

concentrates on the ship-borne aspects of the expedition. The book includes a selection of photographs and maps, a good index, and concise biographies of all the men concerned: from the latter we learn that Mackintosh died on the sea ice in 1916 while a member of Shackleton's Imperial Trans-Antarctic Expedition. (R. K. Headland, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

HEALTH AND DISEASE IN ALASKA

CHILLS AND FEVER: HEALTH AND DISEASE IN THE EARLY HISTORY OF ALASKA. Fortune, R. 1989. Fairbanks, University of Alaska Press. 393 p, illustrated, hard cover. ISBN 0-912006. US\$29.95.

The early history of Alaska, from the first Russian explorations through to the Gold Rush at Nome, was a period of intensive contact with Native peoples as well as one of adventure, exploitation and colonization in the pursuit of wealth. The aboriginal inhabitants were introduced to trade items and Christianity, suffering profound cultural change as a result. But the explorers, missionaries, traders, colonists and pioneers brought much more than imported goods and religion; they brought new diseases to which the Natives of Alaska often had no immunity. Epidemics decimated whole communities, but while the fur trade, exploration, settlement and the Gold Rush are significant chapters in the early history of Alaska, historians and anthropologists have given little attention to health and disease. Robert Fortune has addressed this imbalance by writing an early history of Alaska from this perspective.

In the first of three parts Fortune draws on random evidence from archaeology, skeletal remains and the descriptions of early travellers to show the diseases suffered by aboriginal peoples of Alaska in pre-contact times. Low standards of hygiene and sanitation prevailed; famine, hunger, malnutrition, botulism, salmonella, diseases caught from animals, skin infections and respiratory ailments were known; the author presents a convincing picture of early conditions and destroys the myth of healthy, disease-free pre-contact Natives. Part II overviews Alaskan history from Russian penetration up to the days of the Klondike and the Nome Gold Rush, discussing the health of Europeans, Americans and Natives, relationships between these groups, the conditions that nurtured diseases, and the impact of disease on both Natives and incomers. Origins of health service are covered, from the inception of a health care system by the Russian-American Company to the role of the United States following the sale of Alaska in 1867. Fortune also considers how disease and illness was spread around Alaska by whalers and traders, and the effective and important part played by missions in health care. Part III considers health problems that were unique in severity of impact on social and economic life, for example the 19th century epidemics of smallpox, influenza and measles that devastated and confused Native populations all over Alaska. As if these were not enough, other virulent and contagious diseases

took hold: tuberculosis continued well into the 20th century, while gonorrhoea and syphilis were a common cause of illness almost from the contact period. Fortune does not ignore the introduction and effects on health of tobacco and alcohol, particularly pertinent for contemporary health problems.

The strength of this book lies in demonstrating the hard facts about the impact of culture contact and colonialism. In the author's own words (p. 87), 'Health and disease not only helped to shape Alaskan history, but the very events of history in significant ways determined what the patterns of health and disease would be among the people of Alaska, both native and newcomer.' This sums up what the book sets out to document; its achievement in doing so gives fresh insight into the health of Native peoples in the pre-contact period and a greater understanding of the history of the region. (Mark Nuttall, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

GLOBAL CLIMATE CHANGES

CARBON DIOXIDE AND GLOBAL CHANGE: EARTH IN TRANSITION. Idso, Sherwood B. 1989. Tempe, Arizona, IBR Press. 292 p, illustrated, soft cover. ISBN 0-9623489-1-0. \$19.95 + \$2.00 postage and packing.

Sherwood B. Idso is not a prophet of doom. The first half of his text deals with climatologists' predictions of almost catastrophic warming due to increases of CO₂ and other greenhouse gases in the atmosphere. He considers that the complex mathematical/computing techniques used are inadequate to deal with the wide range of physical, biological and related feedback effects that determine global climate. To simplify prediction, Idso compares the greenhouse warming of the Earth, Mars and Venus attributed to CO₂ to deduce a warming of only 0.4°C for doubling CO₂ in the earth's atmosphere, compared with climatologists' predictions five or ten times greater. Nevertheless, Idso's figure can be criticised as being subject to similar uncertainties to the output of computer models because we lack comparative knowledge of feedback effects on the three planets, whose atmospheric compositions vary greatly from each other. One can however agree that our knowledge is insufficient to produce reliable figures in either case. Many will not accept the claim that figures for global warming and sea-level rise over the past century lack any credibility.

