

Book Reviews

BORN ADVENTURER: THE LIFE AND TIMES OF FRANK BICKERTON, ANTARCTIC PIONEER.

Stephen Haddelsey. 2005. Stroud: Sutton Publishing. xvi + 255 p, illustrated, hard cover. ISBN 0-7509-4012-3. £20.00.

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Francis Howard Bickerton (1889–1954) was born into an increasingly affluent middle class Victorian family. The tragic death of his father by drowning in 1894, and of his mother two years later, meant that Frank, then seven-years old, and his elder sister Dorothea became wards of their maternal uncle, a mildly eccentric bachelor. What effect this had on Bickerton is not clear, but in any case he grew up to be an unconventional, independent, and somewhat reckless young man. After three years at Marlborough College, Bickerton studied mechanical engineering at London's City and Guilds (technical) College. Taking employment in Bedford, he met Aeneas Mackintosh, who had served on Sir Ernest Shackleton's British Antarctic Expedition (1907–09) and would subsequently lose his life on the 1914–17 Imperial Trans-Antarctic Expedition. The two men became firm friends, and in early 1911 they went treasure hunting on the Cocos Islands. Although this was a particularly poorly conceived expedition, Bickerton's participation in it and his friendship with Mackintosh had exciting consequences. This experience together with his engineering knowledge, interest in aeronautics, and Fellowship of the Royal Geographical Society were enough to secure him a place on Douglas Mawson's Australasian Antarctic Expedition as engineer responsible for the expedition's aeroplane within weeks of his return from the Cocos Islands.

When the monoplane crashed on a test flight in Adelaide, Bickerton's continuance with the expedition was in doubt. Fortunately the wreck could be salvaged, and it was deemed that after some repairs it could be used as a motorised sledge. While the pilot would take no further part in the expedition, Bickerton stayed on as engineer in charge of the air tractor. As a member of the Main Base he was particularly well liked; Walter Hannam thought he was 'the most unselfish man I ever met and the best liked on the expedition,' whereas he (Hannam) considered the photographer Frank Hurley 'our hard case enough said' (Hannam diary NSW State Library). Bickerton spent much of the first winter working up the radio masts and repairing the air tractor. As leader of the Western Sledging Party the following summer, Bickerton, along with Alfred Hodgeman and Leslie Whetter, explored the coastal highlands for 160 miles

to the west of the Main Base. They were away for 47 days, and although the air tractor ultimately proved a disappointment they were lucky to stumble across a meteorite — the first ever found in the Antarctic and a distinct bonus for the scientific achievements of the expedition. As one of the six men selected to remain behind to ascertain the fate of the members of the Far-Eastern Party — Mawson, Xavier Mertz, and Belgrave Ninnis — Bickerton spent a second year south. Once again his engineering skills proved beneficial.

On his return to England Bickerton became involved with Sir Ernest Shackleton's Imperial Trans-Antarctic Expedition (ITAE), and he went with a small party to Norway to test motorised sledges. Given his friendship with both Frank Wild and Mackintosh, it is perhaps surprising that Bickerton did not join the ITAE. However, he did not remain idle for long and was soon embroiled in the First World War, enlisting on 11 September 1914 into the 16th (Public Schools) Service Battalion of the Middlesex Regiment. His abilities were soon recognised and he was commissioned, and on 1 June 1915, 2nd Lieutenant Bickerton, a platoon commander with D Company of the 7th (Service Battalion) Royal Sussex Regiment, arrived in France. After a brief stint with the Machine Gun Corps, Bickerton volunteered for the Royal Flying Corps and was soon flying over the lines as an observer. Slightly wounded by anti-aircraft fire on 31 July 1916, he was seriously injured two weeks later. A pistol blew up in his face practically severing both thumbs and causing a 'piratical' scar on his left cheek. One feels he should have known better as the explosion was caused by his experimentations with double charges of gunpowder. At a time when the life expectancy of a BE2 pilot and his observer was measured in days, this accident may well have saved his life. When he returned to the front about a year later he was a fully qualified pilot. He was clearly suited to his new role as a fighter pilot and was credited with two kills before again being wounded by ground fire after attacking an enemy balloon. Fortunately he managed to coax his Camel back across the lines before crashing. On recovering, he survived another crash when a Vickers Vimy bomber he was test flying from the Aeroplane Experimental Station at Martlesham Heath in Suffolk suffered engine failure. Although the aeroplane was a write-off, he escaped with a few broken fingers.

Captain Bickerton was discharged from the Royal Air Force in August 1919. The remaining 30% of *Born adventurer* is devoted to the remainder of his life (he died in 1954) and includes two spells of farming in East Africa and Newfoundland, a hunting safari when he

traversed Africa from the Cape to Cairo, and his period as a screenwriter and film-editor with the British Film industry in the 1930s. Throughout his life Bickerton mixed with a number of significant artists and writers, several of whom used him as a role model for their heroes (including *The Edwardians* by Vita Sackville-West). In 1937 he married Lady Joan Chetwynd-Talbot, sister of the twenty-first Earl of Shrewsbury, who was 22 years his junior. With the advent of the Second World War, Bickerton re-enlisted and served with distinction as a Wing Commander in the RAF. He died suddenly while on holiday in Cardiganshire on 21 August 1954, leaving a widow and a small daughter.

All his life Bickerton seems to have led an aimless sort of existence — two or three years here, a few years there — and apart from his Antarctic experiences he was never quite centre stage, always just on the periphery of things. And yet it was an interesting life, full of unusual experiences. The author, distantly related to his subject, has done a fine job of piecing together Bickerton's story and providing an insight into this engaging character — perhaps not a doyen of the Heroic Age of polar exploration but the sort of man without whom the expeditions could not have succeeded. (Herbert J.G. Dartnall, Turramurra, New South Wales, Australia.)

THE ARCTIC CLIMATE SYSTEM. Mark C. Serreze and Roger G. Barry. 2005. Cambridge: Cambridge University Press. xviii + 385 p, illustrated, hard cover. ISBN 0-521-81418-9. £75.00; \$US130.00. doi:10.1017/S0032247406225750

I read this book with great interest. It gives an overview of the climate of the Arctic, starting from the early exploration to recent field programmes. It is different from other books insofar that it considers the Arctic as a system, in which the ocean, land, and atmosphere are intimately linked. Again, the Arctic is not discussed in isolation, but the interaction with lower latitudes, both by the atmosphere and ocean, are presented. It is based on physical principles, but the mathematics is limited so that interested undergraduate students will be able to follow. Further, it gives a large number of references, so that it serves nicely as a reference publication for a reader who might be interested in one specific topic. The time of appearance is very appropriate, as next year the International Polar Year will start, leading to increased scientific activity in the polar regions. Both authors are very knowledgeable and actively involved in polar research.

The book is subdivided in 11 chapters. The first chapter, entitled 'The evolution of knowledge about the Arctic and its climate,' consists of 16 pages. It starts with the early exploration mostly in connection with the finding of the Northwest and Northeast Passages. Considering myself knowledgeable on this topic, I was impressed with the masterly description and depth of this early time period, some of the references unknown to me. The chapter describes the increase of knowledge up to the

present. The early Russian Ice Drift (North Pole) stations and the IGY are shown as especially fruitful endeavours.

