157	PHOCIDAE SP.	TIBIA	R		
161	PHOCIDAE SP.	FIBULA	L		
184	PHOCIDAE SP.	RADIUS	L		
160	PHOCIDAE SP.	FIBULA	L		
162	PHOCIDAE SP.	FIBULA	R		
151	PHOCIDAE SP.	PATELLA	L		
85	PHOCIDAE SP.	INNOMINATE	L	ADU	
149	PHOCIDAE SP.	ULNA	L	IMM	
190	PHOCIDAE SP.	TALUS	L		
86	PHOCIDAE SP.	INNOMINATE	R	IM+	
192	PHOCIDAE SP.	TARSAL	R		CENTRALI
60	PHOCIDAE SP.	RIB	L		
193	PHOCIDAE SP.	MAXILLA	R		
204	PHOCIDAE SP.	METATARSAL	R	ADU	
87	PHOCIDAE SP.	INNOMINATE	L		
205	PHOCIDAE SP.	METATARSAL	R		5TH
144	PHOCIDAE SP.	RADIUS	L	ADU	
206	PHOCIDAE SP.	FEMUR	L	IMM	
199	PHOCIDAE SP.	PHALANX	R	ADU	

Table 3. Faunal remains from JcDe-1-3C-1. (continued)

Catalogue no.	Taxon	Element	Side	Age	Remarks
207	PHOCIDAE SP.	RIB	L		3RD
201	PHOCIDAE SP.	PHALANX		ADU	
59	PHOCIDAE SP.	RIB			
111	PHOCIDAE SP.	FEMUR	L	ADU	
198	PHOCIDAE SP.	PHALANX	L	ADU	
61	PHOCIDAE SP.	RIB			
202	PHOCIDAE SP.	PHALANX		ADU	
196	PHOCIDAE SP.	PHALANX			
58	PHOCIDAE SP.	RIB			
57	PHOCIDAE SP.	RIB			
56	PHOCIDAE SP.	RIB			
55	PHOCIDAE SP.	RIB	L		
54	PHOCIDAE SP.	RIB			
170	PHOCIDAE SP.	TIBIA	R		
235	PHOCIDAE SP.	HUMERUS	R	IMM	
236	PHOCIDAE SP.	HUMERUS	L		
216	PHOCIDAE SP.	MAXILLA	R		
108	PHOCIDAE SP.	FEMUR	R	ADU	
140	PHOCIDAE SP.	TALUS	L		
238	PHOCIDAE SP.	FEMUR	R	IMM	
138	PHOCIDAE SP.	METATARSAL	L	ADU	4TH
239	PHOCIDAE SP.	FEMUR	R	IMM	
136	PHOCIDAE SP.	TARSAL	L	ADU	3RD
240	PHOCIDAE SP.	FEMUR	L	IMM	
92	PHOCIDAE SP.	INNOMINATE	R		
241	PHOCIDAE SP.	RIB	R		
94	PHOCIDAE SP.	INNOMIMATE	R		
242	PHOCIDAE SP.	RIB	R		
130	PHOCIDAE SP.	METATARSAL	R	ADU	
243	PHOCIDAE SP.	RIB	R		
127	PHOCIDAE SP.	METATARSAL	L	ADU	4TH
244	PHOCIDAE SP.	RIB	R		
124	PHOCIDAE SP.	TALUS	R	IMM	
245	PHOCIDAE SP.	ULNA	L		
33	PHOCIDAE SP.	PARIETAL	R		INCL AUD BUL
31	PHOCIDAE SP.	PREMAXILLA	L		
217	PHOCIDAE SP.	TIBIA	R		
109	PHOCIDAE SP.	FEMUR	R	IM+	
137	PHOCIDAE SP.	METATARSAL	L	ADU	5TH
248	PHOCIDAE SP.	FRONTAL			
93	PHOCIDAE SP.	INNOMINATE	L		
249	PHOCIDAE SP.	MAXILLA	R		
129	PHOCIDAE SP.	METATARSAL	L	ADU	1ST
250	PHOCIDAE SP.	FRONTAL	L		
97	PHOCIDAE SP.	INNOMINATE	L		
30	PHOCIDAE SP.	PREMAXILLA	R	ADU	
90	PHOCIDAE SP.	INNOMINATE	L		
131	PHOCIDAE SP.	METATARSAL	L	ADU	1ST
95	PHOCIDAE SP.	INNOMINATE	R		
215	PHOCIDAE SP.	MAXILLA	R		

