

Book Reviews

POLAR LOWS: MESOSCALE WEATHER SYSTEMS IN THE POLAR REGIONS. Erik A. Rasmussen and John Turner (Editors). 2003. Cambridge: Cambridge University Press. xii + 612 p, illustrated, hard cover. ISBN 0-521-62430-4. £90.00.
DOI: 10.1017/S0032247404213493

The book *Polar lows* is concerned with the whole range of mesoscale lows with horizontal length scale of less than 1000 km that occur poleward of the main polar front or other major frontal zones. Much of the interest is focused on the more intense systems, the so-called polar lows, which in extreme cases may have winds of hurricane force and bring heavy snowfall to some areas, particularly in the Arctic.

Ten experts in the field of high-latitude mesoscale weather systems are the authors; most of them are members of the European Geophysical Society's Polar Lows Working Group. This group is a focus for much of the research on polar lows in Europe and includes scientists with interests in the modelling, observational, and climatological aspects of the subject. Rasmussen and Turner are major contributors to most of the chapters, as well as being editors. To their credit a substantial effort has been made to review the state of knowledge, and the book has been organized into chapters that reflect the different facets of research that are taking place. Input from the experts has been blended to provide a cohesive and understandable account of an intricate subject.

Major advances have been made during the last three decades in the understanding of the distribution, occurrence, formation, and development mechanisms of polar lows and other high-latitude mesoscale vortices. It is now generally accepted that there is a broad spectrum of lows in polar regions. There are still many outstanding questions that require continued research, and in the final chapter the editors summarize their present understanding of this family of weather systems and consider the requirements for future research.

This book is significant because it helps us to advance towards complete theoretical understanding of why polar lows develop. It reflects the knowledge of the authors, as well as their teaching, writing, illustrating, and editing skills. There are some 500 references cited to relevant articles in the refereed literature.

The book is of practical importance because it deals with a significant cause of severe weather in high latitudes and thus useful to operational meteorologists because it deals with previously much misunderstood phenomena. Polar lows have been difficult to study because of their small dimensions relative to synoptic weather reporting networks and their intricate physical nature. Lead times

over which polar lows can be reasonably forecast using modern 'nowcasting' techniques or numerical weather prediction outputs are discussed.

The introduction includes sections on polar lows and other mesoscale lows in the polar regions, a brief historical review, definition, nomenclature, classification, and cloud signatures. The next chapter, 'Climatology,' is divided into two sections to cater for the significantly different climates of the two polar regions, caused by the physical geography of the Antarctic and sub-Antarctic regions being very different from that of the Arctic.

Chapter 3 covers a major topic of 'Observational studies.' A very significant part of polar low research during the last 30 years has been dedicated to the Nordic seas, which is a primary genesis region. An overview is provided of parallel work carried out in other parts of the Northern Hemisphere. Observational studies of mesoscale weather systems over the Southern Ocean and Antarctica have lagged behind comparable investigations in the Arctic, because of the difficulties in assembling comprehensive data sets that can provide sufficient detail on the structure of the lows.

'Theoretical investigations' are the subject of Chapter 4. The authors discuss a number of physical mechanisms, which, through the years, have been suggested as being responsible for the development of polar lows. The areas in which polar lows have been observed to form range from highly baroclinic regions near the polar front and along the ice edges, to high-latitude, nearly barotropic (or equivalent barotropic) environments. Because of this a variety of forcing mechanisms will be effective, and it is not surprising that polar lows appear in so many forms.

The next chapter, 'Numerical simulation,' presents a review of the studies based on simulations of real polar lows with numerical models. The small scale of the vortices, the relatively large influence of internal forcing, such as latent heat release, the rapid development, the large range of intensities, and the lack of observations make such simulations a challenging task.

In chapter 6, 'Forecasting of polar lows,' the authors examine the means by which forecasters attempt to predict the formation and development of mesocyclones and polar lows. Apart from numerical weather prediction, satellite imagery and other satellite data are indispensable in identifying and predicting the movement of existing mesoscale vortices a few hours ahead. Such a nowcasting approach is certainly valid for about six hours ahead, but can be applicable for 12 hours or more in exceptional cases.

The last chapter is 'Conclusions and future research needs.' It becomes clear from the preceding chapters that major advances have been made during the last few

decades in the understanding of the distribution, frequency of occurrence, formation, and development mechanisms of polar lows and other high-latitude mesoscale vortices. In the final chapter the editors summarize their present understanding of this family of weather systems and consider the requirements for future research. They claim that the body of evidence suggests that there is a broad spectrum of lows in polar regions, which develop because of processes unique to those high-latitude areas. Researchers still do not have a complete theoretical understanding of why all polar lows develop. But major advances have been made in the half-century since they were first observed and we have every reason to believe that the next 50 years will bring even greater insight.

Polar lows: mesoscale weather systems in the polar regions is a quality publication providing high-resolution satellite images, diagrams, graphs, weather charts, etc. The book has been assembled with great care and considerable editorial skills, maintaining continuity throughout the text. Logical layout and good writing skills make the flow of knowledge smooth and understandable.

This reviewer finds the editors have provided a thorough, up-to-date, and thought-provoking account of the subject, and as such, it is highly recommended for purchase by institutional and university libraries. I do not hesitate to recommend this book to those actively involved in polar meteorology research, and also operational meteorologists would find it useful. (Hugh Hutchinson, 21 Jungira Street, Howrah, Tasmania 7018, Australia.)

ARCTIC JUSTICE: ON TRIAL FOR MURDER, POND INLET, 1923. Shelagh D. Grant. 2002. Montreal, Kingston, London, and Ithaca: McGill-Queen's University Press. xx + 342 p, illustrated, hard cover. ISBN 0-7735-2377-5. £31.00.

