

## BOOK REVIEWS

*The Island of South Georgia* by Robert Headland. Cambridge University Press, 1984, xvi + 293 pp. £14.95.

South Georgia is a remote and beautiful island with a varied and intriguing history. This book combines historical, geographical, commercial, scientific and political events in a remarkable *tour de force* by the author, who has done several spells of duty with the British Antarctic Survey since 1977 and played a leading role in the events of April, 1982. The last comprehensive book on South Georgia was *South Georgia: the British Empire's Sub-antarctic Outpost*, written by L. Harrison Matthews, published in 1931. Bob Headland's book is a worthy successor, which extends the earlier account by half a century. It is meticulously researched and difficult to fault, both factually and in its encyclopaedic presentation and interpretation.

It opens with a general account of the island's geography and administration. It is 'like the Alps in mid ocean' and a similar climate in the Arctic would be 20° nearer the pole. Permanent settlement dates from 1904 and a magistracy has been in force since 1909. The claimed discovery by Amerigo Vespucci is shown to be without foundation and Headland attributes the discovery of the islands to Antoine de la Roche, a London merchant, in 1675; this was the first discovery of land south of the Antarctic Convergence. Captain James Cook made the first landing and charts in 1775 and gave the first account of the island, which, during the 'Little Ice Age' – at its peak around 1700 – was significantly more ice bound, cold and rigorous than today.

The third chapter deals with the early history and the first epoch of commercial activity, through the sealing industry. Sealing in the region began in the Falkland Islands in 1766. It was highly competitive and therefore secretive but it swiftly brought the southern fur seals near to extinction. The year 1786 marked the beginning of sealing at South Georgia and the first peak period extended over the next fifteen years. An early conservationist was John Leard, who in 1788 proposed a 'South Sea Company' to regulate sealing (and the much later regulation of sealing at South Georgia was a classic example of wise and rational use.)

The second peak of sealing occurred in 1814–23 and extracts from Thomas W. Smith's autobiography give the flavour of the rigours experienced by the sealers and a remarkably accurate appreciation for that era of the natural history and annual cycle of the elephant seal. All seals seen were killed, irrespective of sex; penguin skins were used as fuel in trying out the oil and James Weddell in 1825 estimated that at least 1.2 million fur seals had been 'brought from off Georgia' – a barbarous and wasteful enterprise.

The third peak of sealing extended from 1869 to 1913 but, even though the population had had two decades for recovery the catches were small. By 1892 Budington was claiming that the seals were almost extinct, although the first of a series of sealing Ordinances had been promulgated by the Government in 1881. Benjamin Cleveland and *Daisy*, 1912–13, were to be the last documented sealing expedition, described by the biologist, R. C. Murphy, in his enchanting *Logbook for Grace*, though C. A. Larsen was aware of at least 440 fur seals taken between 1904 and 1913. Headland's account of sealing methods is well researched and illuminating, drawing upon contemporary writings.

The next chapter is a very competent survey of expeditions to the island from the International Polar Year Expedition of 1882–83 to the present. A potted account of

each expedition encompasses among others the Swedish South Polar Expedition of 1902, the beginning of whaling, HMS *Sappho*, 1906, the first whale research, *Discovery* Investigations 1925–1951 (the foundation of modern oceanography), Kohl-Larsen, *Ajax* and *Exeter* 1937–38, Neil Rankin 1946–47, Steinar Olsen's fishery research 1951–52, and the Royal Navy activities from 1948 to 1955. The South Georgia Surveys, planned and led by Carse between 1951 and 1957, were most cost-effective, accomplished the first modern geological work and resulted in the first accurate map (published in 1958). Several other private expeditions deserve mention: Stonehouse and Bonner, 1953–55, the South Georgia Expedition 1954–55, Bird Island expeditions between 1958 and 1964 largely due to Tickell, which led to the first modern biological work on the seabirds and fur seals involving the ringing or tagging of over 30000 albatrosses and 15000 fur seals – a significant investment for the future that is still paying off today. Carse took a lease of land in 1961 near Undine South Harbour but was overcome by a surge wave which destroyed his camp and he did not achieve his objectives. The Navy and the Combined Services expeditions were active in 1960, 1964–5 and 1981–2 respectively, climbing Mounts Paget and Sugartop in 1964. The first private yacht was Tilman on *Mischief* in 1967, followed by many others since. The Falkland Islands Dependencies Survey (FIDS) had been briefly active in 1950–52, when I myself wintered as Base Leader, and in 1969 the British Antarctic Survey assumed delegated responsibility for the administration. Although I have had a special interest in the island since 1950, Headland's research has turned up much well presented material new to me.

