

turn up in odd forms—Tanoy-Bogorazoy for Tan-Bogoraz, Pal'tse for Palets, Akuliniy for Akulin, and others—due to failure to find the right nominative from an oblique case. In general, let it be said, Barr is excellent with proper names and particularly place-names, where he sticks firmly to the forms approved by the official British and American place-name authorities. Some other small points may be mentioned. The Laptevs were cousins, not half-brothers (p xix). The American interested in the Russian north-east was Vanderlip, not Vanderslip (p 290, 316). West to east should be east to west on p 296. Letuya Bay should be Lituya Bay (p 281). Note 37 on p 307 is missing. It would have been helpful to indicate that N. A. Tranze preferred to spell his name Transehe in Roman type, for he later published under that form in the USA (indeed, a paper of his is relevant to the present work). The index would be more useful if the longer entries were split up by sub-entries. The printers have unfortunately printed extended quotations in bold type, thus giving them an unwarranted appearance of greater importance than the surrounding text. Of course, none of these details seriously detract from the value of the book.

POLAR SOILS

[A review by John T. Andrews* of John C. F. Tedrow's *Soils of the polar landscapes*. New Brunswick, New Jersey, Rutgers University Press, xxvi, 638 p, illus. \$60.]

In recent years one or two eminent polar scientists have produced books which embody much of their active research interests and thus span many years of polar experience—for example, A. L. Washburn's 1973 publication, *Periglacial processes and environments*. The present book by John Tedrow is a similar attempt to synthesize his own and others work on polar soils. The book is unique in the English language, and will certainly find considerable use by soil scientists, geologists, geomorphologists and biologists.

The book is lengthy and consists of 22 chapters plus an extensive bibliography, a general index and a soils index. Considering its length and complexity I would have been delighted if Tedrow had spent just a short amount of time explaining the purpose and organization of the book. The former may be self-evident, but I could not provide an easy explanation for the order in which some of the chapters occur; for example, a chapter on 'Systems of polar soil classification' comes seven chapters before one on 'An approach to polar soil classification', and 'Cryogenic processes and patterned ground' occurs well before a complementary chapter on 'Patterned ground and the genetic soil'.

The book consists of four broad subject groupings: (1) an informative introduction on the early history of polar soil science; (2) a series of five chapters that are in effect looking at the separate variables in the Jenny soil equation (a soil is a function of: climate, vegetation, parent material, topography, and time); (3) chapters dealing with soil classification and the characteristics of the major polar zones, namely the Tundra Zone, the Subpolar Desert Zone, the Polar Desert Zone, and the Cold Desert Zone, and, finally, (4) a regional synthesis of the major soils in six regions (Arctic Alaska, Greenland, Norden, northern USSR, Antarctica, and alpine areas).

The book is encyclopaedic in coverage and reflects the experience of over 26 years. It is not a book that people will read cover to cover, except for the few polar soil specialists, but it will be used repeatedly by a great number of polar researchers. The overall reaction to the book will depend, I am sure, on one's discipline. From the viewpoint of a Quaternary geologist I had two reactions. The first is that it will be a major source of information on soil types within the regions that I normally work. This pulling together of such a mass of data is a tremendous help to researchers on the outer fringe of soil science, but who use soils for their own purposes: My second reaction was that I would have liked to see Tedrow consider the problem of time rather more fully than he does; indeed I think the influence of Quaternary glaciations and other climatic changes on the polar landscapes and deposits could have been more strongly emphasized. A chapter on 'Time' would have complemented those on 'Climate', 'Biötic factors' and the other main controls of soil forming processes.

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One final small point: the use of, for example, inches and °F alongside centimetres and °C is rather confusing, and it is to be hoped that the second edition of the book will use the metric system throughout.

AN EMINENT VICTORIAN

[Review by Maurice Hodgson* of Robert E. Johnson's *Sir John Richardson*, London, Taylor and Francis Ltd, 1976, xii, 209 p, £15.]

Polar exploration owes much to a number of physicians who performed with courage and remarkable tenacity: Edward Wilson, John Rae, Frederick Schwatka, are a few that immediately come to mind, but perhaps none surpassed John Richardson. He accompanied John Franklin on both his early Arctic journeys, led one of the earliest expeditions searching for Franklin, and generally devoted much of his life to the Arctic and Arctic research. He died in 1865 and, despite his acknowledged position in Arctic history, no biography has appeared since the publication of Reverend John McIlraith's eulogistic portrait in 1868. However, that lacuna has now been partially filled with the recent publication of a handsome volume by Robert E. Johnson.

In his introduction, Dr Johnson acknowledges a particular interest in 19th century physicians and brings to his study of Richardson not only his enthusiasm for the man, but his own training in medicine with which to judge Richardson as medical student, practitioner, researcher, and, for 17 years, Physician to the Fleets at the Royal Naval Hospital, Haslar. The biography is a useful source of information on early 19th century medicine in Great Britain and investigates some interesting anomalies of the period: for instance, the Admiralty's notorious favouritism which kept Richardson from the promotion his experience and talents deserved; and also the inability of Richardson, and other explorers, to acknowledge the possibility of integration into apparently hostile environments and so to become less dependent upon inferior stores brought out at great expense and difficulty from England.

Although Richardson played a significant role in medicine, nursing procedures and hospital administration, his name is linked first with Franklin in the same way that Edward Wilson is linked with Scott, and Johnson rightly devotes much of his biography to Richardson's Arctic experience. With the importance of this experience in mind, there are points in Johnson's book which need clarification. Perhaps in keeping with the biographer's avowed principle not to denigrate Richardson, Johnson has depended largely on accounts of Richardson in the Arctic which were bound to be favourable, notably Franklin's own narratives. Even John Rae, who developed an appreciation of Richardson during their joint search for Franklin, provides some caustic observations on Richardson's character in his letters to George Simpson. To Rae, Richardson organized the expedition badly, while his stubborn nature assured a difficult and often tempestuous relationship with his crew. It is unfortunate that Johnson did not make use of E. E. Rich's edition of Rae's letters. Again, there is no indication in Johnson's biography that he consulted George Simpson's Athabaska journal for corroboration of Franklin's version of the expedition. There are serious allegations in these documents against most of the officers on Franklin's expedition, the most serious being made by Willard-Ferdinand Wentzel, a factor of the North-West Fur Company and one of Franklin's guides: 'I once had a sincere esteem for him [Richardson] and feel it doubly disagreeable [*sic*] now to accuse him of conduct for which he richly merited to be punished.' Richardson had apparently told both Simpson and Wentzel that Hood and others had died of exposure, and it was not until Richardson released his account to the newspapers after he reached England that Wentzel learned of his summary execution of Michel following his suspected murder of Hood. Even if Wentzel and Simpson comment from their particular bias, no biographer of Richardson should ignore such unfavourable comments.

There are one or two other points that should be mentioned. As is so frequently the case with books dealing with exploration, the maps are generally disappointing: some lack clarity, while others are sections of larger maps and many readers would have difficulty relating those sections to the larger areas under discussion. Perhaps maps especially prepared for the book and omitting

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