DOI: 10.1017/S003224740422349X

On 15 March 1920, at a hunting camp on the ice of Admiralty Inlet, Robert S. Janes, a trader and 'Caucasian of British heritage,' was shot and killed by Nuqallaq, an Inuit, acting in association with other Inuit. This was, in the words of the author, an 'execution' and 'in accordance with Inuit tradition' on the grounds that Janes had issued threats of violence towards the Inuit because of their failure to hand over fox skins that he claimed were his property. The consequences, however, 'would be dictated by the British code of justice.' A staff-sergeant of the Royal Canadian Mounted Police (RCMP) was sent to Pond Inlet to investigate and, having done so, acted as coroner at an inquest that led to the arrest of three Inuit men. The same officer, now acting as magistrate, conducted hearings that led to the three being charged with murder. The suspects were kept locally in 'house arrest' since there were insufficient custodial facilities at Pond Inlet. In fact, there seems to have been little impediment on their everyday actions. Some years after

the incident, in 1923, a court party arrived and the three were tried by a jury on which there were no Inuit members. Nuqallaq was convicted of manslaughter and condemned to serve 10 years at a prison in Manitoba, while one of the other perpetrators received two years 'hard labour' at Pond Inlet. The third was acquitted.

In the event, Nuqallaq contracted tuberculosis while in prison and was released, on compassionate grounds, to return to Pond Inlet. This became a further tragedy because not only did Nuqallaq die soon after his return, but he also appears to have brought the infection with him, causing a wide outbreak of the disease throughout the surrounding area.

This book is an examination of the killing, of the influences behind the decision to try the men — which was, as the author notes, the first enforcement of colonial rule in North Baffin — and of the consequences to all concerned in the matter. The author points out that the book is an interdisciplinary study 'combining legal and social history with a good measure of cultural anthropology, criminology and public policy.' International relations were also important because the case had much to do with sovereignty over the area, and this aspect of the matter is fully covered in the body of the book. The author was fortunate enough to receive a three-year grant from the Social Sciences and Humanities Research Council of Canada in order to conduct interviews with 'elders' at Pond Inlet and Pangnirtung who might have witnessed the proceedings or have been related to those who did. These interviews were intended to rectify 'the absence of an Inuit perspective' on the matter as presented in the archival sources. She also had access *inter alia* to the RCMP archives and to the personal mementos of a corporal who had spent many years at Pond Inlet. But it seems not unlikely that relations of the whites (qallunaat) involved in the matter might still have been alive at the time the research was conducted and might have had valuable evidence of precisely the same type that the author was searching for among the Inuit. However, the author does not refer to this possibility and it may, of course, be the case that she satisfied herself that no such persons survived.

With this introduction, one might expect an exhaustive study and, indeed, this is exactly what one gets. There is no doubt whatever that the author has examined the matter in its entirety and in massive detail, within the parameters of what she set out to do. A mere glance at the appendices and bibliography is testament to her industry. At the same time, this cannot have been an easy project to conduct, requiring, as it did, the perspectives of an historian with the skills of social scientists of different sorts, of which the tact required in conducting interviews with the Inuit could not have been the least important.

With regard to the book, the writer's style is very attractive, although the constant use of the word 'likely' as in, for example, 'Likely, Judge Rivet felt he had no other choice,' may irritate more readers than just this commentator. She incorporates the oral testimony and the

written records within the text with skill and aplomb. Even though she is frequently dealing with arcane matters and with detailed testimony, this reviewer at any rate, never felt wearied by the book, nor bored by it. Perhaps the fact that he was lucky enough to have read it in a remote part of the Arctic, where it was easy to imagine the events described, and that he had plenty of time, might have helped in this respect. Those not so fortunate may wish that the author had been more concise with regard to the text in order to make it somewhat less long-winded. This might have resulted in a book that could command a wider readership. Indeed, the topic, containing as it does the agreeable frisson of sensation associated with violence, almost cries out for the sort of work that one might reasonably describe as 'easy-going non-fiction.' There is no doubt that the sales of such a book would far outstrip those of the present scholarly version of events, which, despite the valiant efforts of the author to make it widely accessible, smacks rather too much of the research project report for it to be attractive to the general reader.

There are one or two points on which comment might be made, although they do not detract from the worth of the book as a whole. Bernier's plan (1895–96) to reach the North Pole drifting with the ice from Bering Strait is mentioned but one might have hoped for the briefest note on Nansen in this respect and also for a little more on the previous history of *Gauss*, which subsequently became *CGS Arctic* (page 28). Queen Victoria was not alive in 1904 and so cannot then have decreed the 'Royal' for the North West Mounted Police (page 29). The 'white man's burden' might be associated in the popular mind with Africa but, in fact, it was Kipling's exhortation to the Americans to 'do their bit' in the Philippines (page 35). A further point relates to 'polygamy,' which may have been common before the arrival of the missionaries, but the instance cited, that of Janes living in a *ménage à trois* with one Inuit woman and her husband might be more reasonably be described as polyandry (page 66). In a direct quotation, Winston Churchill is recorded as, in 1921, forwarding dispatches from 'Her Majesty's Minister in Copenhagen.' This seems odd since at that time George V was on the throne (page 98).

The presentation of the book is most attractive, as seems to be always the case with McGill-Queen's University Press. There are copious and well-chosen illustrations and some of these must have required much effort to unearth. The maps are excellent. There are comprehensive appendices covering such topics as Inuit names for people and places, and an Inuit glossary and copious notes.

This is an excellent book on a subject that presents obvious difficulties in both the research and the writing stages. The author is to be warmly congratulated on the skill with which she has undertaken both. It is a worthy addition to the McGill-Queen's Native and Northern Series. (Ian R. Stone, Laggan Juys, Larivane Close, Andreas, Isle of Man IM7 4HD.)

