

would be to Canada's disadvantage. All this is written and argued with admirable clarity, causing no hardship to the non-lawyer. A point that strikes one such person is the large subjective element in matters one might suppose would be cut and dried: phrases like 'to an appreciable extent' or 'sufficiently close' abound, but giving an exact value to these is of course just where lawyers come in.

Professor Pharand is admirably balanced in his appreciations. He is by no means putting a case for Canada, but seeking to interpret as accurately as possible the application to Canada's Arctic of the body of traditions and obligations that constitute international law. His work is supplied with a number of well-chosen maps (though keen eyesight is needed for some) and with full documentation of sources.

The Northwest Passage, then, from being a romantic piece of history that Canada fell heir to, has become a practical problem requiring sensitive attention and heavy expenditure. If the wrong things are done, not only will there be adverse material results for Canada, but perhaps even more important, the national psyche will be damaged. Will the true north be strong and free if foreign ships are cavorting in waters that Canada claims but cannot control? These two books may help people at least to see what is at stake. (Terence Armstrong, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

ANTARCTIC GLACIOLOGY

ANTARCTICA. Swithinbank, C., with sections on 'The dry valleys of Victoria Land' by T. J. Chinn and 'Landsat images of Antarctica' by R. S. Williams Jr and J. G. Ferrigno. 1988. Washington, US Government Printing Office. (Geological Survey Professional Paper 1386-B). 278 p, illustrated, soft cover. Supt. of Docs. no. I 19.16: 1386-B. US\$ 40.00.

'Antarctica' is the first volume to be published in a series of 11 that will comprise U.S. Geological Survey Professional Paper 1386, titled 'Satellite Image Atlas of the World'. This ambitious project, conceived and edited by Richard Williams and Jane Ferrigno, has been launched in style by Charles Swithinbank, the main author of Chapter B. When completed, the 11 chapters will present a global 'snapshot' of glacier extent during the first decade of Landsat operation (1972–82). The editors state as their objective the establishment of a global benchmark to be used for determining areal fluctuations in glaciers as they respond to climate change. Between 1979 and 1981 the editors selected the best images from Landsat 1, 2 and 3 of the glacierised regions of the Earth and sent them to a team of 50 scientists who had agreed to author a section of the paper. As well as analysing the images, the authors were asked to summarise information on glaciers within their region. The scale of this task is made apparent by the first fruits only now becoming available.

Charles Swithinbank has obviously revelled in his broad remit to describe the continent he loves. His wide authoritative knowledge and erudition make this chapter

not only a joy to read but also an invaluable reference, acting in some ways as an updated 'Illustrated Glossary of Snow and Ice' for Antarctica. Despite the title of the Professional Paper, less than two thirds of the 103 figures he was allowed are taken from satellites, the rest being mainly aerial photographs. To some extent this was necessary because the highest latitudes that Landsat images reach is only about 81° and many important glaciers, for example in the Transantarctic Mountains, cannot be covered. He has skillfully woven vertical satellite imagery with oblique aerial photography to illustrate many different aspects of Antarctic glaciology that should inspire future generations of glaciologists. Trevor Chinn has contributed a small section on the dry valleys, and Baerbel Lucchitta is responsible for many of the fine digitally enhanced Landsat images.

In the last half of the chapter, the two editors discuss the problems associated with the availability of Landsat images of Antarctica and give tables of the best ones for each path/row scene centre. Two maps in an end pocket complete this impressive volume. Everyone concerned with this publication deserves praise and we look forward eagerly to the remaining chapters. (C. Doake, British Antarctic Survey, High Cross, Madingley Road, Cambridge CB3 0ET.)

CANADA IN THE CIRCUMPOLAR NORTH

THE NORTH AND CANADA'S INTERNATIONAL RELATIONS. Canadian Arctic Resources Committee. 1988. Ottawa, CARC. 88 p, illustrated, soft cover. ISBN 0-919996-37-X.

This concise study of Canada's nascent arctic foreign policy will be of interest not just to Canadians and Canada-watchers, but to all who are interested in circumpolar relations. In thirteen compact, readable chapters the authors, all 'arctic hands' living in the Ottawa-Hull area, walk us through the various policy issues facing Canada and her arctic neighbours. There is less of a southern bias than might be expected, although one can only wonder why no northerners and/or natives were on the working group; the report calls, after all, for the involvement of these groups in foreign policy formulation, and they certainly are well-represented in Ottawa. And, while the report correctly links northern foreign and domestic policies, it gives only scant treatment to the latter.

In spite of these deficiencies, the interested lay reader can in one sitting gain a basic understanding of the complex environmental, legal, strategic and cultural problems extant in the North, with special emphasis on Canada. One strength of the report is its call for an Arctic Basin Council. It also provides a devastatingly accurate critique of the 1988 Canada-United States Agreement on Arctic Cooperation. Unfortunately, the working group waffles in its support of the Government's decision to purchase a fleet of expensive nuclear-powered submarines, one or two of which would patrol the Arctic. The generals in the group appear to have had their way, but the 'dissenting opinion', as it were, of Judge Maxwell Cohen is appropri-