The first whale taken was a humpback in December 1904 and C. A. Larsen's factory was operational on Christmas Eve, although a lease was not granted by government until 1906. In the period until 1965, six shore stations were established and 175250 whales were taken, 12% of all whales taken in the Antarctic up to 1978 – a reflection of the commercial importance of the island. The industry is perceptively described from the early days to its close in 1965. In its heyday, there were 200 men engaged in winter and over a thousand in summer, four fifths of them Norwegians. Eventually it became uneconomic, when catchers had to travel 300 km from the stations to catch whales. So Husvik closed at the end of the 1959–60 season, Grytviken in December 1964 and Leith finally a year later. This sixty year period is of great interest and it is fortunate that Headland was instrumental in removing the whaling archives from the island to the Scott Polar Research Institute, Cambridge, where they will be a valuable source material for later scholars.

The sealing period from 1909 to 1964 saw a quarter of a million elephant seals taken and it is described with the same accuracy and insight as the whaling epoch. I was studying elephant seal biology in 1951, and on the sealer *Albatros* with Captain Hauge when the survivors of the *Dan Samuel* were rescued in King Haakon Bay; they had been living under the upturned ship's boats on albatross fledglings, conditions like those experienced by sealers in the previous century. Headland conveys the interest of those sealing and whaling days and the illustrious names of Larsen, Jacobsen, Esbensen, Allum, Strand, Hauge, Berntsen and Sorlle are evocative of the period. The administrative history is encompassed and a surprising tidbit of information, new to me, is that, during a strike in 1918, some Russian employees agitated for South Georgia to become the second Bolshevik Republic!

Travel and communications receive attention in chapter 6. A useful map gives the location of those famous (to the cognoscenti) ships associated with the history of the island: *Bayard*, *Brutus*, *Louise*, *Tijuca*, *Albatros*, *Petrel*, *Dias*, *Karakatta*, *Lille Carl* (built in 1884, 29.6 m long and credited with killing a blue whale slightly longer),

*Fortuna, Undine, Coronda, Tornquist, Fleurus* – an historical roll call. Aircraft first flew over the island in 1938 and, since 1982, C130s from the Falkland Islands have made regular flights, at least monthly, to drop mail. The postal history is important as a demonstration of effective government in connection with the claim to sovereignty; Headland as erstwhile Deputy Postmaster is very knowledgeable about these activities. He describes how, prior to the 1982 invasion, he took steps to prevent postal franks and other materials falling into Argentine hands, and then by a ruse, managed to distract the guard's attention and to clear the outward mail which went with him into captivity and thence to Britain!

The development of FIDS work on the island is covered from the early 1960s (glaciology by Jeremy Smith, botanical studies and the International Biological Programme Bi-Polar Project 1967–68 by Stanley Greene). With the permanent presence of BAS from 1969, the research activities expanded into other fields and continued uninterrupted until 1982. The meteorological observations were maintained, other physical research initiated, glaciology, geology, terrestrial and marine biology and research on birds and seals were carried out. In 1972 the Bird Island Station was reopened and in 1978 an Offshore Biological Programme began.