SHACKLETON: AN IRISHMAN IN ANTARCTICA. Jonathan Shackleton and John MacKenna. 2002. (Revised edition 2003.) Dublin: The Lilliput Press. 208 p, illustrated, hard cover. ISBN 1-84351-009-X. £17.99. DOI: 10.1017/S0032247404233496

Ernest Shackleton, one of the great figures of the 'Heroic Age of Polar Exploration,' has had his fair share of celebration in recent years, with a large exhibition in New York; documentary films on television; a fine book, *The Endurance*, by Caroline Alexander; portfolio books of pictures; a specially mounted exhibition on *James Caird* at Dulwich College; and, at the Scott Polar Research Institute, a handsome extension to the polar library, named in his memory.

In this new biography John MacKenna and Jonathan Shackleton, a cousin of the explorer, have the advantage of some of the family papers and photographs not used in earlier works. The first chapter is devoted to Ernest's birth in County Kildare; he was the eldest son, and second of 10 children in the family, before they all moved to England when the future explorer was 10 years of age. The family came originally to Ireland in the seventeenth century from north Yorkshire; they were Quakers and pacifists, and when Ernest was born in 1874, lived as yeomen farmers so that they escaped the worst of the Irish famines of the nineteenth century. Thus the Shackletons were basically Anglo-Irish, and clearly influenced by their Irish upbringing, but they spent most of their lives predominantly in England. Indeed, apart from the 'Irish family background' of chapter one, there is virtually nothing in this book to emphasise the Irishness that could be attributed to Shackleton and his career as a polar explorer.

Whilst the Heroic Age is often seen as one of 'national' expeditions — British, French, Belgian, German, Norwegian, and others, where there was sponsorship and some patronage from respective government institutions — Shackleton endeavoured to raise most of his financial backing from private sponsors rather than from government official sources. It is, therefore, more convenient to describe Shackleton's expeditions by the names of his vessels *Nimrod*, *Endurance* and *Aurora*, and *Quest*, rather than by attributing them to national sponsorship. But what determined the nationalism of polar expeditions? Patriotism was certainly a motive, and often there would be royal endorsement of the voyage. Government assistance would be acknowledged for the gift of charts, maps, and scientific instruments, and there would be instructions (often kept secret) to make claims of new lands on behalf of a sponsoring country, but the driving force came from expedition leadership and a confident, loyal crew. Clements Markham, who managed Scott's *Discovery* Expedition, boasted that if any explorers could reach the South Pole they would be Englishmen, and this was said in spite of the composition of Scott's party, which included men from Ireland, Wales, and Scotland! Ernest Shackleton made little of nationalism,

nor of national characteristics, and relied on trustworthy comrades in all his expeditions. His disagreement with Scott on the *Discovery* Expedition seems to have arisen from personal rather than from national prejudice, but he was on the whole well liked by the other members of the expedition and had created a particularly warm friendship with Edward Wilson.

Markham and others continued with an opposition to Shackleton, who was perceived as undermining the fame of Scott and attempting the priority of reaching the South Pole, although there were some who maintained that Shackleton was upholding the reputation of the Irish. Sir Arthur Conan Doyle in his claim as a 'fellow-Irishman,' urged people 'to think of what Ireland has done for the Empire . . . think of that flag flapping down yonder on the snowfield, planted there by an Irishman.'

None the less, Jonathan Shackleton writes of Ernest on his return from the *Nimrod* expedition: 'He might be the darling of the man and woman in the street; he might even be their hero; but according to Scott he was, "A professed liar and a plausible rogue." The geographic establishment would never forgive the upstart Irishman who hardly played by their rules.' The authors of this volume do not attempt to hide Shackleton's quixotic personality in his dealings with the British establishment, nor conceal his intrigues in soliciting for finance for his Antarctic adventures, but stress his sense of responsibility for his men combined with one of companionship. They write, admirably, of the explorer, 'The Antarctic offered Shackleton a second chance to prove himself. Civilization stood for the warmth of home, of his wife and children, but it also signified the constraints of a society that knew nothing of the stimulation that danger and comradeship offered.'

However no one could gainsay the tremendous act of leadership in saving his entire crew after the sinking of *Endurance* in the Weddell Sea, and culminating in his navigation in *James Caird* from Elephant Island to South Georgia and the horrendous crossing of its glacial and mountainous divide. Shackleton recommended all but four of the crew of *Endurance* for the award of the polar medal, although, surprisingly, not Harry McNeish, carpenter, who had been insubordinate on the Weddell Sea ice, but had transformed *James Caird* for the journey to South Georgia and accompanied Shackleton on it. It seemed uncharacteristically ungracious.

This book approaches its subject chronologically and is well illustrated. It examines the many-faceted character of Shackleton: in the family relationships of his early life, and with his wife Emily and their children, his public face as reluctant businessman and lecturer, as well as the well-known polar explorer. It sits well on the bookshelf amongst the many others written about this Heroic Age. (Peter Speak, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

SVALBARD: ARCTIC LAND. Pål Hermansen. 2003. Translated by M. Michael Brady Oslo: Orion Forlag.

200 p, illustrated, hard cover. ISBN 82-458-0596-3. NOK 399.

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Anyone who has visited Longyearbyen has gazed across Adventfjorden at the beautifully sculpted Hiorthfjellet. Depending on the height of the cloud, the thickness of the fog, or the rare patches of light cast on cloudless days by the strange oblique orbit of the Sun around Longyeardalen, Hiorthfjellet can appear near at hand or impossibly remote, full of color or monochromatic. But even those who have been there will have difficulty in imagining Hiorthfjellet, or any of a hundred other geographies in Svalbard, as Pål Hermansen has revealed them in this work of visual genius. In an age when books and reports are hurried to market with the least possible editing using the cheapest possible paper, Hermansen's *Svalbard: Arctic land* has the feel of a medieval illuminated manuscript.

