

from what we do know at the snow-patch level to landscape level. The key to the way forward is a greater level of field experimentation at a wide range of sites to provide the basis from which general principles for snow-vegetation interactions can be deduced.

The final short chapter looks at the effects of snow on trees and how this can be used to date past snow regimes. This application of dendrochronology to the polar regions seems fairly recent and as yet not well exploited. Y. Begin and S. Biovin show that this method will not allow the reconstruction of past precipitation regimes as has been achieved elsewhere. Rather it could give qualitative data for dating extreme snow events in critical areas. Again this appears to have valuable potential for assessing the extent and importance of variability of historical snowfalls.

As the editors observe, the book is not comprehensive even as far as 'snow ecology' is concerned, with no chapter on large mammals or birds, and nothing on the impact of technology and management on snow systems. It would have been nice to see some recognition of how human activities such as skiing or watershed management affect the essential features of snow-covered ecosystems. The editors and contributors all recognise that a better understanding of snow-covered ecosystems is essential, not just for scientific reasons but for the key part they play in Earth system science.

The book is produced to the high Cambridge University Press standard of copy-editing and design but seems, as usual, to suffer from a long delay in press. All of the chapters have very few references later than 1997. Readers will be grateful for a very useful glossary to explain furcula to chemists, saltation to biologists, and chrysolaminarin to physicists, thus ensuring a level playing field for all users of this valuable and timely review volume. (D.W.H. Walton, British Antarctic Survey, High Cross, Madingley Road, Cambridge CB3 0ET.)

CHELTHENHAM IN ANTARCTICA: THE LIFE OF EDWARD WILSON. D.M. Wilson and D.B. Elder. 2000. Cheltenham: Reardon Publishing. 144 p, illustrated, soft cover. ISBN 1-873877-45-5. £10.99.

Polar explorer and saint: Edward Wilson, of all explorers of the Heroic Age, is probably the most revered and least criticised, and, despite this, there has been remarkably little written about him. This well-illustrated book complements the three volumes of his principal biographer, George Seaver, namely, *Edward Wilson of the Antarctic: naturalist and friend* (1933), *Edward Wilson: nature lover* (1937), and a little book, *The faith of Edward Wilson of the Antarctic* (1948).

David Wilson is a great-nephew of the explorer and has had access to family journals and diaries not previously published. He has used many of the hundreds of original pencil sketches from the Cheltenham Art Gallery, as well as hitherto unpublished family photographs and delightful colour reproductions, both of birds and landscapes. The sketches, skilfully integrated with the text, range from

Wilson's earliest drawings when a child to the sophisticated pictures of colleagues on ship or skiing across the Antarctic ice. The ornithological and zoological illustrations nicely complement those published in *Edward Wilson's birds of the Antarctic*, edited by Brian Roberts (1967), and the quotations from the diaries extend and supplement those published in *South Pole odyssey* by Harry King (1982).

The authors have produced a short biography from Wilson's earliest days in Cheltenham, to his undergraduate years in Cambridge, his spell as a junior doctor in London, his first Antarctic journey with Scott in *Discovery* (1901–04), and the fateful second in *Terra Nova* (1910–11). There are also numerous quotations from letters to his parents and to Oriana Souper, whom he married in 1901. Each chapter is prefaced with an appropriate homily, from Wilson's diaries and letters, which jointly reveal his abiding care for others rather than for himself, such as, 'Love is the forgetfulness of self in the thought of the interests of another.'

Scott was blessed to have Wilson as his chief of the scientific staff on *Terra Nova*, and hence ostensibly second-in-command. Each had a great respect for the other, and although Wilson did not have the ultimate burden of final decision, Scott discussed all his plans with him. When Wilson led the winter journey to search for the emperor penguin's egg, he succeeded brilliantly in what has since become known as 'the worst journey in the world.' Seaver summarised their relationship: 'Wilson was regarded by all his comrades as the soul of it, as Scott was the brain; and a friendship was forged between these two which may be said to have outlasted death.' To his shipmates he was simply known as 'Uncle Bill.'

Wilson was a natural scientist from an early age, collecting as a boy, from hedgerow and field, and then illustrating small animals and birds in his sketchbooks. Had he never been south, he would still be remembered today as a fine water-colourist and pencil illuminator. From natural scientist, he proceeded to medical student and never spared himself in caring for the sick and poor in London. 'This is the most fascinating ideal I have ever imagined to become entirely careless of your own soul and body in looking after the welfare of others.' As both scientist and doctor, he became indispensable on both his Antarctic trips. But it was his deep sense of religion and his intense spirituality that his comrades particularly remembered. On the *Discovery* Expedition, he frequently ascended to the crow's nest, not just to sketch the view across the ice, but to meditate and pray, for he treated it as a private chapel.