In chapters 7 to 9, this scientific work is covered in descriptions that reveal a good grasp of the diverse fields of science. This island is set in an island-arc, marginal basin system, the three main geological formations deriving from the volcanic arc to the west – the Amundsen Island Formation; the volcanoclastic turbidites formed from the volcanic activity and deposited by bottom currents – the Cumberland Bay Formation; and the sediments derived from the original super continent of Gondwana – the Sandebugten Formation. The oldest rocks are a complex of gneisses, schists, lavas, gabbros and dykes in the south east corner. At present 50% of the island is covered by permanent snow and ice and 163 separate glaciers have been identified. The ice cover was probably first formed 5 million years ago and even 10000 years ago the icecap was still 1100 m thick. During the current epoch the ice has been in general retreat since 1925 and one photograph illustrates the remarkably prominent annual bands on a glacier surface. The peat base has been dated at 9700 years ago and the tundra soils show familiar periglacial features, though there is no permafrost. There are raised beaches at various heights. The island is occasionally ice bound in winter within the pack ice zone. The climate is becoming warmer, windier and wetter, and up to 180 cm water equivalent is recorded annually. It is so cloudy that only about a tenth of theoretical maximum sunshine is recorded.

Headland's job with BAS was as a biological assistant and he brings to the account the natural history of the island his first hand knowledge. Inevitably, space precludes more than a summary treatment, but it is a good introduction to the subject. There are 26 native vascular plants, 125 known mosses, 85 liverworts, 150 lichens, 59 toadstools, 10 macroalgae, together with 35 flowering plants introduced by Man, and some lichens and toadstools. He describes the main features – from the tussac grass and burnets to the snow algae, endolithic algae and the giant kelp, growing to 40 m along the coasts.

The land and freshwater fauna comprises 40 insects, 10 crustaceans, and many other less conspicuous invertebrates. A small land snail was recently discovered in one locality and is the only terrestrial mollusc in the Antarctic. The animals, like the plants, have interesting adaptations that allow them to survive in a cold environment including cold tolerance, the ability to supercool and the production of antifreeze substances. The marine life is more diverse, centred on the enormously abundant krill, the main food of higher life. In this cold environment the fish have reduced

haemoglobin, extreme in the icefish which has colourless blood containing no functional haemoglobin. Commercial fisheries peaked at nearly half a million tonnes in 1970–71 and have since fallen to around 20000 tonnes a year, an indication of the most serious current conservation problem in the Antarctic. The very conspicuous bird populations include 30 indigenous breeding species, 27 non-breeding and 9 introduced species. The familiar mammals, the whales and six species of seals are based on the sea, and there are no native land mammals but, of a number of introductions, three species have survived – the reindeer, now numbering about 2000, the brown rat and the house mouse (not known until 1976). The effects of the human occupation since 1904 are remarkably impermanent and even marine pollution provides a valuable case study of changes since whaling ceased 20 years ago. The author concludes that 'recovery... is very substantial – indicating the great resiliency of the natural environment'. The conservation legislation, beginning in 1909 and continually improved, was eventually consolidated in the Falkland Islands Conservation Ordinance of 1975, largely owing to the efforts of the late Dr Brian Roberts. This is based partly on the 'Agreed Measures' of the Antarctic Treaty and there are Specially Protected Areas, Sites of Special Scientific Interest and Areas of Special Tourist Interest.

In the final chapter there is an account of the military actions in 1982 and a discussion of future prospects. The author was directly involved in these unpleasant events, unprecedented for the Antarctic, but manages to retain objectivity and even to see humour in some situations. The Argentine pretension to sovereignty relies on an association of the Dependencies with the Falkland Islands, and the highly dubious application of the Treaty of Tordesillas (1494). Headland's careful research has elucidated some matters that are new to me; for instance, although the *Compañía Argentina de Pesca*, established by C. A. Larsen in 1904, was registered in Buenos Aires, Larsen applied for and was granted British citizenship in 1910 and the first cargo of whale oil received in Buenos Aires was classed and charged by the Argentine Customs as a product from outside Argentina. It was not until 1938 that Argentina initiated a campaign that was 'directed to creating a semblance or fiction of sovereignty over South Georgia, which included reinterpretation of history and related actions'. The author drily remarks that 'British charts were used by the Argentine Navy in 1982 as their own were not regarded as sufficiently accurate!' Headland refers to the application by Britain to the International Court of Justice and the refusal of Argentina to accept the jurisdiction of the Court. Argentina is the first, and one hopes the last, state to resort to force in the Antarctic Treaty area; their war zone proclamation included part of the Treaty area. The Davidoff salvage operation, the involvement of the yacht *Caiman*, the *Bahía Paraíso* and the subsequent invasion and capture of Grytviken are all recounted and the recapture by British forces, including the sinking of the submarine *Santa Fé*. Headland was directly involved in most of these events so his account has an immediacy and he has been back to the island since.

