

contained in this volume. It might justifiably be subtitled 'An encyclopedia' rather than 'A history.' There are very few obvious errors: 'Beechey Strait' (page 80) should presumably read 'Barrow Strait,' and on the same page 'Alexandria Fiord' should be 'Alexandra Fiord.' Canadian readers will be disturbed and puzzled to see the Canadian Governor General, Earl Grey (the original presenter of the Grey Cup for Canadian Football) rendered as 'Lord Gray.' Even more puzzling is Lent's consistent rendering of RCMP (Royal Canadian Mounted Police) as simply CMP.

These, however, are very minor flaws. More serious is the fact that the entire book is a little dated. While the bibliography is generally quite exhaustive, numbering over 650 entries, only 18 of these references are dated later than 1995, since which date much has been published on muskoxen. Indeed the book has all the signs of a manuscript for which the author was searching for a publisher for several years. If this were the case, reluctance to update the material once a publisher had been found is understandable, but unfortunate. But apart from this weakness, Lent has produced a superlative study of one of the most fascinating of the Arctic mammals, one that is unlikely to be superseded for a very long time. (William Barr, Arctic Institute of North America, University of Calgary, 2500 University Drive NW, Calgary, Alberta T2N 1N4, Canada.)

SUNRISE OVER PANGNIRTUNG: THE STORY OF OTTO SCHAEFER, MD. Gerald W. Hankins. 2000. Calgary: The Arctic Institute of North America (Komatik Series 6). xiii + 250 p, illustrated, soft cover. ISBN 0-919034-97-7. US\$19.95.

This book is a celebration of the life of Otto Schaefer, whose career as a physician in the Canadian Arctic, where he spent 32 years in all, will be well known to many readers. Schaefer was born in 1919 in Betzdorf, a small German town in the Rhineland. As a child he had felt inspired to visit the north by reading Franz Boas' two volumes that arose from the latter's participation in the work of the International Polar Year. Schaefer studied medicine during World War II and graduated from Heidelberg in 1944. He arrived in Canada in 1951 and, after passing the relevant examinations to secure certification to practise and having married, he received an appointment in Aklavik, where he arrived on 29 January 1953.

The author gives a fascinating account of Schaefer's work in the different isolated communities to which he was posted. Pangnirtung, on Baffin Island, was the favourite of these for Schaefer's family, and hence the title of the book. The 'sunrise' part of the title comes from his work bringing 'the dawn of a new day for health care in the North.'

The author does not overlook those parts of Schaefer's career during which he was based at large hospitals in southern Canada, but in which he often worked with northern peoples evacuated there for specialist treatment. Schaefer was not only a dedicated physician but an astute observer of the peoples among whom he worked. His

admirable habit of writing down clinical and other relevant observations at the time in notebooks assisted him in rapidly acquiring a comprehensive overall perspective of the medical situation in each area in which he worked. This, in turn, meant that he was excellently placed to draw important deductions about, for example, the benefits to be derived by babies from consuming their mothers' milk, rather than artificial substitutes, and of the pernicious effects of alcohol. These insights enabled him to influence medical and other opinion not only by examples of practice but also by preparing articles published in the medical literature. The book makes it clear that Schaefer did not avoid controversy in such matters, but he seems very often to have been proved right.

The book also includes much fascinating material on the way of life not only of the local peoples but also of Europeans working in the Arctic. The author makes it apparent that Schaefer was well disposed towards missionaries, which is refreshing to read in these 'politically correct' times, and provides much information concerning the interactions between the different groups of peoples. The chapters are, on the whole, very short and have such titles as 'Witness for the prosecution,' which largely concerns the murder of the wife of a Royal Canadian Mounted Police special constable, in the investigation of which Schaefer was engaged; 'Patients and characters'; and 'On board the C.D. Howe.' This was a vessel that undertook an annual voyage to isolated settlements carrying supplies, and that had a travelling medical facility. Further chapters include 'White-knuckle moments,' largely about Schaefer's wife Editha (Didi), who seems to have been a real paragon in the difficult circumstances in which the family frequently found itself living; and 'The executioners,' concerning an interesting criminal case that posed questions about the interaction of Inuit behaviour and western justice. Much stress is placed on the Circumpolar Medical Conferences, of which Schaefer was general chairman of the third, held in Yellowknife. As Schaefer grew older and with his advancing reputation as an international authority in Arctic medicine, he received numerous honours, including the Order of Canada in 1976, and these are duly recorded. The author concludes his work with a chapter entitled 'If Otto Schaefer hadn't gone to the Arctic,' which may be summed up by the comment of a friend that 'his academic research and studies were done specifically to benefit them (the Inuit).'

There is an appendix listing Schaefer's papers, a bibliography, and an index. The book is copiously illustrated by excellent photographs, many of which were by Schaefer himself. These are amongst the most interesting aspects of the book, as they set the prose into its proper context.