Chapter 2 is entitled 'Physical characteristics and basic climate features.' It consists of 38 pages and discusses the physical oceanography, sea ice, snow cover, and different meteorological parameters. It is one of the more conventional but well done chapters. Some minor points: the horizontal resolution of figures 2.5 and 2.6 (pages 23, 24) is not 250 km as stated; probably it is of the order of 1 km. The official name of the highest mountain in Alaska is Mount McKinley (page 30); however, it is Denali National Park; presenting Plate 1 (page 31) in black and white in this chapter is meaningless, as the altitude scale is unreadable. When the cloud cover is discussed (starting on page 46), a fair amount is said about satellite-derived data. It is, of course, difficult to obtain data through cloud-cover in that way, as clouds might consist of either ice crystals or water droplets over dry or melting snow, and might be colder or warmer than the surface. Hence a suitable algorithm is difficult to derive. One has to read on to the second to last paragraph of page 48 to find out that modeling efforts cannot give even qualitatively the correct annual cycle, but a reversed one.

Chapter 3 is entitled 'The basic atmospheric heat balance' and consists of 28 pages. This is one of my preferred chapters, as it is unique in the way that energy balance is handled. The authors establish walls along the Arctic Circle, and consider the influx and export, both by the atmosphere and ocean, into and out of the Arctic. In addition, changes in the heat storage of the Arctic Ocean (the atmosphere plays a minor role) and the net radiation on top of the atmosphere are considered. It was for me astounding to see that 'the ocean-cryosphere heat reservoir is as important as the atmospheric influx of energy from the middle latitudes in compensating the radiative loss at the top of the atmosphere' (page 69).

Chapter 4 is entitled 'The atmospheric circulation' and consists of 35 pages. It starts with a historical perspective, and the 'Bergen School' ideas on extra-tropical cyclones by Bjerkness, Rossby, and others. Stratospheric circulation, sudden stratospheric warming (Berlin phenomenon), height of the tropopause, and ozone characteristics of the polar atmosphere are reviewed. In the troposphere, cyclone activity and their common centres (Icelandic and Aleutian Lows), polar lows, frontal activities, and surface winds are discussed. It is a nice summary of the state of knowledge, but a more traditional treatment than the previous chapter.

Chapter 5 is entitled 'The surface energy budget' and consists of 37 pages. It starts out with the surface-energy equation and the non-radiative terms. The authors equate the net radiation with these other terms, which makes the Sun warming the surface a positive flux, while the air warming the surface becomes a negative flux. While it is only a question of definition, and what they are doing is perfectly correct, I prefer a notation where the sum of all fluxes towards the surface equals zero. The solar radiation fluxes, the influence of cloudiness, and the very important

influence of the surface albedo are discussed. When discussing the longwave radiative fluxes, the authors state (page 125): 'The effective emissivity of clouds depends on the cloud optical thickness and. . .'. Optical thickness is a term used for the short wave radiation and normally not for emission, hence 'microphysical properties of clouds' might have been a better expression. Also, when discussing the net radiation and the influence of the albedo, I would have liked to see a reference to Ambach, who carried out measurements in Greenland. He showed that for very high albedos, the net radiation might decrease with increasing global radiation (decreasing cloudiness), as the long wave dominates the net radiation. He coined the term 'radiation paradox' for it. Let me reiterate that the references are otherwise appropriate and plentiful. The authors continue discussing the temporal and spatial changes in the net radiation, cloud radiative forcing, the ice-albedo feedback, cloud-radiation feedback, and the influence of the surface (water, ice, snow, tundra) on the net radiation.

Chapter 6 is entitled 'Precipitation, net precipitation and river discharge' and consists of 30 pages. It starts in discussing the station network, which is not uniform. Further, solid precipitation is normally underreported due to the efficiency of precipitation gauges. In general, precipitation is light in the polar regions. The authors use the aerological method and the reanalysed data (NCEP/NCAR) to calculate the monthly and annual fields of net precipitation ($P - ET$) and apply those to the major river basins in the Arctic. The correlation between the measured run off and the net precipitation is not very good, even on the basis of a hydrological year, during which storage changes should be minor. The run off is normally somewhat higher. This reviewer would have liked to see some more discussion on why this is occurring, for example, is this caused by underground water flow, or are the measurements not accurate enough? Finally, Budyko has done pioneering work, which is mentioned in the manuscript, but no reference is given, and Lettau's climatology equation is not mentioned at all.

Chapter 7 is entitled 'Arctic Ocean–sea ice–climate interactions' and consists of 32 pages. This chapter discusses the growth and decay of sea ice and the dependence of these on salinity and temperature. Different types of sea ice, ice thickness, ice concentration, ice extent, and mean ocean circulation patterns such as the Beaufort Gyre are discussed. It is a nicely written chapter with a great deal of useful information. Three small points: equations 7.1 to 7.3 (page 182) can vary by more than a factor of two also in the range of 0–100 cm, hardly 'rather similar.' Also, a reference to Untersteiner's original work on a drifting ice island during the IGY would have been useful. Further, it is regrettable that the time series of the ice extent in the Beaufort Sea (Fig. 7.12, page 200) was terminated in 1998, as since then several years of low ice extent have occurred, although it is mentioned in the text.

Chapter 8 is entitled 'Climate regimes of the Arctic' and is one of the short chapters, at 21 pages. It concentrates

on specific topics such as Greenland, the polar deserts, maritime influences, the central Arctic Ocean, mountain climates, and anthropogenic influences (heat islands and ice fog). While these subsections are nice to read, some go to great details — for example, for 16 locations in Greenland the annual temperature course is presented. On the other hand, little is said about the influence of the Gulf Stream, which keeps, for example, Murmansk (at 69°N) ice-free year-round, with an annual mean temperature around the freezing point. This reviewer would have liked to see a more detailed discussion of the big picture such as the cold winter temperatures of Eastern Siberia (Verkhoyansk) due to the semi-permanent anticyclone, the coreless winter, and others.

Chapter 9 deals with 'Modeling the Arctic climate system' and consists of 33 pages. It starts out with a description of general model types that are not only considered for the polar regions, but anywhere on Earth. It is well done and gives a good introduction for people who are unfamiliar with this topic. It is followed by a discussion of sea ice and ice–ocean models, and global climate and regional climate models. This is followed by a description of numerical weather prediction and ecosystem models, and finishes with a discussion on model errors. In summary, a nice presentation of the successes and shortcomings of models is presented, presently a major effort in the field of atmospheric sciences.

Chapter 10 discusses 'Arctic paleoclimates' and consists of 29 pages. It goes back to the Proterozoic, some 800 million years ago. It shows clearly that climate change occurred long before any human activity could have influenced it. It further indicates that major shifts in climate are related to changes in the solar radiation first discussed by Milankovitch in 1941, a theory that was doubted for several decades. Only ice-core analyses from Antarctica and Greenland, from which temperature and CO₂ concentration could be obtained, going back for several hundred thousand years, confirmed this hypothesis. It is a well-written chapter, definitely worth reading.

