

ENJOYING A LIFE IN SCIENCE. By P.F. SCHOLANDER. Fairbanks: University of Alaska Press, 1990. 226 p., maps, photos, refs. Hardbound. U.S.\$22.95.

Pete Scholander's autobiography is really an account of his enjoyment of life. Science was a means to this end. That his science was brilliant, stimulating, challenging, if at times controversial, made for him a rich and rewarding life of accomplishment. Here is a chance to share in his exuberance and enthusiasm. It is impossible to review each and every scientific endeavor, nor is it necessary or appropriate, since we are not dealing with a scientific manuscript. We are dealing with a way of life. Each account of his scientific and non-scientific "adventures" is simple, brief, and largely understandable to the layman. Each is also accompanied by his unending enthusiasm and enjoyment of life, congenial company and colleagues, good food, good drink, and good music. He continuously relates to people and his many friends throughout the world.

His first and continuing love was the Arctic, first in Norway and later in Alaska. But better to understand the Arctic one needs also to know the Tropics. Indeed, the world was his laboratory. And no topic was immune from his scrutiny. His early years in Norway and his early arctic ventures are of rather great historical interest. His youth was no doubt influenced by many of the leading European scientists of our time, such as Ahlmann, Bjerknes, Krogh, Mosby, and Ruud. I only wish he had devoted more attention and detail to the fascinating start of his career.

It is quite likely that his early training in medicine provided the best possible broad scientific background for his later endeavors in physiology. I suppose medicine in itself seemed too constrained for his temperament, although some of his later work returned significant contributions to medical science in application of the methods he had developed. What seemed principally to thwart a normal career in medicine was his insatiable and unlimited curiosity about almost everything. His unique ability was to identify simple but meaningful scientific problems, such as the rise of sap in trees or grape vines, the growth of mangroves in a salt water habitat, cold acclimation of the natives of Terra del Fuego and the Australian bush, diving seals, Australian pearl divers, supercooled fish, and the composition of gas bubbles in ice.

His involvement in the gas bubble studies in Labrador, Norway, and Greenland shows much about his way of science. In 1954 a small laboratory was established in Hebron Fjord, Labrador, to study the physiology of bottom fish living in a permanent high arctic environment of -1.7 to -1.8°C found in the fjord basin, while the body fluids of these fish remained almost 1°C warmer! Instead of complex and perhaps unreliable power machinery at the remote site, he used the simple expedient of ice and salt to control temperatures for the experimental work. Among the sources of ice were icebergs, presumably from Greenland. Icebergs contain gas bubbles under pressure. Immediately there was a mercurial rise in Pete's curiosity. Could these bubbles be ancient atmosphere trapped when the snow settled on the Greenland ice cap millennia ago? Immediately available from the Hebron Fjord work was the technology of the physiologist for micro-analysis of respiratory gases. And promptly aboard the R/V *Blue Dolphin*, analyses of the bubble composition were made. This led to further development of techniques in Norway and the 1958 Greenland iceberg dating project, described in chapters 14 and 19.

A principal feature of Pete's work that sets him apart from traditional field scientists was his undertaking detailed experimental work on site in the field, whether in the Arctic or the Tropics, rather than the traditional way of collecting specimens and data to be contemplated perhaps months later on return to the home institution. After his early ventures to Spitzbergen and Greenland this was his normal way of science.

A second feature that soon emerged was his "team approach." His ability to attract competent and diverse colleagues would produce much broader and more significant results. And he needed the stimulation of these colleagues working on related, or unrelated, projects

who could challenge and debate him. But at all times he seemed to be the center — which he was! Few of his friends will dispute that he was somewhat self-centered, egotistical, and opinionated; but he was always honest and generous. Early on he set forth his strong views, not universally popular, on religion, succinctly but not offensively. This simple and direct honesty is found throughout his autobiography, which is quite refreshing in today's world of "weasel-wording" and cautious indecision.

His imagination was unrestrained. For example, just after World War II he proposed to mount a laboratory in an old military troop glider to be landed on remote Prince Patrick Island in the high Canadian Arctic. This became moot when the U.S. Office of Naval Research established the Arctic Research Laboratory at Point Barrow, Alaska, where an era of on-site arctic field research was set in motion principally by its initial investigators, Larry Irving and Pete Scholander.

