

box whereas 'green' and other interests are much more highly differentiated. The science box deserves more subdivision to be comparable, and to include references to the Australian Academy of Science (through which Australia links with the Scientific Committee on Antarctic Research (SCAR)), government institutions with scientific interest (Bureau of Meteorology, Geoscience Australia, etc), and the university sector, even the authors' own institution. SCAR, not strictly part of the ATS, rates no mention at all. There is also the implication that the minister speaks to his department (DEWR) via the Australian Antarctic Division (which is the reverse of reality).

Several later papers (tourism, fishing surveillance, seabird issues, whaling) acknowledge that Australia operates its Antarctic *policy* well but state that more could be done. Clearly it is true that Australia needs to pursue some marine issues (including research) more assiduously with more shipping resources. Some of the questions about *implementation* spring from moral exhortation rather than enforceable law and draw out the difficulty Australia faces as a claimant nation unwilling or unable to apply Australian law to non-Australians. Many issues also are highly relevant to considerations well beyond the Antarctic (for example, the Law of the Sea).

The sub-Antarctic Macquarie and Heard/McDonald Islands are considered non-contentiously, but the rabbit problem on Macquarie Island could have been developed further. Cats (now eradicated but with severe impact on other animals) are now overshadowed by rabbits (dramatic damage to vegetation and the physical environment with consequent impact on fauna) as a curse.

A continuing thread is almost a view of the ATS as an instrument that is ossified and needs to change quickly. I question this view. One of the strengths of the ATS is 'constructive ambiguity' about territorial claims, but one gets the feeling that the many authors/editors of this volume would like this ambiguity clarified. I believe that the whole issue is best left unresolved, as the ATS has it. The Powell/Jackson paper is a solid review showing that the Antarctic Treaty System has evolved effectively in recent years and continues to serve Australian and Antarctic interests well. It also draws out the currency role of science and reminds us that the AAD/government staff have access to many sources of information not yet available to external analysts/commentators (but government will also benefit from views of the external community).

I see two major gaps in the list of contributors. Science is the currency of credibility in the Antarctic Treaty System (ATS) but there are no science authors in the list, an oddity when the Antarctic Climate and Ecosystems Cooperative Research Centre (ACE CRC — the nominal home of most of the authors) is largely science-based. Likewise, there is only a single paper from the government perspective (Powell and Jackson) concerned with Australia's influence in the ATS. The volume would have had more authority if there were comments by the head of the ACE CRC and by a senior

representative of the relevant government department. A government statement would be particularly relevant in the light of a new and different Australian government (although this was not known as the book went to press).

There are several grammatical lapses and editorial control could have been a little tighter.

In summary, there is much useful material in this book, and it should be on the bookshelves of all involved in Antarctic policy analysis. Those in the Antarctic business, but not policy, should also be aware of the attitudes evolving in the law/diplomacy area and try to be involved in discussions around that evolution. The book is written mainly by authors in the academic community and would have benefited by more input from those active in policy direction within government. It would have been strengthened with a more considered discussion of the role of science, ideally with a contribution from the science community. That said, there are many suggestions and exhortations for government to examine, and I am sure officials will do so. (Patrick G. Quilty, School of Earth Sciences, University of Tasmania, Private Bag 79, Hobart, Tasmania 7001, Australia.)

#### **THE FEROCIOUS SUMMER: PALMER'S PENGUINS AND THE WARMING OF ANTARCTICA.**

Meredith Hooper. 2007. London: Profile Books. xx + 299 p, illustrated, hard cover. ISBN 978-1-84668-008-3. £20.00.

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Understanding how scientists work is often hard for those with no scientific training. Too often the media picture scientists as rather mad boffins in white coats, cloistered in their laboratories and totally out of touch with the real world. This is a book to set them right, describing how a gifted ornithologist not only works himself, but how he inspires others to join his group and become as passionate as he is in the search for a better understanding of the way our world works.

This is the story of how a scientific quest has taken over the life of Bill Fraser, of how in his determination to understand Adélie penguins he has spent almost every summer for the past 30 years working at Palmer Station on Anvers Island. Fighting for funding and always battling against the weather, Fraser has been driving his team to collect long-term data of very high accuracy in order to test new hypotheses on how and why the numbers of Adélies in that area are declining.

The book comes out of the author's third visit to Palmer in the US Writer & Artists Program, and could only have been achieved because of her close working relationship with Fraser. Meredith Hooper is not a scientist, and it is clear that she worked hard to understand the thinking behind Fraser's approach and how his ability to synthesise data allows him to come up with novel interpretations. It also allowed her to ask the simple questions that are so hard to answer.