Chapter 11, the last and longest with 45 pages, is entitled 'Recent climate variability, trends and the future.' It discusses the observed climate change during the instrumental record, basically the last 100 years. It discusses natural climate variability and human impacts and the different meteorological elements such as temperature, moisture, cloudiness, atmospheric pressure, precipitation, run off, sea ice, and cyclonic activity not as single parameters, but their interactions. The North Atlantic Oscillation (NAO) and the Arctic Oscillation (AO) are discussed in detail. The authors point out that the observed warming from 1920 to 1940 has the same order of magnitude as the present one, a fact often ignored by the popular press. Further, they state that the climate system is complex and has natural low-frequency oscillation, as expressed in the above indices. Hence, it is simplistic to believe that all observed changes are

due to human activity. The observed warming in the Arctic is larger than the mean warming observed on Earth. This polar amplification is most likely due to the positive ice–albedo feedback. However, this might be in part balanced by ‘a corresponding reduction in poleward heat transport by atmospheric circulation.’ Models have improved substantially; however, they still cannot explain the observed cooling from 1940 to 1970, so that future forecasts, especially for extended time periods, have to be taken with caution. As do most scientists, I agree with the authors’ statements that human activities have contributed to the observed Arctic warming, but that separating the anthropogenic signal from natural oscillation is a difficult task. There is one small error on page 294, where it states: ‘Since 1997, it (PDO) has shifted from negative to positive.’ The shift was, in fact, in the opposite direction.

Summarising, I do like this book, which indicates current knowledge concerning the climate of the Arctic and its interaction with the lower latitudes as of today. The authors made a major effort to include recent advances, which can be seen from the literature and includes papers published in 2005. While there will be relatively few scientists or students who will read the book cover to cover, it should become a standard reference volume. The large number of references (42 pages) and the subject index are very useful in this direction, as are the websites cited and the overview at the beginning of each chapter. Compared to Przybylak’s book on the *Climate of the Arctic* (2003), this book is broader and puts more emphasis on the interactions, as expressed in the title *The Arctic climate system*. This book will be essential for all climatologists interested in the Arctic. (Gerd Wendler, Geophysical Institute, University of Alaska Fairbanks, 903 Koyukuk Drive, PO Box 757320, Fairbanks, AK 99775-7320, USA.)

TOWARDS THE SOUTH POLE ABOARD THE FRANÇAIS. Jean-Baptiste Charcot. Translated by A. W. Billingham. 2004. Bluntisham: Bluntisham Books; Banham: Erskine Press. liv + 247 p, illustrated, hard cover. ISBN 1-85297-062-6.

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Jean-Baptiste Charcot was one of the greatest scientists and explorers of the ‘Heroic Age’ of Antarctic exploration. Yet his expeditions — particularly his first aboard *Français* — remain among the lesser known of the Antarctic efforts in the opening decades of the twentieth century. This is certainly in part because his published account of that first expedition (Charcot 1906) has never previously been translated into English. Now that oversight has been corrected in this important addition to the series of translations of early expedition accounts that Bluntisham Books and the Erskine Press has been publishing for the last two decades.

The son of a renowned neurologist, Charcot was pushed from an early age to follow in his father’s footsteps. However, as a youth he was enamoured of ships

and the sea and dreamed instead of joining the French navy. Although Charcot qualified as a medical doctor, the deaths of both of his parents left him with a sizable inheritance, which allowed him to pursue his goals of going to sea and engaging in scientific exploration.

Eager to lead an expedition to the Arctic, Charcot commissioned the Le Havre firm of Gauthier to construct a three-masted schooner of uncommonly high quality. Charcot received advice throughout the process from Adrien de Gerlache, the leader of the *Belgica* expedition, which had been the first to winter south of the Antarctic Circle. Unfortunately, even Charcot’s considerable fortune was not able to cover the costs of a ship made to such a high standard, including special reinforcements and fittings designed for the Arctic seas and the installation and equipping of a complete scientific laboratory aboard. The result was that Charcot was ultimately forced to install a second-hand engine, which would cause problems throughout the first expedition.

Although his original intention was to travel north, Charcot did a volte-face when, in spring 1903, the news broke that the members of the Swedish Antarctic expedition under Otto Nordenskjöld were missing. With support from the influential newspaper *Le Matin* — run by Charcot’s brother-in-law — from Paul Pléneau, the wealthy director of an engineering company, and from a number of French scientific societies, as well as the blessing of the French president, he established a plan to provide aid in the search for Nordenskjöld, explore the west coast of the Antarctic Peninsula as far south as Adelaide and Alexander islands, and conduct a full scientific programme.

Français left Le Havre in August 1903, with Pléneau and de Gerlache as members of the expedition. However, on arrival in Pernambuco, Brazil, de Gerlache and two French naturalists left the venture, and shortly thereafter, in Buenos Aires, Charcot’s party was able to meet that of Nordenskjöld, which had been rescued by the Argentine corvette *Uruguay*, under the command of Julian Irizar. This development enabled Charcot to dispense with any humanitarian considerations and concentrate solely on an exploratory expedition emphasising geographic, cartographic, and scientific accomplishments — the scientific staff consisted of six men studying a wide array of disciplines. They sailed south from Buenos Aires in December, and made slow but steady progress, finally reaching the South Shetland Islands on 1 February 1904. Within a week, serious engine problems developed, but Charcot pressed on.

At Wiencke Island, Charcot found ‘an excellent place in which to shelter and carry out some repairs’ (page 26). They named it Port Lockroy after Edouard Lockroy, the Vice-President of the Chamber of Deputies and a great supporter of the expedition. Shortly thereafter, *Français* was afflicted by further engine problems, and Charcot determined to winter in a shallow inlet on the coast of Booth Island. Here his careful planning and foresight showed Charcot in his best light: not only did

Français carry materials for the construction of on-shore accommodation for the scientific instruments, but he had carefully prepared for the welfare of the crew. Each bunk had a sliding door for privacy, which was also given in a series of cubicles that came equipped with writing desks. In addition, there was an excellent selection of high-quality and varied food and drink, and lectures, concerts, and discussion groups were organised to prevent boredom. And whenever conditions permitted, the men made scientific or recreational excursions ashore.

In the following spring, Charcot led a trip in a whaleboat to Petermann Island and the Graham Land coast, which were carefully surveyed. Then, when the wind blew out the ice from the entrance to the winter quarters, the expedition continued south, passing the Biscoe Islands and Adelaide Island before sighting Alexander Island. However, *Français* struck a submerged rock and was badly holed, while at the same time, due to the inefficient engine, constant working of the pumps by hand was required. With the weather deteriorating, Charcot regretfully acknowledged that they had to turn north to Wiencke Island, where repairs could be undertaken. For the next 16 days the pumps were manned almost continuously, but they were able to reach Port Lockroy, where temporary repairs were made. *Français* then limped northward, eventually reaching first Puerto Madryn — where Charcot learned his wife had filed for divorce on the grounds of desertion — and then Buenos Aires.

In Buenos Aires, after finding how truly extensive the damage to *Français* was, Charcot sold her to the government of Argentina, and the expedition members returned to France aboard a cruise liner, hauling with them 75 boxes of scientific specimens, records, and charts. Charcot's results included the charting of more than 600 miles of coastline, and the extremely detailed scientific results filled seven substantial volumes.

It is somewhat of a mystery why no English-language publisher previously produced a version of Charcot's account of his first expedition, particularly considering that his translated work about his second expedition (Charcot 1911) is considered something of a classic. This volume fulfils the need for an account of the expedition in English, and also includes a detailed and most useful introduction by Maurice Raraty, which gives an extensive background to Charcot himself before, during, and after the expedition, and in so doing explains much about the reasons behind the expedition, its accomplishments, and its place in Antarctic history.

