to facilitate easy comparisons of glacial processes for the lay reader. Describing the surge of Variegated Glacier, Alaska, in 1982-3, the "major surge was not a single simple event. Rather, the glacier behaved like an athlete warming up for an event by taking deep breaths, doing calisthenics, and engaging in short sprints to flex muscles and get in trim for the main event". Sharp personalizes glaciers and their actions: "[a] glacier also deepens the valley, not because it needs to, but because it can't help it" (p. 105). He points out the inevitable unknowns and mysteries of glaciology that await solutions by future investigators, such as dislocation creep (p. 66), "not yet fully and satisfactorily understood", and kinematic waves (p. 70), for which "more actual measurements of wave character and behavior are needed". For the future — "If all the world's glaciers were suddenly melted, the results would be catastrophic. Florida would be reduced to a few tiny islands ... [with a] rise in sea level of 70 meters or so". It is also possible that the last Ice Age is not over and we may be living in an interglacial period, to be followed by another period of cold and widespread glaciation. As the author states in the final words of the text, "Could it all happen? Yes, indeed!"

There are a few minor errors to be corrected in future editions; for example the maximum thickness of the Antarctic Ice Sheet appears as 4300 m on p. 24 and more than 5000 meters on p. 174, and there are spelling and printing mistakes. As the dust cover states, this book is a must "for anyone with a passing knowledge of earth science and an interest in the world of living ice"; it is also a genuine bargain for the price. (John Splettstoesser, 1 Jameson Point Road, Rockland, Maine, 04841 USA.)

HIGH ARCTIC VEGETATION

VEGETATION OF THE SOVIET POLAR DESERTS. V. D. Aleksandrova. 1988. Cambridge, Cambridge University Press (Studies in Polar Research). 228 p, illustrated, hard cover. ISBN 0-521-32998-1. £30.00, US$49.50.

Published originally in Russian in 1983, this polar classic has been translated by Doris Löve, who also contributes a foreword. The English edition was encouraged and seen through the press by the late Dr Stanley Greene, who did much to make Soviet arctic studies available in English. The work is based mainly on the Alexandrova's own research in Zemlya Frantsa-Iosifa, one of the world's most northerly island groups, but includes that of many Soviet colleagues in the far north and tundra. As such it is a valuable window on the Eurasian provinces of the Arctic.

The first 30 pages include a brief introductory chapter, followed by two short chapters describing the geographical background, climate, soils and snow regime, and giving detailed treatment of the microclimate in plant-growing conditions at ground level. Virtually all the rest of the book is devoted to the vegetation. Chapter 4, over 120 pages long, is a comprehensive survey of plants and communities on all the Soviet Arctic Ocean islands, in both the Barents and Siberian provinces. Chapter 5, of 40 pages, deals with the flowering plants, with special reference to seasonal development of named species that were the author's special study. The final chapter, called 'Conclusions' can best be described as thoughts on particular communities, on the overal structure of the flora, species composition of flowering plants and the concept of aggressiveness in plant colonization.

This is not an exciting, challenging or speculative book; it sticks tightly to its title, and has little to say about other arctic areas, still less about comparable plants and plant communities in the Antarctic. However, it puts before us in readable English a wealth of well-marshalled fact and natural history observation hitherto available only in Russian. Every polar plant ecologist will need it for reference. (Bernard Stonehouse, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER, UK.)

MUSK OXEN

THE MUSKOXEN OF POLAR BEAR PASS. Gray, D. R. 1987. Markham, Ont., Fitzhenry and Whiteside. 191 p, illustrated, hard cover. ISBN 0-88902-944-X. Can$50.00.

David Gray met his first musk oxen as a member of the Canadian National Museum of Natural Science's first expedition to Bathurst Island in 1968. There followed a five-year doctoral study and later intermittent work, on which this book is based. Gray writes of musk oxen, of the Arctic and its wildlife, and of himself. This is an intensely self-conscious book, with the personal pronoun prominent on every page; some readers may find the author and his feelings unduly intrusive. Nevertheless he gives us plenty of solid information about the community of musk oxen studied, and abundant collateral information on the environment in which they live and plants, birds, mammals and people that share the habitat. The final chapter, 'Summing up', is the least personal and the most thoughtful — an admirable summary of the species, its ecology and behaviour. The book is well illustrated with photographs and maps, and excellent line drawings by P. Geraghty illustrate behaviour. (Bernard Stonehouse, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER UK.)

BRIEF REVIEWS

NORTHERN HYDROCARBON DEVELOPMENT IN THE NINETIES: A GLOBAL PERSPECTIVE. Frankling, Freddie. T. 1989. Ottawa, Geotechnical Sciences Laboratories, Carleton University. 257 p, illustrated, soft cover. ISBN 0-7709-0245-6. Can$75.00. Available from GSL, Loeb Building, Carleton University, Ottawa Ont. K1S 5B6.

