

broad-ranging review by authoritative authors for those who are not specialists — and, let it be said, for narrow specialists also. Some of the contributions are difficult for most earth scientists: Outcalt's paper is exclusively about a mathematical model. The preceding one, by M.W. Smith, though, concerns more easily grasped physical models that are a good link between the purely descriptive and purely theoretical. On the whole, one may be assured that the material is not of the ephemeral nature of many research papers, and the book deserves to be widely read by students and their teachers who are sometimes inclined to see geocryology (or periglacial studies) through blinkered eyes.

As is often the case in volumes of this nature, there is an introductory chapter, rightly laudatory, about Ross Mackay's scientific procedures, written by his friend and colleague W.H. Mathews. This reviewer always finds such chapters especially interesting, a celebratory leavening of what could otherwise be heavy fare; this one will remind those knowing Ross Mackay personally of the extraordinary, delightful person, and rigorous scientist, that he is.

P.J. Williams
Geotechnical Science Laboratories
Carleton University
Ottawa, Ontario, Canada
K1S 5B6

COMPANY OF ADVENTURERS, Vol. I. By PETER C. NEWMAN.
Markham: Penguin Books Canada Ltd., 1985. 413 p., notes, bib.,
index, illus. Cdn\$25.00.

No single economic force has so profoundly influenced the development of Canada as has the fur industry. And except for a brief period when the Northwest Company eclipsed the Company of Adventurers Trading Into Hudson's Bay, no corporation has commanded such control over the industry as has the Hudson's Bay Company. Granted its Royal Charter in 1670, the HBC has become a household word for Canadians, whether they speak of exploration, native people, or where to buy a new living room suite. To chronicle the corporate history of this institution is surely a bold and ambitious task.

In *Company of Adventurers, Volume I*, Peter C. Newman attempts just that. This initial volume encompasses HBC history from incorporation until the mid-nineteenth-century exploits of John Rae, and a further volume is planned. The fainthearted would pale at the very conception of such arduous labour; they would be struck dumb at the notion that such a Herculean task might be attempted by someone whose previous efforts have primarily concerned the corporate and political power structure of twentieth-century Canada. Newman's impressive ability to collect and assimilate information is enviable — an ability, no doubt, that has earned him his status as one of Canada's top journalists.

In his Foreword, Newman explains his approach:

This is a journalist's book, a search for the stories, the themes, the personalities who dominated the first century of the Company's long stewardship. I believe it is a valid new approach to an old subject because it is rooted in the writer's own desire to make sense for himself of the tantalizing moments that gave the history of the HBC its meaning and of the beguiling individuals who gave it excitement. The hard-bitten Bay men profiled in this volume are as true to life as I could make them, and I have carefully limited myself to the available evidence.

The approach expressed here points both to the strengths and to the weaknesses of *Company of Adventurers*. As "a journalist's book," the book is popular history and must be clearly distinguished from a study such as Harold Innis's *The Fur Trade in Canada: An Introduction to Canadian Economic History* (1930). Although Newman's research has been considerable, the author's priorities place lively, confident interpretations of fact and occasional glib solutions to complex issues above an exacting and disinterested analysis of those issues.

Newman draws an attractive energy from the human dimension of those who figured prominently in the HBC, from such early explorers

as Frobisher, Hudson, and Radisson, through Prince Rupert, the first governor of the Company, up to Dr. John Rae. As a result, the book exudes a ready appeal and will be eagerly devoured by readers unfamiliar with the HBC and the fur trade in Canada. The appendices include a transcription of the original Royal Charter, granting Prince Rupert and his 17 fellow investors their control over the lands draining into Hudson Bay on May 2, 1670. (The date is transposed in *Company of Adventurers* to read May 2, 1760.) Another appendix offers brief profiles of 19 early corporate investors. Other appendices list the governors and deputy governors of the Company, a record of annual dividends paid, and a chronology from 1610 to 1799. I fail to understand why John Rae's mid-nineteenth-century contributions are chronicled in a volume that professes to be a search for "the personalities who dominated the first century of the Company's long stewardship" and that supplies a chronology ending with the year 1799. Here, perhaps, Newman's enthusiasm for the human interest overrides his principles of organization.

Still another appendix lists some 200 "resource people" consulted or interviewed during the preparation of the book. Such a distinguished and comprehensive list recommends the work, although I have spoken to more than one of these "resource people" who think the direction and information they provided is misrepresented in Newman's final draft. Thus, what might seem a solid history based on the opinions and research of experts is not always so.

