

weak point; it appears to me as if no one has taken care of this important facet of the book. For example, the compound heptachloro epoxide is independently listed as heptachlor epoxide and as hepta-chloroepoxide, each with additional entries. The same is true of the keyword hexachlorocyclohexanes. It seems to me that every author has prepared his own index, which then was merged in one without further editing. This weak point should be eliminated in the next edition. (Michael Oehme, Norwegian Institute for Air Research, N-2001 Lillestrøm, Norway.)

ANTARCTICA: BOTH HEAVEN AND HELL. Reinhold Messner. 1991. Marlborough, Wiltshire: Crowood Press. 381 p, illustrated with maps and photographs, hard cover. ISBN 1-85223-704X. £19.95.

This book tells the story of Reinhold Messner's 1989/90 crossing of the Antarctic continent with Arved Fuchs as his sole companion. The expedition travelled 2800 km in only 92 days, from the Ronne Ice Shelf to the American base at McMurdo, the two men pulling and sailing their sledges without the aid of dogs or mechanical means, and with the 'minimum' of air support (such details seem very important to Messner). The book is divided between the telling of the story of the crossing and several short chapters dealing with the Antarctic Treaty, a chronology of Antarctic expeditions, and the ideal of 'World Park Antarctica,' which Messner supports and which he states the expedition was to publicise.

However, the book's real story is the tale of a dispute (essentially over the presentation of the crossing in 'environmental' terms) that arose between Fuchs and Messner at the end of the trip. At times the book reads like the prosecutor's notes at a trial, each event seemingly being described to the reader for its place in Fuchs' supposedly scheming plan to misrepresent everything for which Messner stands. One of Messner's friends is quoted as saying, 'You, the star, are only taken advantage of' (page 47), and one suspects that this is the feeling he has about this trip. This is perhaps a feeling for which the reader will have little sympathy. No attempt is made to allow the reader to develop his own appreciation of what is happening between the two men — everything is presented in the perfect vision of hindsight.

The book does little justice to the quite amazing achievement of the two men and even less to the environment in which they found themselves. Messner writes, '...my knowledge of the Antarctic consisted of clichés: sterile, unimaginably big, cold' (page 26), but he does nothing to change one's perception of this with his own writing. He makes much use of quotations from the earlier explorers of the continent — Amundsen, Scott, Shackleton — giving entire pages on occasion. They are well chosen and interesting, although they unfortunately serve to show the poverty of Messner's own writing and to leave the reader wishing he had spent his money (for at £19.95 this is not a cheap book) on a copy of *The worst journey in the world* or *South*. When the next book about such a venture is written, the quotations from such early works will appear, not from this — a classic it is not! Antarctica deserves

better than this. (Stephen Wells, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

THE GEOGRAPHY OF THE CANADIAN NORTH. Robert M. Bone. 1992. Oxford: Oxford University Press. 284 p, illustrated, soft cover. ISBN 0-19-540772-5. £17.50.

There are so few good texts on the geography of Arctic Canada that any new one is to be welcomed. In this book, the 'Canadian North' is treated generously, with its southern limit the edge of the northern boreal forest where trees give way to prairie grasslands (excepting the southern part of the mountain forest of British Columbia and Alberta, and the black spruce forest of the Gaspé and much of Newfoundland). This results in a survey of approximately three-quarters of the land and sea areas of Canada. The north is sensibly split into the Arctic and the sub-Arctic macro-regions, the division between the two being considered as the treeline, which follows generally the mean monthly 10°C isotherm for July. Thus, this is a treatment in terms of the natural, rather than the administrative, regions of Canada, and one familiar to geographers, but the author prefers within this framework a systematic rather than a traditional regional approach. Whilst this creates difficulties in the non-correspondence between the statistics available for the natural — as distinct from the political — divisions, it makes for a more readable and lively text.

After introductory chapters on the perception of 'nordicity' and on the physical background to the north, the book concentrates primarily on resources and economic development. This allows the author to present his very detailed knowledge of the difficulties of resource exploitation — physical, political, legal, and environmental — in a multi-cultural society. He deals with the mega-projects of James Bay, the Arctic Pilot Project, and the Mackenzie Pipeline with admirable clarity. The book concludes with chapters on the problems of native land claims and regional self-determination, and the geographical realities of present times in these northern lands.

Each chapter of the book contains in appropriate places short vignettes that serve to highlight the main points for discussion; it is a device that exemplifies the essentially didactic purpose of the work. The book should prove to be invaluable for undergraduate courses on the geography of the Canadian north. (Peter Speak, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

BRIEF REVIEWS

EXPLORATION OF ALASKA 1865–1900. 1992. Morgan B. Sherwood. Fairbanks: University of Alaska Press. xxii + 207 p, illustrated, soft cover. ISBN 0-912006-62-5. US\$15.00.

