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SIBERIA: A HISTORY OF THE PEOPLE. Janet M. Hartley. 2014. New Haven, London: Yale University Press. xx + 289, illustrated, hard cover. ISBN 978-0-300-16794-8. £25.00.
doi:10.1017/S0032247415000108

This book is a thoroughly comprehensive, and yet easy to read, introduction to problems that have frequently been seen as defying easy explanation. Namely who are the peoples of Siberia and where did they come from? It is definitely not a history of Siberia *per se*, for that one would have to look elsewhere, and it would be useful to familiarise oneself with the outlines before perusing this volume, but from the first chapter one is swept along in the author's infectious and attractive prose on a journey towards understanding, and there are rather few books nowadays about which one can write that.

In the introduction the author refers to popular perceptions of Siberia, its enormous size, ferocious climate, thinly spread population, the old fur trade, 'a place of terror and exile', and so forth, and goes on to affirm that her aim is, within a 'broadly chronological' approach, an attempt to understand 'the experiences of explorers, missionaries, priests, traders, officials, exiles and convicts' in tsarist and post tsarist Siberia. Starting with the advance into Siberia towards the end of the sixteenth century, the author examines the indigenous peoples and the problems of communication faced by anyone penetrating the region. She then proceeds to cover immigration in the seventeenth century and the development of the territory in the eighteenth and nineteenth centuries following on with the traumatic events of the twentieth century. She lays stress on the differences between Siberia and European Russia concentrating on involuntary and voluntary immigrants, the role of the indigenous peoples and the difficulties of administration in such a vast area. And all this is in fewer than 300 pages with no hint of inadequate detail, hurried prose, or poor referencing!

For this reviewer the most interesting sections included those on the Old Believers, about whom there is a sensitive account laying due stress on the fact that many of them chose immolation in fire in preference to adopting the changes that they viewed as 'a heretical challenge to sacred symbols' and even as the work of the devil. Readers of this journal will be interested in the accounts of the Great Northern Expedition, although it is not named as such, and of other exploratory ventures in the north. Such characters as Laptev, Pronshishchev (and his redoubtable wife), Steller, Krasheninnikov, Müller and Gmelin stalk the pages and a necessarily concise account of Russian America is presented laying emphasis on its continual supply problems but omitting the part that the Hudson's Bay Company played in alleviating these to a certain extent. An important chapter covers the advent of the Trans-Siberian Railway which was the 'root cause of the transformation of Siberia' and a full account is given of the multifarious difficulties faced by the engineers in the process of construction. The completion of the railway was of great importance with regard to the Russo-Japanese War (1904–1905) and this leads into a section on Japanese immigration into the Russian far east which started at the beginning of the twentieth century. There were 3000 in Vladivostok in 1902 for example. Comment is also made on the Chinese in Siberia. Immigration from Russia was stimulated by the emancipation of the serfs in 1861 and there was mass migration followed by another surge after 1906. The Stolypin reforms that were current at the time and were intended to assist peasants setting up as farms represent merely one of the series of lost opportunities that seem to have afflicted Siberia and its inhabitants since the very earliest days. The extraordinary development of agriculture in the years before 1914 receives due attention and it was startling to this reviewer when the author pointed out that by that year butter was the fourth most important export after grain, flax and wood and that there were some 4000 creameries in Siberia. Extraordinary for an economy that was then and still is regarded as more or less totally extractive.

The author handles the traumas of the 1920s with care and provides an excellent analysis of why the 'whites' were doomed to defeat. She cites fact after fact with regard to the development of the territory from the 1930s to the 1960s noting that by the latter year illiteracy was 'almost eradicated' and that by 1975 there were 51,000 higher education students in Siberia. A final chapter entitled 'The New Siberia' notes the collapse of the Soviet Union and the subsequent reduction in the population of Siberia reflecting unemployment and higher mortality rates. The book finishes with what I take to be a note of optimism for the future of this perplexing land.

