

far northern world'; the preface calls it a 'field guide and general introduction to the common physical and biological features that the scientist, naturalist, and interested traveller will find in the Arctic regions'; and the dust cover adds that it is a 'reference source' and a 'fascinating and often surprising reading experience'.

One has to read the preface and table of contents to learn that the book virtually excludes human life. Its final chapter, although entitled 'The human presence in the Arctic', is limited to prehistoric cultures, in which humanity was 'a natural part of the Arctic environment' (p.322). The important theme of human impact upon the environment is therefore not within the scope of the book, although a number of references are made in passing to human activities.

Steven Young is a biologist and director of the Center for Northern Studies at Wolcott, Vermont, USA. In content his book resembles a text on the physical geography of the Arctic, including weather, climate, vegetation, animal life, ice, landscape evolution, lakes, rivers and seas; but it pays less attention to the spatial distribution of features, characteristics and processes (there are only four maps), and it places less emphasis on the ecological inter-relationships of environmental components (for example the food chains of land and sea are not diagrammed). There is a general subject index (not detailed enough) and a separate index containing the common and Latin names of plants and animals. Each chapter contains a short list of recommended books.

To the Arctic is generously illustrated, with approximately sixty photographs, fifty sketches and twenty diagrams, all in black and white. The photographs are well chosen but many suffer from being printed on soft paper. It seems regrettable that more than a hundred years after the initial application of dry plate photographic technique to the Arctic regions produced sharply focused, high-contrast prints to accompany Nares' book on the expedition of 1875–76, some publishers today are content to supply photographs lacking in sharpness and contrast, through which the type on the back of the page is visible.

It is also unfortunate that although the book is published in the Wiley Science Editions, in which one would expect to encounter an accurate portrayal of the subject, its dust cover describes the Arctic as a land 'covered in snow and ice, shrouded in mystery and danger'. Surely this archaic and misleading image was laid to rest by Stefansson a long time ago, and exhuming it here does a great disservice to the author.

To the Arctic is not my idea of a field guide but it is a reliable introduction to the Arctic environment, enhanced by the author's extensive experience and his apparent love for the subject. As a reading experience it is both enjoyable and informative. The reader feels more like a participant on one of the author's polar journeys than a passive recipient of descriptive information. Charming marginal and chapter-head drawings reinforce the underlying current of curiosity, wonderment and enjoyment of the Arctic

world. (W. Gillies Ross, Scott Polar Research Institute, Lensfield Road, Cambridge CB2 1ER UK.)

NORTH AMERICAN TIMBERLINE

THE NORTHERN FOREST BORDER IN CANADA AND ALASKA: BIOTIC COMMUNITIES AND ECOLOGICAL RELATIONSHIPS. Larsen, J. A. 1988. Berlin, Springer-Verlag (Ecological Studies 70). 255 p, illustrated, hard cover. ISBN 3-540-96753-2. DM 149.00.

The excellent Springer-Verlag series of ecological monographs produced in 1986 *Forest ecosystems in the Alaskan Taiga: a synthesis of structure and function*, edited by K. Van Cleve, F. S. Chapin, L. A. Viereck, C. T. Dyrness and P. W. Flanagan. This book, though very different in approach, is a worthy companion. The work of a single author, it is Larsen's view of the forest-tundra border especially in central Canada. It bears the stamp of one who knows the area intimately and regards its vegetational vagaries as a problem in time. Larsen writes with affection of '... a fascinating biotic region, a captivating land ...', embodying '... a collection of interesting ecological problems, environmental relationships to be discerned in part, perhaps understood to some degree, perhaps one day to be modelled mathematically.' One day possibly, but not yet — at least not by Larsen, whose preference for sound description is manifest.

The book's main topic is the composition of plant communities that are established from time to time between forest and tundra, with some attempts to relate them to climate, soils and other environmental factors. Larsen starts with a review of historical records from early explorers and deals in successive chapters with the forest-tundra transitional belt, physiography of the study areas, the forest border community structure, soils, faunal community relationships, diversity and dominance and climatic influences. These are pages rich in observation and detail. His conclusions are modest — a summary of the observations that to him appear 'the most significant for furthering understanding of the ecological relationships existing in the ecotonal region'. Those who seek firm guidance on why the treeline is where it is may be disappointed, but they will not fail to find this a sourcebook packed with well-organized information, data and personality. (Bernard Stonehouse, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER UK.)

POLAR DESERT PLANTS

BIOLOGY OF POLAR BRYOPHYTES AND LICHENS. Longton, R. E. 1988. Cambridge, Cambridge University Press (Studies in Polar Research). 391 p, illustrated, hard cover. ISBN 0-521-25015-3. £55.00, US\$95.00.

