

## Reviews

**NO ORDINARY JOURNEY: JOHN RAE – ARCTIC EXPLORER 1813–1893.** Ian Bunyan, Jenni Calder, Dale Idiens, and Bryce Wilson. 1993. Edinburgh: National Museums of Scotland; Montreal and Kingston: McGill–Queen’s University Press. xi + 116 p, illustrated, soft cover. ISBN 0-948636-38-6. £9.95.

John Rae and David Livingstone had much in common. They were both born in 1813, both Scots doctors (one trained in Edinburgh, the other in Glasgow) who left Scotland at relatively early ages (Rae a mere 20-year-old) to achieve fame overseas. Both branched out from the imperial organisations that originally employed them, the Hudson’s Bay Company and the London Missionary Society, respectively, to become celebrated travellers at the opposite ends of the meteorological spectrum, in the frozen wastes of Arctic Canada and the tropical heat of central Africa. Neither was particularly respectful towards the English establishment, and they shared a sharp flintiness of character that ensured they were at their best when they travelled with indigenous companions and without other European company. Both travelled light, respected local knowledge and customs, which were observed with a clear and sympathetic eye, and were admirably non-violent.

It is arguable that Rae’s geographical achievements were as great as or even more significant than those of Livingstone. Yet history has treated them very differently. Livingstone is one of the towering figures of the nineteenth century, a major heroic myth of European imperialism, the man who turned the Partition of Africa into what Sir John Scott Keltie described as a sort of holy crusade. Rae, on the other hand, was almost forgotten when he died (20 years after Livingstone), and his reputation has been eclipsed by more celebrated, if less successful, figures like Sir John Ross, Sir James Clark Ross, and Sir John Franklin.

One of the contributors to *No ordinary journey* considers why this should be so. He suggests that it may be because Rae was ‘lower class.’ This cannot be so when Livingstone, from a distinctly lower order than the son of a factor of a major estate, was showered with such honours. Maybe, it is argued, it is because he used ‘native methods,’ because he told some of the unpalatable truth about the Franklin disaster, because he avoided failure himself, or because he never lost an opportunity to attack the Royal Navy and its ridiculously overblown and over-equipped expeditions. There is, perhaps, some truth in all of these, but the fact is that, as Riffenburgh, Youngs, and others have shown, ‘successful’ exploration (in the sense of fame and/or wealth) required in Victorian times the manipulation of the media, the commercialisation and packaging of which H.M. Stanley, for example, became the past master. Rae published no best sellers, had no major patrons, and never formed a close relationship either with the press or

key societies and pressure groups. The public never feared for his safety, thrilled to a hopelessly heroic cause, or mourned his loss. In short, whatever we may think of them, Rae’s journeys actually remained obstinately ordinary.

It is one of the failures of this, the accompanying booklet to the centennial exhibition shown in Edinburgh, Orkney, and Canada, that Rae’s career is never placed in this wider context, although it consciously sets out to put the record straight. The four contributors (three of them employed by the National Museums of Scotland, the other the Museums Officer of the Orkney Islands Council), write about Rae’s childhood in the Orkneys, his early experience of the Arctic, his major achievements, his relationship with ‘native Canadians,’ and his activities as ethnographer and collector. As is invariably the case with such compilations, the quality is highly variable, particularly as these writers are scarcely specialists in polar research. The exception to this is Dale Idiens, who has written extensively on the Inuit, and his two chapters on Rae’s relationships with local peoples and his ethnographic interests are unquestionably the most successful. The booklet is beautifully illustrated, although its precise relationship to the exhibits in the display is unclear.

It also leaves glaring gaps. It is filled with contemporary quotations, including many from Rae’s own papers and publications. None of these is precisely identified. There is no bibliography, either of works about polar exploration or, more seriously, of Rae’s own writings. The Scott Polar Research Institute provided a copy of Rae’s unpublished autobiography, but its use in the text is seldom clear. The authors and publishers might well argue that general readers, for whom this publication is clearly intended, do not wish to be weighed down by the impedimenta of academic apparatus; like Rae himself, they wish to travel fast and light. But there are two objections to this one-dimensional approach. It is perhaps sustainable when there are good sources to which the more specialist reader can turn. In this case there are few. Second, the finest museum catalogues — and not necessarily those that rival the telephone directory in size — succeed in pleasing both academic and general readers. Most importantly, they should open out a subject, offering opportunities for further exploration, and, as in all good museum practice, they should source materials, artefacts, and illustrations with crystal clarity. A brief list of acknowledgements only goes some way towards satisfying this requirement.

But both the exhibition and this booklet unquestionably whet the appetite. Rae will constitute an excellent research project and there is a crying need for further publications. Above all, someone will have to explain not so much Rae’s low profile, as the fact that both his methods and his criticisms continued to be ignored into the twenti-

eth century. The packaging and marketing of exploration seemed to require the perpetuation of the fallacies of scale, a continuing reliance on western 'expertise' and refusal to accept the lessons Rae learnt from his indigenous companions. In this, as in so many other matters, the English establishment remained stubbornly impervious to good sense. Admiration for heroic failure and the inability to recognise quiet success have remained one of the most disfiguring aspects of British culture. (John M. MacKenzie, Department of History, Lancaster University, Lancaster LA1 4YW.)

