

NOTES ON THE MAMMALS OF THE MACKENZIE DISTRICT, NORTHWEST TERRITORIES

A. W. F. Banfield*

ALTHOUGH there are several accounts of the mammals of the Mackenzie District, notably those of Preble (1908), Porsild (1945), and Clarke (1940), such literature is still sufficiently scarce for the following notes on the distribution of mammals to be worth recording. The observations were made in the course of other field investigations undertaken in the Northwest Territories since 1946 for the Canadian Wildlife Service.

A preliminary investigation of the muskrat resources of the Mackenzie delta was carried out between 15 July and 17 August 1946. At this time brief observations were made at the airfields in the Mackenzie valley. In the delta, camps were established at Aklavik, the Reindeer Station, and Richards Island. Small mammal traps were set at the Reindeer Station.

In 1948 and 1949 extensive field work was undertaken in connection with the barren ground caribou investigation (Banfield, 1950), and much information was obtained from numerous low level flights over the eastern part of the Mackenzie District. Throughout the summer field trips I was assisted by Mr. A. L. Wilk.

Intensive studies and small mammal trapping was carried out at the following stations for the periods listed:

- Clinton-Colden Lake, 6 July-3 September 1948;
- Muskox Lake, 19-23 July 1948;
- Yellowknife, 21 April-2 May 1949;
- Fort Smith, 18-25 June 1949;
- Fort Reliance, 25 June-11 July 1949;
- Bathurst Inlet, 12 July-1 August 1949;
- Contwoyto Lake, 1-20 August 1949.

During the summer of 1948 two canoe trips were made from Clinton-Colden Lake, one on the Back River and the other on the Hanbury River.

The following annotated list is based on a collection of 80 mammal specimens of 19 species and on observations. The Mackenzie delta specimens were donated to the National Museum of Canada, the remainder are in my private collection. The nomenclature is that of Anderson's 'Catalogue of Canadian recent mammals' (1946), except in the following cases where I have followed the authors indicated:

- Ursus americanus* (Hall, 1928);
- Phenacomys intermedius mackenzii* (Crowe, 1943);
- Clethrionomys rutilus dawsoni* (Rausch, 1950);
- Microtus oeconomus macfarlani* (Rausch, 1950);
- Alces americana andersoni* (Peterson, 1950).

Where the precise determination of specimens is impossible because of the

*Canadian Wildlife Service.

lack of adequate material the scientific identification has been presented in as detailed form as is thought justifiable.

The Mackenzie District contains two major biotic formations in which mammals occur: the tundra and the taiga or boreal forest biomes. These observations deal with the fauna of both formations. The smaller mammals are generally restricted to one formation although there may be some marginal overlapping. Many of the larger mammals, although showing a distributional preference for one formation, are often found in both.

Sorex cinereus ugyunak Anderson and Rand. Arctic Long-Tailed Shrew.

This shrew seems to have a widespread though localized distribution on the tundra. Four specimens were secured during August 1946 from traps set in a ravine in a dense growth of willows, alders, and birch in the Caribou Hills behind the Reindeer Station. Mr. M. Murphy of Muskox Lake gave me four mummified carcasses of shrews on 20 July 1948, which he had found during the spring cleaning of his sod cabin. Three had the dark dorsal band and grey flanks which fit well the original description of the subspecies. The fourth had a more buffy pelage which possibly indicated a seasonal difference. The skulls were typical of the species.

Ursus sp. Barren Ground Grizzly Bear.

A dark-coated grizzly bear was seen from the air on a tundra lake about fifty miles west of Contwoyto Lake on 4 May 1948. At Contwoyto Lake two grizzly hides were secured from the Eskimo. Both hides were generally buff coloured with reddish fur on the limbs. Mr. Frank Knox of Fort Reliance reported that two grizzlies had been troublesome about his meat caches at Ptarmigan Lake during the fall of 1948.

Ursus americanus Pallas. Black Bear.

Bear tracks and claw marks were noted near Fort Reliance. Part of a skull was found at the Indian campsite at the mouth of the Lockhart River.

Vulpes fulva alascensis Merriam. Alaska Red Fox.

Native and white trappers interviewed reported that the red fox had increased in recent years on the tundra. It was reported at Bathurst Inlet and Muskox Lake. A cross fox was observed at Contwoyto Lake on 16 August 1949.

Alopex lagopus innuitus (Merriam). Continental Arctic Fox.