Characteristic plants of polar and alpine deserts, the bryophytes (mosses and liverworts) and lichens have for long been the major study of polar botanists — indeed mosses,

lichens and algae are virtually all that botanists of the high Antarctic have available for study. Systematics and cataloguing were the main preoccupations of the early workers. Ecological studies began in earnest with the International Geophysical Year and International Biological Programme Tundra Biome investigations, making use of new kinds of instrumentation and techniques. Nowhere have these studies been pursued more diligently than in the maritime sector of Antarctica by biologists of British Antarctic Survey. R. E. Longton, formerly of BAS and now in the Botany Department of Reading University, over two decades has contributed much to botanical fieldwork at both ends of the world, and established a world-wide reputation in bryology. He is one of a very few botanists qualified to write this book, and all polar ecologists will be glad that he has.

The book starts with reviews of polar topography, geological history, climate, soils, biogeography and the polar moss and lichen floras, followed by reviews of vegetation classification systems and growth forms. It then deals in turn with environmental relationships, colonization and succession, and vegetation patterns on the ground. There is a chapter on radiation and microclimate and one on the physiology of mosses and lichens, patterns of growth and phenology. The penultimate chapter is on energy flow, nutrient cycling and the environmental influences — mostly baleful — of man, his animal, chemical and mechanical introductions, and his generally destructive activities in polar habitats. The last chapter, a long one, covers reproductive biology, evolution and dispersion strategies of polar mosses and lichens.

In his final two pages the author concludes that polar cryptogamic floras in the main comprise species from warmer climates that are likely to have developed before polar regions were cold. Phenotypic plasticity and ability to deal equally successfully with much or little water allowed them to occupy new niches when forest gave way to tundra, and to gain advantages over the less-adaptable flowering plants. A few species, some polyploid, appear to have evolved under polar conditions.

This is a good book, well produced and with clear illustrations. I would not buy it for its conclusions (particularly at the appalling price) but would find it essential for any future thinking or decision-making that involved the ecology of polar terrestrial flora. (Bernard Stonehouse, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER UK.)

AGRICULTURE IN ARCTIC FINLAND

THE SOCIAL IMPLICATIONS OF AGRARIAN CHANGE IN NORTHERN AND EASTERN FINLAND. Ingold, Tim (editor). 1988. Helsinki, Finnish Anthropological Society (Suomen Antropologisen Seuran Toimituksia 22). 156pp, illustrated, soft cover. ISBN 951-95435-2-X.

This interesting study brings to English readers detailed information on recent developments in farming in Fin-

land. Many rural communities have been fragmented as a result of industrialization, and this has resulted in serious social consequences. The book contains four essays by English-speaking social scientists, and a summary article by Professor W.R. Mead. For northern scholars the paper by the editor, Tim Ingold, dealing with changes in Salla on the borders of Sami territory, with a mixed economy of farming, forestry and reindeer management, is the most rewarding. There is also an interesting paper by Robert Jarvenpa on Suomussalusi in Kainuu, south of the Arctic circle and close to the USSR, analysing the production strategies of farmers and their wives. Richard Gould contributes an ethno-archaeological study of an abandoned sub-Arctic farming community which is compared with similar material from Canada. The volume is broadly empirical, and is a valuable addition to our knowledge of Finland. (Ian Whitaker, Simon Fraser University, Burnaby, British Columbia, Canada V5A 1S6.)

BRIEF REVIEWS

KING ISLAND TALES: ESKIMO HISTORY AND LEGENDS FROM BERING STRAIT. Kaplan, L. D. (editor). 1988. Fairbanks, Alaska Native Language Center and University of Alaska Press. 259 p, illustrated, soft cover. ISBN 1-55500-19-3. US\$19.95 plus \$1.55 p and p.

A collection of stories and narratives told by nine native story-tellers, translated from tape recordings made in Nome, Alaska in 1983, under the auspices of the Eskimo Heritage Program of Kawerak Inc. Haunting, inconsequential tales, pleasantly illustrated with photographs and drawings.

LIST OF NORTHERN SPECIALISTS AT CANADIAN UNIVERSITIES: 3rd EDITION. ACUNS. 1989. Ottawa, Association of Canadian Universities for Northern Studie (Occasional Publications 14). 176 p, soft cover. ISBN 0-921-421-05-2.

Listings alphabetical by name, by institutions, by disciplines and by geographical specializations, of almost 800 individuals at 49 universities, involved in a wide range of northern studies from archaeology to zoology.

HIGH ALTITUDE MEDICINE AND PHYSIOLOGY. Ward, M.J., Milledge, J. S. and West, J. B. 1989. London, Chapman and Hall. 515 p, illustrated, hard cover. ISBN 0-412-29010-3. £50.00.

Written by three medical officers (surgeon, physician and physiologist) with wide experience of mountaineering, this book contains much that is relevant and interesting to polar-oriented medicine. It includes chapters on the cardio-vascular system, peripheral tissue physiology, exercise, sleep, nutrition and intestinal function, endocrine and renal systems, thermal balance, reactions to cold, vascular disorders, hypothermia, local cold injury, accidents, emergencies and anaesthesia, and practicalities of field studies. Expensive, but good reading for any polar station library; more readable and relevant than several recent polar medical compilations.