As is typical for Bluntisham Books and the Erskine Press, this is a very nicely produced work. Although a number of the pictures are not as sharp and crisp as they might have been had the publishers been able to use Charcot's originals rather than those from the first published edition, the layout and type make the book easy to read. It is a high-quality production, with exceptionally good paper, a beautiful cover that is a careful copy of the original, and high standards in production and binding. As has been noted for earlier volumes (and

undoubtedly will again), these publishers are both to be thanked for producing such a valuable contribution to the literature of Antarctic history. (Beau Riffenburgh, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

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ENVIRONMENTAL CHANGE: KEY ISSUES AND ALTERNATIVE APPROACHES. Frank Oldfield. 2005. Cambridge: Cambridge University Press. xxi + 363 p, illustrated, soft cover. ISBN 0-521-53633-2. doi:10.1017/S0032247406245753

To author a book titled *Environmental change* is a daunting prospect. A scholarly treatment of the topic almost requires a qualifying subtitle, but the one provided in this case is not very informative.

The preface and first chapter set this work largely in the context of relatively recent changes resulting from the effects that human life- (and lifestyle-) supporting activities are having on the Earth-system. Manifestations of these changes in atmospheric concentrations of greenhouse gases and, correspondingly in Earth's temperature are, Oldfield argues, beyond the range, especially with respect to rates of change, of past climate change. A nice overview is provided for key Earth-system processes, including feedbacks and non-linearities.

The introductory chapter provides an excellent review of the last few decades of Earth-system science research. In doing so it introduces a list of the 'key issues' to be addressed in this book, which include global climate change, sea-level rise, ecological and human implications of climate change, wider implications of human activities and global change (changes in biodiversity, ecosystem services, etc), implications for human vulnerability and sustainability, and future surprises. An effort is made to scope each of these with respect to the changes that have been documented or inferred for the distant past and the recent past, as well as those that can be anticipated for the future. A seventh entry in this list, 'The IPCC (Intergovernmental Panel for Climate Change) approach,' might have been better placed in the next section of this chapter, which is entitled scientific methodologies. Assessments like the IPCC and the Millennium Assessment (unfortunately the Arctic Climate Impact Assessment is too recent to have been covered in this book) play a role in shaping science, and it would be interesting to know the author's view of the significance of environmental-change assessments in this regard.

For the study of environmental change, six methodological frameworks are mentioned: monitoring, coordinated observational campaigns, field experiments, paleo-environmental studies, modeling, and global base-line surveys. Two of these are well covered with full chapter treatment, while the other four are mentioned at various points in the remaining chapters. Chapter 2 provides an introduction to models and modeling and sets the stage for reference to various model studies and products in later chapters. Chapters 3 and 4 focus on the methodologies employed in palaeo-climate studies. Given the author's scientific credentials, it is not surprising to see this emphasis, and it is indeed one of the great strengths of the book. I cannot think of any other place where one will find such a concise overview of the multiple approaches used in palaeo-climate studies, and especially an evaluation of the potential and the limitations of proxy analyses.

Chapters 5, 6, and 7 provide a compact overview of climate variation during the past half million years, with emphasis that proceeds from glacial–interglacial cycles, to the transition to the Holocene, and then to the Holocene, itself. Many exciting discoveries of the last three decades, such as the acceptance of the importance of Milankovitch orbital forcing, the composition of past atmospheres as revealed in ice cores from Greenland and Antarctica, and the understanding of feedbacks, especially those linking physical and biogeochemical aspects of climate, are nicely captured in these three chapters. Chapter 7, specifically on the Holocene, includes considerations of the contributions of solar variability and volcanic activity to climate variability. It also touches upon a recent debate regarding the geographic extent and severity of the Medieval Warm Period and the Little Ice Age, as treated in publications through 2004.

The next four chapters cover environmental change that has occurred during the period that Crutzen and Stoermer have recently termed the Anthropocene. Separate chapters treat the atmosphere, the land, aquatic environments, and biodiversity. They cover climate and non-climate topics such as CFCs, deforestation, and coastal eutrophication. Each is relatively brief, and some of these topics do not appear elsewhere in the book. Much of what is in these four chapters could have been folded into a more interactive characterisation of Earth-system components that are being affected by human activities.

Another strength of the book is found in the next chapter, on detection and attribution. I would, however, have liked to see a more extensive discussion of the polar amplification of climate change, and especially the reasons for its more pronounced character in the Arctic vs Antarctic — something that is often perplexing to the non-scientist.

Chapter 13, on future global mean temperatures and sea level, draws heavily from projections contained in the IPCC third assessment reports published in 2001. Some publications since IPCC 2001 are discussed, and attention is given to possible surprises with respect to the potential for rapid ice loss from the west Antarctic ice sheet

(WAIS) and Greenland. Several publications since 2004 have since emphasised an even higher likelihood of this occurring, with expanded areas of summer surface melt and enhanced glacial flow on Greenland. The implications of these changes for sea-level rise are considerable. There is an unfortunate error in a paragraph near the end of this chapter that begins with mention of a possible rapid collapse of the 'west Greenland ice sheet' rather than the west Antarctic ice sheet.

The next two chapters deal with regional products of global climate models and associated impacts and vulnerability for systems and sectors such as floods, droughts, food production, and forestry. For a book on environmental change, vs one on climate change, these chapters are thin. Mention is made of shifts in the frequency of extreme events with a change in global mean temperature. The IPCC 2001 reports document changes in numbers of exceptionally hot and exceptionally cold days, in the intensity of precipitation events, and in the occurrence of continental drying over the past few decades in concert with the documented increase in Earth's mean temperature. On the basis of emission scenarios and climate projections (discussed here in chapter 13), the IPCC projects 66–99% likelihood for increasing frequency of occurrence, intensity, or persistence of these extreme events, as well as higher peak wind and peak precipitation intensities for tropical cyclones in the twenty-first century. The implications of these aspects of projected future climate change, especially in concert with sea-level rise in coastal areas, are understated in this book. Here the author demonstrates much less familiarity with portions of the IPCC assessment that bear on climate-related environmental changes that have potential to severely impact ecosystem services, especially human and societal needs for food, fuel, and fibre. In fact, in several places an incorrect citation is given for the IPCC reports that deal with regional climate impacts and vulnerabilities.

The final chapter calls attention to some of the questions raised in scientific publications about confidences that can be placed on projections for future climate. Mention is also made of some of the spurious challenges to the science that underlies our current understanding of climate and other environmental change. Better understanding of the functioning of the Earth system will improve our ability to project future environmental conditions. However, the fact remains that a huge portion of uncertainty about the composition of the atmosphere and climate in future lies in an inability to forecast what choices humans will make about our population size, our collective standard of living, and, most importantly for climate, whether we fuel this life style with the combustion of fossil fuels as inefficiently as we do today.

Whereas on the whole the IPCC climate assessments project that a warmer world will have many net negative environmental impacts, a popular challenge to this view is that Earth was at times warmer in the past and this was not necessarily a bad thing. Anyone truly open to discussion and reason on this topic will find Oldfield's treatment of

past climate highly approachable. The case is compelling that we have entered the Anthropocene. Earth's climate 50 and 100 years from now will be influenced by decisions that we make today and tomorrow. Informed people will make wise choices, and to this end *Environmental change: key issues and alternative approaches*, makes an important contribution. (James J. McCarthy, MCZ, Harvard University, 26 Oxford Street, Cambridge, MA 02138, USA.)