Hermansen writes (correctly) that books on the intoxicating geography of Svalbard come in two flavors: 'in-depth texts written for Svalbard aficionados or glossy coffee table books containing a few scattered facts.' As an author of the former persuasion, my vision now stands revealed as hopelessly narrow and small. Likewise, a casual reader might be tempted to flip through the pages of Hermansen's work as though it were just another Svalbard coffee table book, when it is rather an attempt at an almost spiritual understanding of the Svalbard landscape.

Through his imagery, Hermansen has captured the essential duality of Svalbard, at once gigantic and minute, like a patch of lichen on a glacial erratic. The difficulty of this cannot be overestimated, since Svalbard reveals itself to an observer in its own time. The low orbit of the Sun in high summer creates spectacular but brief episodes of light and shadow. What is almost celestial one moment is gone in the blink of an eye — *et øyeblikk*, in the marvelously curving Norwegian construction. Hermansen can view a collection of ice floes and bergy bits and make them look like an alabaster archipelago or Pangaea as it begins to fracture into continents. He simultaneously reveals how one immensely skillful artist can freeze a mobile image permanently in the imagination, and how fleeting are our views of seemingly immovable and permanent mountain ridges.

For all of its obvious grandeur, the work has a few failings. Amid the natural magnificence there are but seven images of the intensely fascinating cultural heritage of Svalbard, and three of these (pages 162–163) are somewhat unsuccessful black-and-white views of the aerial tramway building in Longyearbyen. This unique structure is of high importance to the history of mining and currently the center of a heated debate over whether Store Norske Spitsbergen Kulkompani should be allowed to use it as an office building, but it would appear at the bottom of most lists of important cultural sites in Svalbard. Worse, the one excellent detailed image of Ernest Mansfield's historic marble mine at Kongsfjorden

(page 158) is identified only as 'cultural refuse.' The reader is told both that 'Svalbard has a lot of cultural refuse' and, conversely, that there are 'only negligible smudges of the short-term human time frame.' These are strange, contrary, and unfortunate dismissals of a rich archeological landscape. One longs for the day when the human 'smudges' and associated 'refuse' of Svalbard are revealed with the same care and detail Hermansen has here afforded his images of its natural landscape.

Hermansen's use of history is uneven, forgivable perhaps if one accepts that he uses history in an attempt to define his imagery, when one is accustomed to the reverse. Fridtjof Nansen's experience with floe ice east of Greenland and north of Franz Josef Land serves as the appropriate background to the entire section on Svalbard ice. Elsewhere, the history is spotty and careless. The whaling wars are mentioned, without seeming cognizance that major engagements were fought in Svalbard itself, including a titanic battle in Sorgfjord at 80°N in 1693 when two French frigates engaged 40 Dutch whaling ships and destroyed several of them. Salomon Andrée's 1897 polar balloon flight is given in the wrong month, and the balloon hardly 'crashed.' The American journalist Walter Wellman was neither 'wealthy' nor 'eccentric,' although it has been popular in Norway for a century now to insist otherwise. Umberto Nobile would no doubt take issue with the assertion that he had merely 'been in Amundsen's crew on [board *Norge*].'

Stylistically, the writing tends toward the pedestrian — its metaphors leaning heavily on the caloric — and is nowhere the equal of the imagery. The reader is told that coal seams are 'like chocolate in a layer cake,' that geological strata are 'like the chocolate and whipped cream of a layer cake,' and that ice like 'white sugaring' covers 60% of the archipelago, 'squeezed together in a gigantic cheese press.' Perhaps Hermansen wrote the text after a week or more of field rations. Measurements weave from metric to English and back to metric, sometimes within the same paragraph. Names of vessels are sometimes italicized, sometimes not. Some sentences start hopefully then drift into the fog: 'The reindeer is exclusively vegetarian; its life is at a low and hunger gnaws at its ribs every during the long winter.'

Refuse and layer cakes aside, Hermansen has precisely described the nature of the Svalbard landscape as one where time is etched into each rock, cirque, ridge, and scree slope. 'The tools of time grind onward in their endless task, with no blueprint of the final result.' The spiritually minded can argue whether or not any blueprint exists, but it certainly seems as if in the Svalbard landscape one is being closely followed. It seems a shame, as Hermansen writes, that we cannot 'stop the job now, as there's more than enough to view and enjoy on a grand scale.' Through this immense compilation, we at least have the revelation of one of the most important polar landscapes captured in mid-construction. (P.J. Capelotti, Division of Social and Behavioral Sciences, 103 Rydal

Building, Penn State Abington College, Abington, PA 19001 USA.)

PINK ICE: BRITAIN AND THE SOUTH ATLANTIC EMPIRE. Klaus Dodds. 2002. London and New York: I.B. Tauris & Co. xxiii + 229 p, illustrated, soft cover. ISBN 1-86064-770-7.

DOI: 10.1017/S0032247404253499

The 'dots on the map' in the South Atlantic and Antarctic, coloured pink or red as part of the Empire in old British atlases, have been the location for tales of heroism and adventure as explorers and sailors battled with nature and the elements. Recent dramatisations of Shackleton's and Scott's expeditions have retold such events. Yet the actual context, history, and geography of these territories have been much less known. When war broke out in the Falklands in 1982, much of the British public had to be told where the islands were. That war produced its own heroism on the battlefield, but it is arguable that the war was largely a product of ignorance, misunderstanding, and misperception, with Britain and Argentina each reading wrong signals about the other's intentions. Since 1982 the Falkland Islands are a little better known in Britain, but there has been no full-scale study of them within their broader context of the South Atlantic territories, Antarctica, and Argentina. Klaus Dodds' *Pink ice* sets out to provide such a study, and it succeeds admirably.