Considering its relatively modest length, the critical apparatus of the book is most impressive and reveals that the author has been living with the project for a long time. The illustrations are carefully selected and the maps are models of their kind.

To sum up: this book should be read by all with interests, however vestigal, in Siberia. As is pointed out there is something in the very name that attracts and repels but it cannot be ignored. No matter how profound is the reader's prior knowledge, no matter how many times has he or she been there, a reader will learn much from this book and be fascinated and entertained into the bargain. (Ian R. Stone, Scott Polar Research Institute, Lensfield Rd., Cambridge CB2 1ER (irs30@cam.ac.uk)).

THE ARCTIC CLIMATE SYSTEM (second edition). Mark Serreze and Roger Barry. 2014. Cambridge: Cambridge University Press. 404 p, illustrated, hardcover. ISBN 978-1-107-03717-5. £75.00.
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While the Arctic sits in uncertain times experiencing amplified warming and rapid change, there is no better time for the second edition of *The Arctic climate system*. It brings an overview of climate interactions between atmosphere, land and ocean, detailing the complex systems at play. A wealth of knowledge

is brought to this book by the authors, Mark Serreze and Roger Barry, who have dedicated their careers to climate research in the high latitudes. Originally published almost a decade ago, the second edition is a welcome update reflecting the recent advances in both understanding and observational research programmes. The result is a highly informative and detailed publication, which remains engaging throughout.

Comprising of 11 chapters, the reader is taken on a journey from early scientific exploration in the 16th century, to the latest global climate models used to predict the climate for centuries to come. A solid background to the Arctic is given in the first three chapters. I found the summary of historical exploration particularly insightful, detailing the perils of early scientists who discovered the wilderness of the north. Contemporary research takes a different tone, focused on understanding specific processes, interdisciplinary interactions, and forecasting future climate. The connections between land, ocean and climate in the Arctic are explored in chapter two. The regional perspective is up scaled with the Arctic being placed into a global context regarding atmosphere, ocean and energy budgets in chapter three. Accessible and interesting, these chapters cover the basics of the Arctic climate and are suitable for any interested party.

Those with specific interest in the Arctic climate will benefit from the following five chapters, which focus on specific processes and their implications. The following are all covered in detail: atmospheric circulation, surface energy budgets, precipitation, and sea ice. Particular attention is paid to the intense seasonal variability of each of these aspects and how this impacts the wider climate system. Substantial attention is paid to albedo and radiative forcing, leading into discussion of radiation – climate feedbacks. Schematic diagrams delineate the key feedback mechanisms, illustrating the positive/negative interactions between elements. These, together with descriptions within the text offer a solid understanding of the complex and evolving climate, forming a valuable resource to support learning and teaching. A solid overview of the key processes and interactions of the Arctic climate system is well presented and will benefit anyone undertaking research into the changing Arctic.

Serreze and Barry have made a concerted effort to intertwine the current changes to the Arctic climate throughout the book. This approach continually reinforces that the change is not solely constrained to one discipline or geographical region. The rate of change is often put into context: '[D]uring July 2012 more than 98 percent of the ice sheet experienced at least a brief period of surface melt [...] [T]he last time that such extensive melt occurred was in 1889 and the next pervious event was approximately seven centuries earlier' (page 261). A comparison such as this is a stark reminder that we are living in a time of change, promoting the need to learn what the implications are, both for the Arctic and globally.

Much of this understanding is coming from climate models, which are explained in a dedicated chapter. As the primary tool for forecasting future climate, models are becoming increasingly complex, requiring ever more computing power. The authors review the types of models, their uses and limitations in a way that remains understandable. This is quite a feat! From single column to global climate models (GCM), descriptions and applications are given, as well as examples of existing models. GCMs receive substantial attention due to their use in the Intergovernmental Panel on Climate Change (IPCC) reports. Of course, there is not just one GCM but many. The book draws upon the coupled model intercomparison projects, which strive to acknowledge and quantify the limitations and variability within different models.