Table 3. Faunal remains from JcDe-1-3C-1. (continued)

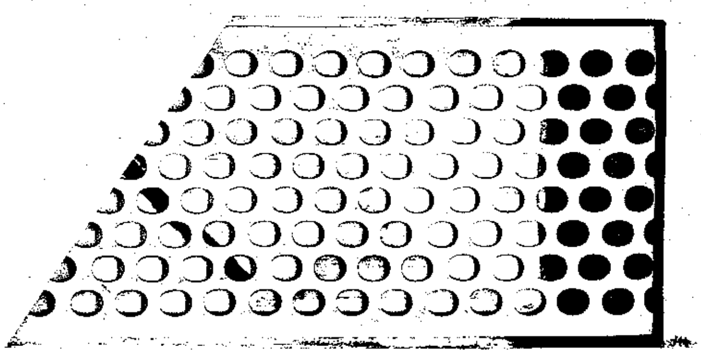
Catalogue no.	Taxon	Element	Side	Age	Remarks
135	PHOCIDAE SP.	PHALANX	R		
252	PHOCIDAE SP.	TALUS	L		
28	PHOCIDAE SP.	SKULL			FRAG
16	PHOCIDAE SP.	SKULL		ADU	CRANIUM PRTL
118	PHOCIDAE SP.	HUMERUS	L	IMM	
115	PHOCIDAE SP.	HUMERUS	L	IMM	
89	PHOCIDAE SP.	INNOMINATE	R		
185	PHOCIDAE SP.	RADIUS	R	IMM	
110	PHOCIDAE SP.	FEMUR	L	IM+	
260	PHOCIDAE SP.	RADIUS	R	IMM	
261	PHOCIDAE SP.	METACARPAL	R		1ST
262	PHOCIDAE SP.	PHALANX			
263	PHOCIDAE SP.	PHALANX			
264	PHOCIDAE SP.	METATARSAL	R		2ND
62	PHOCIDAE SP.	RIB			
271	PHOCIDAE SP.	METATARSAL	R		1ST
272	PHOCIDAE SP.	METATARSAL	L		3RD
267	PHOCIDAE SP.	METATARSAL	L		4TH
269	PHOCIDAE SP.	METATARSAL	R		5TH
6	PHOCIDAE SP.	MANDIBLE	L	ADU	
266	PHOCIDAE SP.	PHALANX			
268	PHOCIDAE SP.	PHALANX	L		
273	PHOCIDAE SP.	METATARSAL	R		1ST
274	PHOCIDAE SP.	PHALANX			
275	PHOCIDAE SP.	PHALANX			
276	PHOCIDAE SP.	HUMERUS	L	IMM	
277	PHOCIDAE SP.	HUMERUS	L	IMM	
139	PHOCIDAE SP.	METATARSAL	L	ADU	4TH
200	PHOCIDAE SP.	PHALANX	L	ADU	
340	PHOCIDAE SP.	T. VERTEBR			
392	PHOCIDAE SP.	FEMUR	R	IMM	
336	PHOCIDAE SP.	T. VERTEBR		IMM	
282	PHOCIDAE SP.	ULNA	R	IMM	
337	PHOCIDAE SP.	T. VERTEBR		IMM	15TH
284	PHOCIDAE SP.	HUMERUS	R	ADU	
338	PHOCIDAE SP.	LUMB. VERT		IMM	
286	PHOCIDAE SP.	HUMERUS	L	ADU	
339	PHOCIDAE SP.	T. VERTEBR		IMM	
288	PHOCIDAE SP.	HUMERUS	L		
281	PHOCIDAE SP.	ULNA	L	IMM	
291	PHOCIDAE SP.	RIB	R		
390	PHOCIDAE SP.	FEMUR	R	IMM	DIST EPI
341	PHOCIDAE SP.	T. VERTEBR		IMM	
292	PHOCIDAE SP.	RIB	R		
387	PHOCIDAE SP.	INNOMINATE	R		
294	PHOCIDAE SP.	RIB	L		
296	PHOCIDAE SP.	RIB	L		
342	PHOCIDAE SP.	T. VERTEBR		IMM	
298	PHOCIDAE SP.	RIB	R		
343	PHOCIDAE SP.	T. VERTEBR			

