

BOOK REVIEW

Antarctic Science edited by D. W. H. Walton with contributions from C. S. M. Doake, J. R. Dudeney, I. Everson, R. M. Laws and D. W. H. Walton. Introduction by Sir Vivian Fuchs. Cambridge University Press, 1987. 280 pp. £25.00.

This book 'is an attempt' (highly successful, I believe) 'to put Antarctic science in a more general perspective', but it seems to have an identity crisis. The full-page colour photographs are of a quality (with a few exceptions) up to the standards of the *National Geographic Magazine*, arguing for a place on the coffee table, while the scientific text and diagrams argue for a place in the laboratory. To consign it to the laboratory would defeat the stated intent, and deprive those who have a passing acquaintance with the science or the area from getting to know more.

So where should the book reside? It certainly should grace the coffee table in reception at the headquarters of the British Antarctic Survey (BAS), whose staff members are the authors of the book. Any visitor would then be able to get a rapid introduction to the international programme to which BAS so effectively contributes. It should have similar prominence in the offices of the Natural Environment Research Council (NERC) to which BAS is attached, and the Foreign and Commonwealth Office who contribute significantly to the BAS programme. The book would quickly show their visitors the vital importance of the programme. It would, however, be even better if the book could find a place in most dentists' waiting rooms (where material has to be absorbing, informative and capable of being picked up and put down at random). Having several of those qualities it could satisfy the public's interest in the region's indefinable 'romance', and introduce them to the real challenges of Antarctica, which are so well described in this book.

Antarctic science is undoubtedly vigorous, with scholarship that 'is a truly international achievement'. Within that international framework, the UK contribution of 17% of all the papers published about the Antarctic during 1979-82 is outstanding, being second only to the USA (18%). Such scholarship stems from a UK scientific involvement in the area that dates back to Cook's voyages in the eighteenth century but blossomed with the *Discovery* Investigations, starting in 1925, partially financed by taxes levied on the whaling companies operating on South Georgia. The historical perspective of work in the region is well established in the introduction, written by Sir Vivian Fuchs, Director of BAS until 1973. Fuchs was one of the scientists who fostered my interest in geophysics many years ago by a radio series describing the activities of the International Geophysical Year, a recording of which I still treasure. It is heartening to see how well the initiative taken in 1957-58 is justified by the repeated mention of those activities throughout the book.

The book is itself a review, 'highlighting the principal achievements of the past 25 years' in Antarctic life sciences, Earth sciences and atmospheric sciences. I shall not attempt to list those highlights, because I could do no better than quote directly from the final section (Cooperation or Confrontation) in which Dick Laws, recently retired as Director of BAS, also discusses the future political arrangement under which that science could continue to flourish. Suffice it to say that although the book does not attempt to be comprehensive, I did not find that the 'subjective' choice of topics limited its value in any way. Within each of these topics, however, the book has a wealth of fascinating items, some of which I will mention because they may act as bait for those people that I believe should be the market for the book, but who may be deterred by some of its jargon.

The first section (Geography, Politics and Science) is full of interesting information to which one can be lured by the photographs. For example, a photographic

comparison between the rations of R. F. Scott's first expedition and that of a modern sledging team leads one to adjacent text from which one learns that substitution of West Indian limes for Mediterranean lemons unwittingly reduced the Vitamin C intake of expeditions by 75%, thereby causing scurvy to reappear during early expeditions. Other morsels include the fact that the largest building at the now unused whaling station at Grytviken was assigned to the guano store and factory. I noted with horror that it also housed the meat cookery!

With good momentum generated by this eminently readable section, I plunged headlong into the first of the scientific sections (*Life in a Cold Environment*), which transition I suspect the casual reader will liken to walking into a cold shower. The initial contrast is a shame because if you survive statements about 'fluorescence at the same frequency as lipofuchsin' (or should that be lipofucsin, as in the next line?) or that 'nototheniid kidneys are aglomerular', there are other fascinating things to be learned. Fur seal cows apparently mate again just one week after their pups are born. Emperor penguin chicks huddle into large crèches helping to keep them warm while allowing their parents to collect more food. I was fascinated by the white-blooded fish, which has no haemoglobin despite its oxygen intake being essentially the same as red-blooded fish. The text explains how they survive, but doesn't answer the fundamental question of why nature took this route, introduced by the author as a feature which appears to be 'not just useless but positively disadvantageous'! Did you know that some penguins and seals have heat exchangers in their nasal passages recovering, in one species, 83% of the heat that they would otherwise lose through exhaling? Did you also know that in 1900 the great whales between them consumed 150 million tonnes of krill, twice the weight of the current annual world fish catch? Maybe the krill paste and krill cheese products prepared in the Soviet Union and reported not to have gained 'widespread popularity' will yet be seen on our tables. I hope that such fascinating titbits, all found within the comprehensive discussion of the overall scientific achievements in Antarctica, are not lost to the casual reader who might be deterred by the technical jargon.

Although the foregoing comments have made specific reference to the first scientific section, I believe the criticism to be equally valid for the other two such sections (entitled '*Antarctic Ice and Rocks*' and '*The Antarctic Atmosphere*'), with which I have closer scientific contact, and therefore with which it is more difficult for me to be objective. I welcomed discussion of the contribution that Antarctica makes as a platform for studying 'Geospace' and the necessity for 'routine, perhaps mundane synoptic observations' that form the basis for much of the international Antarctic scholarship. Although space research is better written (in that it has less jargon) than many other contributions in this field, I suspect that it will be still too technical for the average reader.

Finally, I heartily commend all who have contributed to the design of the book. It is very well laid out; a tribute to their efforts and providing an excellent vehicle for the science it presents, complemented so well by the many excellent photographs. It is unfortunate that some poor ones have been included, because they tend to devalue the book as a whole. However, the majority of the photographs are excellent and separates of some of them could be best sellers. Although I have not tried to decide on my favourite photograph, that of Oberon Peak is noteworthy in that it epitomizes the cold but calm face of Antarctica. This book shows that it is a face, perhaps like that of '*La Gioconda*', that provides a hint of the fascination that lies behind it, encouraging further attention to reveal its innermost secrets.

In summary, an enthralling book that I shall treasure, and can recommend wholeheartedly.

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