

as an integral part of the ATS process of accommodation, and as a potentially operative regime for future generations.

The work may be influential in shaping the legal policies of the Chilean government. This is highlighted by the notion of sovereignty as applied to Antarctica. It is here a markedly inclusive concept. While it is linked to the classical issues of title to territory, the specific claims of various states regarding Antarctica are not examined, in contrast to the emphasis on this point by co-national Sahurie (1992). More importantly, the content of sovereignty claims regarding Antarctica, on the one hand, is explained in function of concurrent legitimate interests within a process of successful international cooperation, on the other. The latter can thus not exist without the former, nor vice versa. This is reflected in the characterization of the ATS as one of 'limited internationalization.' Where relevant to the discussion, the author points to the role that the Chilean government has played in the ATS, for the benefit of the reader's awareness.

The author offers his own preferences on certain issues of external accommodation (for example, Antarctic maritime zones), and on the continued development of the ATS for this purpose. His doctrinal viewpoints are outlined regarding the legal effects of the ATS on third parties. The hard facts of international cooperation would support the existence of a legislative function carried out by the ATS, especially in regard to environmental matters. The author is more cautious, however, on the thorny questions as to whether this amounts to an objective regime, and whether customary international law has developed from the ATS. Despite increasing international participation by both governmental and non-governmental organizations, and the fact that the ATS parties account for roughly three-fourths of the world's population, the most challenging aspect of the accommodation process in Antarctica will be that of the distribution of the benefits derived from resource utilization.

The book is divided into three parts. The first part traces, in four chapters, the development of the ATS towards the integration of a framework for resource utilization. These chapters deal, respectively, with the evolution of Antarctic cooperation; the normative expansion of the ATS with respect to resources; approaches to sovereignty and jurisdiction; and the relation between Antarctica and the Law of the Sea. The second part deals specifically with the ATS resources regimes, also in four chapters. These cover, respectively, the basic elements of a mineral resources regime; environmental protection; models and alternatives for the distribution of powers within resources regimes; and the institutional framework of the ATS. The two chapters of the third part discuss, respectively, the participation of non-Consultative Parties and the perspectives of the international community at large towards the ATS. There is much helpful cross-referencing in the text.

In conclusion, the work is a relevant contribution to the

ongoing legal discussion on Antarctica, deserving, it must be said, of greater editorial support than that displayed in this volume. (Alejandro A. Escobar, Trinity Hall, Trinity Lane, Cambridge CB2 1TJ.)

References

- Sahurie, E. 1992. *The international law of Antarctica*. New Haven: New Haven Press; Dordrecht: Martinus Nijhoff.
Watts, A. 1992. *International law and the Antarctic Treaty System*. Cambridge: Grotius.

COLD CLIMATE LANDFORMS. D.J.A. Evans (Editor). 1994. Chichester: Wiley. xvi + 526 p, illustrated, hard cover. ISBN 0-471-94043-7. £95.00.

This book, which concentrates largely on papers dealing with permafrost and periglacial landforms, is part of a wider geomorphology series on 'Classic papers in translation.' The series was apparently developed because of a perceived ignorance within the English-speaking scientific community of important papers in geomorphology — the study of landforms — not published in that language.

Cold climate landforms contains 21 papers in English translation. These papers are divided into seven parts, on permafrost landforms and regional reconstructions (5 papers), periglacial landforms (6 papers), glacial and fluvioglacial landforms (4 papers), marine and lacustrine landforms (2 papers), polygenetic landforms (1 paper), cold climate slopes (2 papers), and rock glaciers (1 paper). Each translated paper is preceded by an 'Editor's review,' which summarises the general context of each specific contribution and points out its particular significance.

As the title of the volume implies, there is a clear and deliberate emphasis on landforms in the choice of papers. This is, presumably, 'classical geomorphology,' but I was often hankering for more information on the internal structure of the depositional forms that were discussed, since this is clearly a basic tool in understanding the processes responsible for their development.

The selection of papers for a volume such as this is critical, and the editor has, quite rightly, consulted widely before coming to his final choice. My own view is that the book would have been enhanced by the inclusion of several of the most significant English-language papers on cold climate landforms. It would then have become more representative of the total literature available and, thus, more useful to students of the cold regions and their landforms.

There is also a sense in which at least a proportion of the scientific information translated within the volume is already accessible in English. This is especially so where authors have published some of their work in English-language journals. From my knowledge of the literature on rock glaciers, for example, I would have thought that a number of the major points made in the paper by Barsch were to be found already in English.

The book is very well presented, with a particularly attractive cover, and this is a credit to the editor. The figures are in general clear, and I assume that a number

have been redrawn. I found the single list of references at the end of the book distracting, as I was frequently thumbing through a very extensive accumulated bibliography rather than dipping into a shorter and more conveniently placed list at the end of each paper.

