

informing the Antarctic traveller. It will ably introduce the reader to this most beautiful of places and help create a group of travellers who are well informed and, one hopes, more appreciative of the splendour around them. Even if they are just sitting in their bedsit in Cheltenham. (Peter W. Carey, 21 Radbrook Street, Christchurch 4, New Zealand.)

FUNDAMENTALS OF GLACIER DYNAMICS. C.J. van der Veen. 1999. Rotterdam: A.A. Balkema. x + 462 p, illustrated, soft cover. ISBN 90-5410-471-6. 80 Hfl.

Fundamentals of glacier dynamics focuses strongly on the quantitative description of physical processes that are by no means restricted solely either to glaciers or to their dynamics. A more accurate title would therefore be 'Fundamental physics of ice masses,' thereby explicitly attracting direct comparison with *Physics of glaciers* (Paterson 1994) and the more recent *Principles of glacier mechanics* (Hooke 1998). With *Fundamentals of glacier dynamics*, however, C.J. van der Veen has found a relatively small, but well-founded, niche in this rapidly expanding library of glaciological texts. The publishers correctly point out that the text 'presents an introduction to modelling the flow and dynamics of glaciers. The emphasis is more on developing and outlining procedures than on providing a complete overview of all aspects of glacier dynamics.' Consequently, this book is best seen as a practical, users' guide to developing the equations and models that describe the physical behaviour of ice masses. As such, it serves as an excellent reference text both to glaciologists and, equally important, to scientists outside the discipline who may wish to familiarise themselves with state-of-the-art numerical glaciology. Topics and treatments are introduced from their fundamental principles and developed quantitatively at a level that can be followed by readers with mathematics or physics to undergraduate level. The text is neither designed for, nor suitable for, readers who are not familiar with this level of mathematics.

The book has 12 chapters that are probably best viewed as independent topics, rather than as a narrative to be read sequentially (although many chapters are closely related and characterised by a degree of progression). After a short and rather bland first chapter (entitled 'Ice in the climate system'), the text begins in earnest with 'Ice deformation,' which, as occurs throughout the text, is treated from first principles. Concepts of continuum mechanics are introduced and the deformation of ice is covered, both as individual crystals and, more comprehensively, as a crystalline aggregate. The chapter is well-referenced and informative, including useful sections on the influence of non-uniform crystal fabrics and incorporating the consequent strain enhancement into models of ice flow. This topic is extended in scale and scope in chapter 3, 'Mechanics of glacier flow,' which focuses largely on the author's own ideas on the force-budgets that underpin approaches to modelling ice masses. Limitations of the approach are also discussed in section

3.6. Basal sliding of ice masses is dealt with in chapter 4, although not in as comprehensive a manner as is ice deformation. This chapter also includes an interesting subsection concerned with subglacial hydraulics. In general, the emphasis here is on theoretical and quantitative treatments, rather than on an exhaustive presentation of field-based information. However, the chapter does end with an insightful discussion of the relationships between field-based time series of subglacial water pressure and ice velocity. This section is, unfortunately, one of the few extended interpretative discussions presented in the text. Chapter 5, on 'Modelling glacier flow,' again presents essential insights into how glaciologists approach this task, focusing in particular on each of the principal drag forces involved. The problem is extended in chapter 6, dealing with the 'Equilibrium profiles of glaciers,' which provides a useful discussion of how the longitudinal profiles of a variety of ice-mass geometries are modelled and of the assumptions that underpin these methods.

The thread is continued and developed further in the following three chapters, entitled 'Glacier thermodynamics,' 'Numerical ice-sheet models,' and 'Large-scale dynamics of ice sheets.' Each of these provides not only a comprehensive discussion of the quantitative approaches involved, including the surface-energy budget in chapter 7, but also at least one extended example. These include a treatment of the thermal character of firn at the South Pole (end of chapter 7) and ice-mass response to climate forcing during the Pleistocene (end of chapter 9). Finally, chapters 10, 11, and 12 deal respectively with 'Mountain glaciers,' 'The Greenland ice sheet,' and 'The Antarctic ice sheet.' Although this geographical classification cuts across the process-based structure adopted up to this point, these sections complement the rest of the book well, providing region-specific background and process-based information. Chapter 10, 'Mountain glaciers,' thus deals, albeit rather cursorily, with special cases of models of glacier response to changes in mass balance based on kinematic wave theory, and the special cases of tidewater and surge-type glaciers. 'The Antarctic ice sheet' includes interesting sections on the potential instability of the West Antarctic ice sheet, ice streaming (focusing on the Siple Coast ice streams), and, perhaps the most important of all, an operational model of the Antarctic ice sheet.

