

situations. Is this the “world” of the polar bear? In my view, there are three crown jewels in the polar bear world: Wapusk National Park, Manitoba; Kong Karls Land in Svalbard, Norway; and Wrangel Island in Russia. Rosing exposes us to exquisite images from one of these areas, but dedicated polar bear enthusiasts may want to see the rawer side of the species. Given that the polar bear is the most carnivorous of the bears, the book is sorely lacking in images of polar bears hunting, killing, and consuming seals.

Overall, this is a coffee table book intended to showcase some of the most captivating photographs of polar bears. A series of fold-out pages provides a larger format for photos that is applied with varying success. The book is not intended for an audience seeking details, but it should have a broad appeal to those interested in Arctic wildlife and particularly in polar bears.

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HILLS OF SILVER: THE YUKON'S MIGHTY KENO HILL MINE. By DR. AARO E. AHO. Madeira Park, British Columbia: Harbour Publishing, 2006. ISBN 1-55017-394-4. 336 p., b&w illus., selected references, glossary, index. Softbound. Cdn\$26.95.

Hills of Silver is a comprehensive history of 70 years of prospecting and development in the Stewart River basin of the Yukon Territory. Written by a prominent Yukon geologist who was personally involved in the last two decades of that activity, the book is suffused with the rugged personalities that made it all happen. Above all this is a people book, with over 500 named individuals derived from the author's personal contacts and his talent for collecting story and report.

In general terms, Dr. Aho describes four periods of mining history. The first is 1900–15, when prospectors by the hundreds spread though the Yukon in the aftermath of the Klondike gold rush. They engaged in placer mining on the tributaries of the Stewart River and established the town of Mayo. The author pursues the story of these operations chronologically to their conclusion, when hydraulic sluicing and dredging became important end products of development. During the second period (1915–20), miners increasingly devoted their attention to hard rock prospecting, in search of the mother lode. The Silver King mine was developed on a four-foot-wide galena vein rich in silver (300 oz per ton), which proved to be characteristic of the district spreading 15 miles eastward to Keno Hill. Its high-grade ore was bagged and hauled to Mayo on horse-drawn sleighs for transfer to Stewart River steamboats. In the third period (1920–41), extensive silver prospecting

swept eastward, yielding many mines. Many capable prospector/miner individuals, such as Louis Bouvette and Charlie Brefalt, are described. Aiding and abetting the prospectors were geologist Livingston Wernecke, acting for the Treadwell Yukon interests of Seattle, and Alfred Schellinger, for the Guggenheim interests of New York. The gross production of Treadwell Yukon up to 1942, after 17 years, was 44 million ounces of silver and 96 million pounds of lead. In the final, post-war period (1945–72), the properties were bought by Canadian interests, Ventures Limited and Conwest Exploration. Their principals, Thayer Lindsley and Fred Connell, collaborated to form United Keno Hill Mines Limited. The author describes how the best geological minds and sophisticated new methods made United Keno Hill into the largest silver mine in Canada. By 1972, the district's production over 59 years was about 175 million ounces.

The author describes anecdotally the character of the communities and the evolving transportation systems that served the mines and opened up the Yukon. But his most interesting accounts portray the development of actual creeks for placer gold and actual veins for silver and lead. He always delineates interesting technical plots using non-technical language, and he provides a valuable glossary for the general reader. The serious reader wanting to follow the progression closely should refer to Gleeson and Boyle (1980), in which the maps have a convenient scale (2 miles to the inch) and display topography and the locations of mines and prospects (72 of them), giving descriptions of vein mineralogy and geology.

Telling the mining history of the Yukon plateau through the personality of its participants is the key nature and value of this book. One might even call it a folksy compendium on the subject. But the reader could equally interpret it thematically, as *Hills of Silver* is an authoritative record covering a long period and contains many embedded themes. The book should therefore appeal to resource legislators, environmentalists, engineers, and exploration technologists, although regretfully the index does not have the topical content needed to facilitate the pursuit of the various themes.

One such theme is how the free-entry system for the acquisition of Crown lands has been a fixture in the Yukon since the beginning of prospector interest. This system was consolidated by the Dominion Lands Act of 1898. The prospector could go anywhere and stake a claim, enjoying exclusive rights to explore and develop. (Readers interested in the legal aspects of staking claims can consult Barton, 1993.) It is clear from Dr. Aho's account why the Yukon has been the perfect nurturing ground for the free-entry system. It has waterway access, ubiquitous forests (for fuel, cabin building, and mine timbers), abundant fish and game resources for living off the land, and fur species to provide prospectors with winter earnings. In the early days, when only a single claim on a creek or vein was the rule, there was tremendous emphasis on the individual—the system promoted individualism, which was such a

delight to the author. Free entry opened Canada's North, and nowhere more so than in the Yukon.