For the future he concludes that this beautiful island cannot escape from the political background. Although the island remains intrinsically unchanged by these events, the war has changed its position in the world.

This review has been only a sampling of the good things in an outstanding book. In addition there are 139 well chosen illustrations, ten informative appendices, a selective bibliography (drawn from the author's larger published bibliography of 1344 works) and a good index. I found very few errors and I commend this well balanced account unreservedly.

RICHARD M. LAWS

*The Norwegian with Scott: Trygve Gran's Antarctic Diary 1910-13* edited by G. Hattersley-Smith, translated by Ellen-Johanne McGhie. HMSO, 1984. 258 pp. £9.95.

In *The Norwegian with Scott*, there is a graceful reference to myself. 'Had Scott been the unattractive and pig-headed leader portrayed in a recent biography ... Huntford, R. ... *Scott and Amundsen* ... it is beyond the bounds of possibility that his friends and companions should have held his memory so high.' This serves both to declare my interest and reveal the tenor of the book.

The title refers to Trygve Gran, whom Scott took on his second, disastrous expedition, to make skiers of his men. Gran was a splendid character and a Norwegian of a certain type. That is to say he was an accomplished skier, a compulsive raconteur, patriotic to a fault, with roots deep in his native soil, but insular he was not. Under Scott, he needed all the adaptability that happened to be one of his characteristics too.

In the first place, Gran found himself playing moonlight football instead of teaching Scott's men how to ski. The reason was a blend of Scott's technical incompetence, the rooted prejudice of British Antarctic explorers against ski, and Gran's nationality. When Amundsen's challenge emerged, Gran found himself in the enemy camp, as it were, the personification of the 'intruder', and the victim of Scott's uncertain temper.

Gran's view of the expedition obviously has an intrinsic interest. He was a prolific writer, but his books have been available in the original Norwegian only. *The Norwegian with Scott* is the first to appear in English. It purports to be a translation of Gran's diaries. It is in reality based on a published version of those diaries which appeared in 1915. It is fairly clear that the text was edited for publication.

Translation is a difficult art and, for a variety of reasons, Norwegian is one of the hardest languages with which to deal. Gran wrote well and entertainingly, but that does not emerge from this book. The translation fails to catch the spirit of the original. It displays too much anodyne, of which Trygve Gran was not guilty. This may well be the fault of the editor, rather than the translator, Ellen-Johanne McGhie. She happens to be Gran's daughter, and is married to a retired British diplomat.

In any translation there are likely to be errors. This one, as it happens contains a particularly interesting example. On 28 February 1911, after Scott heard that Amundsen was settled at the Bay of Whales, ready to race him to the Pole, the translation makes him call Scott 'ambitious'. The original actually reads 'irritated'. The Norwegian *ærgelig*, angry or irritated, has obviously been confused with *ærgjerrig*, ambitious. It may well have been no more than a slip of the pen, but it is revealing none the less.

Geoffrey Hattersley-Smith, the book's editor, refers to a 'two-page diary entry for 17 March 1911' on the part of Scott, 'when Gran was accused of malingering'. Hattersley-Smith then goes on to exculpate Scott. What Hattersley-Smith does not explain is that this entry was vicious. 'Such is Gran' ran one passage, 'a big hulking oaf absolutely without spirit'. That was written while Scott was living cheek by jowl with Gran in the old *Discovery* hut at Hut Point. It is one of many similar excoriations of other members of the expedition, all removed from *Scott's Last Expedition*, the published version of his diaries. The explanation proffered was that to print those passages would be to hurt the feelings of those against whom they were directed. That was humbug. The real issue was how the image of Scott was affected. Some of those passages raise the whole question of Scott's mental stability. This, however, is unlikely to be resolved until the Admiralty opens his medical record.



