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Book Reviews

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Meteorites, Ice and Antarctica: a personal account

by *William A. Cassidy*
Cambridge University Press, Cambridge (2003)
ISBN 0 521 25872 3. 349 pages. Price £19.95

Since the discovery, in the early 1970s, that meteorites are concentrated in Antarctica, this continent has been responsible for increasing the total inventory of known meteorites by 1000%, from around 2000 to over 20 000. Bill Cassidy lead the US Antarctic Search for Meteorites for almost 20 years. In this book, he describes, with charming modesty, his experiences during this time, from the logistics of planning an expedition, to his adventures in the field, his experience assisting in the distribution of meteorites to scientists, and the scientific research of himself and others on the recovered meteorites. The book spans topics as diverse as a description of the grimness of McMurdo base, musings on the long odds of being hit by a piece of Mars, and the composition and history of the Moon. The book is divided into three parts. The first one 'Setting the stage' discusses the history of the meteorite collection project and what it is like to be in Antarctica. The second, 'ANSMET pays off', describes the recognition and importance of meteorites from the Moon, Mars, and the rest of the solar system. The final section, 'Has it been worthwhile', is a simple summary of what we have learnt about meteoritics and glaciology from the collection of Antarctic meteorites.

This book is obviously written by a man who has spent too much of his life holed up in a tent during storms, with not much entertainment on tap: he has developed a gift for storytelling. His many anecdotes about Antarctica, meteorites, and life, left me at times literally crying with laughter. One can visualise him, cramped but cosy, whisky in hand, inside a Scott tent somewhere on the Antarctic plateau in a howling gale, regaling his fellow expedition members with the stories from this book: of the adventures from his previous expeditions, of how the meteorite collection programme first started, and of what happened when the first lunar meteorite was recognised. However, the book is not just about tales of wild adventure. The author's many years as a university professor are also in evidence, as the book describes, with simplicity and accuracy, the scientific importance of meteorites, and intelligently discusses the possible reasons for the mechanisms by which meteorites are concentrated in such huge amounts only in this region of Earth. I would recommend that all students of this topic read this book.

The only negative comment I have is that the book has only very few diagrams and hardly any photos (and all of those are in black-and-white). Considering the beauty and interest of many of the places Cassidy has visited, I found this disappointing.

Who would the book appeal to? Certainly it will be required reading for anyone planning to search for meteorites, either in Antarctica or in warmer climes. Students of geology and astronomy will surely find this book much more fascinating, and equally informative, than their standard textbooks. It will also be of interest to anyone visiting Antarctica for fieldwork, and it will give their loved ones back home a flavour of the Antarctic researchers' experience.

SARA RUSSELL

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Northern Lights against POPs: combating toxic threats in the Arctic

edited by D.L. Downie & T. Fenge
McGill-Queen's University Press, Montreal, Canada (2003)
ISBN 0 7735 2482 7. 347 pages. Price £18.50

The Stockholm Convention on Persistent Organic Pollutants (POPs) was adopted in 2001 and provides the global basis for banning or restricting the uses of around twelve of the most toxic chemicals used as pesticides, herbicides or industrial chemicals which accumulate both in the environment and in human beings. Research had shown that this was especially a problem in the Arctic where transport from the temperate regions and biomagnification in the food chain had produced elevated levels in both the wildlife and the indigenous peoples. This book has 12 chapters describing first the details of the present understanding of POPs in the Arctic, monitoring programmes (including AMAP) and probable sources in the US and Canada, before going on to look at the legal implementation, the effects on indigenous people and role of various organisations in effecting change. This volume contains a great of seriously disturbing evidence of long-range, trans-boundary pollution which is steadily spreading across the world. POPs have already been identified in the Antarctic and this detailed multi-author study should serve to remind Antarctic biologists of the serious effects of these chemicals as they accumulate inexorably in the food webs.

D.W.H. WALTON

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Dictionary of Science and Technology

Bloomsbury Reference, London (2003)
ISBN 0 7475 6620 8. 400 pages. £9.99

This is a dictionary different from the ones we are used to; is it not providing explanation of words in a particular language or specific field of science, but it attempts to cover all fields of science and technology. To do so, it lists more than 17 000 scientific and technological terms and explains these in simple language. I looked up 10 arbitrarily chosen terms from my own field of speciality (meteorology): aerosol, scattering, albedo, turbulence, vorticity (x), jet stream, longwave (radiation) (x), advection, geostrophic (wind), pyranometer (x) and found that 7 were listed with a brief but qualitatively correct explanation. This underlines both the strength and weakness of this publication: you have a fair chance of finding what you are looking for, but the rather qualitative and brief explanation that is presented might not get you very far in thoroughly understanding it. The target group of a book like this (science journalists, policymakers that often read science-oriented documents) might find it useful to have on the shelf, but living in the internet age as we are I doubt whether many specialized scientists would opt for a reference book on paper.

MICHIEL VAN DEN BROEKE

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Norway - a consistent Polar Nation? Analysis of an image seen through the history of the Norwegian Polar Institute

Susan Barr
Kolofon AS, Norway (2003)
ISBN 82 300 0026 3 Price 350 kr. 593 pages.