One of Pete Scholander's important accomplishments was the creating of the R/V *Alpha Helix*, which fulfilled his fundamental objective of having a first-rate laboratory ship to conduct experimental work, whether in the Arctic, the Tropics, or even up the Amazon. The idea was there from the outset; but the nurturing of it and the selling of it to the funding bureaucracies was largely through Pete's initiative and persistence. The *Alpha Helix* remains as an investigative tool for future researchers who follow in Pete's steps.

But sometimes it was pure fun. When at Elgin Field in early World War II, in an attempt to outwit the minuscule brain of an alligator, Pete and Larry Irving managed to capture one and brought it into the laboratory one evening. The next morning, after it had frightened the lab attendant, they took it back to its creek and let it go. Why? "Just for the hell of it."

There is one rather great gap in Pete Scholander's chronicle that I must note. This is failure to acknowledge adequately the role in his life and in his science of his marvelous and charming wife, Susan Irving Scholander. Susan stood by him at all times, from providing a congenial home and entertaining Pete's almost continuous stream of guests to active participation in the field projects. Any account of his life is incomplete without recognition of Susan. I am certain all Pete's friends and colleagues will join me in affirming this judgement.

In conclusion there are two special enduring notes that deserve mention. In 1979 he was awarded the Nansen Prize from his boyhood Norway and distinguished recognition from the old world. In 1989 the Physiological Research Laboratory at Scripps Institute of Oceanography was named Scholander Hall as a new world recognition.

I feel honored and privileged to have had an opportunity to share a small part of Pete Scholander's exciting and enjoyable life in science.

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THE INUPIAT AND ARCTIC ALASKA: AN ETHNOGRAPHY OF DEVELOPMENT. By NORMAN A. CHANCE. Ft. Worth, Texas: Holt, Rinehart and Winston, 1990. 241 p., maps, photos, figs., bib., glossary, index. Softbound. Price not indicated.

Norman Chance is well known to students of the Arctic because of his first book on the Inupiat, *The Eskimo of North Alaska* (1966). But his research interests in cultural anthropology took him to other regions. He has conducted studies in northern Canada, the American Southwest, and China. This range of experience in comparative development problems gives Chance's second book on the Alaska Inupiat a broader perspective. Not only does he review changes since his first trip to Kaktovik in 1958 and examine the transformation of the Inupiat hunting and gathering culture under the pressure

of oil and gas development, but he also begins an exploration of the dynamic relationship between human societies and nature.

The book's first section outlines the European and American colonial and industrial penetration of areas inhabited by Inupiat in Alaska's Arctic Slope and evaluates Inuit responses to this pattern of colonialism. Chance describes the whaling and trading eras and the changes they brought about in the material culture of the Inupiat, particularly by introducing new forms of technology and weaponry.

The middle section of the book captures the impact of the colonial era on Inupiat living circumstances in a snapshot of Kaktovik village life in the late 1950s. Chance describes what it was like to grow up in such a time and shows how the Inupiat dealt with economic changes prior to the discovery of oil at Prudhoe Bay.

The book's final section explores the situation and prospects for present-day Inupiat; it is based upon social science research conducted in Alaska during the 1970s and 1980s. The backdrop to Inupiat social and political development is composed of events since statehood: formation of state government, discovery of oil at Prudhoe Bay in 1968, the successful movement to resolve the Native land claims issue (the Alaska Native Claims Settlement Act of 1971), which permitted construction of the oil pipeline to proceed, and legislation to distribute federal lands in Alaska (Alaska National Interest Lands Conservation Act of 1980), including protection of subsistence hunting rights of Alaska Natives. These form the context for establishment on the Arctic Slope of a strong local (borough) government, a wealthy for-profit regional corporation (ASRC), a locally controlled school district, and other institutions that have drawn the Inupiat into a complex web of political and economic interdependence.

Chance concludes the book by linking the Inupiat story to two fundamental human problems of the late 20th century — "the formidable unequal distribution of productive wealth" and "ecological deterioration." He points to an emerging class division between Inupiat corporate and government elites and the people, a division spawned by the competitive cash and commodities economy, which contradicts values of sharing in Inupiat culture. He is troubled by the 1989 *Exxon Valdez* oil spill, which by despoiling Alaska waters and lands symbolizes the threat of resource development to traditional Inupiat subsistence pursuits. His is a poignant account of the Inupiat's painful struggle to exercise control over their fate, attempts that make them part of the process while producing outcomes that often erode Inupiat cultural life.

Chance sensitively illustrates the dilemmas facing the Alaska Inupiat and makes their experience relevant. The balance he achieves in this slim volume recommends it to specialist and generalist alike.