THE PREDICAMENT OF CHUKOTKA'S INDIGENOUS MOVEMENT: POST-SOVIET ACTIVISM IN THE RUSSIAN FAR NORTH. Patty A. Gray. 2005. Cambridge: Cambridge University Press. xxvi + 276 p, illustrated, hard cover. ISBN 0-521-82346-3. £55.00; \$US90.00.

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It has become common knowledge that the 1990s — the first decade following Soviet rule — brought drastic and disruptive changes and the experience of extreme poverty to many of Russia's citizens. In *The predicament of Chukotka's indigenous movement*, Patty Gray documents how the indigenous peoples of Chukotka — an autonomous region of Russia located at the northeasternmost extreme of Siberia — lived through this 'dark decade' (page xii). The decade was dark not only from an economic point of view, but also because of the cynicism of Chukotka's governor, Aleksandr Nazarov, and the policies implemented by his administration. In a compelling narrative style, Gray recounts the struggles of Chukotka's indigenous peoples to have their voices heard at a time when, on the basis of the highly touted processes of democratisation going on in Russia, one would have expected greater openness and freedom of expression.

The book is divided into seven chapters, with a preface and an epilogue. Between each chapter, novelesque vignettes invite us into the life of Malina Ivanovna Kevyngevyt, a fictional character inspired by people the author met in the field. Malina Ivanovna is an ethnic Chukchi — the largest of the indigenous groups living in Chukotka. In the course of her lifetime, Malina Ivanovna experienced all of the radical changes of the twentieth century in Chukotka: born in a *iaranga* (the 'traditional' housing), she was then settled with her parents in a village, received higher education in the Soviet system, became chair of the village Soviet in the 1970s, suffered from the hardships of the 1990s, and felt alien in the new businesslike atmosphere of the capital after the election in 2000 of the oligarch Roman Abramovich as governor (who became famous in the West after he purchased the Chelsea football club). These vignettes evocatively flesh out the factual and analytical material.

After a brief preface, Gray dives right into the heart of her subject matter through the presentation of several 'epitomizing events.' These events reveal two main aspects of the indigenous movement in the 1990s: 1) there was indeed a political consciousness among indigenous

peoples, although it was inchoate; and 2) indigenous activism in Chukotka faced so many impediments from the local government that it could not really emerge. Indeed, these events show how indigenous peoples in Chukotka were deprived of their regular meeting place and their indigenous-language newspaper, and forced to fight against the manipulations of the administration so that they could put forward their own representative as a candidate for governor. Gray insightfully approaches this situation in terms of control of space:

[A]s far as the Russian administration was concerned...it was not considered important for indigenous Chukotkans to control spaces of their own in Chukotka society; it was sufficient to accommodate them in Russian spaces: a room in the House of Culture, a page inside the Russian newspaper, a token appointment within the administrative apparatus. (page 25)

In the chapters that follow, the author provides the elements required to understand the context and consequences of these 'epitomizing' events.

Chapter 2 gives insight into the development of the Chukotkan indigenous movement. Gray places it within both its international and national contexts, documenting the rise of indigenous movements throughout the world, the history of the Russian Association of Indigenous Peoples of the North (RAIPON), and how the Russian movement is linked to global indigenous activism. In this chapter, we see that the indigenous movement of Chukotka, which started during Soviet times, was better adapted to the Soviet system than to the new, more colonial post-Soviet logic that was predominant in Chukotka in the 1990s.

Chapter 3 expands on the 'limits of resistance' of the indigenous peoples of Chukotka. Gray invokes a variety of theoretical tools to illuminate the situation, including the notion of 'in-between social protest,' and a definition of resistance as 'a process of becoming rather than an already achieved state' (both ideas from Fox and Starn 1997, quoted by Gray page 68). Gray shows also how 'hidden' and 'public' transcripts (Scott 1998) have shifted in the post-Soviet period. During the Soviet period, the official public transcript claimed that all nationalities were equally represented in the communist system, and thereby concealed the fact that ethnic Russians dominated public life. In the post-Soviet context, the discursive emphasis put on democratic equality and opportunities offered by capitalism obscured local authorities' hidden aim to 'capitalize on limited resources and monopolize them within incomer-dominated patronage networks' (page 70). Interestingly, Gray shows how the use of the idea of 'democracy,' defined as the rule of the majority, worked against the indigenous peoples by removing justification for their special subsidies, rights, and privileges, and thereby depriving them of much-needed support.

Chapter 4 goes back to Soviet times and provides a history of Chukotka and of all the changes indigenous peoples had to face during this period. This chapter

pays particular attention to the creation of the indigenous intellectual elite, constituting today the driving force of the emerging activism.

In chapter 5 Gray returns to the notion of physical and social space used in chapter 1 and uses it to analyse the relationship between indigenous residents and incomers, describing 'how incomers managed to inscribe their dominance on a space that was originally thought to belong to indigenous residents' (page 117). By way of illustration, Gray shows how the village of Tavaivaam, a 'suburb' of Anadyr, has become both a ghetto for indigenous residents and a 'living museum of Chukotka's indigenous cultures' (page 136). Indigenous 'culture,' understood here mostly as cultural performances, is instrumentalised by local authorities as a display of what the administration claims to be doing for the sake of the indigenous residents. Gray speaks of the 'ghettoization in a "cultural space"' as a 'diversionary tactic, a way to shift attention away from more pressing indigenous concerns' such as poverty, lack of housing, and health care (page 140).

Chapter 6 elaborates on the changes in Russia during the 'dark decade,' and the consequences those changes had on local politics. Gray outlines the history of federal and local institutions in Russia, which provides an understanding of how relations between different nationalities had been organised under Soviet rule at an institutional level. This helps the reader understand how, in the case of Chukotka, the Russian candidate for governor (A. Nazarov) won over the Chukchi candidate (V. Etylin) in the post-Soviet context. As part of the anti-foreigner policy developed by Nazarov, Gray explains how all of Chukotka has come to be classified as a restricted border zone, despite the fact that Russian president Boris Yeltsin had implemented federal laws that promoted freedom of movement for Russian citizens and foreigners, both within Russia and abroad.

Chapter 7 is devoted to the socioeconomic conditions in Chukotka. Gray provides details on the difficulties encountered by residents of this region: unpaid salaries, outrageously high prices (the highest in Russia), etc. Whereas non-indigenous residents fled from the region in droves, indigenous residents have no other choice but to stay. Hardships of their everyday life have dramatic consequences on their life expectancy and alcohol consumption (although, as Gray accurately stresses, the latter should not be considered exclusively an indigenous issue).

After this sad portrayal of indigenous peoples' lives and activism in Chukotka, Gray concludes on a cautiously optimistic note, referring to positive developments that have occurred since 2001. However, without a follow-up study on the extent to which the new administration has in fact had a positive impact on indigenous activism and welfare, her optimism remains provisional. Indeed, coming back to two of the 'epitomizing events' mentioned in chapter 1, as of spring 2006 indigenous peoples still did not have a place for their regular meetings, and still had not resumed publishing any indigenous-language newspapers.

My only real complaint about the book has to do with its organisation. In an effort to make the book more readable and enjoyable (and it *is* readable and enjoyable), Gray portrays the situation by focusing in each chapter on one aspect (history, politics, institutions, economy) to the exclusion of the others, so that the reader does not get an overall view of the situation until the end of the book. Because of this narrative technique, crucial data are sometimes provided a bit late. For instance, it would be helpful for the reader to know how many indigenous peoples live in Chukotka, and the ratio of indigenous to non-indigenous residents, before chapter 3, or to know more about the socioeconomic conditions earlier than chapter 7. But in the end, all the necessary pieces of information are there, and the reader can piece the puzzle together.

