

C.H.D. Clarke (1909-1981)

Although by the early 1900s the coastline of the mainland Northwest Territories and the major river systems of the barren-grounds had been explored and mapped, little was known about the flora and fauna of the region. John Richardson and Richard King, surgeon-naturalists with the Franklin and Back expeditions, had begun the immense task of describing the natural history of an area of over 1.3 million km², but their efforts were limited by their arduous travels. During the first three decades of the twentieth century work by R.M. Anderson, E.A. Preble and a few other scientists added to the biological knowledge of the Hudson Bay and Athabasca-Mackenzie regions. However, the central barren-grounds remained relatively unknown. No systematic efforts had been made to study caribou, muskoxen or fur-bearing mammals, even though these animals were important to the northern economy and some populations were threatened by increased commercial exploitation.

It was into this biological *terra incognita* that Charles Henry Douglas Clarke wandered. Clarke was born on 14 June 1909 in Kerwood, Ontario, the son of a Methodist minister. As he described it, an early interest in natural history led him to become "a bird watcher, and in time a hunter, and then also a collector, and the lines of least resistance made me a wildlife biologist." Undergraduate study in forestry at the University of Toronto led to graduate study in zoology and dissertation research on the population dynamics of ruffed grouse. After receiving a Ph.D. in zoology, Clarke was hired by R.M. Anderson, Curator of Mammals at the National Museum of Canada, to conduct a faunal survey on the north shore of Lake Superior. In 1936 Anderson again approached Clarke, this time with an offer to investigate muskoxen in the Thelon Game Sanctuary.

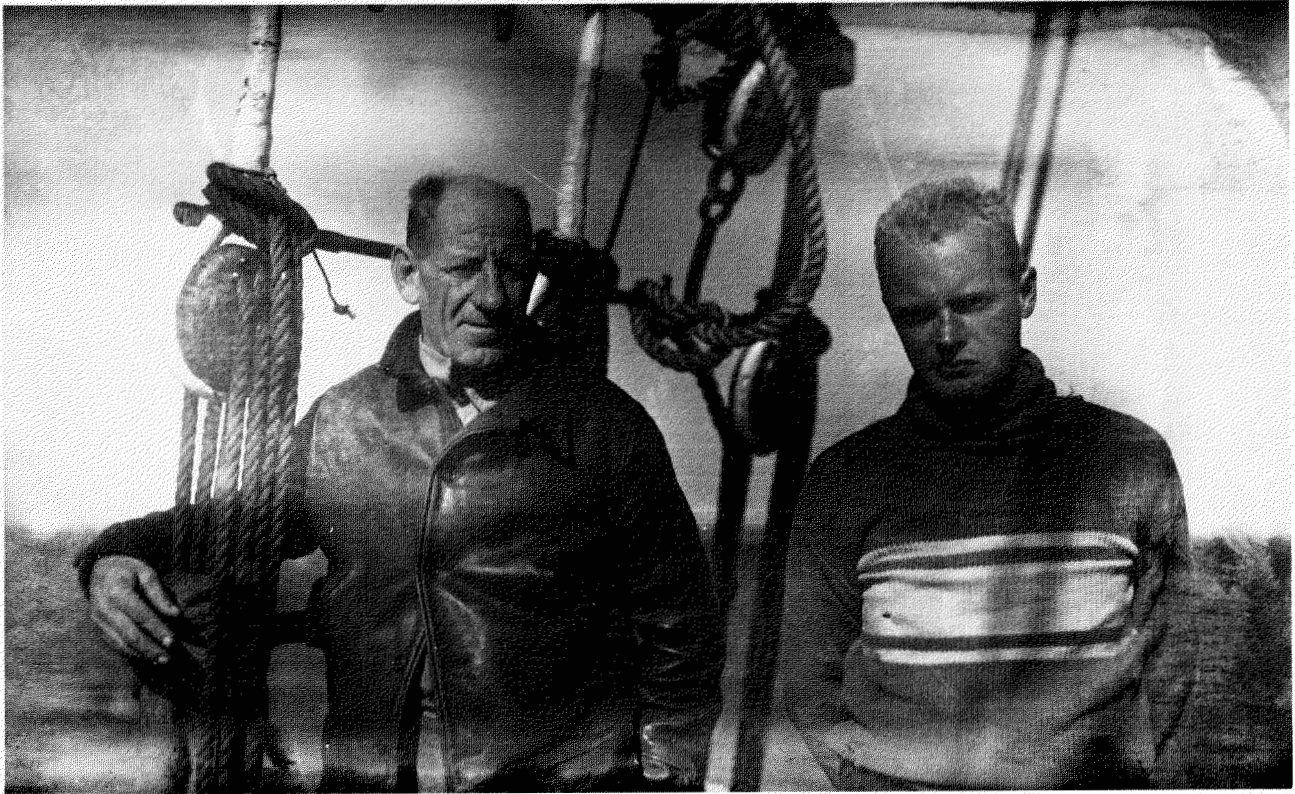
Although muskox populations in Canada were thought to be threatened by overhunting and the species had received federal protection in 1917, few data were available on its status and biology. In 1925 John Hornby and J.C. Critchell-Bullock saw muskoxen during a journey down the Hanbury and Thelon rivers. Their observations led in 1927 to the establishment of a sanctuary to protect what was hoped to be the largest remaining muskox population on the Canadian mainland. W.H.B. "Billy" Hoare and A.J. Knox were dispatched to the sanctuary in 1928 and 1929 and found that muskoxen were concentrated near the junction of the Hanbury and Thelon rivers, over 300 km by water from the nearest settlement, Reliance. Since neither of the men was a trained biologist, and the logistical difficulties of operating far from their supply base meant that they had relatively little time to spend on the Thelon, the need for additional investigations was obvious. The Northwest Territories Bureau requested help from the National Museum, and in 1936 Clarke and Hoare were assigned to the project.