The authors have cleverly organised these new extracts into the fabric of a story well known and largely, through his own words, illumined Wilson the mystic, scientist, doctor, artist, explorer, and near-saint. The final chapter of the book consists of four walks around Cheltenham encompassing his two homes, Westal and Crippetts, the fine memorial statue of Wilson by Lady Scott, and the art gallery on the Promenade, as well as many of Wilson's

favourite places, together with detailed maps.

For easier reading, the book is not referenced, but polar scholars can consult a fully annotated copy of the text in both the Scott Polar Research Institute and Cheltenham Museum. The book is offered as a tribute to Wilson and as a work of love. The authors' comment 'few men have been so widely esteemed by those who knew them and perhaps this is the biggest legacy of all of Ted's achievements — the story of love, loyalty and friendship: human care in its highest form.' The royalties from the book are to benefit the Wilson Collection Fund at the Cheltenham Art Gallery and Museum, which preserves the Wilson Family Archive.

The work is a pleasure to read and a delight to hold, and is recommended to all those with an interest in polar history and classic heroism. (Peter Speak, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

References

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- Seaver, G. 1933. *Edward Wilson of the Antarctic: naturalist and friend*. London: John Murray.
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INTERNATIONAL FISHERIES MANAGEMENT. Stuart B. Kaye. 2001. The Hague, London, Boston: Kluwer Law International. xxii + 606 p, hard cover. ISBN 90-411-9820-2. £109.00.

Having spent some years dealing with the scientific side of international fisheries management, I found it very interesting to look at a book dealing with the same subject as seen through the eyes of a lawyer. In outlining his approach, the author chooses to examine in detail two examples from polar regions, which, as the story unfolds, are seen to be poles apart not only geographically but also in their approaches to the problem. The underpinning definitions of fisheries regimes — 'the co-ordinated adjustments of states' policies yielding benefits to participants' — are discussed in chapter 2, leading into the identification of the people engaged in the process, the so-called epistemic communities. Having laid the groundwork, there is a series of chapters that charts the development of international fisheries management from its origins in the nineteenth century through the various United Nations Law of the Sea Conferences (UNCLOS). This is covered in chapters 3 and 4, in which key UNCLOS Articles are identified, summarised, and carefully explained. Two main themes are identified post-UNCLOS: the precautionary and ecosystem approaches to management. These, along with questions related to co-management, are developed in chapters 5 to 7. Two specific examples are then considered — the Bering Sea and Southern Ocean fisheries in chapters 8 to 12. Rounding off the book, chapter 13 looks to the future.

I found the early chapters extremely interesting since, although I had been aware of the developments that were taking place through UNCLOS and the subsequent developments of the precautionary and ecosystem approaches, my bias had been to the science and not the politics. These chapters put into perspective some of the underlying agendas that were obviously running at the time. I am unfamiliar with the Bering Sea fisheries, but even so found the descriptions highly enlightening. I have been much more closely associated with the developments of CCAMLR. The presentation here was generally good and reasonably comprehensive, but somehow something seemed to be missing. These missing parts were largely because I have been so close to the scientific action and to a lesser extent the Commission, whereas the author appears to rely almost totally on the reports of the Commission and journalistic records. It is noteworthy that nobody mentioned in the acknowledgements is or has been to my knowledge a CCAMLR commissioner. It will not be obvious to the reader of this book that the roots of CCAMLR can be traced from the SCAR symposium in Cambridge in 1968 through the SCAR Group of Specialists to the BIOMASS Programme, the objectives of which in 1976 clearly foreshadow Article II of CCAMLR. It is also important to note that CCAMLR came into being at a time when several nations were feeling very disillusioned with the International Whaling Commission, and this engendered significant wariness in trying to come to terms with the ecosystem approach. It was only when it became obvious in the late 1980s that the Scientific Committee was going to concentrate on science and encourage commissioners to make the political decisions, that sufficient trust had developed for a more open debate to take place and allow the involvement of NGOs. Comments throughout the book on the application of consensus are interesting. Generally it is seen as slowing up the process when decisions, obvious to the majority or the most powerful group, are delayed. I view this differently because the minority view may arise for a variety of reasons, and expressing these as personal reservations allows the group to investigate them further during an inter-sessional period and thus ultimately lead to consensus. Consequently, although that consensus might take slightly longer to achieve, the conclusion, because it is the 'property' of all participants, is likely to hold.

Generally the understanding of CCAMLR is quite well presented although there is one serious error. This relates to the 'Chairman's statement.' The problem arises because the Antarctic Treaty only extends as far north as 60°S, whereas the CCAMLR area was set to correspond closely with the revised FAO Statistical Areas for the Southern Ocean proposed by Everson (1977). This area includes many sub-Antarctic islands. In most cases, but not all, sovereignty over these islands is undisputed. The Chairman's statement, as has been clearly stated by Lopez (1992), is deliberately worded to include all those islands over which sovereignty exists, whether or not that sovereignty is in dispute. The key clause in paragraph 5 of the Chairman's statement, carefully