This is a reprint of Sherwood's already classic 1965 study of the exploration of Alaska, including its political, scientific, and military components. Beginning with the Russian American Telegraph Expedition of 1865 and the purchase of 'Seward's Folly' from Russia in 1867, it covers three and a half decades during which the US Army,

the Revenue Marine, the Coast Survey (or Coast and Geodetic Survey), and the Geological Survey consecutively took over the sustained and systematic exploration of the new territory. *The exploration of Alaska* is also a tale of the personalities who were key figures in the opening of Alaska, of John Muir, the renowned naturalist; Frederick Schwatka, the soldier and mercenary explorer; Henry Allen, perhaps the most successful of the Alaskan explorers; and of Alfred Hulse Brooks, the geologist immortalized in the range of mountains named after him. Even more than these, however, the story is that of William H. Dall, the doyen of Alaskanists, whose career ran parallel to the exploration of the American north and whose scientific and geographical expertise made him, at differing times, able to represent the Coast Survey, the Smithsonian Institution, and the Geological Survey. Sherwood's original work was a pioneering effort in the historical and scientific analysis of the opening of Alaska. Almost three decades after its original publication, it remains unsurpassed for both its scholarship and its readability.

FUNCTIONS OF NATURE: EVALUATION OF NATURE IN ENVIRONMENTAL PLANNING, MANAGEMENT AND DECISION MAKING. Rudolf S. de Groot. 1992. Groningen: Wolters Noordhoff. xviii + 315 p, illustrated, soft cover. ISBN 90-01-35594-3. Dfl 80.

At first glance, this book is not oriented towards the problems that are specific to polar environments. However, the message that comes across clearly throughout the book is that conservation issues and decision-making processes relating to the environment should not be regarded as of purely local importance, but are relevant on a global scale. In order to be able to draw comparisons between such diverse conservation areas as tropical rain forests, tidal wetlands, and national parks with a variety of ecosystems, such as the Galapagos National Park, de Groot has devised a method of evaluation that examines the functional interrelationships between human needs and activities, and natural processes and components. Essentially, de Groot's model aims to balance the economic needs of human societies with the ability of the environment to satisfy them. Functional interrelationships include natural renewable and non-renewable resources balanced against hazards and risks (extreme weather conditions, natural disasters, and biological factors such as disease agents), and the impact of human activities on the environment balanced against the effects of management processes to minimise or eliminate such impact.

Functions of nature is a complex mixture of economic theory and ecology, but de Groot's careful analysis and use of examples ensures that the arguments are easy to follow without prior knowledge of these disciplines. The book suffers a little from the lack of an index, but the contents pages are fairly detailed, enabling the reader to recheck the terminology (much of which is jargonesque) without too much of a problem. As environmental issues become of increasing importance to governments and the public, so systematic and universally accepted methodologies for assessing the economic viability and sustainability of natural resources and the environment, whether in indus-

trialised Europe or the polar regions, will become a matter of necessity. De Groot has made a valuable contribution in this respect.

SEA, ICE AND ROCK. 1992. Chris Bonington and Robin Knox-Johnston. London, Sydney, and Auckland: Hodder & Stoughton. 143 p, illustrated, hard cover. ISBN 0-340-57619-7. £15.99.

This is the story of two adventurers who participated in an ambitious undertaking requiring a combination of their highly different skills and knowledge. Chris Bonington, Britain's best-known mountaineer, and Robin Knox-Johnston, who had made a solo circumnavigation of the globe, sailed to East Greenland for an attempted ascent of the Cathedral, a previously unclimbed — and rarely even visited — peak (2660 metres). Bonington and Knox-Johnston were joined by a small group of other talented outdoorsmen, most notably Jim Lowther, an expert on Greenland climbing, the third son of the Earl of Lonsdale, and a relation to Hugh Lowther, the celebrated 'Yellow Earl' of Lonsdale, who disappeared into the Canadian north in 1888 and returned the next year claiming numerous Arctic achievements. In this day of so many contrived adventures, the authors' straight-forward goal of reaching, first, the base of, and, then, the summit of a far-removed mountain seems an honest and serious objective. For those fans of Bonington, all his usual climbing thrills are here, but added to them are the struggles and dangers inherent in sailing a 32-foot Bermudan ketch up the icy coast of Greenland north of the Arctic Circle. The book is not long, but it is entertainingly written, well-illustrated, and contains appendices that give an informative, if brief, lesson on the history of the exploration of East Greenland.

BEARS. Ian Stirling. 1992. Toronto: Key Porter Books Limited. 64 p, illustrated, hard cover. ISBN 1-55013-296-2. CAN\$18.95.

Bears is part of a series of children's books on natural history, and is written by one of the world's foremost researchers of polar bears. The text is well illustrated with photographs of all eight extant bears, and several informative, but simple, diagrams — such as a bear and a human skeleton side by side to illustrate differences and similarities; silhouettes of each bear to scale, giving male and female body weights; and how to identify black bears and grizzlies. The author does not steer away from the knottier problems of taxonomy, and there are short sections on the relationship between pandas and racoons, and the evolution of bears from 20 million years ago. There are also diagrammatic explanations of the techniques of ageing bears from dental annuli and of satellite tracking. The book ends with a description of human impact on bear populations, including hunting, encroachment on their habitats, and a summary of national and international legislation aimed to allow dwindling populations to recover. The lively style and sense of enthusiasm that is evident throughout the book, combined with its many beautiful colour photographs, make *Bears* an invaluable addition to any child's book collection.