

disdained to provide him with the extra chronometer and azimuth compass that he (a mere whaleman) had dared to request for the work.

Nine appendices follow Scoresby's text, presenting valuable reference material on geology, botany, zoology and meteorology, along with brief accounts by two other whaling captains in the same year. Among the eight plates in the book are topographical sketches of the Greenland coast and two maps incorporating Scoresby's own researches.

The release of these two books brings to seven the number of items either by or about William Scoresby, jr published recently by Caedmon of Whitby. The popularity of Scoresby's great two-volume work *An account of the Arctic regions* during the last century and a half has overshadowed his other writings, which amount to more than 90 published titles relating to whaling, science and religion. It is therefore gratifying to see some additional Scoresby contributions, unpublished or out of print, now made available. This laudable publishing effort by Caedmon should stimulate interest in the history and ecology of Arctic whaling, and the achievements of this remarkable man during the period of the Greenland fishery.

SURVEYING ARCTIC SOILS

[Review by Donald A. Davidson* of K. A. Linell and J. C. F. Tedrow's *Soil and permafrost surveys in the Arctic*, Oxford, Clarendon Press, Oxford University Press, 1981, 279 p, illus. Hardcover £25.00.]

Economic developments in the Arctic since World War II have resulted in a demand for information on soils, relevant to the construction and maintenance of airfields, roads, pipelines and buildings, and similar projects. The authors of this book, both established authorities, concentrate on the particular problems of surveying Arctic soils and permafrost. The first six chapters are introductory, defining Arctic areas and outlining characteristics of climate, hydrology, permafrost, thermal regimes, and the formation and classification of soils. Chapters 7, 8 and 9 turn to soil engineering and properties of soils in the Arctic; chapter 10 discusses briefly the agricultural potential and conservation of Arctic soils. Chapter 11 outlines factors that influence the thermal stability of permafrost, and chapter 12 summarizes engineering soil classifications, such as the Unified and AASHTO systems. Chapter 13 applies the findings of soil engineering investigations to problems involving piling, roads, utility lines and pipelines, excavations, shafts and tunnels. Chapters 14 to 17 finally pay specific attention to survey planning and execution, covering such topics as field organization and procedures, terrain evaluation and route or site selection.

Soil and permafrost surveys in the Arctic is thus much more of a general text than might be inferred from the title. This is both a strength and a weakness. Strength lies in its usefulness as a general introduction to Arctic soils, making it a suitable reference text for undergraduates; the reader without Arctic experience will be struck by the practical difficulties of field investigations in that environment. The overall weakness is that the detailed examination of survey procedures is too brief for the book to become the definitive research text on the subject. The market potential for such a research text would of course be limited; it is understandable why the book's scope has been broadened to cover the general reader as well as the Arctic specialist. The authors' own Arctic experience is evident, for example from their writing on the effects of structures on permafrost (chapter 11). One important geotechnical theme not adequately discussed is hydraulic conductivity of frozen soils—one of the key issues in the Mackenzie Valley Pipeline Project enquiry. Some reference to governing thermodynamic principles should also have been made. Most of the illustrations have been extracted from published sources with little attempt to simplify them for this book; some are over-reduced, one (Fig 17.1) to the point of illegibility. In summary this book will mainly become a library reference for readers to dip into according to their interests; it is neither a comprehensive introductory text nor a research treatise on the title topic, and confusion of aims is bound to limit its value.

* Department of Geography, University of Strathclyde, Livingstone Tower, 26 Richmond Street, Glasgow G1 1XH.