Antarctic Science 17 (4): 569–570 (2005)

Book Reviews

Antarctic Science, **17** (2005)
DOI: 10.1017/S0954102005213007

The Silent Sound: the story of two years in Antarctica and the first winter occupation of Alexander Island

Cliff Pearce
The Book Guild (2004)
ISBN 1-85776-845-0. 256 pages. Hardback. £16.95

In recent years there has been a plethora of Antarctic books, written by media-designated explorers, pitting themselves against the Antarctic environment. They are equipped with the latest high-tech, light-weight clothing and equipment, navigate with global positioning systems, and have instant access to the outside world through satellite-based communications when events do not go according to plan. The books are glossy and their authors often feted on radio and through the printed media. By contrast this is a simple story of Antarctic exploration of fifty years ago, when clothing was poor, equipment was still rudimentary, communications were primitive, difficult and unreliable, and the characters unknown to the general public. The author, Cliff Pearce, is an ordinary chap, albeit one with a great sense of adventure and working in a rather unusual place.

"The Silent Sound" is a somewhat poetic reference to George VI Sound, an ice-filled strait over 500 km long, separating Alexander Island (an island twice the size of Wales) from the Antarctic Peninsula. By 1961, the island had been sighted from the sea and the air, and its eastern coast 'touched' by three dog-supported expeditions passing by. In February1961, the Falkland Islands Dependencies Survey (FIDS) succeeded in establishing a tiny, one-room wooden hut with four bunks at Fossil Bluff, on its eastern coast. From this base three people, Cliff Pearce (meteorologist) and his companions, Brian Taylor (geologist) and John Smith (meteorologist), were given the job of making a start on exploring this country-sized terra incognita.

The story by which they had arrived is a complicated one. Because heavy sea-ice prevented their ship from reaching Marguerite Bay, their project had been delayed for a whole year and Pearce had been sent north to Deception Island for his first Antarctic winter. Fortunes changed in the Antarctic summer of 1960/61 when it proved possible not only to establish a new British station, Base T, on Adelaide Island but then to fly in the construction materials and men to build the hut at Fossil Bluff, and the food and fuel to support three men for a winter. As it turned out, those stores were barely able to sustain Pearce and his companions and much of their winter was spent on very meagre rations.

Despite these and many other problems, Taylor set about a thorough and systematic investigation of the local geology. Their only transport was their own legs and the field work had to be carried out from a tiny tent set up close to the work area. Taylor often camped alone, supported and supplied by one of his companions hiking in with supplies and taking out rock samples over treacherous hills and unstable scree slopes. Radio communications with the main base at Stonington Island were poor at best, so they knew little of what was going on elsewhere and, presumably, even less was known about them. Health and Safety had not then been invented, but apart from a case of frostbite, they came to no grief. Pearce had to pack in a great deal of comings and goings into his book, with headquarters' plans for a major field programme on Alexander Island that never materialised, the loss of one of the relief tractors through the sea ice on its way from Stonington to Fossil Bluff, and the realisation that the hut was not supportable on a year-round basis with the logistic support available at the time. He also gives us details and a flavour of what it must have been like to spend that first winter at Fossil Bluff. As someone who was soon to follow in their footsteps and work in the same area, I can share their enthusiasm for Fossil Bluff and have always regretted that I was denied the opportunity to winter-over there. However, I shall never regret not having to spend months alone in a tiny tent!

The book is reminiscent of many travel adventures that I used to read as a schoolboy and which inspired me to become a field scientist. Whilst FIFDS was a national and permanent operation, the work and the organisation of that work fell into the category of an expedition in the true sense of the word. It also focussed on the Antarctic, a region even then too remote for serious exploration by private expeditions. Pearce's book is one of very few that gives us an insight into the workings of a national, government-supported expedition, of the never-ending difficulties that they faced in the field, and the differences of view between those at headquarters and the people on the ground.

Unfortunately the book suffers from a rather large number of annoying mistakes and omissions. The statement (p. 119) that "Graham Land" is 625 miles wide at 71°S, when it is actually about 150 miles, is inexplicable. Names are misspelled (e.g. Livingstone Island for Livingston Island, Guebriand for Guébriant, *Bahia Aguerre* for *Aguirre*), and many place names referred to are missing from maps, making it impossible to follow the action in places. But, as a story of its time, this is an interesting read and goes to show how paranoid our society has become over such issues as health and safety, and culpability, and contrasts with the current generation's demands for instant and incessant communication, and the 'need' for home comforts, however remote the location. And, if nothing else, his book helps to remind us that true exploration is about venturing into unmapped and unknown parts.

