

(CALM) network has collected data on long-term changes in active-layer thickness. Now, increasing attention is being given to the decay of organic matter held within the upper layers of permafrost and the associated release of carbon and methane. For example, the Northern Circumpolar Soil Carbon Database estimates that 1672 billion metric tons of carbon exists in the upper layers of permafrost. This could produce 6000 billion metric tons of CO<sub>2</sub>, or twice the amount of CO<sub>2</sub> currently in the atmosphere. In northern Alaska, the expansion of thaw lakes between 1974 and 2000 increased methane emissions, an even more potent greenhouse gas, by 58%. The obvious lesson is that the thaw of near-surface permafrost will be an important accelerator of global warming in the high latitudes.

Chapter seven, *A Hazy Shade of Winter*, discusses the soot, transported into the Arctic, that results from fire in the boreal forests and from industrial pollution in northern Eurasia. Some argue that soot may be the next most important contributor to global warming after CO<sub>2</sub> because it darkens snow and enhances melt. Twelve papers are discussed by Bjørnøes and Prestrud but the results are inconclusive; it appears that arctic soot concentrations in the atmosphere and on the snow peaked in the 1960s. They conclude that the contribution of soot to arctic warming is limited. One wonders why this topic warranted a separate chapter.

The final two chapters are *For Better or for Worse* and *Southern Invasion*. They refer, respectively, to human life in the Arctic (chapter eight) and changes in terrestrial ecosystems (chapter nine). As such, climate lessons are not really applicable. The chapters discuss reindeer herding, fish stocks, transportation issues, the greening of the tundra as seen from space, the northward movement of the tree line, and the life cycles of lemmings and arctic fox.

The text is not without criticism. For example, the criteria for paper selection are unclear and the broader literature that gives appropriate background is sometimes lacking. Some chapters, such as those on sea ice and thawing permafrost, are far more important than others. Some chapters exaggerate the 'lessons' that can be learnt and are overly dramatic as regards possible impacts. The 'Nordic' component of the Arctic is overemphasized at the expense of the North American Arctic. Insufficient attention is paid to Antarctica as regards the global climate system.

Almost certainly, this monograph will have a short shelf life; this is because the text will be quickly overshadowed by newer research. Nevertheless, it throws light on some major climate-related concerns of high latitudes. Those interested in polar regions and global climate change will find this monograph an easy read that is well illustrated with simple and effective diagrams and photographs.

HUGH FRENCH

*Professor Emeritus, University of Ottawa  
10945 Marti Lane  
North Saanich, British Columbia V8L 6B3  
Canada*

---

CIRCUMPOLAR HEALTH ATLAS. By Senior Editor T. Kue Young and Associate Editors Rajiv Rawat, Winfried Dall-

---

DOI: <http://dx.doi.org/10.1657/1938-4246-45.1.154>

mann, Susan Chatwood, and Peter Bjerregaard. Toronto, Buffalo, London: University of Toronto Press, 2012. vii, ix + 190 pp., maps, color and black-and-white illustrations, bibliography, credits. \$75.00 (hardcover). ISBN 978-1-4426-4456-4.

The *Circumpolar Health Atlas* is a highly accessible and attractive work. The size and design of the book adds to both its visual appeal and easy access of information. It is approximately 20 cm high by 25 cm wide and is thus easily handled. At only 190 pages, it is not heavy when it comes to weight, but in terms of information it is very solid. Upon opening it, one sees two pages at once, with a useful and eye-catching combination of illustrations and text. The editors claim to have tried to appeal particularly to the non-academic reader. By eliminating footnotes and avoiding jargon it will undoubtedly succeed in this. However, it still manages to be both scholarly and erudite. It is rare that a work can be of use to both the academic and general reader. An example of such a work, complementary to this one, is the ARCTIC HUMAN DEVELOPMENT REPORT (Einarsson et al., 2004), and the ATLAS also falls squarely into this category. In their preface, the editors note that working on the ATLAS has been a "labour of love." This is undoubtedly the key to the fact that they have succeeded in producing a book that, in their words, is (they hope) "not just a scientific book, but also a work of art!"