The book is written in a pleasant, light, somewhat journalistic, style that may not be to the taste of all readers. Very many chapters start *in medias res*, with such sentences as 'It happened one day in April, when Otto was away with his dog team...' or 'It was 1:30 AM on April 12, 1964, when Otto Schaefer finally put down his pen and

stethoscope.' One might think, as this reviewer did on first looking into the book, that such an approach tends to trivialise the subject. This is, of course, no less than one supremely dedicated individual's attempts to better the medical care afforded to peoples living in one of the toughest environments on Earth. But this would be to misinterpret the task that the author and publisher have set themselves. It is obvious that this was not to produce a full 'chapter and verse' type biography, which clearly must wait for some years, but to seek to set out for the non-medical reader some of the challenges faced by Schaefer during his work in the north, to outline the evolution of his thoughts about the problems facing him, and to view the overall success he achieved during his career. And all this in a format that would appeal to popular interest and to increase general knowledge relating to a remarkable Canadian.

In this they have been successful, and, while the book is very interesting, it is also easy reading and none the worse for that. It is highly recommended for those who are interested in the development of health care in the north during the second half of the twentieth century and those who have heard of Schaefer and wish to know more about him. (Ian R. Stone, Laggan Juys, Larivane Close, Andreas, Isle of Man IM7 4HD.)

THE NATURAL AND SOCIETAL CHALLENGES OF THE NORTHERN SEA ROUTE: A REFERENCE WORK. Willy Østreng (Editor). 1999. Dordrecht, Boston, and London: Kluwer Academic Publishers. xlii + 466 p, illustrated, hard cover. ISBN 0-7923-6112-1. £132.00; US\$212.00; NLG400.

This volume represents what must have seemed an overwhelming task at the outset, the condensation of six years of output from the International Northern Sea Route Program (known as INSROP). The numbers speak for themselves: 167 working papers, and 318 researchers from 69 institutions on three continents producing some 14,500 pages of scientific text. The three principal cooperative partners of INSROP were the Central Marine Research and Design Institute (CNIIMF) in Russia, the Fridtjof Nansen Institute (FNI) in Norway, and the Ship and Ocean Foundation (SOF) in Japan. Contributors' notes reveal the depth of outstanding talent represented by the editor and 12 authors of the different chapters in this book. Willy Østreng is magnanimous in acknowledging the efforts of hundreds of contributors to INSROP. At the same time he openly discusses a number of important disagreements on the content and organization of the final text for this volume. While this might appear as a somewhat unusual airing of internal affairs, it serves to illustrate the intense difficulties that had to be overcome to produce this work. With the vast number of parties, cultures, and disciplines involved, the lack of unanimity in the final editorial process should come as no surprise. The effort was certainly worthwhile. This book stands as a unique reference work on all aspects of the Northern Sea Route (NSR): natural and societal. Rather than focusing strictly

on Russian internal affairs and history (although there is a good deal of this), the book contains extensive discussions of the linkages between the NSR and both political interests and economies in adjacent seas and countries: world trading patterns, international geopolitics, military spheres of influence and so on.

Several items stand out from Østreng's introduction: the initial concept for INSROP growing out of Gorbachev's initiatives in 1987; the use of geographic information systems as a means of bridging the many disciplines and languages; and the different functional definitions of the Northern Sea Route depending on the geographical and political context.

The first chapter provides a fascinating overview of the historical and geopolitical context of the Northern Sea Route. Here, the western NSR, where year-round shipping is already a reality, is contrasted with the much more difficult eastern NSR, where the shipping season is limited to less than six months by severe ice conditions. The early history covers the initial opening of the NSR by a combination of Dutch, English, and Russian sailors in the sixteenth and seventeenth centuries as well as the overland exploration driven by the fur trade. Military history begins with the original Russian desire to use the NSR as a means of exchanging naval vessels between the northern and Pacific fleets, and proceeds to discuss the utilization of the route by convoys during World War II and by military vessels and submarines during the Cold War, when the NSR was out of bounds for any foreign commercial use. The role of prison labor in post-war Siberian development serves as a grim reminder of the dramatic shift in political regimes during the past decade. Østreng introduces the western view of the NSR as a misbegotten product of the Soviet command economy rather than any legitimate offspring of market economics. He makes the point early on that at present the NSR is not perceived as a viable year-round alternative to the Suez or the Panama routes. Perhaps most disturbing are the data revealing how dramatically the impressive infrastructure of the NSR, developed during the old Soviet regime, is now disintegrating in the new Russia. Cargo volumes that peaked in 1987 have since dropped threefold. Prospects for economic relief and renewal of fleets and ports appear dim to non-existent. Set against this overall sense of gloom and chaos is the historical record of Russian achievements against tremendous odds, and the creation of a unique and unmatched icebreaker fleet.

Chapter 2 characterizes the natural conditions in the key straits and seas within the NSR in terms of ice severity, water depths, currents, and other factors impeding or aiding navigation. Draft stands out as the most important natural factor (apart from the ice itself) in dictating the largest size of vessel that can navigate along the entire route or access any of the ports along the way. The authors do a good job describing the geographic choke points and the variability in ice thickness and concentration in time and space, including polynya and fast-ice boundaries.