

that was crushed by the ice with a loss of 11 lives. The probable reason is that Borden's Conservative government had come to power over the issue of a naval contribution by Canada for which Churchill was pressing, and the expedition was given to Naval Service only a month before Borden's naval bill was defeated in the Senate. Britain had found that polar exploration helped the image of the Royal Navy, and Borden may have hoped to improve that of his infant navy by adding to Canadian territory. But if there is nothing of this in Professor Diubaldo's book, one can only conclude that such a diligent researcher found nothing in the archives. Nevertheless, the impression is given that if Stefansson was trying to use the Canadian government they were trying to use him, and were ultimately more successful.

The disarray of the Canadian Arctic Expedition left Stefansson with almost all his colleagues hostile to him, but this had nothing to do with his subsequent troubles. He initiated two Arctic ventures on which he was ill-informed. His attempt to annex Wrangel Island, where the survivors of the expedition ship *Karluuk* had taken refuge in 1914, led to four more deaths and was a diplomatic embarrassment to Canada. His attempt to introduce reindeer to Baffin Island was a fiasco; but by now Stefansson was considered a nuisance and his writings were infuriating his former colleagues, so the establishment in Ottawa froze him out.

Professor Diubaldo has researched his subject as none has done before or is ever likely to do again. But since neither Stefansson nor his opponents appear in a sympathetic light, the ultimate effect is rather clinical, and this may account for a degree of failure to hold the reader's interest, as Stefansson's character is explored again and again. Yet the book does leave the reader with a sense of tragedy. Whatever his limitations, Stefansson did have abilities, and after being denied a prominent part in Arctic development he might have moved on to a new career, perhaps as an anthropologist in another continent. Instead he spent the second half of his life re-living the events of the first half as a popular writer and lecturer.

ASSESSING ANTARCTICA'S FUTURE

[Review by David Drewry* of *Last of lands . . . Antarctica*, by J. F. Lovering and J. R. V. Prescott, Melbourne, Melbourne University Press, 1979, 212 p, illus. A\$9.80.]

The Antarctic Treaty, despite several shortcomings especially in dealing with territorial claims, has been presented as a model for other spheres of international activity. The cynic would claim, however, that the success of the Treaty, in terms of unparalleled scientific co-operation, stemmed from the inhospitable and commercially insignificant nature of the Antarctic continent. In the late 1950s nations could afford to take a benign attitude in accepting the generally wide-ranging terms of the Treaty—after all little was apparently at stake. But by the mid to late 1970s the scene had changed dramatically. Antarctica has now taken on a new importance in the world which cannot be ignored. The practicability of utilizing its hydrocarbon, mineral and biological resources has rapidly and irreversibly changed the international political prospects for Antarctica.

Last of lands . . . Antarctica is a welcome first attempt at addressing the changing political and economic circumstances of Antarctica. It is principally a critical assessment of the mineral and living resources of the region, and the various national claims to a share in their exploitation. The book is divided into four approximately equal chapters which, together with a summary on future prospects, review the general physical and biological environment, the current state of resources, the history of Antarctic discovery and Antarctic political geography.

Chapters II and IV are the core of the work. The former deals dispassionately with the present state of knowledge of earth and biological resources and their relative importance. It covers topics such as krill, squid and fish, ferrous and non-ferrous minerals, energy resources, tourism, iceberg utilization, and has a special section on off-shore oil and gas. The chapter, although a little uneven, does provide a very good all-round summary. The numerous recent and often sensational reports on resource potential are dealt with realistically. The authors are at pains to underscore the very

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limited information that is currently available, and demonstrate that many estimates for economic potential are based on seriously deficient data. In the final two chapters the authors discuss in detail the history and political geography of Antarctica. They are primarily concerned with background to national claims, and events leading up to the Antarctic Treaty, its implementation, and the role of the treaty consultative meetings.

The opening chapter on the physical environment of the Antarctic is probably the most seriously deficient section of the book for it contains numerous and fundamental errors, and often draws on material that is out-dated (two-thirds of the references are pre-1965). For example, the quoted maximum thickness of the ice sheet, 4 800 m (p 12) is based upon gravity measurements which, over seven years ago, were shown to be inaccurate by +10 per cent. Lambert Glacier is called a valley glacier rather than an outlet glacier, and the authors consider 'ablation' as evaporation only (p 18). Some of the worst misconceptions occur in dealing with glacial geologic history of Antarctica. The start of the last global ice age is given (p 18) as 1.8 Ma BP—the beginning of the Quaternary. In the next paragraph we are told that the Antarctic ice sheet dates well before the Quaternary. In fact, most glaciologists consider the last ice age began 20 to 25 Ma BP. We are also told that the very spectacular and much investigated dry valleys in McMurdo Sound were deglaciated around 50 ka BP (p 22)—towards the peak of the last glacial advance. Almost a decade ago, detailed volcanic sedimentological evidence from these valleys demonstrated that they have been ice-free for a minimum of 4.2 Ma.

Despite these shortcomings the book is well-written and should be essential reading for those who wish to keep abreast of current economic and political developments in Antarctica. Its modest cost makes the book most attractive.

ELEPHANT ISLAND

[Review by Peter D. Clarkson* of Chris Furse's *Elephant Island: an Antarctic expedition*, Shrewsbury, Anthony Nelson Limited, 1979, 256 p, illus. £8.50.]

Following his first experience of Antarctica with Malcolm Burley's 1970–71 Joint Services Expedition to Elephant Island, Chris Furse was determined to return as leader of his own expedition to the Elephant Island group, part of the South Shetland Islands.

The book is the official expedition narrative and it necessarily opens with the obligatory chapters on conception, planning and all the trials and tribulations experienced by every expedition leader before departure. The proposed use of canoes was viewed with concern by the Antarctic exploration 'establishment' in Britain but, when the more risky inter-island voyages were eliminated, the expedition was eventually 'endorsed' both as an adventure and as a scientific venture. The novelty of the expedition was canoeing around and between the islands—a more versatile mode of transport and considerably cheaper than the conventional rubber inflatable boats. Canoes in polar waters are not new, Eskimos have used kayaks for centuries, but this is a first for Antarctica, unless Uite-Rangiora really did reach the frozen ocean in the canoe *Te-Ivi-o-Atea* about 650 AD, as told in Rarotongan legends.

Once in Antarctica aboard HMS *Endurance*, the story is told in diary form. The author writes well of his own party on O'Brien, Eadie, Aspland and Gibbs islands in what is the largest and most exciting section of the book. The comparable section on the Clarence Island party written by John Highton, the deputy leader, is shorter and less inspired, although there is still plenty of adventure. The final section, where both parties come together on Elephant Island, is not written with quite the same flair as the author's earlier part. Throughout the story the main events take place on the islands, whether in exploration, climbing or in scientific endeavour; but it is always the sea, the canoe journeys and the weather which provide the greatest excitement.

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