Fundamentals of glacier dynamics is a well-written and well-produced text which is fair value. The book is adequately illustrated, with cartoon asides to keep the reader interested in many of the line drawings (although figure 3.9 may be a little much). Unusually for a glaciological text, it contains no photographs — but this is, in a way, symptomatic of the approach of the book, focusing on a theoretical and quantitative treatment rather than on empirical information. The subject matter is broad but not exhaustive, largely reflecting the author's own perspective (including little about, for example, finite element modelling, cumulative strain and glacier structure,

or recent models that deal explicitly with long stresses in valley glaciers). To summarise, this is a very useful book to those with some mathematical ability and who have an interest in the quantitative description and modelling of ice dynamics. It is of limited value to others, who may be better served by a broader-based glaciological text. (Bryn Hubbard, Centre for Glaciology, Institute of Geography and Earth Sciences, University of Wales, Aberystwyth SY23 3DB.)

References

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 Paterson, W.S.B. 1994. *The physics of glaciers*. Third edition. Oxford: Pergamon/Elsevier Science.

NEOTRADITIONALISM IN THE RUSSIAN NORTH: INDIGENOUS PEOPLE AND THE LEGACY OF PERESTROIKA. Aleksandr Pika (Editor). 1999. Seattle: University of Washington Press. xii + 214 p, illustrated, soft cover. ISBN 0-295-97829-5. US\$30.00.

Neotraditionalism in the Russian north is an important and ambitious book. Edited by anthropologist and human-rights activist Aleksandr Pika, it addresses one of the most crucial questions faced by indigenous peoples in the Russian north today. How are indigenous rights recognized by and inscribed in law and the constitution? How are indigenous attachments to the land and the complex interrelations between peoples, waters, plants, animals, and other natural resources recognized and addressed in national and international policy-making? And, pressing the issue even further, how can animal/land/human relations become the grounds on which to think about democracy and social justice in innovative and creative ways? 'Neotraditionalism,' it is argued, is one useful and promising site to think about such crucial questions without negating the terrible effects (increase in drinking and diseases, high suicide rate, impoverished conditions of living) of Soviet and post-Soviet life in northern Russian indigenous communities. Thanks to the collective efforts of Bruce Grant, Gail Fondahl, David Koester, David Anderson, Patty Gray, Christina D. Kincaid, and Alexander D. King, these discussions, first published in Russia in 1994, are now also available to an English-speaking audience. The translation is more than one adaptation of a Russian text: it also marks an opening, the beginning of a sustained dialogue in the long-strained relations between Russian and western-oriented anthropology.

The term 'neotraditionalism' condenses many concerns of the book. The authors use it in multiple ways, variably meaning the usage of traditional social and economic practices (reindeer herding, hunting, fishing, the kinship-based decision-making polity (*obshchina*)) in which indigenous people engage; the cultural premises on which arguments for indigenous rights and native self-government in the Russian north are based; and, less overtly than by implication, healing the effects of cultural and emotional injury that ravage northern indigenous communities today.

In short, neotraditionalism foregrounds and emphasizes traditional practices as a productive site for addressing and engaging the social problems in the Russian north that occupy indigenous peoples, administrators, policy-makers, human-rights activists, anthropologists, and social scientists alike. Yet at the same time — being aware that the term easily evokes connotations of tradition as primitive and timeworn and of indigenous peoples as if existing in archaic isolation — the authors quite emphatically emphasize that they do not wish to advocate a facile view of tradition as a return to 'the chums and *iarangas*' (page xxiv). They understand neotraditionalism as the basis of support for, and revival of, cultural distinctiveness, time-honored ways of livelihood, economic management, and indigenous land use. This is a momentous step away from the Soviet idea of development ('non-capitalist path of development of the formerly backwards people') that promoted a particular kind of political vanguardism and bureaucratic paternalism on part of the state to help native peoples achieve true socialism — that is, by implication, historical consciousness, literary edification, and the refinements of a 'civilized world.' This vision of development refused indigenous peoples their voice and denied the values of their traditions, knowledge, and heritage.

This book, then, provides important grounds on which to conceptualize and re-think the relations between regional and federal administrative institutions, local and civil laws, and international and national human-rights standards. Yet as important as these questions are, I cannot help but ask if the use of the term neotraditionalism may not be detrimental to the goal the book so assertively tries to achieve — a question, I think, implicitly asked by the authors themselves (page 21). The problem is that indigenous peoples have often been placed in frameworks of conceptual oppositions, ignoring their own histories to posit conditions of before versus after — of pristine isolation, on the one hand, and rapid cultural destruction or modernization, on the other. These contrasts leave only little room for the recognition and consideration of an array of productive social relationships and identities that have emerged in the interstices between tundra/camp/settlement contexts, or the inclusion of native people who live in urban centers, as well as those who do not embrace traditional practices as a site of meaningful identity for themselves. In light of the fact that a considerable number of native peoples do not necessarily share a vision of tradition as a cultural practice that may offer a solution to their predicament, the contrast between the traditional and the modern appears as too unbending in the book. For example, traditional religious practices are deemed as 'natural,' basically harking back to pre-modern identifications (page 16). From the point of indigenous subjects who embrace, and actively engage in, such practices, the text then argues, 'Russification was wholly artificial' (page 17). Yet what happened to the possibility that traditions can arise in the fissures and cracks between