Although the book is called a "Health Atlas," it is also a mine of general information concerning the arctic and polar regions. It is divided into five sections plus a useful bibliography and credits. The first section is entitled "The Circumpolar World" with four subsections: (1) Introduction; (2) Lands and Seas; (3) Changing Climate; and (4) Plants and Animals. This provides a general overview of the geography of the Arctic. The second section concerns "Circumpolar Peoples" with chapters on: (1) Cultures and Language; (2) Origins and Prehistory; (3) History and Politics; (4) Population and Settlements; and (5) Society and Economy. This focuses on the human dimension—the cultures and languages of the people who inhabit the circumpolar Arctic, as well as their social and economic conditions. The third through fifth sections address the main focus of the book. Section three is on "Health Status" and has chapters on specific diseases and their context. These are: (1) General Health; (2) Children and Youth; (3) Reproductive Health; (4) Infectious Diseases; (5) Cancer; (6) Cardiovascular Diseases; (7) Diabetes and Obesity; (8) Injuries and Violence; and (9) Mental Health and Suicide. Section four is on "Health Determinants" and considers: (1) General Susceptibility; (2) Cold and Dark; (3) Living Conditions; (4) Environmental Quality; (5) Nutrition and Physical Activity; and (6) Smoking, Alcohol, and Substance Use. The fifth and final section, "Health Systems," considers: (1) Governance and Organization; (2) Financing and Expenditure; (3) Programs and Services; and (4) Education and Research.

The aim and focus of the book is stated clearly and concisely on the first page of the introduction: "This is an atlas about the health of the diverse populations who inhabit the circumpolar regions in the northern hemisphere. As an atlas, it uses maps, charts, tables, and images to describe and explain visually the major health patterns and related issues" (p. 2). On this page also, a number of

basic facts concerning the “north” are given. Thus, for example, there is an inset table with a glossary of “northern terms.” In particular, four key terms are explained. These are: Arctic, Polar, Boreal, and Nordic. These are terms that are in constant use by those undertaking research in the Arctic. However, the definitions given here are clear and concise and it is always nice to be reminded that the word “Arctic” comes from the Greek *arktos*, for bear, referring to the constellation Ursa Major. The North Star, or Polaris, in Ursa Major, is directly above the North Pole. As well as very clearly laid-out text which gives a number of basic explanations and definitions of key concepts, these first two pages of the book also contain a map of the circumpolar world, a picture of the Aurora Borealis in the night sky, and a picture which illustrates “finding north in the night sky.”

This pattern is followed in the rest of the book and each page is pleasing to the eye. The numerous maps are excellent, and range from a fine reproduction of the Gerardus Mercator map of the Arctic from 1595 (p. 55) to many maps of specific and general arctic and northerly regions. Mercator’s map is the first printed map of the northern hemisphere and, for its time, appears astonishingly accurate. Other illustrations throughout the book are lavish and of high quality, and cover an extremely wide range of subjects. They all provide further amplification of the text. Thus, for example, the section on “History and Politics” describes the Russian conquest of Siberia in the late 1500s by Yermak Timofeevich who has been called the “Christopher Columbus of Russia” for his conquest and annexation of Siberia. As well as providing Russia with Siberia’s natural resources, this opened the Pacific coast to Russia and led to the “discovery” of the Bering Strait separating Asia from North America. The text describing this event is illustrated by an oil painting by Vasily Ivanovich from 1895 depicting Yermak’s conquest of Siberia. Here we are also reminded that in 1867, Czar Alexander II sold Alaska to the United States for \$7.2 million (p. 59), an example of one of many facts presented in an apposite manner.

Although focusing on current issues of health, the *ATLAS* includes much historical information that provides an excellent perspective to present-day concerns. Covering so much ground, however, it is perhaps inevitable that there will be points that “experts” in a particular field might feel are given only superficial coverage. Thus, at the beginning of the section on “History and Politics” on page 51, there is some text and a heading entitled “The Vikings Cometh.” There is also a table (continued on the following pages) entitled: “Major historical events in circumpolar countries and their northern regions” with a timeline of events in Greenland, Iceland, the Faroes, Fennoscandia, and Russia from just before the 10th century through to the present. Here this reviewer found what might be termed a tiny item of what may uncharitably be called dross amongst the general gold of the book.