Environmental and land-use standards eventually came into existence, and it is no longer possible for prospectors to live off the land. Environmentalists will appreciate that *Hills of Silver* is a fascinating case history of pollution and metal dispersion on creeks and rivers.

The author is eloquent in his descriptions of mining methods. The presence of glacial overburden and permafrost had a profound influence in the Yukon plateau. Placer miners initially panned and worked the streams, then blasted shafts through frozen gravel and clay using steam injection points to reach the pay zone at the bedrock surface. Yukon prospectors always had to be miners as well. When it came to vein prospecting in this mountainous region, they used the spring runoff for surface sluicing of the float- and overburden-covered ground. Eventually they traced the best float occurrences down through the overburden to the bedrock veins by sinking timbered shafts. The usual technique was steam-assisted drilling, achieved by using old oil drums, fittings, and pipe and a supply of firewood and water.

Another theme Dr. Aho stresses is the importance of transportation, which evolved to meet the changing needs of the miners. Only when they could be transported did trucks, cat trains, compressors, and jack-leg drills come into use, and likewise geophysics, underground diamond drilling, and overburden rotary percussion drilling. Note that mining in the Keno Hill district was all underground, and the often dusty conditions in the permafrost zone affected the health of miners.

Dr. Aho states his optimistic and visionary view of the potential for more mineral wealth in the hinterland of the Yukon plateau. He was a prospector at heart and made a valuable contribution to the industry in the Keno Hill camp and elsewhere. He founded Dynasty Mines, which discovered the great Anvil base metal deposit. He is truly an icon of Yukon geology and had much potential left when his untimely death occurred in 1977. It is a tribute to the efforts of his family, friends, and colleagues that *Hills of Silver* saw publication in 2006.

REFERENCES

- BARTON, B.J. 1993. Canadian law of mining. Calgary, Alberta: Canadian Institute of Resources Law. 522 p.
- GLEESON, G.F., and BOYLE, R.W. 1980. The lithogeochemistry of the Keno Hill District, Yukon Territory. Geological Survey of Canada Paper 77–31.

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A CENTURY OF ADVENTURE IN NORTHERN HEALTH: THE PUBLIC HEALTH SERVICE COMMISSIONED CORPS IN ALASKA, 1879–1978. By ROBERT FORTUINE. Landover, Maryland: Commissioned Officers Foundation, 2006. Distributed by the University of Alaska Press, Fairbanks. ISBN 1-9773149-0-1. 168 p., maps, b&w and colour illus., notes, appendix of selected references, index. Softbound. US\$18.95.

Anyone who is familiar with Arctic medical history is sure to have come across the writings of Robert Fortuine. A prolific writer, he has previously published, among other works, *Chills and Fever: Health and Disease in the Early History of Alaska* (1989) and “*Must We All Die?*”: *Alaska’s Enduring Struggle with Tuberculosis* (2005). The present slim volume, privately published by a charitable foundation affiliated with the professional association of U.S. Public Health Service (PHS) health officers, appears to be a spin-off product of the TB book, but nevertheless a valuable contribution to the growing, but still small, literature on Arctic health history. Fortuine writes from intimate personal knowledge, as he has been as much a part of the “action” as those he portrayed in the book. He served 26 years in the PHS, 17 of them with its Indian Health Service in Alaska. He worked both as primary care provider in the Native communities and as a senior administrator, eventually becoming director of the Alaska Native Medical Center in Anchorage.

Those of us, particularly non-Americans, who worked with or visited our Alaskan medical colleagues would have observed a curious phenomenon: one day a week, they showed up attired in Navy whites, complete with stripes showing rank and serial number! The Naval origin of the United States Public Health Service explains this tradition, and this book delves into the many personalities and events that mark the impact of the PHS on the evolution of public health in Alaska. The PHS is a mammoth organization, and its professional staff populates not only the Indian Health Service, until recently the most important health care agency in Alaska, but also agencies across the national system, in the National Institutes of Health, the Centers for Disease Control and Prevention, and the Food and Drug Administration. Thus it plays a prominent role in medical research, public health, and food and drug regulation. While there have been histories of the main agency nationally, the story of the role it played in Alaska has not been told until now. I am not aware of any comparable organization in other countries that matches the PHS Commissioned Corps in its professionalism, scientific contributions, and public health leadership. From the perspective of a health researcher, I am staggered by the total corpus of scientific publications from PHS scientists and practitioners, which clearly exceeds the output of quite a few universities put together.

For someone outside the circle of retired and currently serving PHS officers in Alaska, this *Who’s Who* of Alaska health care can be a bit tedious, but Fortuine has successfully conveyed the sense of the tremendous transformation