Despite its defects, *The Norwegian with Scott* none the less is worth reading. It presents important material hitherto closed to English readers. Some of Gran's asides are illuminating: 'The only thing that can save Scott is if an accident happens to Amundsen'; 'we seemed like a defeated army - dispirited and inconsolable'. The latter appears after the middle of the depot journey in the Southern autumn of 1911. It is a revealing comment on Scott's leadership, if nothing else.

The difficulty with the Scott myth is that it is based on a morbid romanticising of failure which equates heroism with martyrdom. It perpetuates the cult of mediocrity, it stultifies comment by invoking quasi-religious emotions, and using an unnecessary disaster as a pretext for an unctuous veil of obfuscation. The value of this book is that it provides an outsider's point of view to pierce the haze of sycophancy. It gives a refreshing glimpse of Scott the leader instead of Scott the dead hero and surrogate saint. Most tellingly, it hints at the shift of opinion before and after the débâcle.

Gran presents a comprehensive catalogue of Scott's incompetence and muddle. For example, defective skiing technique probably cost Scott and his men about 50 miles. That alone is enough to explain the ultimate disaster. Indeed, Gran gives a coherent picture of why Scott failed. To grasp all this, however, the editing has to be ignored. Its aim is palpably to prop up the Scott legend, and Tryggve Gran takes second place. It is a pity because, after all, this is Gran's book.

One question remains: why was *The Norwegian with Scott* published by HMSO? Usually that means official sanction. Is that the case here?

ROLAND HUNTFORD

*Antarctic Days with Mawson: A personal account of the BANZARE of 1930-31* by Harold Fletcher. Angus and Robertson, 1984. 313 pp. £12.95.

This is an interesting but rather awkward book. It is 'A personal account of the British, Australian, New Zealand Antarctic Research Expedition of 1929-31' written by Harold Fletcher, the Assistant Zoologist then aged 26, and later Deputy Director of the Australian Museum. The text is based on his diaries written, doubtless, day-to-day, now expanded and explained but undated. The last omission is unfortunate.

The work describes two successive and notable southern summer voyages along what became the 3000 miles of the coast of the Australian sector of Antarctica, together with visits to Macquarie and Kerguelen Islands. There were excitements (troubles, formal claims to territorial sovereignty (really the prime motivation for the voyages) and clashes of judgement between Sir Douglas Mawson as leader and Captain Davis as Master of the 'old' *Discovery*. Mawson was indeed a man of immense experience and stature.

The author notes his indebtedness to Mawson's presentation to the Royal Geographical Society (published in the *Geographical Journal* in August 1932). He also makes references to 'A comprehensive and official history, based on the Mawson papers, together with controversial issues raised at the time ... written by A. Grenfell Price ... in *The Winning of Australian Antarctica* published in 1962.'

Naturally, the present book is not to be read for literary pleasure but investigated for interesting detailed facts written at the time. But this hope is made almost impossible by the absence of an index, and the absence of dates within the text. Also, the maps are distinctly weak, printed on the inside of the book's covers and divided at 100° East longitude (though there is some overlap).

So, I found difficulty in my search for the activities of old friends, then in relative youth, e.g. Falla, the zoologist later to be eminent in New Zealand; Marr, the later veteran oceanographer; and 'Lofty' Martin, the bosun who later was mate with us in *Penola* of the British Graham Land Expedition (1934-37) and to whom we owed so much (he was later torpedoed and drowned in World War II).

Though I describe the book as awkward but interesting, the author should be thanked for his efforts to help understanding and perspective of a notable venture.

G. C. L. BERTRAM

*The Antarctic Circumpolar Ocean* by George Deacon. Cambridge University Press, Cambridge, 1984. 180 + viii pp. £15.00.