Clarke and Hoare's first journey north followed a traditional route: west by rail to Edmonton and Ft. McMurray, then north by water on the Hudson's Bay Company vessel *Pelly Lake*. They left Ontario on 18 June and didn't arrive in Reliance until 10 July. The three weeks in transit represented valuable time lost from research, but the loss was compensated for by the opportunity to talk with barren-ground trappers Matt Murphy and Alan Stewart on the *Pelly Lake* and to socialize with other

trappers waiting to travel east from Fort Resolution. Clarke saw 1936 as "the last season when everyone came and went by boat. All the old-timers, it seemed, or at least many of them, were still alive." Clarke and Hoare remained in Reliance until 20 July, awaiting permission to fly with the Royal Canadian Air Force, which was assisting with mapping in the region. They then completed a quick aerial survey of the Thelon River area and worked two stations on the Back-Thelon divide before moving to Crystal Island on Artillery Lake. They had hoped to travel to Baker Lake, but the season was too advanced for much useful field work and they remained in the Artillery Lake area until the end of August before returning south via the long water route up the Slave and Athabasca rivers.

The 1937 field season was much more productive than in 1936. Clarke and Hoare flew north from Edmonton and were established near the head of the Hanbury River by 19 June. From there they traveled slowly toward Baker Lake, collecting specimens and making wildlife observations. On 3 July they encountered a huge post-calving aggregation of caribou moving north, which Clarke estimated to contain between 100 000 and 200 000 animals. In contrast to their observations in 1936, Clarke and Hoare saw large numbers of muskoxen along the Thelon and were early enough to gather information on breeding birds. After meeting a group of Kazan River Inuit on a wood-gathering trip and being wind-bound without food for five days, they arrived at the small trading post of Baker Lake on 20 August.

Clarke's results were presented in *A Biological Investigation of the Thelon Game Sanctuary*. Although the report had value as the first systematic and complete list of barren-ground vertebrates, it also provided important information on wildlife use by Inuit and northern Indians, the population cycles of fur-bearing mammals, and caribou and muskoxen. In the section on caribou, Clarke examined the contemporary lack of scientific knowledge about northern wildlife. Migration patterns, population dynamics, behavior and the impact of predation on caribou herds were poorly, if at all, understood. Population estimates ranged from E.T. Seton's 30 000 000 to R.M. Anderson's more reasonable figure of 2 500 000, while the chief factor in limiting caribou populations was said to be wolves. Clarke used his observations, the reports of others and his training in the fledgling science of wildlife biology to present an account of the species that clearly was as good as could have been expected. In many ways, Clarke's ideas were ahead of his time. He argued for increased study and protection of caribou, abandoning preconceived ideas about predators, favoring native interests over those of whites in decisions regarding wildlife and discarding ineffectual and misguided wolf control programs. Clarke was aware that increased resource development and hunting could threaten wildlife populations, and he suggested that the land should be protected for its wilderness value. In the conclusion he wrote, "We should always be careful that in our search for new resources we do not destroy what we already have. . . . If we can keep it [the North] a true wilderness, its spiritual value will remain, but if the wild herds are lost it will not be a wilderness, but a desert."



C.H.D. Clarke (right) and W.H.B. Hoare. Photograph taken in September 1937 at the conclusion of their trip down the Hanbury and Thelon rivers.

After completing the Thelon study, Clarke held a post in the Parks Wildlife Section in Ottawa. He returned to the North in 1942 to evaluate the reindeer industry in the Mackenzie Delta region and recommended increased native involvement in management of the project. During 1943 and 1944, while associated with the war-related North Pacific Planning Project, Clarke conducted a faunal survey along the Alaskan Highway and helped establish the Kluane Reserve in the southern Yukon. Although Clarke later undertook consulting work related to the proposed Mackenzie Valley pipeline, 1944 marked the end of his involvement with federal wildlife research in the North. That same year, he moved to the Department of Lands and Forests in Ontario, eventually becoming chief of the Division of Fish and Wildlife.

During a distinguished professional career he received many awards, including the Leopold Medal from the Wildlife Society, and was elected president of the Wildlife Society and Canadian Wildlife Federation and a governor of the Arctic Institute of North America. Clarke died in an ice-fishing accident in March 1981.

A pioneer in biological research in the North, C.H.D. Clarke lived to see the region transformed by social, political, economic and technological forces. He recognized his good fortune at having been active "when things were still fresh" and was reluctant to return to places he once knew, for fear that they would have been destroyed. Near the end of his life he wrote, "To me the Sanctuary will always be what it was in my time."

Nevertheless in 1970 he did return to Artillery Lake. It no

longer marked the western edge of the Thelon Game Sanctuary, since in 1956 the boundary had been shifted eastward at the behest of mining interests. Gyrfalcons had replaced peregrines in the cliffs above the lake, and white trappers were mostly gone from the area, replaced by increasing numbers of recreational canoeists. Air travel had compromised the isolation of the barrens, yet airplanes had also allowed biologists to work in remote regions, and major studies on wolves, caribou and muskoxen had provided increased data with which to make informed wildlife management decisions. Much to his pleasure, Clarke saw a grizzly bear where none had been in 1936 and found the land itself unspoiled. He knew that muskoxen still thrived along the Thelon and was encouraged that he could return to an area he once loved and still recognize its magic.

FURTHER READINGS

- CLARKE, C.H.D. 1940. A Biological Investigation of the Thelon Game Sanctuary. National Museum of Canada Bulletin No. 92.
 HOARE, W.H.B. 1930. Conserving Canada's Muskoxen. Ottawa: Department of the Interior.

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