Table 3. Faunal remains from JcDe-1-3C-1. (continued)

Catalogue no.	Taxon	Element	Side	Age	Remarks
300	PHOCIDAE SP.	RIB	L		
344	PHOCIDAE SP.	T. VERTEBR		IMM	
397	PHOCIDAE SP.	HUMERUS	L		
289	PHOCIDAE SP.	HUMERUS	R		
295	PHOCIDAE SP.	RIB	R		
396	PHOCIDAE SP.	ZYGOMATIC	L		
297	PHOCIDAE SP.	RIB	L		
307	PHOCIDAE SP.	RIB	L		
299	PHOCIDAE SP.	RIB	L		
393	PHOCIDAE SP.	FEMUR	L		
310	PHOCIDAE SP.	LUMB. VERT		IMM	
311	PHOCIDAE SP.	LUMB. VERT		IMM	
301	PHOCIDAE SP.	RIB	R		
313	PHOCIDAE SP.	LUMB. VERT		ADU	
386	PHOCIDAE SP.	TIBIA	R		
315	PHOCIDAE SP.	LUMB. VERT		IMM	
304	PHOCIDAE SP.	RIB	R		
317	PHOCIDAE SP.	T. VERTEBR		ADU	
318	PHOCIDAE SP.	T. VERTEBR		ADU	
372	PHOCIDAE SP.	AUD. BULLA	R		
319	PHOCIDAE SP.	T. VERTEBR		ADU	
321	PHOCIDAE SP.	CERV. VERT		IMM	
391	PHOCIDAE SP.	HUMERUS	L	IMM	DIST EPI
323	PHOCIDAE SP.	CERV. VERT		IMM	
348	PHOCIDAE SP.	LUMB. VERT		IMM	
325	PHOCIDAE SP.	T. VERTEBR		ADU	
349	PHOCIDAE SP.	T. VERTEBR		IMM	
327	PHOCIDAE SP.	T. VERTEBR		ADU	
350	PHOCIDAE SP.	CERV. VERT		ADU	6TH
329	PHOCIDAE SP.	T. VERTEBR		ADU	
351	PHOCIDAE SP.	LUMB. VERT		IMM	
331	PHOCIDAE SP.	T. VERTEBR		ADU	
352	PHOCIDAE SP.	LUMB. VERT		IMM	
333	PHOCIDAE SP.	ATLAS VERT		ADU	
353	PHOCIDAE SP.	CERV. VERT		ADU	7TH
400	PHOCIDAE SP.	T. VERTEBR			
354	PHOCIDAE SP.	CERV. VERT		ADU	6TH
285	PHOCIDAE SP.	HUMERUS	L	ADU	
355	PHOCIDAE SP.	T. VERTEBR		IMM	
376	PHOCIDAE SP.	TARSAL	L		4TH
356	PHOCIDAE SP.	T. VERTEBR		ADU	
374	PHOCIDAE SP.	AUD. BULLA	L		
357	PHOCIDAE SP.	T. VERTEBR			
314	PHOCIDAE SP.	LUMB. VERT		IMM	
358	PHOCIDAE SP.	T. VERTEBR			
320	PHOCIDAE SP.	CERV. VERT		IMM	
359	PHOCIDAE SP.	CERV. VERT		ADU	
324	PHOCIDAE SP.	CERV. VERT		IMM	
360	PHOCIDAE SP.	CERV. VERT		ADU	
328	PHOCIDAE SP.	T. VERTEBR		ADU	

aunal remains from JcDe-1-3C-1. (concluded)