As a concept, I do not find it appropriate that the principal criterion for selection in a volume of classic papers on a geomorphological topic should be that of language. This is not a book that I would buy, since (1) the bulk of the papers are somewhat dated, if interesting nonetheless, and (2) the papers are not selected from the entire available pool of literature on the topic. I cannot envisage any but a small handful of scientists consulting the volume regularly. These points are reinforced by the price of £95. (Julian A. Dowdeswell, Centre for Glaciology, Institute of Earth Studies, University of Wales, Aberystwyth, Dyfed SY23 3DB.)

SCALING FISHERIES: THE SCIENCE OF MEASURING THE EFFECTS OF FISHING, 1855–1955.

Tim D. Smith. 1994. Cambridge: Cambridge University Press. xii + 392 p, illustrated, hard cover. ISBN 0-521-39032-X. £50.00; \$US74.95.

Marine stocks and fisheries stand at a critical juncture. Yields of many marine stocks, including those in the Southern Ocean, have declined, sometimes dramatically, during the last decades. The causes are well known: uncontrolled access to marine resources, uncertain scientific information, and risk-prone assessment driven by short-term economic goals. The histories of the International Whaling Commission (IWC) and the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) offer many examples of when short-term economic goals superseded plans for sustainable use or development.

Fisheries science has developed under the nearly continual dominance of short-term economic interests over long-term economic, social, and scientific goals. With a few exceptions, textbooks on fisheries science generally lack a historical setting or contain only brief notes on the history of fisheries science. I agree with Tim Smith's sentiments that a critical appraisal of the historical development of the studies of fisheries and their successes and mistakes is a prerequisite for the establishment of research programmes independent of short-term management needs. His book attempts to fill this gap.

The book is comprised of three parts. Part 1 describes the fluctuations in fish catches, exemplified in patterns occurring in fisheries for Arcto-Norwegian cod (*Gadus morhua*) off the Lofoten Islands, sardines (*Sardina pilchardus*) around Brittany, and sockeye salmon (*Oncorhynchus nerka*) in the Fraser River of British Columbia. This part sets the stage for the economic and political questions faced by biologists in the mid to late 1800s. Parts 2 and 3 describe the struggle of scientists with these problems.

Part 2 deals with the development of methods between

about 1855 and the beginning of World War II. Basic research methods were developed between 1855 and 1890 in the United States (US Fish Commission) and Europe (for example, Marine Biological Association, Fishery Board of Scotland). The debate began on the usefulness of stocking the sea with artificially reared marine species, such as Atlantic cod (chapter 2) to increase the harvest, a debate that has continued to the present day. These research methods were used in the 1890s in order to determine the effects of fishing on the stocks. The magnitude of this task resulted in the foundation of the International Council for the Exploration of the Sea (ICES) as an international organisation that should develop and coordinate research programmes, a task ICES has continued to undertake to the present day (chapters 3 and 4). By the 1920s, sufficient progress had been made to allow short-term predictions of catches for several fisheries (chapter 5). Then came new methods based on mathematical modelling of dynamics of populations (chapter 6).

Part 3 (chapters 7 to 10) describes the development of the three partial theories of the dynamics of marine fish populations (Schaefer's surplus production theory, Ricker's spawner and recruit theory, and Beverton and Holt's yield per recruit theory) that have considerably shaped the development of fisheries science in the decades thereafter (chapter 10).

We are still far from understanding ecosystems exploited and affected by the fishery, at least in quantitative terms. One of the important lessons to be learnt from Tim Smith's description of the historical development of fisheries science is that long-term strategies for conservation and sustainable use based on scientific findings require a research agenda that is independent of short-term management needs. This is not a new perception, but it cannot be underlined often enough. It has already been realized in a number of international fisheries organisations, such as ICES or CCAMLR, and is reflected in a number of long-term research activities, such as the ICES International Bottom Trawl Surveys in the North Sea or the CCAMLR Ecosystem Monitoring Program. Even so, the direction of research is still strongly influenced by transitory economic and political forces and/or concepts presently in vogue, such as global climate change.

I enjoyed reading the book despite and because of all the 'deja-vus.' It is well written, offers many lessons from which to learn, and is excellent as a reference, and not only for those interested in the history of fisheries science. (Karl-Hermann Kock, Institut für Seefischerei, Bundesforschungsanstalt für Fischerei, Palmallee 9, D-22767 Hamburg, Germany.)

THE TRAIL OF THE HARE: ENVIRONMENT AND STRESS IN A SUB-ARCTIC COMMUNITY. Second edition. Joel S. Savishinsky. 1994. Langhorne, PA: Gordon and Breach Science Publishers. xxxii + 294 p, illustrated, soft cover. ISBN 2-88124-618-4. £14.00; \$US22.00.

The second edition of this ethnographic portrait of the Hare