

SOVIET STUDIES OF THE EURASIAN TUNDRA

THE LIVING TUNDRA. Chernov, J. I. 1985. Translated by D. Löve. Cambridge, Cambridge University Press. (Studies in Polar Research.) 213 p, illustrated, hard cover. ISBN 0 521 25393. £27.50.

This second volume in the Studies in Polar Research series is a translation by D. Löve of a work first published in Russian in 1980. It deals broadly with inter-relationships between plants and animals of the Eurasian Tundra and the physical components of their environment. The author is a distinguished Soviet entomologist whose studies in many of the world's major biomes enable him to set his favourite tundra ecosystem in its global context.

Early chapters emphasize that climate varies widely with latitude in the Russian northlands, resulting in a considerable diversity of environments and biotic communities. The Soviet approach to the recognition of vegetation zones within the Arctic is outlined, thus facilitating comparison with the contrasting systems employed in the West. The differences have their origin in part in climate, for, as Chernov emphasizes, the Eurasian tundra exists under relatively oceanic conditions and lacks the extensive areas of arid terrain so characteristic of the North American high Arctic. Conversely, we learn that humid areas, where low summer temperatures seem primarily responsible for restricting the plant cover to open, largely cryptogamic communities, are more extensive in the Soviet than in the American north.

Other chapters are devoted to snow cover and its influence on the biota, to biogeography (emphasizing the influence of historical factors on the current ranges of plant and animal species), and to adaptations of living organisms for the rigours of Arctic environments, the importance of pre-adaptation in the relatively youthful flora and fauna being stressed. These are followed by a lengthy but largely qualitative account of trophic relationships in tundra communities, and a discussion of man's past and potential impact on the sensitive polar ecosystem in which pleas for conservation in the face of expanding human activity bear eloquent testimony to the author's real affection for the Arctic fauna.

The book thus covers many facets of an immensely wide subject. It does so in a modest 213 pages and is inevitably not a work of great depth. However, it provides a valuable insight into Russian thinking on Arctic ecology and a useful bibliography of the more important literature. The book is in general attractively presented, except that several of the numerous black and white photographs are poorly reproduced, and some are frankly deplorable. *The Living Tundra* will form a useful introduction to forthcoming, more specialised works on terrestrial biology in the Studies in Polar Research series. (R. E. Longton, Department of Botany, Plant Science Laboratories, University of Reading, Whiteknights, Reading RG6 2AS.)

THE SOUTHERN OCEANS

THE ANTARCTIC CIRCUMPOLAR OCEAN. Deacon, G. 1984. Cambridge, Cambridge University Press. 180 p, illustrated, hard cover. ISBN 0-521-25410-8. £15.00.

Oceanography is a young enough science for some of the giants who laid its foundations to be still alive. The world lost one of the greatest and best loved of these in November last year when Sir George Deacon died. Leader of the Discovery Committee expeditions of the 1930s to the Southern Ocean, and founding Director of the National Institute of Oceanography after the War, Deacon is best remembered as the man who established the framework of our present understanding of Antarctic oceanography in his classic 1933

and 1937 *Discovery Reports*. Sir George 'retired' in 1971, but kept working at an undiminished pace. Two years ago, he undertook to write a book on the Antarctic Ocean for the new Cambridge monograph series 'Studies in Polar Research'. This was his last book, and also, amazingly, it was his first. It is pleasant to record that he was able to handle a copy of the published work a few days before his sudden death (see obituary, this issue).

The scope of the book is best described in Deacon's own words. 'The first part deals with the early ideas and evidence of a great southern continent, the pioneering observations of the early explorers and of the sealers who profited from the new discoveries, the observations made by polar explorers on their way to the continent, and the systematic studies of oceanographic expeditions. The second part summarizes present knowledge of the water movements and their probable effects on temperature and salinity distributions, biological productivity, distributions of marine plants and animals, climate and ice cover.' To this we can only add that he carries out this schedule through an inspiring narrative, aimed at the non-specialist who is interested in polar studies or in oceanography and who wants to get an overall picture of the Antarctic Ocean.

In the first half of the book Deacon works systematically through the history of discovery and exploration in the far south, enlivening the story with his own penetrating insights. He is generous in praise of the early German expeditions in the *Valdivia*, *Gauss*, *Deutschland* and *Meteor*, with their equipment and professional approach unmatched at the time. As usual he is modest in describing his own role in the Discovery investigations, but he firmly believes in the value of such systematic long-term studies and laments the fact that they are no longer carried out. It is a pity, he says, that 'covering the ocean as a whole at the critical times of the year to solve long-term distributional problems has become too expensive.'

The second half of the book is an excellent coherent summary of our present knowledge of winds, currents, water masses, deep circulation, ice and waves. He goes on to deal with sea bed topography, primary productivity and the distribution of plankton, especially the vitally important krill. Finally there are short sections on climate, tides and conservation, where once again he expresses his regret that current co-operative research projects such as BIOMASS include 'perhaps too little effort on more widespread or long-term projects'. He avoids references in the text, allowing the story to flow naturally, but provides a guide to further reading at the end. The illustrations include a superb collection of historic photographs taken mainly from the *Discovery II* cruises of the 1930s.

'It's all computers now', he once said to me in a rueful way, but with his eyes twinkling. We must be deeply grateful that by this book Deacon connects us once again with the heroic pre-computer age of oceanic exploration, and shows us how the knowledge so elegantly presented in the second half of the book was so painfully but romantically won. (Peter Wadhams, Scott Polar Research Institute, Lensfield Road, Cambridge CB2 1ER.)

A NORTH CANADIAN INDIAN CULTURE

EXTENDING THE RAFTERS: INTERDISCIPLINARY APPROACHES TO IROQUOIS STUDIES. Foster, M. K., Campisi, J. and Mithun, M. (editors). 1984. Albany, State University of New York Press. 422p, illustrated, hard cover. US\$48.50 (Soft cover US\$16.95).

Until a few years ago, scholars held the Iroquoians to be relatively recent migrants to the eastern Great Lakes region from the American South, where their relatives the Cherokees remain today. How else to explain their presence as islands in a hostile Northern sea of Algonkian speakers? Nowadays, however, most authorities believe that