	Taxon	Element	Side	Age	Remarks
361	PHOCIDAE SP.	RIB			
332	PHOCIDAE SP.	T. VERTEBR	R		
362	PHOCIDAE SP.	RIB			
283	PHOCIDAE SP.	ULNA			
363	PHOCIDAE SP.	HUMERUS	L	ADU	
395	PHOCIDAE SP.	ZYGOMATIC	L	ADU	
364	PHOCIDAE SP.	RIB	R		
316	PHOCIDAE SP.	T. VERTEBR	R		
365	PHOCIDAE SP.	AUD. BULLA	R	IMM	
326	PHOCIDAE SP.	T. VERTEBR	R	IMM	
366	PHOCIDAE SP.	AUD. BULLA	L	ADU	
334	PHOCIDAE SP.	ATLAS VERT			
312	PHOCIDAE SP.	LUMB. VERT		ADU	
322	PHOCIDAE SP.	CERV. VERT		IMM	
330	PHOCIDAE SP.	T. VERTEBR		IMM	
287	PHOCIDAE SP.	HUMERUS	R	ADU	
367	PHOCIDAE SP.	AUD. BULLA	L	ADU	
368	PHOCIDAE SP.	AUD. BULLA	L		
369	PHOCIDAE SP.	AUD. BULLA	R		
370	PHOCIDAE SP.	AUD. BULLA	L		
371	RANGIFER TARANDUS	FRONTAL			
104	RANGIFER TARANDUS	FEMUR			
373	RANGIFER TARANDUS	T. VERTEBR	L	IMM	
06	RANGIFER TARANDUS	METAPODIAL	L	IMM	DIST EPI
	RANGIFER TARANDUS	T. VERTEBR			
	RANGIFER TARANDUS	ASTRALAGUS	L	ADU	
	RANGIFER TARANDUS	AXIS VERT.			
	RANGIFER TARANDUS	T. VERTEBR.			
	RANGIFER TARANDUS	HUMERUS			
	RANGIFER TARANDUS	RIB			
	RANGIFER TARANDUS	HUMERUS	L		
	RANGIFER TARANDUS	INNOMINATE	L	ADU	
	RANGIFER TARANDUS	INNOMINATE	R	ADU	
	RANGIFER TARANDUS	INNOMINATE	R	ADU	
	RANGIFER TARANDUS	ATLAS VERT	L	ADU	
	RANGIFER TARANDUS	FEMUR		ADU	
	RANGIFER TARANDUS	HUMERUS	L	IMM	
	RANGIFER TARANDUS	INNOMINATE	R	ADU	
	RANGIFER TARANDUS	INNOMINATE	L	IMM	ACETABULUM
	RANGIFER TARANDUS	SCAPULA	L		
	RANGIFER TARANDUS	HUMERUS	R	IMM	
	RANGIFER TARANDUS	FEMUR	L		
	RANGIFER TARANDUS	RADIOULNA	R		
	RANGIFER TARANDUS	ULNA	R		
	RANGIFER TARANDUS	CERV. VERT	L	IM+	
	RANGIFER TARANDUS	PATELLA	L	ADU	
	RANGIFER TARANDUS	RADIUS	L	IM+	
4			L		
			L	ADU	
			L	ADU	



20 October 1989.

DENTAL FORMULAE OF ARCHAEOLOGICALLY SIGNIFICANT MAMMALS IN ONTARIO

ORDER LAGOMORPHA

Family Leporidae (Hares and Rabbits) : $\frac{2}{1}\ \frac{0}{0}\ \frac{3}{2}\ \frac{3}{3} = 28.$

Sylvilagus floridanus (Eastern Cottontail)

Lepus americanus (Snowshoe Rabbit)

ORDER RODENTIA

Family Sciuridae (Squirrels, Chipmunks, Woodchucks, etc.)