Eleven skulls of this fox were secured from an Eskimo winter camp at Contwoyto Lake. Fox tracks were noted along the upper Back River and along the upper Hanbury River. On 25 August 1948 a fox den was discovered in a rocky talus at Clinton-Colden Lake. Attention was drawn to the spot by the yapping of the two whelps. They were clove-brown dorsally and the colour extended in strips down the legs. The under parts were creamy-yellow, and this colour extended on to the flanks. During the following days the



String of caribou crossing Ghost Lake during the spring migration.



Aerial view of a wolf in pursuit of migrating caribou at Ghost Lake.

antics of the whelps, which were remarkably fearless, were photographed at close range. The adults were never seen, although they visited our camp regularly at night and stole our meat and drying specimens.

Canis lupus ssp. Wolf.

During our field trips on the tundra in summer, wolves or their tracks were seen at all stations. The population was not evenly distributed. On extensive flights it was noted that large areas of the northern coastal tundra seemed to be nearly devoid of wolves while the tundra in the vicinity of the treeline appeared to support a large population. Eskers were favourite locations for den sites. A freshly abandoned den was found on an esker at Sussex Lake on 15 July 1948 with nearby the skeleton of a wolf which appeared to have been eaten by other wolves. The skull of another wolf was secured at Bathurst Inlet.

In the late summer individual wolves were observed following in the train of migrating caribou herds at Contwoyto Lake, Aylmer Lake, Clinton-Colden Lake, and the Hanbury River. In early spring packs of wolves were seen following and feeding on the migrating caribou herds in the coniferous forests of the Mackenzie basin, the upper Snare River, Artillery Lake, the upper Thelon River, and Sid Lake. Flights over the tundra at this time of year showed little sign of wolves or their tracks. It seems likely that many of the wolves of the Mackenzie District carry out seasonal migrations as extensive as those of the barren ground caribou themselves.

The wolves of the district show wide variations in colour. Grey is the predominant colour but black, cream coloured, and white wolves were seen.

Martes americana actuosa (Osgood). Alaska Marten.

A marten skull was picked up at a winter Eskimo campsite at Contwoyto Lake on 15 August 1949. The trapper's line extended about seventy-five miles west to the treeline east of the Coppermine River, where the marten was presumably taken.

Mustela erminea arctica (Merriam). Western Arctic Ermine.

Two groups of ermine were observed in rock piles: one at Contwoyto Lake and the other at Clinton-Colden Lake.

Gulo luscus luscus (Linnaeus). Wolverine.

A skin, which had been taken locally during the early months of 1949, was secured from an Eskimo trapper at Contwoyto Lake.

Citellus parryii parryii (Richardson). Parry's Ground Squirrel.

Colonies of these squirrels were found on eskers, gravel river banks, and rocky hillsides on the tundra. In these dry regions the ground does not freeze solid during the winter and burrowing is still possible. Two specimens were secured at the Reindeer Station, one at Contwoyto Lake, and one at

Sussex Lake. Ground squirrels were also observed at Bathurst Inlet, Perry River, Muskox Lake, Aylmer Lake, and the Hanbury River.

Eutamias minimus borealis (Allen). Northern Interior Chipmunk.

This diminutive squirrel is confined to the southern part of the Mackenzie basin. Two specimens were collected at Fort Smith; others were observed at Hay River and Fort Simpson. None was seen at Yellowknife or Fort Reliance.

Tamiasciurus hudsonicus preblei Howell. Mackenzie Red Squirrel.

Red squirrels are common throughout the whole forested region of the district even to the treeline. One was secured at Fort Reliance and one at Fort Smith. They were observed also at Yellowknife, Artillery Lake, Fort Simpson, Wrigley, Norman Wells, and Aklavik.

Castor canadensis canadensis Kuhl. Canada Beaver.

The beaver is fairly common in the Mackenzie delta, where lodges and animals were seen north of the Reindeer Station. On flights over the southern part of the Mackenzie District scattered lodges were observed in the Nonacho Lake and Snowdrift River areas.

Peromyscus maniculatus borealis Mearns. Mackenzie White-footed Mouse.

The white-footed mouse inhabits the taiga biome of the Mackenzie basin. Three specimens were secured at Fort Reliance.

Lemmus trimucronatus alascensis Merriam. Alaska Brown Lemming.

Lemmings were nowhere common during the seasons when these investigations were carried out. One Alaska Brown Lemming was secured on Richards Island at the mouth of the Mackenzie River in 1946.

Lemmus trimucronatus trimucronatus (Richardson). Brown Lemming.

Three brown lemmings were secured at Clinton-Colden Lake. This lemming was also observed at Bathurst Inlet, Aylmer Lake, and Contwoyto Lake.

Dicrostonyx groenlandicus kilangmiutak Anderson and Rand. Mackenzie Varying Lemming.