Newman provides his documentation for quoted material and, to a much less satisfactory extent, for detailed facts in Appendix Eight. Once again, by offering the sources of some of his information, he creates the impression of thorough and painstaking accuracy. However, in a work of this scope, involving so many thousands of pieces of evidence, more complete documentation is essential if this book is to contribute anything more than a vague enhancement of popular awareness of the long-lived Company. Perhaps an example of the handicap created by this incomplete documentation will clarify my point. In his discussion of Rae's 1846-1847 expedition, Newman writes: "[H]e set out to prepare for the winter by shooting '120 deer, 62 caribou' and scores of ducks and geese" (p. 301). The quotation marks around "120 deer, 62 caribou" indicate that Newman is quoting from archival or published record, although no documentation supports the quote. Farther down that same page, Newman quotes a sentence that his documentation indicates comes from Rae's *Narrative of an Expedition to the Shores of the Arctic Sea in 1846 and 1847*, page 150. One must assume that the reference to "120 deer, 62 caribou" appears in that same narrative. But in the contemporary accounts of that region — in fact, even in many twentieth-century accounts of northern travel and exploration — the word "deer" is used to describe "caribou." To my knowledge, no deer-like ungulate other than the caribou inhabits the area of Repulse Bay and Rae Isthmus, where the shooting occurred. So if Rae shot only 62 "caribou," what were the 120 "deer"? As a careful reader, I want to check this reference. Perhaps Rae shot 120 muskoxen? Perhaps he is distinguishing between two different subspecies of caribou? Perhaps this is a lapse in Rae's customary acuity? Perhaps the T. & W. Boone edition (1850) of Rae's narrative, from which Newman's note indicates the reference is taken, is faulty? Or perhaps the confusion is Newman's? But to answer these questions first requires a complete reading of Rae's narrative in order to locate the passage, because the documentation provided in *Company of Adventurers* gives no page reference. Even this effort will not suffice if the quoted material comes from some source other than Rae's narrative. To have added the appropriate page number would not have interfered with the flow of Newman's account, as what documentation there is appears unobtrusively in the appendix and is not signalled by an irritating asterisk or superscript in the main text itself.

This illustration is intended to make my point concrete; it is but one of many problems with the documentation that will frustrate demanding readers. Someone wanting only a general sense of the HBC's corporate history will have no patience with what will surely be seen as nit-picking. But northern specialists and informed fur-trade enthusiasts should be alerted to the limitations of this popular history of the HBC.

Enough documentation is provided to lend an air of authenticity to the research, but too little is provided to make *Company of Adventurers* a solid study of the HBC's control of the fur industry in Canada.

This matter of partial documentation creates yet another difficulty. The reader is frequently nonplussed to distinguish between statements of irrefutable fact, expert opinion, and hypotheses and conclusions proffered by the author himself. For the most part, Newman makes such distinctions clear, but too often *Company of Adventurers* demands an act of faith many readers will not be willing to grant.

One wonders if the Company would have had such good faith with similar deficiencies in the balance sheets of its factors.

Richard C. Davis
Department of English
University of Calgary
Calgary, Alberta, Canada
T2N 1N4

CIRCUMPOLAR HEALTH '84, PROCEEDINGS OF THE SIXTH INTERNATIONAL SYMPOSIUM ON CIRCUMPOLAR HEALTH. Edited by ROBERT FORTUINE. Seattle: University of Washington Press, 1985. 508 p., appendix, index. Hardcover. US\$40.00.

This volume contains many of the papers presented in Fairbanks, Alaska, in May 1984, the sixth symposium in a series held every three or four years since 1967. The papers deal with the health of three human populations: the "relocated southerners," "the people who have been here in the circumpolar regions for countless generations . . .," and "the visitors," usually belonging to the workforce whose tours of duty vary from a few days to a season or more. Some papers deal with acclimatization of newcomers, others with cultural adaptations in the original populations.

The settlement of a nomadic people is shown to have resulted in a loss of lung capacity and of leg muscle power, as the long treks between hunting and fishing sites are no longer made on foot. Interestingly, hand grasp is maintained to wrestle with snowmobiles! Subcutaneous fat is increased with a lower calorie output and an intake augmented by the availability of southern foods. Many southern foods contain sugar and are associated with dental caries. There is also increasing recognition of diabetes mellitus in a people who were once thought never to exhibit the condition. The effect of increasing adiposity on cardiovascular health cannot yet be demonstrated, but as this generation ages a comparison with their forebears will become possible.