Optimism dominates the second half of the text, which deals with the biological effects of increased CO₂ in the atmosphere. Idso's own experiments show an increase of growth of lemon trees of 80% due to doubling CO₂. He presents other evidence that the biosphere benefits in many ways from increased CO₂, which will help feed an increasing world population. He concludes that 'It would thus appear that man's inadvertent flooding of the atmosphere with CO₂ is a most fortunate and desirable phenomena indeed'. In comparison with Idso's 1982 booklet 'Carbon

dioxide; friend or foe?' the present volume is much more detailed, but less well printed and presented. Over 2000 references fill one third of the volume, of which over half refer to work dated 1985 or later. So many references in such a controversial field make one suspect that one can find an authority to support any point of view. However, in contrast to the earlier volume, Idso expresses the view that the wide range of scientific questions that need to be solved are now being asked and are being tackled, although the answers are still distant. (G. de Q. Robin, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

A CONTINENT UNSPOILED?

THE EXPLORATIONS OF ANTARCTICA: THE LAST UNSPOILT CONTINENT. Fogg, G. E. and Smith, D. London, Cassell. 224 p, illustrated, hard cover. ISBN 0-304-31813-2. £16.95.

This is an unusual book, far removed from run-of-the-mill polar coffee-table fare. Dedicated to British Antarctic Survey, it is written by a biologist who has had much to do with the Survey over many years. Fogg's text is mainly a historic account of the unfolding of Antarctica and its assimilation into science. The story has been written often enough, but rarely by a scientist who perceives so clearly where each small tile of information fits into the overall mosaic. There is also a deal of comment, based on the author's summer working visits to Antarctica with the Survey, and broad background knowledge of the continent's curious politics. The black and white pictures are a carefully-chosen mixture of historic drawings, photographs and illustrations from early works, that embellish and enlarge on the text.

But this is not primarily a history book. As a very substantial bonus comes a selection of reproductions of contemporary oil and water-colour paintings by David Smith, one of Antarctica's most distinguished living artists. Some are lovely, some magical, some garish: all are interesting and evocative of Antarctica in its range of moods. Smith's work reproduces well, though I am not sure if he will be delighted with the quality of some of the printing. This is a fireside book for browsing. I wish I could agree with the implication of the subtitle: to those who knew it before IGY, Antarctica is a continent already badly spoilt by decades of insensitive mismanagement. Nowhere is there a greater need for cherishing than in the peninsula sector that these authors know and depict so well. (Bernard Stonehouse, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

ASSESSING WHALE STOCKS

THE COMPREHENSIVE ASSESSMENT OF WHALE STOCKS: THE EARLY YEARS. Donovan, G. P. (Editor). 1989. Cambridge, International Whaling Commission. (Reports of the International Whaling Commission, Special Issue 11). 210 p, illustrated, hard cover. ISBN 0-

906975-22-0. £25.00 (\$45.00) plus £5.00 (\$8.00) postage and packing.

The 1982 meeting of IWC introduced into the Schedule to the Convention a promise to itself to undertake, by 1990 at the latest, a comprehensive assessment of the effects on stocks of a pause in commercial whaling, and a further comprehensive assessment of the effects of new management schemes on aboriginal subsistence whaling. As the editor of this volume points out, they neglected only to say what the term 'comprehensive assessment' entailed, leaving the responsible Scientific Committee to decide for itself. In 1986 the Committee determined that a Comprehensive Assessment (now dignified by capitals) was '... an in-depth evaluation of the status of all whale stocks in the light of management objectives and procedures [including] the examination of current stock size, recent population trends, carrying capacity and productivity', and identifying three major areas of work, 'to review and revise current knowledge concerning methodology, stock identity and data availability; to plan and conduct the collection of new data; and to examine alternative management regimes.'

Comprehensive indeed, and making it clear that whale management, while still requiring field biologists and others to provide new data, has for many years required substantial inputs from mathematicians and modellers. This volume starts with reports on four Comprehensive Assessment workshops held in Cambridge April 1986, Reykjavik March 1987 and Lowestoft 1989. There follow three reports on specially-funded reviews and studies; 'Survey techniques for estimating abundance of cetaceans' (Hiby and Hammond — an evaluation of standard methods of stock size assessment from ships, shore and aircraft, with a guide to non-specialist observers), 'Molecular techniques for examining genetic variation and stock identity in cetacean species' (Hoelzel and Dover) and 'Analysis of southern hemisphere minke whale mark-recovery data' (Buckland and Duff). The final section includes five papers on management modelling: 'Simulation studies of two whale stock management procedures' (Cooke), 'Further simulation studies on management procedures' (De la Mare), 'A feedback strategy to regulate catches from a whale stock' (Magnusson and Stefansson), 'Results of first-stage screening trials for a proposed whale stock management procedure' (Punt and Butterworth) and 'A simulation study on management of whale stocks considering feedback systems' (Sakuramoto and Tanaka).

Whales are notoriously difficult to count and their stocks are almost impossible to evaluate accurately. Here we see gallant attempts to provide useful models for management. For the sake of the whales, let us hope that the biologists, mathematicians, modellers and managers find a common language, and that research funding is available not only to develop models, but to test them adequately by field observations. This volume is obtainable from the International Whaling Commission, The