The Norse settlements in Greenland are here said to have died out in the 14th to 15th centuries “with the onset of the Little Ice Age.” This unfortunately sounds a lot like the standard chestnut regarding the Norse in Greenland: “It got cold and they died.” Continuing on this topic, the text also states, “The onset of the Little Ice Age around 1450–1500 likely put tremendous stress on what was still a medieval European farming-based society.” In

actual fact the situation was, of course, far more complex (e.g. Ogilvie et al., 2009). In contrast to this generality, in the table the oddly precise fact is given that in AD 1001 Leif Ericsson (sic) made a landfall on Baffin, albeit with a question mark. Nevertheless, this is a useful table for a very general overview of a history of arctic exploration. Accompanying the first page of this table there is a series of excellent photographs showing, for example, what this reviewer would take to be petroglyphs from Finnmark in Norway, which have been dated between 4200 BC and AD 200. The caption says “pteryglyphs” but presumably that is a typographical error (doubtless the only one in the book). Other photographs show tools and house remains from a variety of northern cultures, from Early Dorset to Old Bering Sea. A sixth photograph on this page shows a view from the reconstructed Norse house at the settlement at L’Anse aux Meadows on the northernmost tip of Newfoundland.

Although an excellent introduction to the Arctic in general, the main part of the *ATLAS* is, of course, concerned with health. It takes an extremely broad view of the topic and considers not just obvious aspects such as infectious diseases and mental health but also the effects of injuries and violence; nutrition and physical activity; health in the home with regard to the effects of smoking, drinking and substance abuse; and the quality of the general environment, in particular the effects of contaminants in the Arctic. Residents of arctic regions share many common situations, such as light summer nights and long, dark, cold winters. In particular, a cold climatic regime may pose significant health risks for those who live under it. Cold in itself may aggravate the symptoms of chronic diseases, and excess winter mortality is a well-reported phenomenon throughout the world (p. 128). Cold injuries can arise from the cooling of body tissues, causing frostbite or hypothermia. A further effect of the cold is the increased prevalence of depressive symptoms and negative mood states in winter that affect some people. This is referred to as SAD, or “Seasonal Affective Disorder.”

Across the circumpolar Arctic, other aspects such as living conditions and governance vary widely between the nations, and indeed between different regions. Thus the northern regions in Fennoscandia generally score more positively in a variety of health indicators than the northern regions of North America and Russia. Also, within each country in Fennoscandia, the “north-south” disparity is less marked. Thus the general health of the Sámi is far better than indigenous peoples in Alaska, northern Canada, Greenland, and Arctic Russia (p. 133). The association between socio-economic status and health has been observed for a long time, but historical factors also cause great differences between the well-being of different arctic nations. Exactly what constitutes good health is complex, but a commonly used indicator in international comparisons is life expectancy at birth. Also used is the United Nations Human Development Programme index (HDI). This combines statistical measures of health, education, and the general standard of living. In 2010, Norway, the United States, Canada, and Sweden ranked within the top 10, and Iceland, Finland, and Denmark within the top 20, while Russia ranked 65th (p. 88).

The *CIRCUMPOLAR HEALTH ATLAS* is unusual in that it could sit on one’s coffee table to be dipped into when one felt the need to gaze at a pleasing arctic image or map, or to be surprised by a

fact that one did not know before. However, it would be equally at home in a middle or high school, on a college curriculum, and, not least, on a scholarly bookshelf as a useful reference work. It is to be recommended for all these possibilities and more.

### References Cited

- Einarsson, N., Nyman Larsen, J., Nilsson, A., and Young, O. R. (eds.), 2004: *Arctic Human Development Report (AHDR)*. Akureyri: Stefansson Arctic Institute.
- Ogilvie, A. E. J., Woollett, J. M., Smiarowski, K., Arneborg, J., Troelstra, S., Pálsdóttir, A., and McGovern, T. H., 2009: Seals and sea ice in medieval Greenland. *Journal of the North Atlantic*, 2: 60–80.

ASTRID E. J. OGILVIE

*Institute of Arctic and Alpine Research*  
*University of Colorado*  
*CB 450*  
*Boulder, Colorado 80309-0450*  
*U.S.A.*