**ANTARCTIC MICROBIOLOGY.** E. Imre Friedmann (Editor). 1993. New York: Wiley-Liss. x + 634 p, illustrated, hard cover. ISBN 0-471-50776-8. £136.00.

This is a comprehensive and stimulating volume covering a wide range of Antarctic habitats, communities, and organisms. It is written by scientists with proven field experience and provides an excellent starting point for entering the field of Antarctic biology with experience of other areas. However, an introductory chapter to explain the significance of Antarctic microbiology could have synthesized the separate contributions with a holistic approach specially relevant to current interest in environmental change.

The chapters are grouped under three general headings: marine environments; terrestrial and freshwater environments; and other topics, which include human diseases, exobiology, and protection issues.

The first marine paper, by D.M. Karl, on microbial processes in the Southern Ocean ably introduces Antarctic marine ecosystems. Karl discusses determination of biomass but surprisingly does not include image analysis as used by workers such as Sieracki. He concentrates on activity, trophic models, and physiological responses to driving forces, and discusses bacterioplankton-phytoplankton correlations. Tables of substrate uptake, turnover rates, and mass fluxes, and of bacterioplankton abundance, productivity, and growth rates from diverse areas of the Southern Ocean give a comprehensive overview. However, the topical effect of UV-B radiation on marine microbial processes is barely mentioned. Case studies unique to polar regions include the multi-disciplinary AMERIEZ Program (Antarctic Marine Ecosystem at the Ice-Edge Zone) of the USA in the Weddell-Scotia sea. Other studies cover the Drake Passage, Prydz Bay, and waters under the Ross Ice Shelf 450 km from the open sea. Karl rounds off with a stimulating summary of current technology and new issues such as microbial loops.

An authoritative account of phytoplankton of the Southern Ocean, by S.Z. El-Sayed and G.A. Fryxell, includes superb photographs. The authors revise marine food webs to emphasize the significance of choanoflagellates and picoplankton, whose taxonomy is conspicuously undescribed. Populations under ice shelves, in the open ocean, and in nearshore waters are compared, highlighting

vertical zonation and seasonal fluctuation, especially at the ice edge. The influence of UV-B is noted but recent relevant work by Karentz and others is omitted. The authors analyse factors governing distribution and productivity, including the controversy over Fe-limitation and the unpredictability of correlations between phytoplankton abundance and grazing by heterogeneous krill populations.

D.L. Garrison and M.M. Gowing accentuate taxonomic problems with protozooplankton by admitting the impossibility of presenting a species list! Tables summarize the relatively few but significant cruises that have addressed protozooplankton and describe abundance and biomass of pelagic populations. The authors discuss the variability of bacteria-grazing by flagellates at ice-covered and open-water stations. They review how recent findings have invalidated the short diatom-krill food web by describing the flagellate-dominated microbial (regenerating) system with superimposed blooms of larger phytoplankton.

A chapter on sea-ice microbes, by A.C. Palmisano and D.L. Garrison, concisely describes sea-ice habitats before giving a well-illustrated taxonomic account of the microbiota. A thorough description of the structure and ecophysiology of the microbial assemblages highlights the significance of their lipid composition and response of pigmentation to photosynthetically-active radiation. Gaps in our knowledge of their primary production and its significance for the community are discussed.

The expertise of D.C. White and others results in an enlightening account of phospholipid ester-linked fatty acids (PLFA) and sterols used for determining the biomass of the nearshore benthic microflora and its ecophysiology and taxonomy. They also stress the value of PLFA analysis for detecting extraneous contamination. However, it is unfortunate that benthic microbiological work at Signy Island (inaccurately described as sub-Antarctic) has been omitted.

The chapter by J.T. Staley and R.P. Herwig synthesizes a broad remit on particulate organic degradation, ranging from marine particulate matter and penguin rookeries to moss communities. Decomposer activity in the maritime Antarctic is contrasted with continental Antarctica and the sub-Antarctic. Particulate substrates include recalcitrant molecules such as chitin (in exoskeletons of invertebrates such as krill and in terrestrial fungal hyphae), keratin (fur and feathers), cellulose (cryptograms and grasses), and more labile uric acid (penguin guano). Attention is given to the consumption of krill by predators and the importance of their gut microbiota.

Cyanobacteria receive minimal attention in any of the marine chapters. Does this mean that they are insignificant in the Southern Ocean despite references to picoplankton, or that nobody has looked for them? The marine chapters are lacking in references to European Antarctic microbiological research, and the comprehensive international BIOMASS programme (Biological Investigations of Marine Antarctic Systems and Stocks) is mentioned only briefly. Nevertheless, this group of chapters contains a