The book is essentially a diary of the summer of 2001–2002, which she spent with Fraser's group, accompanying them on exhausting fieldwork trips, watching them sort stomach samples, sharing in their concerns over the weather and the targets unachieved. That particular summer proved to be a truly disastrous one for the Adélie penguins, with a further major decline in their populations as the weather made breeding first difficult and then survival of the chicks almost impossible.

Her descriptions of the way in which the data are collected, as well as of the social interactions in Palmer Station itself will be revelatory to those who have never spent time on an Antarctic research station. The enthusiasm and dedication of all the participants comes through very clearly, as does the universal lack of privacy and the claustrophobic elements that characterise all small communities. She describes the social distinction between the scientists and the logistics people employed by Raytheon, but it seemed to me much less of a problem in the small Palmer station than is obvious at the much larger station of McMurdo, where the two groups live almost parallel lives. Her enjoyment of simply being in the Antarctic and taking part in something she clearly feels is important and worthwhile comes through very clearly.

The bigger story here is that the decline in Adélie penguins, top predators in the Southern Ocean marine ecosystem, is inextricably linked to global change. It is the biological equivalent of the retreating glaciers and ice shelves, and yet to unravel its complexities can take a lifetime's work.

If I have a complaint, it is that the book is too long and the reader may get bored and give up before the interesting final chapters. Hooper gives repeated accounts of trips to different islands to count birds, which provide little extra to the scene she has already set. We really don't need 32 chapters to understand the scientific work, nor do we need them to provide the interesting social background. A more rigorous editing would have provided a more immediate message without losing any of the key elements. In addition to the text, the book has some useful maps, some colour photos, a brief bibliography, and a useful index.

Whilst there have been other books describing different fields of science in the Antarctic by the scientists themselves, I have not seen a book quite like this before. Hooper's familiarity with the research station and the Antarctic environment combined with her probing questions in areas many scientists simply take for granted means this is an interesting and different contribution to why and how we do science in Antarctica. (David Walton, British Antarctic Survey, High Cross, Madingley Road, Cambridge CB3 0ET.)

**A COMPLETE GUIDE TO ANTARCTIC WILDLIFE: THE BIRDS AND MARINE MAMMALS OF THE ANTARCTIC CONTINENT AND THE SOUTHERN OCEAN.** Second edition. Hadoram

Shirihai. 2007. London: A&C Black. 544 p, illustrated, hard cover. ISBN 978-0-7136-6406-5. £35.00.  
doi:10.1017/S003224740800764X

The first edition of *The complete guide to Antarctic wildlife* was published in 2002 to widespread acclaim. The second edition comes just five years later (as *A complete guide*, rather than *The complete guide*, although whether this is a bit of retrospective modesty, or just something that happened to slip past the editor, is uncertain). Of course, to those of us who use the book on a regular basis, it is simply 'Shirihai.'

There are a number of differences between the editions, the most noteworthy of which is the inclusion of some 300 new photographs. These are distributed throughout, and not only serve to illustrate the morphology of different birds and marine mammals, but have been chosen to demonstrate specific aspects of behaviour, too. So, for example, there is a fabulous series of preening/grooming behaviour in the section on king penguins (page 46), and some beautiful illustrations of Adélie penguins feeding their young (page 61). Of particular interest is the collection of surfacing crested penguins in New Zealand's sub-Antarctic waters, so the reader can study the differences between four species: snares, erect crested, fjordland and rockhopper. The fairy prions (pages 198–200) and fulmar prions (page 202) also benefit from additional illustrations.

The two editions differ in more than their illustrations. Minor changes include illustrated end-papers (the front is 'Bird and marine mammal topography' from page 53 in the first edition, and the back is the map from the original 'layout of the book' section), a much longer list of acknowledgements, and additional illustrations by John Cox, well-known for his splendid illustrations in Brooke's *A guide to the albatrosses, petrels and shearwaters of the world*. Much of the book has been redesigned, and tables that were once just black and white have been given a facelift with a little colour. Another difference occurs in the plates relating to the cetaceans. For example, the first edition's plate 32 (page 335) of 'Dark animals with similar, prominent dorsal fins,' which highlights variation between killer whales, long-finned pilot whales, false killer whales, Risso's dolphins, and bottlenose dolphins, had corresponding text on the opposite page. The second edition crams all the information on one page, which makes for a somewhat busy page with fairly small diagrams.

There are one or two other irritations — although they are minor, and do not detract from the book as a whole. First, the map on page 9 refers to the Polar Front as the Antarctic Convergence, which could have been updated, and the 'Checklist of birds and marine mammals of Antarctica and the Southern Ocean' (pages 31–34) has been condensed from its original six pages to four, which makes for some very small print.

However, perhaps the *Guide's* most important contribution lies in the updating of the section on tubenoses. The