Tamias striatus (Eastern Chipmunk) : $\frac{1}{1}\ \frac{0}{0}\ \frac{1}{1}\ \frac{3}{3} = 20.$

Marmota monax (Woodchuck) : $\frac{1}{1}\ \frac{0}{0}\ \frac{2}{1}\ \frac{3}{3} = 22.$

and Sciurus carolinensis (Gray Squirrel)

Tamiasciurus hudsonicus (Red Squirrel) : $\frac{1}{1}\ \frac{0}{0}\ \frac{1-2}{1}\ \frac{3}{3} = 20\text{-}22.$

Family Castoridae (Beaver) : $\frac{1}{1}\ \frac{0}{0}\ \frac{1}{1}\ \frac{3}{3} = 20.$

Castor canadensis (Beaver)

Family Cricetidae (Mice, Muskrats, etc.) : $\frac{1}{1}\ \frac{0}{0}\ \frac{0}{0}\ \frac{3}{3} = 16.$

Ondatra zibethicus (Muskrat)

Family Erethizontidae (Porcupines) : $\frac{1}{1}\ \frac{0}{0}\ \frac{1}{1}\ \frac{3}{3} = 20.$

Erethizon dorsatum (Porcupine)

ORDER CETACEA

Family Monodontidae (White Whales and Narwhals)

Delphinapterus leucas (White Whale) : $\frac{8\text{-}10}{8\text{-}10} = 16\text{-}20.$

Family Balaenidae (Right and Bowhead Whales) : $\frac{\text{----}}{\text{----}} = \text{----}.$

Balaena mysticetus (Bowhead Whale)

ORDER CARNIVORA

Family Canidae (Wolves, Dogs and Foxes) : $\frac{3}{3}\ \frac{1}{1}\ \frac{4}{4}\ \frac{2}{3} = 42.$

Canis lupus (Gray Wolf)

Canis familiaris (Domestic Dog)

Alopex lagopus (Arctic Fox)

Vulpes vulpes (Red Fox)

Urocyon cinereoargenteus (Gray Fox)

DENTAL FORMULAE OF ARCHAEOLOGICALLY SIGNIFICANT MAMMALS IN ONTARIO

ORDER CARNIVORA (Cont'd)

Family Ursidae (Black Bears, Polar Bears, etc.) : $\frac{3}{3}\ \frac{1}{1}\ \frac{4}{4}\ \frac{2}{3} = 42.$

Ursus americanus (Black Bear)

Thalarctos maritimus (Polar Bear)

Family Procyonidae (Raccoons, Coatis, etc.) : $\frac{3}{3}\ \frac{1}{1}\ \frac{4}{4}\ \frac{2}{2} = 40.$

Procyon lotor (Raccoon)

Family Mustelidae (Martens, Weasels, Otters, etc.)

Martes americana (Marten) : $\frac{3}{3}\ \frac{1}{1}\ \frac{4}{4}\ \frac{1}{2} = 38.$

Martes pennanti (Fisher) : As above.

Mustela erminea (Ermine) " $\frac{3}{3}\ \frac{1}{1}\ \frac{3}{3}\ \frac{1}{2} = 34.$

Mustela frenata (Long-tailed Weasel) : As above.

Mustela vison (Mink) " As above.

Gulo luscus (Wolverine) : $\frac{3}{3}\ \frac{1}{1}\ \frac{4}{4}\ \frac{1}{2} = 38.$

Mephitis mephitis (Striped Skunk) : $\frac{3}{3}\ \frac{1}{1}\ \frac{3}{3}\ \frac{1}{2} = 34.$

Lontra canadensis (River Otter) : $\frac{3}{3}\ \frac{1}{1}\ \frac{4}{3}\ \frac{1}{2} = 36.$

Family Felidae (Cats, Lynx, etc.)