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Antarctic Science, **17** (2005)
DOI: 10.1017/S0954102005223003

Antarctic ecosystems: environmental contamination, climate change and human impact

R Bargagli
Ecological Studies 175. Springer (2005)
ISBN 3 540 22091 7. £100

This is another valuable book in the Springer Ecological Studies series, of which several previous titles have dealt with the Polar Regions. This one follows recent volumes on various aspects of human chemical impacts on Antarctic ecosystems (e.g. Caroli *et al*. 2001, Priddle 2002) but differs in that it tries to make cross-disciplinary connections to explain pathways and trends.

The author is best known for his research on heavy metals in the Antarctic environment (especially mercury) and he has used his familiarity with the environmental pollution literature to make a very valuable survey and synthesis of all environmental chemical pollutants. This would have been a useful approach on its own but Bargagli has tried for more. The remaining contents of this volume focus on summarising the data for climate change. Indeed almost a third of the volume (Chapters 1-3) is devoted to a general description of various elements of the Antarctic and their links to climate change. In taking this route the author has attempted to link several very different science areas – geology, climatology, ecology of terrestrial systems and the anthropogenic impacts on the Southern Ocean – with the data on heavy metals and persistent organic pollutants. I suspect that some will find these summary chapters excellent teaching aids for covering complex fields quickly.

It is only in Chapter 4 that he begins to look in detail at environmental contaminants, first in the atmosphere and then, in progressive chapters, in snow and terrestrial ecosystems, seawater and sediments, and marine food chains. The final chapter is a synthesis of the data for environmental contaminants and the possible effects that climate change could have on their pathways and accumulation.

Despite 62 pages of references no author can find everything. However, Bargagli did not refer to either Caroli *et al*. (2001) or Priddle (2002) and both of these would have added substantially to some of his chapters.

He does refer to the problems others have recognised before in terms of compiling trends, especially in POPs where many different protocols and standards have been used in the published literature. This seems to be a continuing problem and one which needs addressing internationally. Again whilst he refers in Chapter 7 to data showing accumulation of contaminants in organs of a range of different species I was surprised that he did not highlight the almost complete lack of ecotoxicological studies to establish the importance of chronic levels in reproduction and development of keystone species, many of which are very slow growing and might therefore be at considerable risk even with low levels of contaminants.

There are as always small points that any reviewer can find (e.g. IUCN is the World Conservation Union, the ice free area of the Antarctic is only about 0.4%, the labelling on many maps is very poor with Lemaire Channel where the Drake Passage should be and various island groups like Crozet, Macquarie and Marion are missing altogether, South Georgia labelled as South Georgia Island, etc.). These minor problems should, however, not detract from what is a substantial achievement – linking environmental contamination with climate change in a more thorough way than has been attempted before and in the process highlighting more clearly what we still do not know, especially about the actual sources and pathways.

His conclusions in the final chapter are an interesting attempt to suggest possible trends for the future. He suggests that the "cold trap" effect will result in a disproportionate deposition of tropospheric mercury and that this will be traceable back, like increased copper and zinc through other pathways, to industrial development in South America with little or no emission controls. On POPs his suggestions are that deposition will continue to increase in the Peninsula area and Weddell Sea again traceable to increased use in South America of pesticides and PCBs in electrical equipment, whilst biomass burning (which may increase despite attempts to control it) will continue to produce PAHs and black carbon. These ideas are appealing and some industrial data to support the suggested trends would have been a useful addition to his arguments. His proposal for large-scale continent-wide monitoring notes the efforts of SCAR and COMNAP but wants much more – "the development of a specifically designed international programme with standardized procedures for sampling and analysis of environmental matrices". So far this has not been taken up with any enthusiasm by the Treaty Parties. Some of these ideas seem to be reflected in suggestions for IPY programmes, so perhaps there is a mechanism by which new initiatives may be achieved.

I cannot disagree with his conclusions that knowledge of the Antarctic environment needs to be transferred to other sectors of society in many countries to influence decisions on global pollution and environmental management. He wants this book to be a step towards this – an admirable objective.

References

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D.W.H. Walton