There have been several accounts of the polar activities of individual nations, and even of particular institutes and laboratories. Like company histories they tend to be of most interest to those who took part in the specific activities covered but, depending on how the author approaches the history, they can provide a great deal more than a simple marshalling of the facts. In researching this volume Susan Barr has cast her net much more widely than some earlier authors. For instance, Vivian Fuchs in his history of BAS (Fuchs 1982) almost completely ignored the political context, minimised the science and placed the focus firmly on tales of exploration and bravery against the elements. On the other hand Tim Bowden (Bowden 1997) took a more critical look at Australian Antarctic Division (AAD) "warts and all" as he put it and found much to comment on in the way in which government and science interacted. Barr has taken the latter approach for the Norsk Polarinstitutt (NPI) but has also attempted to answer a quasi-philosophical question about how Norway is perceived, both internally and externally, in a polar context. As a nation with Arctic and Antarctic territories, a history of whaling and sealing and an emphasis on winter sports the answer to her question may seem obvious - but not so.

The author has clearly devoted immense energy to the research, unearthing many obscure letters and reports to develop her narrative. Indeed, my overwhelming feeling at the end of the volume was that there was simply too much detail for me to have been able to follow the history easily. Undoubtedly for Norwegians the book will provide the definitive reference source but for many others these details may deter readers from finishing the volume. I should add that the author seems to recognise the problem and provides very useful summaries and conclusions at various points.

I learnt a great deal from this book, not least about the enormous contribution made by the first director Alfred Hoel, whose efforts seem to be little known outside Norway. Also interesting was the difficulty experienced over many decades in keeping political interest in the Polar Regions alive in the Storting. Much of the volume deals with the Arctic (and then principally Svalbard), documenting the details of the ways in which Norway planned to exert control over the Svalbard archipelago, the political background to the 1921 Spitsbergen Treaty, the arguments over mineral claims, the dispute with Denmark over the sovereignty of East Greenland, and problems with the Russians over coal mining in Svalbard. There is also much detail about changes in the political context and how the mission of the Institute was coupled to whichever Ministry was given the sponsoring role.

The Second World War proved the downfall of Hoel who, in trying to keep polar work going at the Institute, was seen as collaborating with the Nazis and was arrested and sentenced as a traitor at the end of the war, bringing to an end a lifetime spent in promoting polar survey and science. One of the elements I found especially interesting was the way the author tried to describe how each of the Directors of NPI had contributed to change and development in the Institute, and how their character and scientific interests played a key role in what the Institute achieved.

The book provides fascinating details I had not seen before on the Maudheim expedition 1949-52, an Antarctic activity strongly supported by Harald Sverdrup (the new director of NPI) and on the Norwegian IGY activities. Gjelsvik, as director 1960-83, clearly fought hard to increase investment in Antarctic research, when Norway's government position was that since activities on the continent could not help the sovereignty case there was no

case for spending money on Antarctic science. This argument will be recognised by scientists from many other countries! The fact that Gjesvik succeeded in not only expanding the Institute but also developing Antarctic research against strong bureaucratic opposition was perhaps his greatest triumph.

The last part of the volume deals with the directorships of Rogne and Øritsland, covering developments up to the move from Oslo to Tromsø when Olav Orheim took over. The author clearly feels that the move to Tromso was wrong and she attempts to show how regional politics and media pressure rather than science need or logic dictated the final decision. Australian readers may see some similarities here with the relocation of AAD to Tasmania.

Susan Barr sets out some criteria for defining what she thinks should constitute a "polar nation". These include having polar territories, a cultural history with polar heroes and major exploratory achievements, a central government institution focussed on the Polar Regions, and an interest and awareness amongst the public that polar activities are important. On almost all these grounds Britain scores pretty highly as a polar nation, but is probably not widely regarded as such either internally or externally. Surely Norway, with territories at both Poles, heroes such as Amundsen and Nansen, and the Norsk Polarinstitutt must? I conclude that Norway does pass her tests but with the caveat that its success is due mainly to a small number of enthusiasts whose dedication triumphed over public apathy, financial hurdles, political misunderstanding, and bureaucratic difficulties to establish, develop and maintain a remarkably effective bipolar research portfolio over almost 100 years. I believe Norway is now seen as a consistent polar nation externally, and a major driver for its size of polar initiatives in both science and politics. Susan Barr's book shows just how different this is from earlier times.

In providing this work in English Barr has made available a huge range of Norwegian archival and published literature that is inaccessible to most of us. Although the narrative generally reads well, from time to time she slips in rather strange phrases or words such "self-felt experience"(p. 26), "had a meaning with such an institution" (p. 36), and there are a small number of spelling mistakes (sponsing instead of sponsoring, correspondance instead of correspondence, noone instead of no one, etc).

Checking the extensive index at random I found only a few errors where the items were not mentioned on the page indexed. The index is generally very useful as are the appendices listing NPI staff with periods of employment, expedition vessels, a bibliography and citations for the 2015 sources superscripted in the text.

This is not a popular account of NPI history but a reference work. It will answer many questions about why decisions were taken as they were, who had the drive and vision to make things change and the role played by science in guiding polar policy in Norway. I hope someone will now write the popular book to make Susan's research more generally available.

DAVID WALTON

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