Varying lemmings show a seasonal change in habitat in this district. During the winter months they build tunnels and nests under the snow banks. In summer they move to well drained slopes on higher ground, inhabiting shallow systems of burrows among the boulders. In the fall they return to the lower areas and the protection of the snow banks, and at this time some seem to wander out on the newly formed ice. Two carcasses were seen on the thawing ice off shore from Bathurst Inlet. In May 1948 carcasses were noted about two hundred yards off shore from Churchill, Manitoba. During July 1948 colonies, which had probably been established by such fall wanderings, were seen on islets in Clinton-Colden and Aylmer lakes. Three specimens



Aerial view of a herd of caribou, Ghost Lake. From the aircraft it could be seen that the herd was surrounding a single wolf.

were taken at Contwoyto Lake and one at Bathurst Inlet and others were also observed at Perry River.

Phenacomys intermedius mackenzii (Preble). Mackenzie Phenacomys.

Three specimens of this rare vole were trapped on the forest edge at Fort Reliance.

Clethrionomys rutilus dawsoni (Merriam). Dawson's Red-backed Vole.

Three typically bright-coloured specimens of the red-backed vole were secured in the taiga habitat at Fort Reliance. This vole also seems to be widely distributed on the tundra. A series of ten specimens was secured at Clinton-Colden Lake during the summer of 1948. Others were identified at Bathurst Inlet, Contwoyto Lake, and MuskoX Lake. The Clinton-Colden series is much darker than the Fort Reliance specimens and the palatine bridge of the skull is also more widely interrupted. The tundra red-backed voles may represent an undescribed subspecies of the *rutilus* group and may be ecologically isolated from the taiga form.

Microtus pennsylvanicus drummondii (Audubon and Bachman). Drummond's Meadow Vole.

This vole is widely distributed in suitable meadow habitats in the taiga and seems to have spread to the tundra in the southern part of the Mackenzie

District. A single specimen was secured at each of the following places: Reindeer Station, Fort Reliance, and Clinton-Colden Lake.

Microtus oeconomus macfarlani Merriam. Macfarlane's Tundra Vole.

Three specimens of this large grey vole were secured from runways around the buildings at Bathurst Inlet.

Ondatra zibethica spatulata (Osgood). Northwestern Muskrat.

Throughout the taiga muskrats are widely distributed wherever shallow ponds and lakes contain suitable food. They are extremely common in the Mackenzie delta, where they occur beyond the treeline. Five were taken at Aklavik and one at the Reindeer Station, and they were observed at Fort Reliance and Fort Smith.

The Mackenzie delta muskrats were found to carry a prevalent liver infestation of coenuri of an unidentified tapeworm.

Erethizon dorsatum dorsatum (Linnaeus). Porcupine.

Corporal Ivan Ralston of the R.C.M.P., when in dire need, shot and ate a porcupine east of Lynx Lake in February 1949. The porcupine was taken in a small isolated group of spruce at the treeline.

Lepus arcticus andersoni Nelson. Barren Grounds Hare.

Arctic hares are widely distributed on the tundra but are only abundant locally. Two young hares were discovered in a rocky talus on the shore of Clinton-Colden Lake on 6 July 1948. They were also common and fearless about our camp there, and as many as five were feeding about the tent during the twilight hours of August.

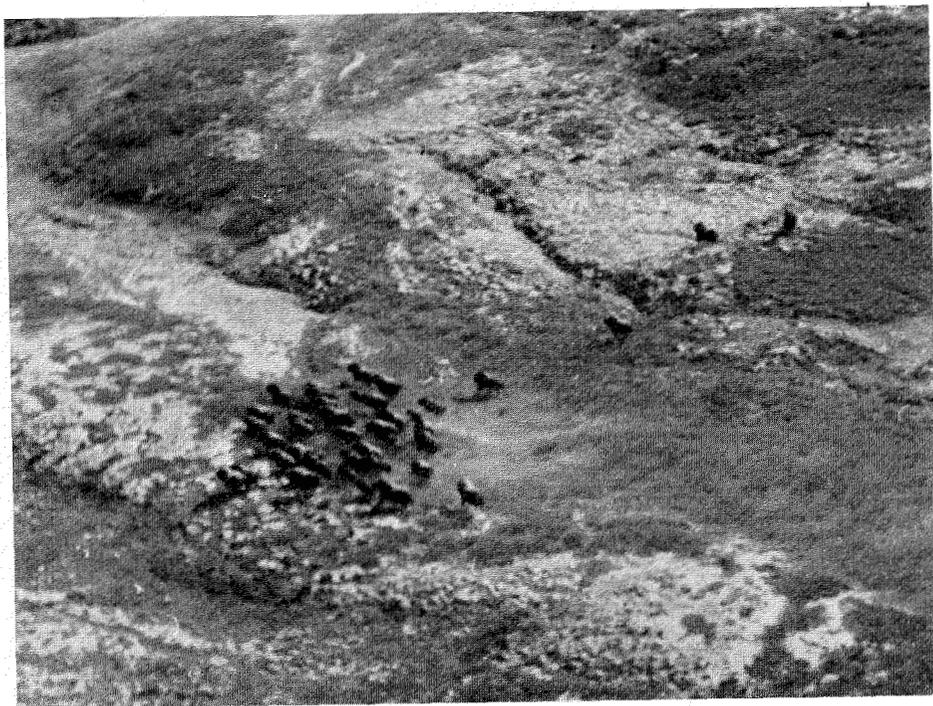
Lepus americanus macfarlani Merriam. Mackenzie Varying Hare.

