

Book Reviews

Antarctic Science, **19** (2007)
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Surviving Antarctica

David N. Thomas
Natural History Museum, London. 2007.
ISBN 978 0-565-09217-7, 96 pp, £9.99

Writing good science material for a young audience is an exacting task. With less than 100 pages of simple text and many colour photographs the Natural History Museum commissioned this book to accompany their new travelling exhibition “Ice Station Antarctica”. Designed as educational family entertainment the exhibition attempts to give young people some idea of what it is like to work in Antarctica and a small insight into some parts of the science. The book reflects this approach. To reach such an audience I appreciate that the author felt severely constrained to keep the book both short and simple, elements which can result in errors or misunderstandings. For instance, there are some inaccuracies in his generalizations: the Antarctic Treaty does not cover all the area south of 60°S, only the land and ice shelves; in listing the objectives of the Treaty he left out the key principle in Article II - freedom for scientific investigation; there have been more tourists than scientists/logistics people visiting Antarctica for some years now; many of the coastal stations use desalination plants rather than snow melters; frostbite is rare but frost nip is not uncommon; and the vegetation down the west side of the Antarctic Peninsula can be very lush (for example at Argentine Islands and Leonie Island). In his description on p. 90 of protected areas he fails to mention Antarctic Specially Protected Areas at all and in talking about the quite different Antarctic Specially Managed Areas (ASMA) he wrongly states that the McMurdo Dry Valleys ASMA is the first of its type. There are also still many stations that do not have sewage plants and most inland stations deposit human wastes in a cavern in the ice sheet. In a few instances his descriptions are misleading as they deal only with his personal Antarctic experience. For example, his account of project funding is typical for a university scientist but he fails to mention that several governments support long term research in Antarctica through institutes. The transit time by air to the Antarctic is not 8 hours (which is typical for the Christchurch-McMurdo flight) but dependent on the flight origin and destination - for Rothera for example it is typically 4–5 hours. Whilst the book provides interesting details about emperor penguins there is less on Adélie penguins, only a brief mention of albatrosses and giant petrels and no mention at all of the other birds such as skuas, sheathbills, Wilson’s petrels etc. On p. 70 the reader

has to conclude that incubation of emperor penguin eggs apparently takes place at 80°C, instead of 38°C. I find myself also disagreeing with the implication in his final statements about the extent and importance of environmental damage caused by scientists. True, there is some but it is all localized and at the continental level Antarctic pollution is due to industrial activities elsewhere in the world and not those on the continent. Surprisingly there are some spelling errors - sore for soar, wierdest for weirdest, Comandente for Comandante - and not all the photographs are recent - the one of Rothera is long out of date. Many of the photos came from the author and it seemed to me that a wider trawl could have produced some better illustrative material. Perhaps some of the errors could also have been picked up if the manuscript had been read by other Antarctic experts?

In spite of all these critical comments the book is well written, well designed, easy to read and a really useful addition to the public outreach. I hope that it sells many copies!

D.W.H. WALTON

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The Physiology of Polar Fishes

Fish Physiology Volume 22
edited by A.P. Farrell and J.F. Steffensen
Academic Press, 2005
ISBN 0-12-350446-5, 394 pages, £66

Despite very cold waters, polar regions are very productive and support a large population of birds and mammals that rely on fish for their food. The challenge for fishes come largely in the winter, when thick ice limits atmospheric gas exchange, although high oxygen solubility in the cold may avoid serious problems, and the lack of sunlight shuts down primary production. This volume provides a timely overview of the physiology of fishes that have successfully adapted to one of the most challenging aquatic environments on earth. It updates one aspect of the wide-ranging ‘Antarctic Fish Biology’¹, and various specialist books since, but importantly fills a gap for the Arctic fauna, where the biology and systematics are much less well served². The authors address three important questions: What is special about the physiology of fish from the stenothermal Arctic and Antarctic environments? Are there common themes to the physiology for fishes that live in frigid waters but poles apart? How do polar fishes differ from more eurythermal temperate species that can acclimatize to seasonally cold waters?

Opening of the Drake Passage occurred about 25 m.y.a., and the circumpolar current thus formed physically isolated