These minor structural flaws in no way diminish the overall contribution of this important work. First, few monographs about Chukotka have been written by Western scholars. Access to the region was not possible before the 1990s, and even now there are very few anthropologists and other researchers working in the region (the anti-foreigner policy discussed in chapter 6 suggests an explanation for this). This book not only documents ethnographically the historical, political, and economic situation of the indigenous peoples of Chukotka in the 1990s — about which very little information is available — but more importantly it provides the context necessary to understand the situation in Chukotka today. I would highly recommend this book to anyone interested in Chukotka and in indigenous issues more generally. (Virginie Vaté, Siberian Studies Centre, Max Planck Institute for Social Anthropology, PO Box 11 03 51, D-06017 Halle, Germany.)

TRAVELLING PASSIONS: THE HIDDEN LIFE OF VILHJALMUR STEFANSSON. Gísli Pálsson. Translated from Icelandic by Keneva Kunz. 2003. Hanover, New Hampshire: University Press of New England. xviii + 374 p, illustrated, hard cover. ISBN 1-58465-510-0. \$US35.00.

doi:10.1017/S0032247406265756

At least half a dozen biographies of Vilhjalmur Stefansson have been written, as well as his own 411-page autobiography. What more can there be to say? Quite a lot, according to Gísli Pálsson. Substantial new evidence on Stefansson's private life came to light in 1987 with the discovery in a flea market of hundreds of private letters and documents. These shed light on the lives and loves of women he knew and with whom he corresponded over many years. The author of *Travelling passions*, while in no way neglecting the better-known aspects of Stefansson's career, has followed the trail of the new sources and conducted interviews with Stefansson's friends and relatives, uncovering a complex and perhaps torn personality. The 'hidden life' in the title hints at the author's special interest in Alex, Stefansson's son by his Inuit 'seamstress' Fanny Pannigabluk.

Pálsson is Professor of Anthropology at the University of Iceland and editor of Stefansson's ethnographic notebooks (published in 2001 — 39 years after Stefansson's death). Travelling far and wide, the author sought out and interviewed everyone who would talk to him about Stefansson, including Alex's children Frank, Georgina, Rosie, and Shirley, and others who had known Alex at Herschel Island and Inuvik. Pálsson also discusses colonialist assumptions and anthropological relationships at the time of Stefansson's Arctic expeditions. He devotes several chapters to these expeditions but returns again and again to 'the hidden life' on the grounds that most of it went unreported in earlier biographies. At Harvard in 1905 Stef met Orpha Cecil Smith, a young drama student from Toronto, and in 1906 they became engaged. Although Cecil broke off the engagement some years later when it became clear that Stef was consumed by his Arctic interests, they continued to correspond with evident depth of feeling for the next 30 years. Pálsson learned some of this from a meeting with Cecil's daughter Jerry Day Mason in 2002.

Between 1906 and 1918, Stefansson went on three expeditions to the Arctic. Prior to that he had made two summer journeys to Iceland. His first major Arctic expedition was the shortest one, spanning 16 months, and the last one the longest, extending over five years. During the second expedition, Stefansson hired Pannigabluk, a widow, who became his key informant on native ways of life. Thanks to her, Stefansson's field descriptions became perceptive, rich, and detailed. It is not surprising that this expedition proved particularly valuable in an anthropological sense.

Stefansson's theory of Arctic exploration, although it owed much to Dr John Rae, was still considered revolutionary in the early years of the twentieth century. He questioned contemporary ideas about the Arctic, emphasising that these revealed as much about the people who expressed them as about the Arctic itself. If travellers learned to adapt to the environment by assuming the ways of local people, the Arctic would cease to be an alien, unfriendly land. Only by living with the Inuit and by participating in their activities, he argued, could we learn to appreciate the Arctic as an insider, free from the prejudice and arrogance of outsiders. In Pannigabluk, Stefansson had an intimate relationship with one of the aboriginal people, a relationship that allowed him to 'know the Inuit as they are,' as he often put it. However, he was silent to the grave about this relationship. The fact that he had a fiancée in Boston may at least partly explain his reticence throughout his career about Pannigabluk and their son Alex.

Stef, as the reviewer knew him in the 1950s, was able to look back on a long career as anthropologist, explorer, and prolific writer on Arctic affairs. As a young man, years before he met Cecil Smith, he appears to have speculated about his future, envisaging only two avenues: peaceful and loving family life, on the one hand, and fame and fortune, on the other, as if the two could not be combined.

He dreamed of becoming a poet, and in one of his early poems he places 'a woman's love, the life of a common man' above everything else. In the event, he lived his life in exactly the opposite manner in many ways.

Biographers have minutely dissected his life from its beginnings in the Icelandic colony in Winnipeg, the family's move to North Dakota, and Stef's university studies in Iowa and at Harvard, where he toyed with the idea of becoming a minister. His Arctic expeditions were followed by four decades of writing, lecturing, and promulgating the concept of living off the land; on the possible ethnic origins of the Copper Inuit; and on diet and disease in an Arctic context. Stef himself published 24 books and more than 400 articles. His most famous book, *The friendly Arctic* (1921), described the Canadian Arctic Expedition of 1913–18. In it he reported on the discovery of new islands north of latitude 75°N, on the expedition's anthropological studies, and also on the tragic loss of the expedition ship *Karluk*, about which several books have been written.

Stef settled in New York in 1918. In 1922 he met the author Fannie Hurst while travelling in Italy and they became lovers. Fannie was already married but that did not seem to affect their relationship. At the time they both lived in Greenwich Village and enjoyed its rich cultural and social life. They corresponded for years, yet Fannie Hurst's marriage lasted until she died in 1952.

Stef met Evelyn Schwartz Baird in Romany Marie's restaurant in the Village. Although Evelyn was 34 years younger, they began to see more of each other and eventually married in 1941. At age 62, it was Stef's first marriage but Evelyn's second. Besides lecturing, Stef's preoccupation at the time was building up his library and cornering the market in polar books. However, having friends in many countries with common interests in Arctic affairs, Stef was approached by the Office of Naval Research in 1946 to write an Encyclopaedia of the Arctic. He employed research assistants, some of whom were Russian. Insensitive to the growing paranoia about communism, he fell foul of Senator Joseph McCarthy's Committee on Un-American Activities. Stef was considered guilty by association with various socialist societies and with the anthropologist Professor Owen Lattimore. Lattimore had been a friend for many years because of their shared interests in Asia, but he was never a communist. Stef's contract with ONR was terminated and as a result, he and Evelyn could no longer afford to remain in New York. They moved first to Vermont and later to Hanover, New Hampshire.

Stef's polar library was housed in the Baker Library of Dartmouth College. Because of its vast scope, the collection became a Mecca for scholars of Arctic affairs and polar history. An added bonus was the ubiquitous presence of the man himself, forever willing to share his encyclopaedic knowledge with all comers. Stef died in 1962 and, bereft of its protector, the collection became the victim of 'rationalisation' involving the dispersal of some of its contents.