This is the first volume in a new series that seeks to present to both general and specialist readers, information being gained from the increase in research activity in both polar regions. Consequently, the format will be mainly one of review, rather than research report, conference proceedings or collated papers. Studies in all the physical, biological and social sciences will be covered. Sir George Deacon's objective is more precisely defined. He has attempted to produce a text which, though suitable for general readership, is intended to stimulate the interest of students moving into oceanography and polar studies from other scientific backgrounds. He approaches his subject by presenting an historical perspective. The development of knowledge is traced from the musings of Greek and Roman philosophers to the findings of present-day research teams on dedicated oceanographic cruises. Present knowledge is then summarized in terms of water movement and its probable effect on other marine phenomena, both physical and biological, and on climate.

The historical account is generally interesting and entertaining, with the right level of anecdotal material to lighten the narrative and to amuse. The reader cannot help but share Sir George's admiration for the formidable talents and determination of the early explorers and pioneer oceanographers. However he describes not only Man's laudable achievements under conditions of often extreme privation but also Man's abuse of the region's wild life. Over-exploitation led to the near-extinction of seals and whales – but the same commercial greed did give impetus to both geographic discovery and scientific investigation. The discoveries are referred to in temporal sequence within the historical narrative. Students as well as general readers would grasp the significance of each more readily if a series of maps and line drawings had been included to illustrate the growth of geographic and oceanographic knowledge.

The second part of the book is disappointing. The summary of present knowledge is not well structured or presented. The writing is very poor in several sections. Too often it is assumed that the general reader and would-be student have a grasp of basic descriptive physical oceanography. In fact, the non-specialist reader is unlikely to have gained a sufficiently ordered concept of temperature, salinity and density distributions and relationships from the historical narrative to understand fully even the chapter on zonation of water types. Yet this chapter is preceded by one dealing with the far more difficult concepts of wind and water currents. Describing dynamical physical oceanography in simple terms is not easy (but it can be done – see *Environmental Oceanography* by Tom Beer, Pergamon Press, 1983). Unfortunately, the explanations of Ekman transport (wind forcing), dynamic topography and geostrophic currents in this book are very confusing. The basic physical principles involved are either inadequately described or else prior knowledge is assumed. Again, line drawings would

have been of considerable assistance. Seventy-two pages are devoted to physical oceanography, including 23 pages of insubstantial accounts on sea ice, ice bergs, waves and swell, yet only 16 pages are allocated to marine biology. Here the reader is assumed to have a basic knowledge of taxonomy. No illustrations of any of the plants or animals mentioned are provided. The imbalance in the treatment of physical and biological oceanography cannot be justified in terms of relative importance or input from past and present research. There is world-wide concern over the renewed commercial interest in the living resources of the southern ocean which is shared by members of the international scientific community, and governmental and intergovernmental agencies and organizations. The current international collaborative programme in Antarctic marine research – The Biological Investigation of Marine Antarctic Systems and Stocks (BIOMASS) – is mentioned only briefly on a single page devoted to conservation. The length of this last chapter and its content are inconsistent with a declared intention of indicating the relevance of present knowledge to economic problems such as the conservation of marine living resources. In fact, this theme is not really dealt with at all. Equally surprising is the low-key treatment of the important role played by the southern ocean in global circulation, ocean mixing, redistribution of nutrients and regulation of world climate.

The layout of the book is unusual – one third of each page of text is blank. The reader may wonder why it was not used to give fuller and more adequate explanations and descriptions of many of the oceanographic phenomena. Similarly, he may question the choice of photographs used. A few are of historical value but most could have been replaced with good quality, more recent exposures – or, better still, line drawings to illustrate the modern instruments referred to in the text without adequate, or sometimes any, explanation. Even authors of specialist textbooks on oceanography think it necessary to describe and illustrate with line drawings or photographs reversing thermometers, bathythermographs, and even ‘pingers’. I am afraid would-be students of oceanography or polar studies are more likely to find their interest stultified rather than stimulated by this volume.

R. B. HEYWOOD