

‘Reindeer Botanist’ and the Onset of Canadian Arctic Ecology (In memory of the 40th anniversary of A. E. Porsild’s passing)

Josef Svoboda*

Department of Biology, University of Toronto Mississauga, Ontario, Canada

Abstract

Alf Erling Porsild, a field naturalist by birth and life-long practice was a pioneer, greater than life Canadian Arctic eco-botanist. And that before the term ‘ecology’ became a household name among the Canadian field biologists.

DOI: 10.5817/CPR2017-2-23

Canada is the world’s second largest but a relatively young country. At the break of the 20th Century most of its population was spread along its southern border, leaving its vast northern territory still virtually uninhabited and for its sheer size also to a high degree unexplored.

Alf Erling Porsild (1901-1977) and his brother Robert grew up above the Arctic Circle in Godhavn, Greenland, where their father, Morten Pedersen Porsild, a botanist, was a Director of the Danish Permanent Research Station. He hired his sons to collect for him herbarium specimens and already during their teen years, they both became experts in Arctic plants (Fig. 1 - A, B, C).

The Canadian North-West was known for its abundant wildlife, mainly for its vast caribou population. In the spring its immense herds migrated from the forest-tundra boundary to the open tundra in the North, to return in the fall, seeking protection and forage back in the boreal forest.

In early 1920th, the government of Canada became driven by an objective to introduce a reindeer herd into the Canadian

northern mainland. Anatomically the reindeer and wild caribou (*Rangifer tarandus*) are almost undistinguishable and both ‘races’ can interbreed freely. The government’s enlightened idea was to offer the Canadian Northern native hunters the opportunity of becoming herdsman. This alternative life style would lead to their eventual settling in favorable places, thus phasing out their year-round nomadic life. The project was to follow the Scandinavian model, where successful reindeer management historically developed into a sustainable source of food for northern natives within a defined region.

Learning that such a herd of reindeer was available for purchase in the Central Western Alaska, the young, yet exceptionally qualified Porsild brothers were hired by the Canadian Government to ‘ground-truth’ the Alaska terrain by foot for potentially suitable grazing pathways. This was, primarily, for guiding a large herd of reindeer, to be soon purchased from established Alaskan herders, to new grazing grounds in Northern Yukon.

Received May 28, 2017, accepted September 20, 2017.

*Corresponding author: J. Svoboda <josef.svoboda@utoronto.ca>

After surveying the Alaska interior, while collecting thousands of herbarium specimens along their route, the Porsild brothers travelled with a dog sled along the Alaska northern coast to the Canadian Yukon Territory. Their terrain exploration for the reindeer passage took place in 1926-27 and earned Erling Porsild the nickname, "Reindeer Botanist".

As anticipated, 5,000 reindeer were purchased in Alaska in 1929, and their 'exodus' was guided by hired and experienced Scandinavian herders. However, the project had encountered unexpected complications, such as running onto groups of wild caribou and losing many reindeer escaping with them. The herd had wandered around for four years instead of the expected two, before it reached its destination. Mere 2,370 reindeer made it to Canada and were 'delivered' in the Canadian Interior Reindeer Station in Kittigazuit, NWT, a prepared gathering place of the Kitigaaryungmiut, in March 1935 (Porsild 1936).

For Erling Porsild, however, the reindeer saga was influential in furthering his botanical interests. Erling was an avid collector of new botanical specimens since a broadening of the species geographic distribution was of utmost interest in those times. His lifetime collection represents a comprehensive embodiment of some 30,000 Arctic plant specimens, mostly personally gathered and pressed during his northern travels. These were in many partial installments shipped by various ways and means from the most remote northern sites to the Herbarium of the National Museum of Canada in Ottawa, of which Porsild later became a decades-long Curator.

In Ottawa, the extensive material had been gradually identified, classified and published, mostly by Porsild himself in a great number of monographs. These became a 'must have' source for many future Arctic botanist and Northern bio-geographers, including the author of this article. However, two of Porsild's books have secured

an indefinite shelf-life: 1. *The Illustrated Flora of the Canadian Arctic Archipelago* (218 p., 1957 and subsequent editions), and 2. *Vascular plants of the Continental Northwest Territories, Canada*, co-authored with W. I. Cody (667 p., 1980). Both books, published by the National Museums of Canada, are equipped with the species' morphological and taxonomical characteristics, good illustrations and habitat descriptions. They also serve well as field manuals for Arctic plants identification, and their ecological or niche characteristics.

Porsild's botanical manuals have become a solid foundation of the Canadian northern plant ecologists. Their usefulness came to a full fruition during the years of the International Biological Program (IBP 1964-1974). This program zeroed the world research on Primary production of the world's largest biomes such as tropical rain forest, grasslands, boreal forest and tundra, as these huge ecosystems are fundamental and sustainable energy bases of the biosphere. It was a quantum leap from the classical herbarium botany to energy-driven ecosystem ecology and the related climate – vegetation issues in general. The Canadian Tundra Biome studies were one of the most comprehensive contributions to the IBP (Bliss 1977).