Any analysis of the scattered islands and territories of the South Atlantic and their political problems cries out for maps and a geographical perspective. This is precisely what Dodds provides. He is a geographer and during the last decade has become a key scholar and expert on the geopolitics and international relations of the South Atlantic, publishing numerous papers and a book on the geopolitics of Antarctica. The present book draws together this work to provide a critical study of Britain's South Atlantic Empire. But *Pink ice* should not be seen as simply a reworking and synthesis of existing material. On the contrary, the book contains much original scholarship, particularly on British foreign and commonwealth policy, as the many chapter endnotes to the archives of the Public Record Office testify. It also draws on numerous interviews with leading figures in British politics and administration.

When the term 'geopolitics' was coined in the 1890s, it was as a claim to remedy a neglect of geography and spatial context in the writing of political history and international relations. But too often, as geography and space were put in, the history and politics were taken out. *Pink ice* never falls into this trap, and is a convincing demonstration of the way geopolitical analysis can be woven into historical narrative and political evaluation. It shows how policies in both Britain and Argentina have been shaped by their 'geopolitical imaginations' — how they constructed and represented their national identities and aspirations; how they understood the South

Atlantic context — and frequently by their ignorance of other and opposing geopolitical imaginations. The book uses this perspective to trace the history of the region since 1900, but particularly since 1945. Dodds examines many dimensions of the often-tense relations with Argentina, not just over the territories but also over the meat trade and arms. Few relevant stones remain unturned: he shows how football matches between the two countries have often been the spur for increased animosity and tension. He has worked primarily in the British archives, but he also knows Spanish-language, Argentine literature, and, in all the sections on Anglo-Argentine relationships, he is able to demonstrate the very different perceptions. The interrelationships between Antarctic exploration, science, and political strategy are also examined, and I particularly enjoyed the analysis of the Dependencies and the discussions about whether and how they might be separated from negotiations over the Falklands with Argentina. The story inevitably leads up to the 1982 war and re-evaluations of the Falklands and the region in the aftermath: Britain found itself with a major financial and political commitment, and *Pink ice* shows how this led to new interest in South Atlantic resources, restructuring of the previously neglected Falklands economy, and debates on races, identity, and nationalism.

This is a work of considerable original scholarship, but the extensive endnote references should not lead a potential reader to pigeonhole it as a specialist monograph and leave it on the shelf. *Pink ice* is ‘a good read’ and anyone with an interest in the Falklands, South Atlantic, or Antarctica will enjoy reading it. Dodds writes clearly and engagingly; many of his quotations from interviews and archives are not only apt, but also often pithy and amusing, and the book is shot-through with detail from unusual sources. Antarctic scientists and those interested in the history of polar exploration will find the political background fascinating; those interested in the history and politics of the colonies will gain much new detail and find the geopolitical perspective illuminating. The general reader, who perhaps comes across the book by serendipity, will find a readable narrative and portrait about a part of the world that has played a significant role in recent British politics. It should be the key text for any civil servant or politician acquiring responsibilities for the region, and hopefully copies will be read in Port Stanley and Buenos Aires as well as London. The publishers have allowed the author 16 pages of black-and-white photos, and these illustrate many of his points and must add to the book’s appeal. I cannot resist mentioning (as he could not resist including) plate 1, which shows the author in explorer-mode at Pendulum Cove, Deception Island!

Readers of *Polar Record* will naturally read *Pink ice* for its specific regional narrative, and the book should become a standard reference on the region. But *Pink ice* also proves an exemplar of how geopolitical analysis can be written lucidly for a wide readership, demonstrating the importance of geographical insight and spatial context to an understanding of recent history and contemporary

politics. Recent academic work on geopolitics has become much more theoretically sophisticated in its critical dissections of the geopolitical imagination, but in doing so it has become written in a way that is — perhaps inevitably — rather inaccessible outside a specialist community. Dodds draws on such theoretical ideas in *Pink ice*, but does not let them intrude, and so keeps his narrative accessible. It would be good to see other geographers and geopolitical specialists producing studies of this type and style for other parts of the world. (Leslie Hepple, School of Geographical Sciences, University of Bristol, University Road, Bristol BS8 1SS.)

WESLEY EARL DUNKLE: ALASKA’S FLYING MINER. Charles Caldwell Hawley. 2003. Boulder: University Press of Colorado. xxi + 274 p, illustrated, hard cover. ISBN 0-87081-723-X. US\$34.95. DOI: 10.1017/S0032247404263495

This is much more than the biography of a miner. Centred around the life of a distinguished geologist, it spans the developing economy of Alaska from 1910 to 1957. Exhaustively researched by a fellow geologist, it is an erudite telling of a substantial part of Alaska’s boom-and-bust history before statehood.

Earl Dunkle, as he was known, was born in 1887 and grew up in Pennsylvania. After graduating from Yale University (class of 1908) in economic geology, he worked in a Minnesota iron mine and a Nevada copper mine before moving to Alaska in 1910. His first postings were in the Prince William Sound copper belt, at mines operated by the Alaska Syndicate owned by J.P. Morgan and the Guggenheim family. It soon became apparent that Dunkle’s thorough background in the science of mineralisation gave him a head start in prospecting and judging the economic potential of new discoveries. During the next few years he prospected the Bonanza ore body of Kennecott Copper Corporation in the Wrangell Mountains, which in due course became North America’s richest copper mine. At the same time he travelled far and wide on foot to assess other discoveries. Seeking prospects on the Alaska Peninsula, he witnessed the Katmai eruption of 1912 from a ship. In 1915 he was in on the foundation of Anchorage.

As befits a mining geologist, Hawley delves deeply into the technical aspects of mining, yet always in a readable manner with many asides concerning the people involved, the search for financial backers, and the development of sea, land, and air transportation that was critical to moving concentrates to smelters in the United States.