Pálsson's book is very well-researched, and the reviewer found it an excellent read from start to finish. I did, however, feel that there were not enough dates given in the text, sometimes making it difficult to follow the sequence of events. I found very few mis-translations from the Icelandic and none that led to any ambiguity. (Charles Swithinbank, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

VOYAGE TO THE END OF THE WORLD: WITH TALES FROM THE GREAT ICE BARRIER. David Burke. 2005. Boulder, CO: University Press of Colorado. xx + 190 p, illustrated, soft cover. ISBN 0-87081-771-X. \$US21.95.

doi:10.1017/S0032247406275752

We have had plenty of potted histories of Antarctic exploration, many of them covering the same ground in a similar manner for each set of new Antarctic aficionados. This book by David Burke is thus following a well trodden trail. Yet he has managed to find a slightly different way of presenting these selected stories from the Ross Sea, not least by linking them to developments in transport, especially air transport. Readers may well be familiar with Burke's previous Antarctic books, a novel set at McMurdo and a history of Antarctic aviation. In this new book he strikes out in another direction, mixing an account of a tourist trip on *Kapitan Khlebnikov* to the Ross Sea in 2001 with some particular historic events in that area. There are chapters on Amundsen and Scott, Byrd and Little America, Lincoln Ellsworth and his flight, Paul Siple and Deep Freeze — each one with some historic photos and extracts from previous work.

As a journalist, he has an easy style of writing, and his retelling of many of the stories of exploration linked to aviation makes them read more compellingly than the originals. Using long extracts from key works (or from his own earlier newspaper columns) to provide the flavour of the period, he has cleverly used his own journey to a new highest southern latitude for a tourist ship as the framework for the book.

Recognising that personalities provide a key element of interest, he has picked up on that, but using published literature rather than any new archival research. Nevertheless many readers will be interested in his comments on Byrd, both in terms of his leadership (which are more restrained than have been published elsewhere) and his claim to be the first to fly over the North Pole. The working relationship between Ellsworth and Kenyon clearly intrigued Burke, as did Ellsworth's relationship with Hubert Wilkins.

His previous experiences in the Antarctic from IGY, interviewing Paul Siple and Mikhail Somov, almost crash-landing at Byrd Station in 1964, and his story on the fate of *Wyatt Earp* (Ellsworth's ship) give his writing an authority that many journalists lack. He has also worked assiduously to find interesting and relevant historic photos to illustrate his stories. None of the material here is new,

but it is attractively rewritten to appeal to a new generation of Antarctic tourists.

I detected only one spelling mistake, the interesting new verb 'to depth the ice,' and on page 7 I believe he means the New Zealand Antarctic Heritage Trust. His comment that the British gave Amundsen 'scant respect' for reaching the Pole first and surviving is certainly true, as the British often seem to value heroic failure more than unqualified success and no more so than in the Edwardian era! (David Walton, British Antarctic Survey, High Cross, Madingley Road, Cambridge CB1 0ET.)

THE SAAMI: A CULTURAL ENCYCLOPEDIA.

Ulla-Maija Kulonen, Irja Seurujärvi-Kari, and Risto Pulkkinen (Editors). 2005. Helsinki: Suomalaisen kirjallisuuden seura [Finnish Literature Society]. 498 p, illustrated, softcover. ISBN 951-746-506-8. €52.00.

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Saami studies (formerly also known as 'Lappology') have a long and fruitful research history, but despite this, basic handbooks in the field are scarce, and a particularly small amount of literature has been available for the English-speaking readership. Hence the publication of *The Saami: a cultural encyclopedia* is welcome news. The book contains approximately 500 articles by 51 authors, covering diverse fields, such as material culture, folklore, mythology, religion, linguistics, history, archaeology, art, and music. The articles are quite uneven in length: some are only a couple of lines long whereas the longest (for example, reindeer husbandry) span almost 10 pages. In addition, the volume contains a bibliography as well as an index of proper names. A small colour map of Lapland is included as a separate leaflet.

The first thing that draws the reader's attention in a work like this is the selection of entries. Archaeology, religion, mythology, linguistics, and natural environment especially receive a great deal of attention. Curiously, there are also many articles dealing with issues that are only marginally or not at all connected with Saami culture, such as original monotheism, totemism, DNA, physical anthropology, ecology, Ice Age, and the Quaternary Period. The book also includes some 50 etymological word-articles discussing the origin of Saami words for certain central cultural concepts such as *boazu*: 'reindeer'; *sieidi*: 'Saami rock idol'; and *siida*: 'Saami village.' However, it would have been a better choice to incorporate the etymological information in the main articles dealing with these issues, because now the etymological articles remain loosely connected with the rest of the material in the book. In some cases (for example, *gáica*: 'goat' or *goddésáhpán*: 'lemming') it even remains unclear how the etymologised word is connected to Saami culture.

As space has been devoted to all kinds of inessential topics, it is all the more surprising that many entries one expects to find are missing. For example, despite the central role of dogs in reindeer herding, no such entry can be found. Even so, there are articles on animals such

as owls and lemmings, which have no special significance in Saami culture. An even more puzzling omission is the virtually complete absence of place-names as entries, including all central geographical or cultural regions within Lapland and even Lapland itself (even though lakes Ladoga and Onega, both far from Lapland, receive articles of their own!). The volume's place-name index is a poor substitute for this; for example, the reader who wants to find information on the Inari region will have to go through the tedious task of leafing through 54 references given in the form of simple page numbers.

Thus, the book essentially lacks a cultural geographic perspective on Saami culture. This can also be seen in the fact that the Sea Saami (or 'Maritime Saami,' a non-standard term used in the book) of the Norwegian coast, a culturally and economically highly distinct group within the Saami society, lack an article. But in contrast, there are 13 articles, totalling nearly 40 pages, that deal with reindeer and their herding (pages 295–333). Thus, the book might even end up reinforcing the stereotype of reindeer herding as somehow determinant of Saami culture.

The arbitrary selection of topics and entries seems to result from inadequate editorial work, which is also apparent in a number of other features. The spelling of words and place-names is inconsistent throughout the book: modern and obsolete orthographies of Saami languages are used indiscriminately, and often even secondary Finnish adaptations of Saami names are given instead of the primary Saami ones. The English-speaking reader will have a hard time guessing which language each word or name belongs to, as this is generally left unmentioned.

Considering the international audience, it is also a rather strange decision to include so many articles with entries in Saami, especially as no index of topics is provided. How is the reader unacquainted with North Saami supposed to find 'handicraft' under *Duodji*, or 'dried meat' under *Goikebiergu*? The choice of English entries has not been well thought through either: few readers would know to look up traditional use of plants under 'ethnobotany,' or storage methods under 'out-buildings.' Further difficulties are caused by insufficient cross-references; to give a typical example, there are three articles dealing with wild reindeer — 'reindeer, wild' under R, 'wild reindeer hunting' under W, and an etymological article on the Saami word *goddi*: 'wild reindeer' under G — none of which is cross-referenced to the others. The scanty editing has also resulted in numerous overlaps between articles by different authors. What is more, there are even errors in alphabetising (for example, pages 7, 83, 115, 440).

Luckily, the actual contents of the articles are in large part better than the editorial work. For example, the articles on archaeology are well written and highly informative, and the same can also be said of many articles dealing with place-names, recent history, art, and Saami media. There is also much good information on Saami

mythology, even though articles on this topic tend to stray into jargon of religious studies.