Proceedings of a conference held in September 1988 in Yellowknife and Calgary, to provide an overview of Canadian oil and gas developments, and examine them in a global setting. Over 40 papers under the following nine headings: Understanding Canada's north; Managing development; Northern hydrocarbon potential: Regulation; Science, technology and the environment; Environ-

mental issues and their regulation; Finance and trade issues; International dimensions; The conference reviewed. Important environmental, political and social issues discussed, arising from the newly-determined Northern Energy Accord.

SEAS AND OCEANS. Charton, B. 1989. Glasgow, Collins (Collins Reference Dictionary). 458 p, illustrated, softback. ISBN0-00-434362-X. £5.95.

Latest in a long series of reference dictionaries, this is an anglicised and slightly augmented version of the US *Facts on File Dictionary of Marine Science*, published last year. More a mini-encyclopaedia than a dictionary. Many entries of polar and sub-polar interest; useful one-page appendices on Law of the Sea and other topical data.

AN INVESTIGATION OF ROCKHOPPER PENGUIN (EUDYPTES CRESTATUS) MORTALITY IN THE FALKLANDS DURING THE 1985–1986 BREEDING SEASON. Keymer, I. 1988. London, Falkland Islands Foundation Project Report.

Report on a veterinary investigation, funded jointly by the Government of the Falkland Islands and WWF(UK), of high post-breeding mortality in rockhopper penguins in 1986, and a brief field study in 1987. Cause of death probably starvation; the author stresses the need for background studies, perhaps funded by some of the Islands' new-found fishing wealth. The author sent a personal copy to the Editor of *Polar Record*; the publication bears no indication of where it originated or whence further copies can be obtained, but try the Falkland Islands Government, Stanley, FI.

NUNIVAK ISLAND ESKIMO (YUIT) TECHNOLOGY AND MATERIAL CULTURE. VanStone, J. W. 1989. Chicago, Field Museum of Natural History (*Fieldiana*, Publication 1398). 108 p, illustrated, soft cover. ISSN 0071-4739. $23.00.

Account of Nunivak Island (Alaska) culture, especially of technology and materials used, based on field notes recorded in 1939–40 by Margaret Lantis. There is a comprehensive historical introduction; good photographs and diagrams illustrate the astonishing technical ingenuity of this isolated community. "Walrus or bearded seal intestines were considered better materials for rain parkas than the intestines of small seals." Uses were found for grass, driftwood, plant food, marine products, clay and other minerals, ivory, antlers, bird and fish skins and practically everything else available; the author concludes that nowhere else in Eskimo Alaska, with the possible exception of Kodiak Island, was the natural environment as fully utilized by the native peoples.

In brief

NATIONAL SCIENCE FOUNDATION SENDS YOUNG SCHOLARS TO ANTARCTICA. Two high school graduates, selected from a list of 2500, have been included in the 1989-90 US National Antarctic Program. Under an NFS Science and Engineering Directorate scheme initiated in 1988, the two are currently working alongside researchers in the US, preparing for summer field studies. Kevin C. Engel will join Dr Robert Morse to work on gamma ray astronomy at the South Pole; Catherine Ann Blish will work with Dr Cornelius Sullivan on the photobiology of algae in sea ice of McMurdo Sound. (Source: NSF press release PR 89-56.)

POLAR BOOKS TAKEN IN ROYAL COMMONWEALTH LIBRARY THEFT. The library of the Royal Commonwealth Society suffered a major theft early in 1989, involving some 60 rare books, prints and drawings. Books of polar interest stolen included J. R. Forster's *History of the voyages and discoveries made in the north* (1786), Admiral Sir J. Narborough's *An account of several late voyages and discoveries to the south and north towards the Streights of Magellan, etc* (1694), F. A. Peron and C. L. Freycinet's *Voyage de decouvertes aux terres australes etc* (1800–1804), N. A. Porlock's *A voyage round the world; but more particularly to the north-west coast of America etc* (1789). Original Royal Colonial Institute library stamps may have been removed. A full list of stolen material is available from the Librarian, RCS Library, 18 Northumberland Avenue, London WC2. Readers of *Polar Record* are asked to notify the Librarian if they come across any of these items in suspicious circumstances. (Source: RCS Library.)

CAI: COMMENTARY. Comité Arctique International (CAI) in May 1989 produced the first issue of a publication, *CAI Commentary*, which will appear twice yearly. In a brief editorial the president of CAI, Dr B. Ottar, draws attention to recent political and economic developments in the Arctic, and to CAI's role as an independent organization through which practical problems can be freely discussed. The new publication will "bring authoritative and informative comments from experts on questions concerning arctic research and development". The first issue contains articles and notes by B. Ottar, J. Taagholt, E. L. Lewis, T. E. Armstrong and D. K. Haglund, on topics including the global significance of arctic air pollution, the International Arctic Science Committee, Greenland's ten years of home rule, circulation in the Arctic Ocean, establishment of a Danish polar centre, Alaska in the 1988 presidential election, a new station for air pollution measurement at Ny-Aalesund, and ARCUS, a US Arctic Research Consortium.