Comfortably well-off through astute mining investments, Dunkle was now sought after as a consultant on mine prospects not only in the US but also in Africa. In Alaska his scouting took him to the Brooks Range, the Seward Peninsula, several mines along the Alaska Railroad, and in the Kantishna area of Denali National Park. He learned to fly in 1932, and, in common with many early aviators, survived a number of crashes. Knowing

that within hours he could now reach places that formerly took him days of tough hiking, he persisted. Initially in an open-cockpit biplane, he twice crossed the continent from New York and continued up the west coast to Anchorage. In 1934 he broke the record from Seattle to Anchorage by covering the distance in 13.2 hours flying time within a period of 31.5 hours. He became principal stockholder of the fledgling Star Air Service, which, many years later, evolved into Alaska Airlines, and he was general manager and part owner of the Lucky Shot gold mine.

Dunkle believed that aviation was part of Alaska's destiny. In 1953 he wrote: 'The advent of flying . . . changed the lives and outlook of all Alaskans. No longer was it necessary to put one weary foot ahead of the others for hours on end to go some place. Life itself became less threatening due to the assurance of quick help in case of emergency. However, I believe that the greatest change was one of the spirit. It transmitted vicariously to a brave and venturesome population the same feeling of elation which every pilot knows first-hand as he lifts a plane "into the wild blue yonder" and looks about him.' In the course of his career, Dunkle met and corresponded with some of the great names in aircraft manufacturing, among others Walter Beech and William Boeing.

In 1953 Dunkle consulted Bradford Washburn on the merits of writing a history of his life and times in Alaska. Encouraged by Washburn, he taped some 50 hours of interviews with key contemporaries — stories of aviators, prospectors, miners, con men, musicians, prostitutes, and adventurers. Ever a miner, however, he became diverted by the prospects of the Broad Pass Lignite Project on the Alaska Railroad. He died hiking alone while scouting for a water supply for the mine in September 1957.

Charles Caldwell Hawley made extensive use of Dunkle's tape recordings, so this book is far richer than it would have been if based on the mere facts of an extraordinary life. There are text maps, although there should have been more of them and in greater detail. At the end of the book there are 40 pages of notes, 10 pages of bibliography, and an admirably full index. I can commend this work to anyone interested in the history of Alaska during Dunkle's lifetime. (Charles Swithinbank, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

POLAR EXTREMES: THE WORLD OF LINCOLN ELLSWORTH. Beekman H. Pool. 2002. Fairbanks: University of Alaska Press. 311 p, illustrated, soft cover. ISBN 1-889963-44-5. US\$24.95.
DOI: 10.1017/S0032247404273491

The polar historian J. Gordon Hayes once referred to the years spanning the two world wars as the 'Mechanical age of exploration,' in contradistinction to the 'Heroic era' that preceded it. The term has never caught on; mechanisation of transport, radio communication, and even air observation by balloon were experimented with by explorers such as Scott, Shackleton, and Mawson. The

extreme exigencies imposed by World War I accelerated the rate of their development during the inter-war years, more especially in the field of exploration from the air. Names such as Richard E. Byrd and Sir Hubert Wilkins are familiar to the public; less well known is the career of Lincoln Ellsworth, whose flights over the Arctic basin with Amundsen in the 1920s and whose epic trans-Antarctic flight of 1935–36 made banner headlines in their day. Despite these achievements, Ellsworth's name does not figure prominently in history books: his two autobiographies, *Search* (1932) and *Beyond horizons* (1938), have long been out of print.

This detailed and painstakingly researched biography succeeds in filling the gap. The author is especially well qualified for the task, having been a friend of Ellsworth over many years, after accompanying him in 1930 on a wilderness trek to the Grand Falls of Labrador, an account of which serves as the introduction. The first chapter deals with Ellsworth's largely unfocused youth. He was born in 1880, the only son of James Ellsworth, a wealthy businessman whose sole aim was to coerce the boy, a sickly child, into the world of big business, for which he was clearly unsuited. At boarding school he proved an academic failure, to counter which disadvantage he worked relentlessly at body-building and feats of physical endurance. An academic career was ruled out, yet throughout his life he was to display a profound interest in the natural sciences.

For some years Ellsworth was employed on survey work with the Canadian railways and as an assistant engineer in the Alaskan goldfields. A sequence of events seemed to point the way ahead; a reading of Nansen's *Farthest north* was inspirational. Then came a visit to London in 1913. Here he attended Captain Scott's memorial service in St Paul's, allowing himself to be swept up in a wave of popular emotion and hero worship 'almost as if he saw himself in that role.' From then on Ellsworth became determined to explore the polar regions, but now from the air. As a soldier in France in World War he was taught to fly but ended up with an office job and was subsequently invalided home.

Opportunity finally knocked in 1924 when his father agreed to finance the veteran explorer Roald Amundsen's planned flight to the North Pole with two flying boats and grudgingly agreed to his son's joining the expedition. Pool's account of the expedition includes a new translation of Amundsen's diary of the flight. A farthest north of 87°44' was achieved, but one plane was abandoned, the two crews returning safely in the one remaining plane to Spitsbergen. Ellsworth's life was changed forever by the reception given to him and Amundsen, whetting an appetite for publicity that was never to be appeased.

In 1926 Ellsworth, his father having died leaving his son a considerable fortune, was again able to collaborate with Amundsen, this time in the purchase of an Italian airship, named *Norge*, with the aim of achieving the North Pole. Here they found themselves in competition with Byrd, who also aspired to the priority that he succeeded

in claiming but to which, the author points out, he had no right, having fudged his flight log. This fact was only publicly revealed after Ellsworth's death many years later. Then in 1928 Amundsen disappeared in the Arctic, while searching for Umberto Nobile's *Italia* expedition, a tragic event that left Ellsworth free to deploy his capital elsewhere at a time when money for expeditions was in short supply.

