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Book Reviews

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Health of Antarctic Wildlife: A Challenge for Science and Policy

Edited by Knowles R. Kerry and Martin J. Riddle
Springer, Berlin, 2009
ISBN: 978-3-540-93922-1, 470 pages. £180

Diseases have been recently reported as a highly important selective pressure for the evolution of living organisms and also as active drivers at an ecosystem level. Antarctic ecosystems are not beyond the action of the agents causing diseases and information about the presence, effects, origin etc of diseases is crucial to establish the base line of ecosystem health of Antarctica. However, up-to-date information about this topic for Antarctica is scarce and fragmented, so a book such as the present one is to be greatly welcomed as fills an important gap in the knowledge of Antarctica.

Health of Antarctic Wildlife is a volume with a wide scope, as it not only addresses the state of health in the Antarctic fauna and the factors that can affect this but it discusses this topic in the context of the complex policy and administration systems for the Antarctic continent. The book is composed of 17 chapters divided in two parts: Part I wildlife diseases (chapters 1 to 9), and Part II external factors: environmental, administrative and legal (chapters 10 to 17). The first part deals with reviews of the current knowledge of the presence of diseases in different group of animals such as birds (chapter 2) and seals (chapter 3). From the number of pages and the number of references it is clear that there is more information on seals than on birds, probably because of the difficulty of working with birds other than penguins. The chapters following these are case studies focused on pathogens such as the virus of infectious bursal disease (chapter 4), host species, such as mortalities amongst Adélie penguins (chapter 5) or New Zealand Sea lions (chapter 6), or health assessments on Weddell seals (chapters 7 and 8) and leopard seals (chapter 9). The second part of the book addresses how factors such as Antarctic climate (chapter 10) and human impact (chapter 13) can affect wildlife health. Before the examination of human impacts, chapters 11 and 12 give details about the current two main human activities in Antarctica, research through the National Antarctic Programs and tourism. Chapter 14 provides a case study on how to measure stress in the Antarctic fauna, specifically on seals as a way to assess the effects of human impact. Sewage disposal has a special treatment in this book with a chapter (15) completely dedicated to this topic giving detailed information on the historical perspective of sewage disposal, the potential impacts of sewage effluent and survivability of human commensal microorganisms. Finally, chapter 16 deals with the legal framework for protecting the health of Antarctic wildlife reviewing all the international laws, conventions and agreements that can affect wildlife health. It begins with the Antarctic Treaty followed by the Convention of Antarctic Marine Living Resources and the Protocol on Environmental Protection, but also includes other international laws not specifically related to the Antarctic environment. The last chapter is a summary of the outcomes of the Workshop on Diseases of Antarctic Wildlife held in 1998 which provides the origin of the idea for this book. Finally, four highly useful appendixes give practical information on protocols for collection of samples for pathological analyses (Appendix A), protocols for collecting samples for toxicological analyses (Appendix B), recommendations arising from the Workshop on Diseases of Antarctic Wildlife (Appendix C) and the report on the Committee for Environment Protection Open-Ended Inter-sessional Contact Group on diseases of Antarctic Wildlife which was submitted by Australia as a Working Paper to the XXIV Antarctic Treaty Consultative Meeting in 2001.

The book will be very useful for all those interested in the environmental protection of Antarctica and specifically of its fauna. It provides a good starting point for researchers, managers or policy-makers involved in Antarctic work. To be a little bit critical I would have liked to see more attention to physiological information on how Antarctic fauna respond to diseases, for instance immunological studies made on the Antarctic fauna, because we should not forget that health is a matter of two parties, the parasite/pathogen and the host. However, this is probably a reflection of the limited research effort to date on this topic. Finally, a comment: the book originates from the 1998 Workshop on Diseases of Antarctic Wildlife, held with the support of the Australian Antarctic Division, where a major attempt was made first to provide a state-of-the-art overview of Antarctic wildlife health and then a series of recommendations to reduce the risk of the introduction of potential pathogenic organisms. More than ten years has been spent in getting this material to publication but in my opinion this long wait has been worthwhile. Now, from the book and papers recently published on this topic, the importance of the presence, the origins and the effects of diseases in Antarctica for the future preservation of Antarctic wildlife has been finally recognised and a baseline has begun to be established. The clear conclusion from this excellent volume is that more work must be done on this issue in order to understand how diseases are affecting Antarctic wildlife, how Antarctic wildlife responds to diseases, and how human impacts and the effects of climate change are facilitating the introduction and spread of diseases. Without

a firm scientific basis how can we make sensible and informed decision at an international level?

