

## Reviews

### ARCTIC TRAVEL COLLECTION

A VICTORIAN EARL IN THE ARCTIC. THE TRAVELS AND COLLECTIONS OF THE FIFTH EARL OF LONSDALE 1888–9. Krech, Shepard III (editor). 1989. London: British Museum Publications Ltd. 207 pp. Illustrated, hard cover. ISBN 0-7141-1588-6. £19.95.

The name of Hugh Cecil Lowther, Fifth Earl of Lonsdale (1857–1944), (popularly called 'The Yellow Earl' because of his preference for the main colour in the family coat of arms) is probably best known for his passion for and support of horse racing, fox hunting, yachting and boxing; Lonsdale belts are perhaps his best-remembered contribution to sport. Dr Krech's book pays belated though well-deserved tribute to the Earl's important contributions to Arctic geography and anthropology.

In 1886–87 one of the juiciest scandals in England concerned the Earl's affair with the actress Miss Violet Cameron. Within a week of the denouement, allegedly at the prompting of Queen Victoria, on 23 February 1888 the Earl left England for a protracted trip to the Arctic. After spending some time in Winnipeg, where he sought the advice and practical support of Hudson's Bay Company officials, he left the train at Qu'Appelle station (near Regina) and, accompanied by one servant, travelled north via horse sleigh and dog sledge to Fort Chipewyan on Great Slave Lake. Descending the Mackenzie River by canoe and steamer he reached Fort McPherson on 23 July. In total he spent six weeks in the area of the Mackenzie Delta, 12 days of that period being devoted to a trip to Liverpool Bay where he spent time with the Inuvialuit. This was the Earl's farthest north; later press reports that he reached Banks Island are unfounded. Leaving Fort McPherson on 7 September he hiked over Rat Portage to La Pierre House, then descended the Porcupine and Yukon rivers to Russian Mission. There he waited for freeze-up, then travelled by sledge and snowshoe to Katmai, from where he crossed to Kodiak. He reached San Francisco by steamer on 23 April 1889. During this impressive journey the Earl encountered a diverse range of indigenous peoples: Cree, Chipewyan, Slavey, Mountain, Hare and Kutchin on the journey down the Mackenzie, Inuvialuit in the Delta and in Liverpool Bay, Kutchin, Koyukon and Ingalik Indians on the trip down the Yukon, and Yupik Eskimos on the final winter trip to Kodiak. Throughout his journey he was collecting ethnographic material: weapons, clothing, hunting and fishing equipment, domestic utensils, personal ornaments, even an Inuvialuit kayak. He kept a detailed diary and also wrote long, detailed letters to his wife.

With the permission of the present Earl, Dr Krech has used these diaries and letters to weave a fascinating narrative. Preceded by a biographical sketch by J. V. Beckett,

this forms the first half of the book. It is illustrated by contemporary photographs by the Earl and others. The result is an extremely valuable account of some little-known indigenous groups, the Inuvialuit being a prime example. The latter half of the book consists of a superbly illustrated and detailed commentary on the collection of artifacts which Lonsdale presented to the British Museum in 1890. An exhibit featuring many of these artifacts was opened at the National Museum of Mankind in summer 1989 to mark the centennial of the Earl's trip. The book is superbly illustrated and handsomely produced. It represents unequivocally an important addition to the literature which does full justice to a collection and to a journal and diaries which have lain in obscurity for a century. Dr Krech is to be congratulated. (William Barr, Department of Geography, University of Saskatchewan, Saskatoon, Saskatchewan, Canada SN7 OWO.)

### PERMAFROST

THE FROZEN EARTH: FUNDAMENTALS OF GEOCRYOLOGY. Williams, Peter J. and Smith, Michael W. 1989. Cambridge, Cambridge University Press. 306 p. illustrated, hard cover. ISBN 0-521-36534-1. £37.50 or US\$65.00.

Permafrost is widespread at high latitudes and in many mountain ranges. Frozen ground can also be found in submarine locations on polar continental shelves. A number of these areas have, particularly since World War II, become important for strategic and economic reasons. Mineral exploitation and engineering construction both require a detailed knowledge of the physical behaviour of frozen ground. The subtitle to *The Frozen Earth*, by Peter Williams and Michael Smith, is well chosen in that the authors provide considerable detail on the rheology and thermodynamics of permafrost. Their book, more than any existing text, provides us with an account of fundamental physical principles. There are four key chapters in this context. The first considers heat flow and thermal properties of the soil, detailing the basic equations governing these parameters. A second chapter deals with the thermodynamic behaviour of frozen soils. Two others consider the hydrology and mechanics of frozen ground. In the latter, the creep rate and strength of frozen soils is illustrated through a number of well-illustrated laboratory tests.

That the book also deals with the geological consequences of these mechanisms is a useful bonus. Discussion of the morphology of the permafrost surface is divided into chapters on slopes and level ground. Concepts of slope stability and failure are introduced in the first. The second considers 'classical' features of the periglacial environment, for example pingos, palsas and stone polygons. A further strength of the volume is the discussion of