A friendship sprang up with the Antarctic veteran Sir Hubert Wilkins, then planning a voyage under the Arctic pack ice with his submarine *Nautilus*. Ellsworth subscribed but did not participate. Instead he shrewdly recruited Wilkins as his manager on what he described as 'the last great adventure in polar exploration,' namely a trans-Antarctic flight from the Weddell Sea to the Bay of Whales. The year of departure, 1933, coincided with Ellsworth's marriage to Marie Louise Ulmer, daughter of a Pennsylvania industrialist. Despite fervent promises to eschew flying, Ellsworth left as planned for Antarctica aboard his ship *Wyatt Earp*, carrying on board a single-engine monoplane named *Polar Star*. The first two attempts, in 1933–34 and 1934–35, were frustrated by appalling weather conditions, but the third attempt in 1935–36, with H. Hollick-Kenyon as pilot, made the first flight across the continent, from Dundee Island to the Bay of Whales, passing over some 350,000 square miles of territory, including the Ellsworth Mountains, and making extensive territorial claims for the United States.

In 1938 Ellsworth made his last visit to Antarctica, going to Princess Elizabeth Land and flying inland to 72°S, 79°E, claiming it for the United States and providing the first good topographic maps of the region. But by now politics rather than science was becoming the chief interest of the world powers. With the outbreak of World War II, the hopes of Ellsworth for any further participation rapidly faded despite his constant protestations to the contrary. On 26 May 1951 he died of a heart attack.

It is impossible to do justice to this life in a short review. Pool has made a detailed study of his subject based on Ellsworth's own writings and those of his closer associates and his relatives, together with government documents, the national press, and material from his own private archives. His bibliography is fully comprehensive and there is a full index, necessary maps, and a good selection of photographic illustrations. (H.G.R. King, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

HISTORICAL ATLAS OF CANADA: CANADA'S HISTORY ILLUSTRATED WITH ORIGINAL MAPS. Derek Hayes. 2002. Vancouver and Toronto: Douglas and McIntyre; Seattle: University of Washington Press. 272 p, illustrated, hard cover. ISBN 1-55054-918-9. Can\$75.00; US\$60.00.
DOI: 10.1017/S0032247404283498

Derek Hayes is well known as the author of a series of 'Historical Atlases' covering such areas as the North

Pacific and the Pacific Northwest. This volume on Canada is a worthy successor to those publications and excels in breadth of vision, selection of materials, and accuracy and readability of comment.

Hayes follows the tried, tested, and effective formula of offering a series of essays, in this case on individual aspects of Canadian history, the length of each ranging from one to 12 pages with reproductions of contemporary maps to illustrate and inform the text. There are more than 80 such and they are arranged in loose chronological order. The topics selected include some that immediately suggest themselves, for example, 'The coming of the English — the Hudson's Bay Company,' but some are not at all obvious. In this category are 'The demise of the Beothuk,' the native Americans of Newfoundland, which is illustrated by a map that was prepared by possibly the last remaining member of the group; 'A pioneer road map of Canada,' dating from 1850; and 'Fire insurance maps,' in which the author draws attention to the immense historical value of these documents. This is illustrated by a map of a brewery complex in Montreal.

In view of the number of one-page essays, it may be wondered how much information can be conveyed in such a minimal space. In truth, the essays of this modest length are among the most interesting in the book. A single example, that entitled 'Drawing the line — the Webster-Ashburton Treaty' may suffice. Here is a concise analysis of the boundary problem between the United States and Canada in the Maine–Québec–New Brunswick area, with a description of the negotiations that led to the agreement in the Treaty named above. There are three maps. One is a highly optimistic British map of 1814, the second is a detail of Joseph Bouchette's map of 1831 that shows the claims of both nations, and the third is a published map of 1832 that shows the agreed line.

Readers of *Polar Record*, however, will have as their main focus of interest the material that is presented relating to Arctic and sub-Arctic Canada. They will certainly not be disappointed. There are four pages on 'Early English attempts to find a Northwest Passage,' which concentrates on Frobisher, Gilbert, and Davis and includes, among other maps, one of the 'cartes of navigation . . . ruled playne' prepared for Frobisher by William Borough. These are followed by sections on 'Probing the northern seas,' on Hudson, Baffin, Munk, James, and others, containing the curious observation that, by the time of his final voyage, Hudson was 'quite an experienced navigator.' This seems rather an understatement. There are also 'The British attempt to find the Northwest Passage in the eighteenth century'; 'An inland journey,' concentrating on Hearne and containing a wonderful reproduction of his map of the Coppermine River prepared in 1771; 'Alexander Mackenzie crosses the continent'; 'Arctic exploration 1818–1859'; and 'The Canadian Arctic and the Northwest Passage achieved.'

In all some 422 maps are presented, at a wide variety of scales, and many of these are a feast for the eyes. The author has selected maps and plans not only for their

historical importance but also has indulged his readers, and one suspects himself, by a bias towards maps that are beautiful in their own right. In this category, we find in the penultimate essay listed above, a wonderful map published by John Thomson summarising exploration to 1823, and also John Ross' detailed map of the southern part of the Gulf of Boothia.

Among the surveyors, James Cook is, of course, well represented and parts of his famous 'plan' of the St Lawrence and his 1763 map of York Harbour on the Labrador coast are printed. One might have hoped for an example of his surveys of Newfoundland, but the author points out that these are scrolls 'three to four metres long' and 'are in desperate need of conservation,' which is the reason why reproduction was impossible. It is depressing that, in the text, the author occasionally finds it necessary to observe that some highly significant maps, held in public archives, are in urgent need of restoration. He implies that such necessary work might not be forthcoming in the near future.

Each map has explanatory notes that supplement the text, and that comment on its significance, both historical and cartographical. The maps are derived from archives in many countries, including Spain, France, Germany, the Netherlands, Denmark, the United States, the United Kingdom, and, of course, Canada, and several are the property of private collectors.

