

knowledge of vitamins, but scurvy prevention was an intractable problem for early medical officers; there were many complications, notably the unfortunate introduction about 1860 of West Indian lime juice, with half the vitamin C content of the Mediterranean lemon juice for which it substituted.

Scurvy was almost certainly a contributory factor to the loss of the polar party on Scott's last expedition; Dr Alan Rogers, physiologist on the Trans-Antarctic Expedition, provides a useful review of this and other factors leading to the disaster. He also restates his view (Rogers 1974) that Petty Officer Edgar Evans died of a subdural haematoma incurred in a crevasse fall. This is speculation; he may be right, but there were other reasons enough to account for Evans' breakdown and death. As the largest member of the party, existing on the same ration as the others, Evans might be expected to have been the first to fall prey to hypothermia or scurvy. Nor perhaps had he quite the phenomenal moral fibre of the other four members of the polar party.

Less well documented are other deficiency diseases that may be incurred by sailors. In a scholarly paper Surgeon Vice-Admiral Sir James Watt, principal organizer and editor for the symposium, has made a strong case for believing that Captain James Cook suffered from vitamin B deficiency on his last voyage, thus accounting for defects of judgment that may indirectly have led to his death.

Space allows comment on one further paper, by Professor W. R. Keatinge on hypothermia. He makes the point that in the past deaths at sea, through shipwreck or enemy action, were invariably ascribed to drowning rather than to hypothermia. At the start of World War II 'naval ships . . . were equipped for life-saving largely with devices which kept people afloat but left them immersed to the shoulders in water'. Thanks to the work of Professor Keatinge and others survival rafts are now available, but it may be asked how many of the ships and aircraft traversing the polar regions today carry proper provision for survival at sea.

The concise summary of discussions after the papers is a most useful feature of the volume. Sir James Watt and his collaborators deserve our warm thanks for this well edited and valuable synopsis of knowledge in an important field.

#### References

- KENDALL, E. J. C. 1955. Scurvy during some British polar expeditions. *Polar Record*, 7(51): 467–85.  
 ROGERS, A. F. 1974. The death of Chief Petty Officer Evans. *Practitioner* (London), April: 2–12.

## TRISTAN DA CUNHA AND OTHER ISLANDS

[Review by Martin Holdgate\* of Allan Crawford's *Tristan da Cunha and the roaring forties*. Edinburgh, Charles Skilton, and Cape Town, David Philip, 1982, 256 p, illus. Hard cover £7.95]

Allan Crawford first visited Tristan over 45 years ago. Since the late 1930s he has been there many times, corresponded assiduously with his islander friends, and taken a deep interest in all matters Tristanian. During his years of service as Port Meteorological Officer in Cape Town he was officially concerned for the island's people, as the British Government's Honorary Welfare Officer for Tristan in that port. Probably nobody in the 'outside world' in the whole history of Tristan has been so closely in touch with the island community over so long a period.

It is right, therefore, that the people of Tristan and their history dominate this book. Sixteen out of 22 chapters are about the island, and another chapter deals with Gough Island, an outlying member of the Tristan group. But the book is also the story of its author's travelling, from his first visit to Tristan in 1937 as surveyor to the Norwegian Scientific Expedition (led by Erling Christophersen), through his wartime sojourn as meteorologist and liaison officer with the Royal Naval station, to his 18-month residence and later visits in the post-war period. His final long stay was with the Royal Society Expedition in 1961–62, when the settlement stood empty beneath the steam of the island's youngest volcanic cone. In between, Allan Crawford ranged more widely in the South Atlantic. With a group of six South Africans and six Tristan islanders of his own choosing he established the South African

\* Department of the Environment and Department of Transport, 2 Marsham Street, London SW1P 3EB.

meteorological station on Marion Island, Prince Edward Islands, in 1948. He visited Bouvet Øya, possibly the world's most isolated island, in 1955 and 1964, and travelled with the South African party that took over the Norwegian International Geophysical Year Antarctic Station in 1960.

This book is packed with information. Unlike several recent accounts of Tristan which verge on romantic fiction, it does not try to tell a 'human story'. It sets down facts—about the islands, their geography, their history, the customs and relationships of their people, and their changing social and economic circumstances through the periods of pre-war isolation, wartime garrison, post-war fishery development, volcanic eruption, evacuation and re-settlement. The histories of Gough, Marion and Bouvet are also described in some detail.

Allan Crawford's writing is terse, factual, clear and without 'purple passages'. At times the wealth of minor detail about personalities or the little happenings of a small community makes for heavy reading. But the value of this book is as a chronicle of human events. It is well indexed and well illustrated and all in all a valuable addition to the bibliography of a fascinating part of the world and of a kind of community now fast vanishing from the earth.

### DRIFTING GREENLAND

[Review by E. R. Oxburgh\* of Nares Strait and the drift of Greenland: a conflict in plate tectonics, edited by W. M. Kerr. *Meddelelser om Grønland*, (3): 1–392, illus. Hard cover.]

This is an excellent volume and one that I hope receives wider publicity than is common for works appearing in this series. It represents the outcome of a symposium organized jointly by the Geological Survey of Greenland and the Geological Survey of Canada in Halifax, Nova Scotia in 1980. The meeting was planned as a discussion of the detailed evidence concerning one of the most long-standing controversies in the history of continental drift—that concerning the Nares Strait, an elongate physiographic lineament running for several hundred kilometres in a northeast-southwest direction and separating Greenland from Ellesmere Island. The problem is that the gross morphology of the land masses and the features of the ocean floor suggest a sinistral strike-slip offset along the strait of between 200 and 400 km, while a geological comparison of the two sides of the strait shows a reasonable match with little or no displacement.

It is not for the reviewer to take sides in this fierce debate, but simply to record that the editors have gone to extreme lengths to ensure that every voice is heard. In addition to the 18 papers presented at the original symposium they have added 12 others, so that all the relevant data would be available in one volume.

Two early chapters set the scene with reviews of the history of exploration of the area and the history of the debate about the Nares Strait—Taylor, Wegener, Carey, Koch and many others all had their say. These are followed by two chapters that deal with the geomorphology of the area and its interpretation in terms of recent movements, both vertical and horizontal.

The next 80 pages are devoted to a detailed review of the stratigraphy in seven chapters. The bedrock geology comprises a pre-Cambrian basement overlain by a Proterozoic to lower Palaeozoic sedimentary sequence of platform carbonates, clastics and evaporites. One of the difficulties is that the present day strike of the sedimentary sequences on either side of the strait is almost parallel to its trend, and is not therefore a very sensitive indicator of displacement.

The following 80 pages are devoted to a comparison of structural features across the strait, and reviews of the regional tectonics of the area. The eight chapters are wide-ranging in their scope from brecciated lineaments to metamorphic zonation. Some of the photographs in this section emphasize the breathtakingly superb 100 per cent exposure over many hundreds of square kilometres.

The next 80 chapters—on a further 80 pages—cover geophysical observation, bathymetry, crustal seismicity, fault plane solutions, aeromagnetism and a certain amount of crustal structure. To some extent the most compelling arguments for large scale motions along the strait arise from the need to resolve geometrical difficulties that have arisen from plate tectonic interpretations elsewhere, for

\* Department of Earth Sciences, University of Cambridge, Downing Street, Cambridge CB2 3EQ.