Family planning is discussed in a paper from Finland, and from Greenland teen-age pregnancy, often ended by abortion, showing a need for improved sex education. The improvement in maternal, stillbirth, and neonatal mortality rates associated with delivery in well-organized hospitals is reported. From Alaska comes a report of Caesarean section rates of 25% for private hospitals compared with less than 10% for the Alaska Native Medical Centre. The value of midwives in maternal care is reported from Finland and Greenland. Unfortunately the improvement in pregnancy outcome is not matched in the mortality rates for infants and children, which remain stubbornly high in Labrador, northern Ontario, Greenland, and Alaska. The Finnish experience may provide guideposts to other countries.

A paper from Iceland on computerized records available for the population includes censuses up to 300 years old. It shows the use of linkage between disease records and relatives more or less close as chosen by the researcher. Dr. Petursdottir mentions particularly a study of breast cancer made using these records and throws out the challenge to those in Canada and elsewhere with immigrant populations of Icelandic origin to compare disease incidence among the migrants with that of their cousins in the homeland, a method that has proved a fruitful epidemiological technique in other contexts.

There are papers on infectious disease — historical for smallpox and tuberculosis in the early 1800s, more recently showing tuberculous damage to the lungs of Inuit in past decades, and current problems,

including the reactivation of tuberculosis. Hepatitis B is the focus of several papers, and the problems posed by prolonged virus survival in cold climates are also addressed.

Environmental contamination by mercury from both natural and industrial sources is considered because the metal accumulates in fish and marine mammals, which are important native foods. It appears that in Greenland a high selenium content in the diet has a protective effect. Radioactive and other contaminants blow north on prevailing winds and cause an "arctic haze." They accumulate in lichens, which are grazed by caribou. These are hunted by humans, and so in this nutritional context we have another example of the "global village" with the Arctic an unintended pollution sink. Happily a more benign aspect of northern diet is presented in a paper on "country food," the fish and game pursued and used locally in Labrador in 1980-81.

Tobacco smoke is the most frequently inhaled pollutant, and its deleterious effects are noted in students in Alaska and among Inuit in Canada. It is also reported as a factor in low birth weight and infant morbidity and as a precursor of fatal house fires. There are more entries in the index under alcohol than for any other topic. This reflects the recognized importance of this substance in the etiology of trauma (Jaw Fractures in Greenland), death due to house fires (Manitoba), the fetal alcohol syndrome, mental health problems, and in relationship to suicide. There are papers on strategy and management for both prevention and treatment of alcohol abuse and a plea for the involvement of community elders and of recognition and respect for local traditions.

Papers on health care, sickness care, and the delivery of services show increasing concern with native involvement. The Alaskan program for training and using Eskimo girls as community health aides shows one way of outflanking traditional professional boundaries. A Manitoba report shows the value of special premedical studies for native students seeking to qualify as doctors. The need to improve schools and transport, which may contribute more than direct employment of medically trained personnel, is recognized, as is the value of native involvement in policy-making and administrative areas, as well as in service delivery.

Technically the book is well produced, the print is legible, the illustrations show clearly the points we are to recognize, the tables are well laid out. Is the volume more than a souvenir for those who attended the symposium? It is a good overview of the type of health research going on in the polar regions. It gives names and addresses for workers in the field, sources of further information for those who wish to follow ideas and techniques reported. There are contributions from a dozen countries and many disciplines, showing opportunities for the application of ideas in fields different from those reported. Individual papers have references, which allow access to the field of study and draw attention to organizations active in the field.

Many individuals working in the North will wish a personal copy; many more will consult the book in the libraries of institutions whose staff may go to the North or who work with those already there. Most of the reports are from areas where cost is not an overwhelming obstacle to the delivery of top quality services, but poorer countries with sparsely populated areas, problems with the logistics of health care, and different climatic hazards will also be interested in much of the material presented.

T.J. Parkinson
Department of Community Health Sciences
Faculty of Medicine, University of Calgary
Calgary, Alberta, Canada
T2N 1N4

POPULATIONS AND BREEDING SCHEDULES OF WADERS, CHARADRII, IN HIGH ARCTIC GREENLAND. By HANS MELTOFTE. *Meddelelser om Grønland, Bioscience* 16:1-43, 1985. Softbound. No price indicated.

Waders include the bird families Charadriidae (sandpipers) and