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THE CHALLENGE OF ARCTIC SHIPPING: SCIENCE, ENVIRONMENTAL ASSESSMENT AND HUMAN VALUES.

Edited by DAVID L. VANDERZWAAG and CYNTHIA LAMSON.
Montreal and Kingston: McGill-Queen's University Press, 1990.
288 p., 11 maps, bib., index. Hardbound. Cdn\$34.95.

The co-editorship of Cynthia Lamson and David Vanderzwaag is a familiar touch in this collection, having induced excellent contributions — a few from new sources and several with a strong message beyond the conveyance of information. The title is rather more literal than lyrical compared to an earlier offering by the same team, *Northern Decision Making: A Drifting Net in a Restless Sea*. The latter title should, I suggest, be used by them for a second volume, in which they and their contributors reflect on environmental decision making in the North in the 1990s.

The first and last chapters convincingly display the particular strengths of each editor. The opening provides a densely factual

yet surprisingly readable backdrop for the book, and the closing, musically titled "On the Road to Kingdom Come," steps bravely into the central philosophic issue of seeking an environmental consensus among those who would serve nature and those who would be served by it, and those in the middle who are still trying to define "sustainable development."

I expect it is difficult to be a tough editor in this financially unrewarding field, and the collection suffers on occasion from much more emphasis on the first half than the second half of the 1980s, as evidenced by the bibliography and shipping statistics. That said, even if, impossibly, the collection had been started and finished in the first quarter of this year, fast-breaking events would still have begged a "Volume 2." In recent months further legal challenges to EARP have supported the Rafferty and Almeda decision, new environmental assessment legislation has been tabled, and the vast eastern and high arctic onshore and offshore has been captured in the proposed TFN land claim. Perhaps even more to the point, the first Beaufort drilling proposal to be approved by the new Review Board under the Inuvialuit Final Agreement (October 1989) has been quickly followed by the first Beaufort drilling proposal to be refused, in ominous terms, under the same agreement (June 1990). The ongoing impacts of the *Exxon Valdez* are washing ashore, just at the time northerners are ready to make their own difficult tradeoffs between royalties and environmental damage.

Ray Lemberg creates for the reader a seamless backdrop of the decade of the arctic EARP — the 1980s' hammering-out of how to do a risk assessment. He admirably overcomes his in-depth knowledge as a technical expert to the Beaufort Sea Panel to give the reader the perhaps dangerous feeling of having grasped the whole bolt of fabric, from nature of risk to the final necessary compromise. He sets out the slim prospects of "risk" as a numerical probability being established with confidence for arctic projects in the first instance and, if established, satisfying the demand for reassurance in the second place. Many of us have seen environmental assessment panels aspire to deal sensibly with the risk and clean-up of a medium-sized disaster, only to return again and again to the feared "worst case scenario" and the wish for reassurance that a) it will never, never happen, and b) when it does, it will be cleaned up swiftly.

Robert Dryden provides, with barely sub-surfaced anger, a vivid account of the seemingly endless, ultimately frustrated and surely wasteful reviews of the aborted Arctic Pilot Project. The cost of the book is well worth having this compressed history, and the lessons to be learned, on this unique liquid natural gas project. Surely the challenge is to do more effective environmental reviews, not simply more environmental reviews.

Robert Lake was no doubt given the task to describe the physical environment of the Arctic in 50 pages or less; amazingly, he succeeded, and even contributed a spare page to Brian Smiley's "Marine Mammals and Ice-Breakers" — a co-habitation risk summarized as "collisions, interference, and contamination."

Peter Jull's accusatory tone in describing lack of Inuit participation in environmental decisions is wisely tempered by his concern there has been a "too-ready belief that negotiating processes would be problem-free if only Inuit were in charge." He is a prophet who should return from Upper Coomera Australia and provide further insights of this order.

The environmental reviews of the Arctic Pilot Project and the Beaufort oil proposals are referenced extensively, cuing the reader's interest in a future comparison of the EARP processes old and new, federal and territorial. What role the proposed Northern Accord process will set up for carrying out or responding to environmental reviews remains to be seen. In a second volume, David Marshall would have a new lode to mine on federal environmental reviews. John Donihee and Heather Myers have also staked a claim by way of their prescient title "Coming of Age: Territorial Review." The level of influence of the Territorial Government on environmental reviews under land claims and under a Northern Accord is very much a question mark — and Donihee and Myers have established their credentials to define it for us.