

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.