The penultimate chapter discusses paleoclimates, placing the contemporary climate in a greater temporal context. Methods of obtaining and reconstructing past climatic conditions are explored. Whilst the Arctic has undergone unconceivable change in the geologic past, the authors present a concise review of glacial cycles, enabling the current rate of change to be put into perspective. Anyone studying change in the Arctic should be mindful of the temporal scales of natural variability when discussing current and future change. The consideration of past climates leads into *The uncertain future*, a thought provoking and somewhat sombre final chapter. Bringing together all the topics covered in the book, an overarching assessment of change, and predicted change is presented. A valuable summation of the gaps in understanding is presented in a manner that would make any interested student or researcher eager to learn more and tackle the challenge of predicting future change in the Arctic.

The volume is embellished with 32 full colour figures illustrating the latest research findings in addition to detailed schematics to clarify key processes throughout the book. Focus questions and exercises are found at the end of each chapter, designed to reinforce the readers understanding of topics covered. This will be particularly beneficial for students. The text is complimented with essential equations in addition to graphs and diagrams illustrating key points. The authors have included tables of key values, such as the thermal conductivity of natural materials (chapter 5), providing a valuable resource. In many occasions, results from observational research form the basis of explaining certain processes. For example, results from SHEBA (Surface Heat Budget of the Arctic Ocean) are used to explain radiation fluxes and their temporal and spatial variability. We are reminded of the temporal and spatial limitations of observational studies; many studies only last a few years, and geographical limitations put constraints upon observations e.g. sparse distribution of precipitation measuring stations above 60º north (chapter 6). Remote sensing overcomes these obstacles, to an extent, and has allowed for continuous monitoring of sea ice extent over the last 30 years. Since the first edition of *The Arctic climate system*, sea ice research has progressed in leaps and bounds. This chapter boasts many figurative illustrations from satellite data, recently updated to 2012. There are however a few graphs which do not include the 21st century. Looking to the future of remote sensing, the expected launch of ICESat-2 in 2017 is mentioned giving longevity to the relevance of this volume for many years to come.

The Arctic climate system (second edition) is an essential resource for all students and scientists engaged in Arctic research, now and for years to come. Drawing upon the authors' wealth of knowledge, readers will appreciate this thorough and engaging text. Provided within this volume is an Arctic climate tool kit: the key processes and physical dynamics that drive the Arctic climate system are discussed in detail, the complexity of the natural system is dealt with piece by piece, and contemporary change is considered throughout. No book could ever cover every detail of the Arctic climate, which makes the reference list within a valuable resource. Rich in

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citations, readers will be guided to essential literature that has shaped our understanding of the Arctic climate system to further their learning. (Eleanor Darlington, Polar and Alpine Research Centre, Department of Geography, Loughborough University, UK, LE11 3TU (E.F.Darlington@lboro.ac.uk)).

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INTERNATIONAL RELATIONS AND THE ARCTIC: UNDERSTANDING POLICY AND GOVERNANCE. Robert W. Murray and Anita Dey Nuttall (editors). 2014. Amherst: Cambria Press. xii + 742 p, hardcover. ISBN 978-1-604-97876-6. $154.99.
doi:10.1017/S0032247415000145

The growing importance of the Arctic in international affairs is evident also in the massive proliferation of academic and popular literature on northern governance and politics these days. Readers of *Polar Record*'s book review section will be well aware of that. Almost all major publishers (and many more minor ones) with international distribution and readership have over the past few years published monographs or edited volumes on the consequences of Arctic transitions for diplomatic and societal relations in the region and beyond. This trend should be welcomed for the Arctic as an object of study and for polar research as a discipline. At the same time, the plurality and higher frequency of contemporary publications might overstrain both the ordinary and the advanced reader and calls for a lighthouse to provide orientation and guidance in stormy Arctic waters. No less than that is what *International relations and the Arctic: understanding policy and governance* edited by Robert W. Murray and Anita Dey Nuttall is.