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Crevasse Roulette – The First Trans-Antarctic Crossing 1957–58

Jon Stephenson
Rosenburg, New South Wales, Australia, 2009
ISBN 978-1-877-05866-0, 192 pages. £22.50

Most expedition accounts are written fairly soon after the end of the expedition so this is an unusual book, looking back fifty years to this ground-breaking traverse of the International Geophysical Year (IGY) period. For many modern readers the original account by Fuchs and Hillary will not be familiar so Stephenson is essentially telling the story afresh.

The narrative obviously covers the same ground but in a much more personal fashion. This account is different in several ways from that by Fuchs and Hillary. Firstly, it is a much more personal account, and although he deals with the expedition as a whole you read far more about what he did. Secondly, he is able to stand aside from the controversies that bedevilled the original organisation of the TransAntarctic Expedition (TAE) and the antipathy between Fuchs and Hillary and provide some interesting commentary. Stephenson writes well in an easy to read style and includes plenty of details of the science in his narrative.

Crossing Antarctica had been a dream of Shackleton in 1914 whose spectacular failure rather put off everyone else for decades. Lying up in a blizzard in 1949 'Bunny' Fuchs began to think again about how it might be achieved. It was not until 1953 that Fuchs submitted a proposal to the Colonial Office Polar Committee and there it competed head on with one by Duncan Carse, an ex-member of the British Graham Land Expedition. Whilst they decided to back Fuchs Stephenson provides an interesting analysis by Ken Blaiklock of Carses's plans, suggesting his ideas were simply not tenable. Even with the acceptance there was still opposition from some quarters who saw TAE as competing for money that should have been spent through the Falkland Islands Dependencies Survey. Stephenson provides an interesting commentary on the recruitment of expedition members based on his selection as the sole Australian in the party and the only geologist and provides a fascinating account of the winter at the "South Ice" advance base with only three people. It is his comments on individuals – like the moody captain of the *Magga Dan* and Fuchs's repeated insistence that he would not ask for help from the Americans (something he had to backtrack on later) – that provide interesting background to some of the events and decisions that were made. It is clear that Stephenson's sympathies are largely with Fuchs but he does understand why Hillary acted as he did, given the clear reluctance of the New Zealand Committee to authorise his dash to the Pole.

The book contains many previously unpublished photos, and the A4 format allows them to be displayed very well. As you might expect from a geologist, there are some excellent maps. What is rather unfortunate is the number of proof reading errors scattered through the text with not only misspellings of James Clark Ross and of De Havilland but the substitution of letters for apostrophes.

The book contains several interesting extras. First, Stephenson has compiled brief accounts of the later lives of all except the New Zealand participants. Secondly, in Chapter 7 called "Then and Now" he attempts an assessment of the scientific achievements of the crossing and briefly deals with seven of the ten subsequent crossings including Trans-Globe, Messner and Fuchs, Fiennes and Stroud, Ousland, Hubert and Dansercouer, Arnesen and Bancroft. He has also provided five appendices, some of which seem to me to sit strangely in the book. The first deals with previous explorers of the Weddell Sea and goes over yet again the tales of Cook, Ross, Nordenskjöld, Filchner, Bruce and Shackleton, presumably as supporting evidence for the decisions taken by Fuchs on the route of the *Tottan* through the ice of the Weddell Sea. This, together with the appendix on the construction of *Fram, Deutschland* and *Endurance,* seems rather out of place to me, especially as Chapter 1 already contains an overview of the historical context. On the other hand his appendix on the ice and marine geology of the Weddell Sea does add some interesting science that will be unfamiliar to many readers. Equally his appendix on the IGY explorations carried out from Halley Bay, Ellsworth and Belgrano stations provides an interesting counterpoint to the work of the TAE. His final appendix lists TAE publications. If you consider the expedition as a scientific one, given its costs, the list of publications is not especially impressive. However, if the science is taken as a secondary objective to the exploration then the glaciology, the seismic soundings and the geology of three mountain ranges were important achievements. Overall, an interesting and readable volume that makes a useful addition to the TAE literature.

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