Felis catus (Domestic Cat) : $\frac{3}{3}\ \frac{1}{1}\ \frac{3}{2}\ \frac{1}{1} = 30.$

Lynx canadensis (Canada Lynx) : $\frac{3}{3}\ \frac{1}{1}\ \frac{2}{2}\ \frac{1}{1} = 28.$

Lynx rufus (Bobcat) As above.

ORDER PINNIPEDIA

Family Odobenidae (Walrus)

Odobenus rosmarus (Walrus) : $\frac{1}{0}\ \frac{1}{1}\ \frac{3}{3}\ \frac{0}{0} = 18.$

Family Phocidae (Earless Seals) : $\frac{3}{2}\ \frac{1}{1}\ \frac{4}{4}\ \frac{1}{1} = 34.$

Phoca hispida (Ringed Seal)

Phoca groenlandica (Harp Seal)

Erignathus barbatus (Bearded Seal)

DENTAL FORMULAE OF ARCHAEOLOGICALLY SIGNIFICANT MAMMALS IN ONTARIO

ORDER PERISSODACTYLA

Family Equidae (Horses, Donkeys, etc.) : $\frac{3}{3}\ \frac{1}{1}\ \frac{4}{4}\ \frac{3}{3} = 42.$

Equus caballus (Domestic Horse)

ORDER ARTIODACTYLA

Family Suidae (Pigs, etc.) : $\frac{3}{3}\ \frac{1}{1}\ \frac{4}{4}\ \frac{3}{3} = 44.$

Sus scrofa (Domestic Pig)

Family Cervidae (Deer, Elk, Caribou, Moose)

Cervus canadensis (Elk or Wapiti) : $\frac{0}{3}\ \frac{1}{1}\ \frac{3}{3}\ \frac{3}{3} = 34.$

Rangifer tarandus (Caribou) : As above.

Odocoileus virginianus (White-tailed Deer) : $\frac{0}{3}\ \frac{0}{1}\ \frac{3}{3}\ \frac{3}{3} = 32.$

Alces alces (Moose) : As above.

Family Bovidae (Bison, Oxen, Sheep, Goats) : $\frac{0}{3}\ \frac{0}{1}\ \frac{3}{3}\ \frac{3}{3} = 32.$

Bison bison (Bison)

Bos taurus (Domestic Cow)

Ovibos moschatus (Muskox)

Ovis aries (Domestic Sheep)

Capra hircus (Domestic Goat).

SUMMARY OF TOOTH DEVELOPMENT AND REPLACEMENT IN DEER, COW AND DOG

	WHITE-TAILED DEER (Severinghaus, 1949)	DOMESTIC COW (Sisson & Grossman, 1953)	DOMESTIC DOG (Sisson & Grossman, 1953)
Deciduous			
Incisors fully erupted	10 days - 2 weeks	Birth - 2 weeks	4 - 5 weeks
Canine fully erupted	10 days - 2 weeks	Birth - 2 weeks	3 - 4 weeks
2nd, 3rd & 4th premolars fully erupted	By 10th week	Birth - a a few days	3 - 4 weeks
Permanent			
1st incisor fully erupted	10th - 11th month	1½ - 2 years	4 - 5 months
2nd incisor " "	10th - 11th month	2 - 2½ years	4 - 5 months
3rd incisor " "	10th - 11th month	3 years	4 - 5 months
Canine " "	10th - 11th month	3½ - 4 years	4 - 5 months
1st premolar			5 - 6 months
2nd premolar fully erupted	18th - 19th month	2 - 2½ years	5 - 6 months
3rd premolar " "	18th - 19th month	1½ - 2½ years	5 - 6 months
4th premolar " "	18th - 19th month	2½ - 3 years	5 - 6 months
1st molar fully erupted	7th month	5 - 6 months	4 month
2nd molar " "	12th - 13th month	1 - 1½ years	Upper 5 - 6 months Lower 4½ - 5 months
3rd molar " "	19th - 21st month	2 - 2½ years	6 - 7 months.

H. G. S.