This is a fantastic and elaborate collection of essays to think about sovereignty, security and stability in Arctic affairs and the way forward for regional governance. Sovereignty is as much about security as it is about the effective handling of pressing policy problems. So no doubt, this book is right on time. To approach these topics, the book follows a tripartite structure beginning with a theoretical discussion of the concept of sovereignty in Part I, then moves on to investigate the eight Arctic state policies and strategies in Part II, and finally extends the book's analytical scope towards actors and institutions below and beyond the Arctic state in Part III. The volume's length of more than 700 pages and 20 essays is indicative of the time and attention to various local, national and international perspectives, interests and interpretations that is required to better understand what sovereignty is all about in a globalised Arctic. The good news about the present volume is that it does not simply treat the region as just another case for the application and replication of paradigmatic international relations (IR) theories. Rather, the book shall 'throw light on how the Arctic as an area of study contributes to the development of the IR discipline' (page 3–4). The contributors have done a great job doing so and their efforts will be of great interest to both the Arctic studies community and IR scholars more generally.

The editors have ceded most chapters in Part I to IR scholars rather than Arctic experts. This turns out to be a reasoned decision. The concept of Arctic sovereignty is explored from the angles of realist, neoliberal institutionalist and English School IR theory in the first three chapters with a strong focus on relevant concepts and assumptions. True, this comes here and there at the expense of debates of Arctic histories and politics, but the authors manage to pull the Arctic out of its long peripheral position in world politics and push it into the mainstreams of IR research. The fourth chapter of Part I differs from the other three in that it outlines a theory of post-sovereign/transnational politics in the Arctic; a valuable and provocative, albeit normatively inspired intervention in current debates of Arctic sovereignty and one that is reflected in later chapters discussing particularly indigenous peoples' rights and participation in Arctic governance.

Given that the book seeks to overcome the territorial connectivity of the concept of sovereignty in IR, readers might be surprised to see all chapters in Part II of the book dedicated to the eight Arctic Council member states' policies and strategies under the subheading 'Arctic sovereignty in practice'. Yet, to start from more conventional discussions of Arctic politics to which these states are undoubtedly central is justifiable for analytical reasons. The book would still have benefitted from including a more cautious and contextualized discussion of what sovereignty as understood here really means 'in practice' though. One should be reminded that this section's definition of Arctic sovereignty as contained by nation-states in the region is necessarily as varied as the definitions of the Arctic itself. Understandably a consequence of the IR perspective the book adheres to, this conception is deeply rooted in a historical-institutionalist interpretation of who belongs to the Arctic and who does not. As one of the authors notes, the establishment of the Arctic Council in 1996 'changed the more traditional conception of the Arctic as related to five states – the littoral countries – into an eight-state body that included Sweden, Finland, and Iceland' (page 292). Yet, these states, often called sub-Arctic, have little in common with the five littoral states when it comes to sovereignty issues as manifest in overlapping territorial claims in the Arctic Basin, offshore resource development, border control, monitoring, patrolling and surveillance, and so on.

Advanced readers might further object that discussions of the national policy and strategy documents of the eight Arctic states have already been discussed at length elsewhere. They will be surprised by the enormous reflectivity and substantial (re-) interpretation many of the chapters provide of why the north matters for Arctic states' sovereignty and security considerations in regional and global contexts. For all others not yet too familiar with Arctic politics, here is the state of the art of what you should know about the eight Arctic states' ambitions and concerns in the region.

Finally, Part III of the book zooms out to address instances of 'Shared sovereignty and global security interests' with regard to the Arctic region. This is a necessary advancement of the concept of Arctic sovereignty and governance as examined in Parts I and II in the light of the well-documented surge of international interest across a wide array of state and non-state actors in recent years. The ways the roles and interests of indigenous groups, non-Arctic states from across Asia (China, Japan, South Korea and India) and Europe (the United