But the maps are not the only illustrations. The author includes a large number of others and many are as relevant to the purpose of the book as are the maps themselves. For example, an illustration of a page from Peter Fidler's field notebook for 25 July 1791 illustrates the exacting calculations necessary for arriving at longitudes. Other illustrations are photographs of historical sites, including Mackenzie's 'Whale Island,' where he camped on reaching the Arctic Ocean, and the Bastion Saint-Michel in Kingston, which is now situated in 'a traffic island guarding nothing but a fire hydrant.' There is a wonderful photograph of the map archivist at the Hudson's Bay Company Archives holding open the scroll that is Philip Turnor's 1794 summary map showing the Bay 'and the rivers and lakes between the Atlantick and Pacifick Oceans.' This picture enables one to appreciate the enormous size of the original sheet, and this, too, is 'due for restoration work.'

This reviewer would only wish to take issue with the author on a very few points. The first of these is his comment (page 15) that it was the fall of Constantinople in 1453 that 'cut off the supply of spices to Europe' and thus stimulated the search for alternative routes to the east. In fact, it was the costs of the direct route with its successive middle men, of whom the Venetians may have been the most grasping, that prompted the search for a cheaper sea route. He also has Magellan in 1519 'sailing around the southern tip of South America' (page 20)! It was, of course, in 1520 and, while it is strictly true that Magellan did what the author asserts, it is a curious way of expressing it without mention of

Tierra del Fuego. More significantly, the author may be being a trifle hard on W.R. Broughton, who was Vancouver's subordinate officer, with regard to the quality of the work on the northeast coast of Asia that he undertook after Vancouver's great effort. The author's contention is that the comparison between Broughton's survey and that of Vancouver, in which they were both involved, 'demonstrates that it was Vancouver who was personally responsible for the high standard of his survey' (page 164). This overlooks the fact that after the loss of his vessel, *Providence*, in 1797, Broughton accomplished his survey in a purchased 87-ton schooner and with a crew of only 35, and thus the same degree of accuracy was perhaps not to be expected (Stone 1996).

Each reader will think of topics or maps that might have been included. Polar historians, who are otherwise very well served in the book, would have welcomed at least one of the wonderful track maps of the various sledge journeys accomplished during the later parts of the Franklin search and, perhaps, W.J.S. Pullen's fascinating map of Erebus Bay on Beechey Island, prepared in 1854. These were printed in the Arctic Blue Books. Those whose interests include the War of 1812, might have appreciated, for example, a colour version of Eveleth's lovely 'Map of the island of Michilimackinac,' 1817, illustrated in Gough (2002). But, in general, there is no doubt that the author's selection of topics and of material to illustrate them has been excellent. Readers will finish the book well satisfied, and unless they are real historical polymaths, much better informed than they were before they started.

The book is of large format but still of a convenient size, and the presentation is excellent. There is a full map catalogue at the end and a detailed index. The very last map appears on the penultimate page of the index, almost as if the author cannot bear to say goodbye. It is an atlas map prepared by the Dutch mapmaker van Keulen in 1728 showing much of eastern Canada as Dutch territory.

The printing of the book is faultless and the binding and dust jacket are perfect. The price is astonishingly reasonable. At US\$60 (approximately £37), the book is a bargain such as one seldom sees nowadays. It should be in the library of every Canadian college and school, but, no doubt, the same funding constraints that seem to be militating against the preservation of so many of the original maps, will ensure that it is not. The author deserves our thanks for a magnificent production. (Ian R. Stone, Laggan Juys, Larivane Close, Andreas, Isle of Man IM7 4HD.)

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Brief Review

SEA-ICE AND ICEBERG SEDIMENTATION IN THE OCEAN. Alexander P. Lisitzin. 2003. Berlin, Heidelberg, New York: Springer-Verlag. xii + 564 p, illustrated, hard cover. ISBN 3-540-67965-0. £140; US\$239; EUR 199.95.

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A huge scientific literature exists within Russia and former Soviet states. Use of this resource by western scientists has been limited due both to the political landscape between the 1940s and 1990s restricting scientific contact and collaboration across the Iron Curtain, and to the barrier of language. Such limitation is particularly relevant in the fields of polar research and oceanography. Since the early 1990s, however, Eastern European and Russian scientists have been involved in a number of highly successful collaborative programmes with western colleagues. One of the many positive results has been the awareness by western scientists of the existing but little cited literature (and a similar appreciation of the western literature by former Soviet scientists).

Sea-ice and iceberg sedimentation in the ocean is a 'classic' Russian textbook that summarises a wealth of information hitherto unseen by many in the west, which is the book's main purpose and its greatest strength. This information is combined with references to 'western' articles that make it a truly global piece of work. Such a combination should be applauded and welcomed. The bulk of the book is basically a translation of a

work published first in 1994. The material has been subsequently updated and revised. Its translation into English was undertaken in conjunction with scientists at GEOMAR in Kiel, Germany. At more than 500 pages and 17 chapters, this is a bulky volume, and credit is certainly due to the translators. Although the translation is imperfect in quite a few places, I personally think this adds to the flavour of the text, as it reads as a foreign (non-English) work.

The book is split into five parts. The first details the cryospheric system, and how sediments are involved in it. This contains methodology, laboratory analysis, and some general theory. Part 2 examines sedimentation from sea ice, while part 3 is on sediments transported and delivered by icebergs. These two sections make up the majority of the book. The book ends with two short chapters, dealing with glacial sedimentation in the past and the influence of glacial sediments within different tectonic settings.

I anticipate that this book will be well received by those wishing to obtain an insight into the scientific knowledge developed by Russian scientists. However, I do not think the market will be a large one. This book will probably not work well as an undergraduate text, as the English is difficult to follow in places, and several relevant recent publications are missing. However, this is a genuinely interesting book, containing an impressively large collection of material and ideas relating to ice-ocean sedimentation, which should find its way onto many academics' shelves.