The material is not uniformly of high quality, however. For example, the article on historical Lapp villages (*siidas*) concentrates too much on questions of *siida* borders, and does not adequately explain the social, economic, and political aspects of the *siida* system. The articles on natural environment constantly digress from the subject, as most of them consist of bare listing of biological facts with only minimal reference to Saami culture (see for example, berries, flora, predators).

Occasional factual errors can also be found; as random examples one can mention the claims that dried meat could be kept for periods of several years (page 135), that there is an abessive case form in the North Saami language (page 248), or that the word *fádnú* means a whistle flute made from a shoot of angelica (page 107) — the actual meaning is just 'angelica plant (without the flower stalk).' While the majority of errors are mere minor slips, in a couple of articles one encounters more obscure statements that have a flavour of indigenous mysticism. For instance, about music the reader is told that 'Saami music expresses the relationship with nature which is intrinsic in the culture, above all in tunes that interpret natural omens. In these nature, in the form of animals and birds, occupies a position of equality with man' (page 228).

Finally, a brief note on research history is in order. As much of the information and results presented in this book were ultimately established through the scholarly tradition known as Lappology, it comes close to hypocritical that one of the editors affectedly stresses the distinction between traditional Lappology and modern Saami studies, the former of which 'described Saami culture from the outside' and was supposedly 'vitiating by numerous scientific and social prejudices' (page 189). Even the article 'Saami studies' concentrates mostly on reproaching the Lappological tradition instead of explaining how it gradually changed its name and developed into its modern form. In fact, it is not obvious whether Lappology should be seen as more prejudiced than modern Saami studies, considering that some of the representatives of the latter now insist that 'a Saami is involved either as the researcher or as a member of a research team, and that the research should benefit the Saami and their society' (page 356). Even in the humanities, the merits of research are determined by its logical and factual accuracy, not by the ethnic background of the scholars or the putative social demand for its results.

To sum up, *The Saami: a cultural encyclopedia* is, despite its excellent concept, a flawed work. While the book includes a lot of good material, the editors do not seem to have had a rational plan of what to include in the book and how to integrate the materials into a well-designed work of reference. Hence, it provides interesting reading to those who like to leaf through reference works, but does not serve its purpose as an encyclopedia. This is regrettable, because a great deal of work has obviously been put into many of the articles. One is left to hope that an improved

second edition of this work will be published in the future. (Ante Aikio, Giellagas Institute for Saami Studies, PO Box 1000, 90014 University of Oulu, Finland.)

CAPTAIN JAMES FAIRWEATHER: WHALER AND SHIPMASTER: HIS LIFE AND CAREER 1853–1933. Nancy Rycroft. 2005. Ripponden, West Yorkshire: Fairweather Books. 202 p, illustrated, soft cover. ISBN 0-9551739-0-6. £13.95.
doi:10.1017/S0032247406295755

Over recent years there has been a stream of polar biographies and histories. Most feature well-known names and expeditions, and sometimes gain considerable publicity, but accounts of unfamiliar men are also appearing. Some of these are self-published books — labours of love. They introduce new facts about familiar expeditions and have the capacity to substantially broaden the range of accessible information of various aspects of polar life, often more so than do the reworkings of old stories.

James Fairweather had a long and distinguished career that covered more than 40 years at the end of the open-boat whaling era. This was an adventurous enough life, but the climax should have been to find and rescue Shackleton's lost Imperial Trans-Antarctic Expedition.

The book starts with a description of the early life of James Fairweather, for which the author apologises, followed by a short description of Arctic whaling in the nineteenth and early twentieth centuries. The usual pattern of the annual voyage from Dundee was to start with sealing off Newfoundland and Labrador, then return to Dundee and set out again to go whaling in Davis Strait. The narrative then follows the maritime career of Captain James, as he is usually referred to in the text. He had early on worked in a Dundee jute factory but went to sea at the age of 14. He served his apprenticeship in cargo vessels before joining the whaler *Tay* in 1871. In the following year he became mate of *Victor*. An article about the 1877 voyage by another member of the crew, Hector Adams, is reproduced in the appendix. It gives a very detailed and vivid account of the equipment and practices of whaling and sealing. Fairweather remained on *Victor* until appointed master of *Active* in 1878, at the age of 25. In 1883 Fairweather transferred to *Aurora*, the vessel that was later used by Mawson and Shackleton in the Antarctic. There followed a single season in *Earl of Mar and Kellie* in 1889 before Fairweather decided to leave the declining whaling industry and seek employment in general shipping.

Fairweather had a final Arctic season in 1914 commanding *Morning* (not the vessel that relieved Scott's *Discovery* expedition) on a voyage that hoped to find new whaling grounds and revive the industry. It was unsuccessful and, in the event, World War I had broken out before the vessel's return. Fairweather persuaded as many of his crew as he could to join him in volunteering for the Royal Navy. He was appointed Chief Examination Officer, Tay Defences. His duties appear

to have been to organise the navigation and mooring of merchant vessels and the searching of neutral shipping for contraband.

Then there was an interesting twist in Fairweather's career. He was given command of *Discovery*, Scott's former ship, which had been borrowed from the Hudson's Bay Company for the Shackleton Relief Expedition. This had been set up when no news had been heard of Shackleton since he left South Georgia in *Endurance* two years earlier. Before *Discovery* could set sail, however, Shackleton arrived at Port Stanley with the news that the complement of *Endurance* was marooned on Elephant Island. On learning that *Discovery* was coming to their aid, Shackleton feared that he would not be in overall command; the Admiralty confirmed this. According to Fairweather family tradition, Captain James' promotion for the duration of the voyage, from Lieutenant RNVR to Lieutenant Commander RNR, was made so that he would outrank Lieutenant Shackleton RNR.

Discovery had got only as far as Montevideo when the men heard that Shackleton's party had been brought to Punta Arenas aboard *Yelcho*. Fairweather returned to the Tay Defences and later wrote, 'I had started out on my career in search of fame and adventure. I had got my fill of the latter. Was I now to get the former? But that was denied me.' He was always disappointed that Shackleton's own rescue of his men resulted in the recall of *Discovery* before he could win fame for relieving the Elephant Island party. His granddaughter's book will, however, prevent his adventures from sinking into oblivion.

Nancy Rycroft is to be commended for publishing this account of her grandfather's life. The text consists mostly of extracts from his own privately printed memoir *With the Scottish whalers* (1922), articles he wrote for *The Scots Magazine*, newspaper reports of voyages, and family papers. These are interspersed with linking commentary and extra snippets of information by Rycroft, set in a different type. The result is not always easy to assimilate, but there are plenty of nuggets worth digging out. For instance, the value of sails for polar vessels was demonstrated in 1879 when *Active* made her passage home from a difficult season in the pack ice by sail alone, there being only enough coal left for cooking. There are descriptions of hazardous encounters with ice and rocks, of boats being overturned, and of encounters with Inuit and Newfoundlanders. I was amused, as were the onlookers, when Captain James used a bowl of molasses as an artificial horizon when fog obscured the true horizon. The book is perhaps most useful as an accessible source of descriptions and anecdotes of Arctic whaling and sealing. It will also make a good bedside anthology that can be dipped into at random for a few minutes' entertainment and enlightenment.

Copies of the book may be obtained from the author at: Fairweather Books, Scarr House, Stainland, Halifax HX4 9PN for £13.95 plus £2.50 for UK postage or £6.50 for overseas postage. (Robert Burton, 63 Common Lane, Hemingford Abbots, Huntingdon PE28 9AW.)