At the time of my field trip in 1946 the varying hare population in the Mackenzie delta had just crashed from a peak during the preceding winter. In July hares were still very common in the delta region. The numerous faeces and extensive girdling of willows and alders indicated the great density of the winter population. Three carcasses were found. cursory examination failed to show any significant internal lesions, but one sick animal was examined which had a creamy exudate from the eyes matting the hair of the face.

Alces americana andersoni Peterson. Northwestern Moose.

Moose are widely distributed in suitable habitats in the taiga and they also occur on the tundra in the vicinity of the treeline. In regions where hunting is not heavy they may be locally abundant. During the present field investigations moose were seen in the Mackenzie delta, on the upper Yellowknife River, and on the Lockhart River. A moose skull was examined at the Indian camp at Fort Reliance.

Mr. Robert Smith of the U.S. Fish and Wildlife Service reported numerous moose seen from the air in 1949 between the head of the Eskimo Lakes and Liverpool Bay.



A herd of thirty-five muskoxen seen from the air at Arctic Sound.

Rangifer arcticus arcticus (Richardson). Barren Ground Caribou.

The barren ground caribou is a nomadic inhabitant of the tundra and the taiga of the eastern part of the Mackenzie District. Large herds generally spend the winter months in the forest about the great lakes of the Mackenzie basin. During the early summer these herds are usually dispersed on the tundra. Specimens, mostly skulls, were collected at Fort Reliance, Clinton-Colden Lake, Contwoyto Lake, Bathurst Inlet, and Sussex Lake. A special report on the barren ground caribou investigation will be published later.

Rangifer caribou sylvestris (Richardson). Western Woodland Caribou.

Mr. Robert Smith reported seeing a small group of caribou from the air on the northwest shore of Great Slave Lake in July 1949. As this was out of the range of the barren ground caribou they were assumed to be woodland caribou.

Bison bison Linnaeus. Bison.

Three bison were observed on the salt plains northwest of Fort Smith.

Ovibos moschatus moschatus (Zimmerman). Barren Grounds Muskox.

During the extensive reconnaissance flights over the tundra for the caribou investigation, every opportunity was taken to gather data on the distribution

of continental muskox. Muskoxen were observed at the following localities: upper Tree River (8); Arctic Sound (40); Hood River (1); west branch of the Burnside River (3); Contwoyto Lake (10); Aylmer Lake (17); Clinton-Colden Lake (1). Reliable reports of recent observations from the following localities were secured from northern pilots: Tree River mouth (15); Grays Bay (40); Galena Point (40); Bathurst Inlet (1); Thelon River (90); Consul River; Simpson Peninsula (50); Wharton Lake.

From these observations it is evident that a pocket of muskoxen, numbering between 100 and 200 animals, exists in the exceedingly rough country bordering Coronation Gulf between the Tree River and the Hood River. Other scattered bands, perhaps 50 individuals in all, inhabit the headwaters region of the Burnside River. Elsewhere, muskoxen seem to be maintaining themselves in and about the Thelon Sanctuary. The herd observed at Aylmer Lake consisted of 1 bull, 8 cows, 3 yearlings, and 5 calves, which indicated an excellent increase.

From information obtained on many flights it seems unlikely that muskoxen occur at present in the Kazan and upper Dubawnt river systems or in the terrain between Bathurst Inlet and Perry River. Nor have they been recently observed on the upper reaches of the Thelon or Back rivers.

Muskoxen appear to take part in local seasonal migrations. During the summer months herds were observed along the river valleys and lake shores browsing on the dwarf birch (*Betula glandulosa*). During the winter months they were seen in rough hilly country where the winter winds had blown the steep rocky slopes clear of snow. Aerial surveys of the Thelon valley in April and May failed to locate muskoxen or their tracks in areas where they were reported by Clarke (1940) as being common in summer.

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