Porsild belongs to a small group of historical individuals who, without a formal academic education, advanced their discipline miles ahead of their time. As if predestined, he was born in the Arctic in a right time and a right place, to single-handedly accomplish a daunting task of describing the flora and their habitats of Northern Canada from coast to coast. Dismissing the absence of his formal education yet assessing the volume of his scientific work, the University of Copenhagen granted Alf Erling Porsild, a Danish-Canadian botanist, his PhD diploma in 1955. In Canada Dr. Porsild received the Massey Medal from the Royal Geographical Society in 1966. Fortunately and not too soon, his amazing and

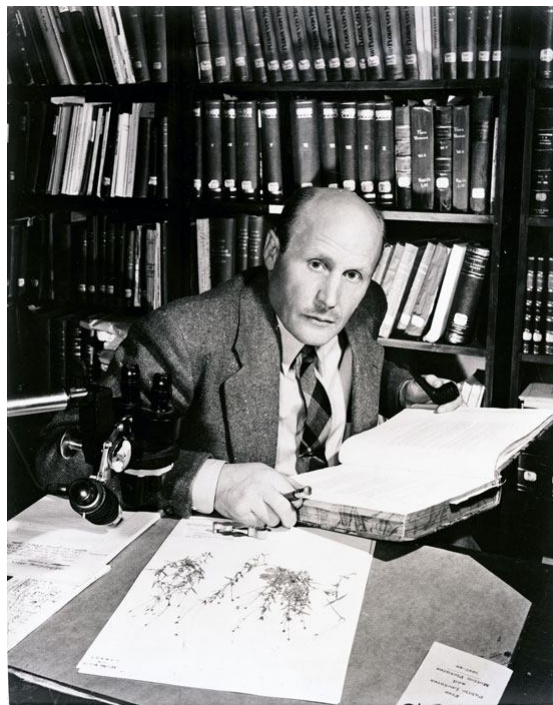
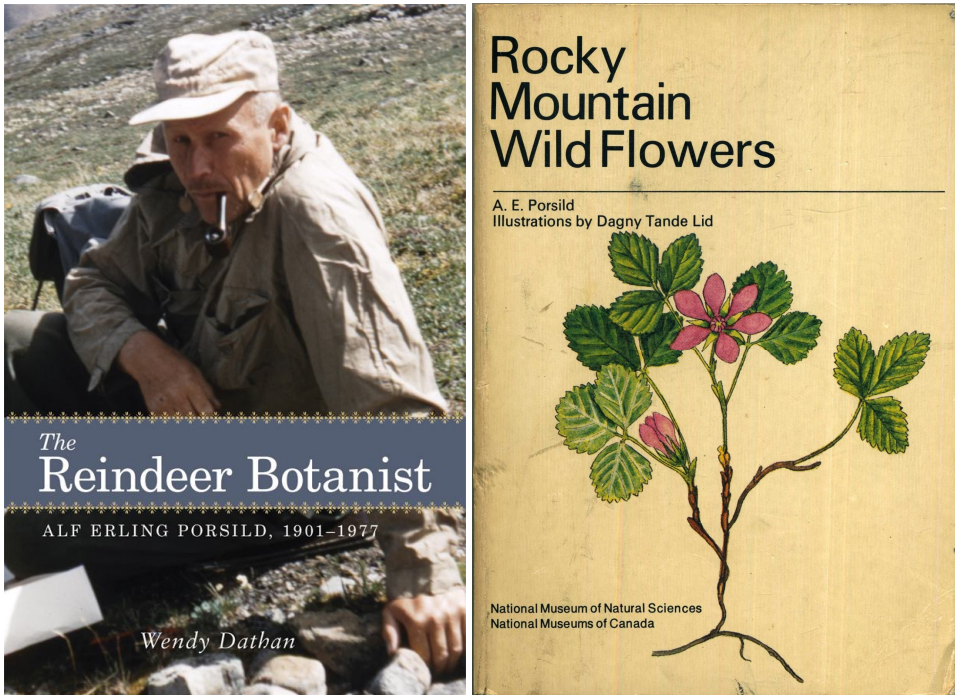


Fig. 1. Cover page copies of Alf Erling Porsild's books (A, B) and his personal photo (C).

productive life story was comprehensively and convincingly revealed by Vendy Datham (2012).

The Canadian Botanical Association bestows annually the 'Alf Erling Porsild Award', in recognition of the best paper published in the field of Systematics and Phytogeography upon a graduate student in a Canadian university or a Canadian stu-

dent in a foreign university. This is great, but to my opinion, not an adequate tribute to Porsild himself. A 'Porsild Prize' for a significant contribution to Northern/Arctic Science would be a more meaningful award for a deserved scientist, as well as recognition of Porsild's place in the Canadian Northern science.

References

- BLISS, L. C. (ed.) (1977): Truelove Lowland, Devon Island, Canada: A High Arctic Ecosystem. The University of Alberta Press. 714 p.
- DATHAM, V. (2012): The Reindeer Botanist: Alf Erling Porsild 1901-1977. University of Calgary Press. 726 p.
- PORSILD, E. (1936): The Reindeer Industry and the Canadian Eskimo. *The Geographical Journal*, 88.1: 1-17.
- PORSILD, A. E. (1964): Illustrated flora of the Canadian Arctic Archipelago (2nd edition, revised). *National Museum of Canada Bulletin*, 146: 1-218.
- PORSILD, A. E., CODY, W. J. (1980): Vascular plants of continental Northwest Territories, Canada. Ottawa, National Museum of Natural Sciences, 667 p.