

Nathaniel Palmer. However, the reader himself must determine which criterion applies as the first sighting: is it the continental ice shelf, which Bellingshausen saw but did not recognize, or the bare rock and mountains seen by Smith and Bransfield just two to three days later, some 60° to the west on Antarctic Peninsula? Bellingshausen's sighting was on 28 and 29 January 1820 at the Fimbul Ice Shelf, in about 69.4°S, 2.2°W. Smith and Bransfield's sighting was on 30 and 31 January 1820 between 63.6°S and 63.1°S, 60°W and 57°W. Bellingshausen never claimed to have seen the continent, although he did refer to the ice as continental, if the Russian word *materik* is translated literally.

Some writers have claimed that Cook may have seen Antarctica during his circumnavigation of 1772–75. Cook himself never claimed to have seen it, and Jones too discounts the possibility, basing his conclusion on Cook's own account of what he saw, and taking into account both the ice conditions and weather, as well as the navigational data. Although Cook reached a higher latitude than the others (71.2°S at around 106°W), he was not close enough to have seen the continent at this his most southerly point on 30 January 1774. Any claim that Palmer might have been the first is refuted; there is no documented evidence to show that he saw the continent earlier than 16 and 17 November 1820, ie ten months after the sightings of Bellingshausen, Smith and Bransfield.

Jones has wisely devoted a chapter to a lucid description of 'the inaccessible continent' and what made it so. In a relatively short chapter he successfully evokes a vivid impression of the Antarctic physiography, the continental ice, the sea ice, the surrounding ocean, and the severe weather conditions which combine to make the region so hazardous to explorers, even today. The only typographical error is in this chapter (p 9—'tubular' rather than tabular icebergs). In another chapter Jones briefly recounts the explorations of Magellan, Drake, Halley, Furneaux and other, that pushed back the boundary of the supposed southern continent before Cook's high latitude circumnavigation.

The author has performed a useful service in writing this informative and readable book; the unusually clear sketch maps which show the tracks of the ships and their positions when the continent might have been sighted are especially welcome. The publishers have produced a book of good quality with clear, legible type. There are a few points of potential confusion. On p 6, is 'M' Murdo Bay' meant to be McMurdo Sound, and is 'Drake Strait' meant to be Drake Passage (p 12)? Perhaps these are old names not generally known today.

Jones comments that the old and new style calendars (p 87) differ by 12 days, without specifying that the old style (Julian) calendar used by Bellingshausen is 12 days behind the new style (Gregorian) calendar used by Cook and the others. It is made clear only later when the dates are given for Bellingshausen's sighting, which are 16 and 17 January 1820 (old style) and, consequently, two to three days earlier than Smith's and Bransfield's sighting on 30 and 31 January 1820 (new style). On p 100 there is a rough conversion of 2 400 m to 7 500 ft; the correct value is 7 900 ft. More important, however, is Jones' remark (p 100) about the weather and visibility when Bellingshausen might have seen the continent: 'From the 4th February to the 7th, there was a steadily rising barometer, so there would have been no difficulty with visibility.' I cannot agree: Bellingshausen's weather reports for 4–7 February 1820 indicate that he met overcast skies with snow, which most likely reduced the visibility. One should not, however, let these few points spoil one's enjoyment of the book.

GREENLAND'S ROLE IN THE MODERN ARCTIC

[Review by Terence Armstrong* of H. C. Bach and J. Taagholt's *Greenland and the Arctic* [sic] region—resources and security policy. Copenhagen, Information and Welfare Service of the Danish Defence, 1982, 79 p.]

This booklet seeks to outline, and to put in perspective, the place of Greenland in a rapidly changing Arctic. Background is given on the history of Greenland and on the geography, resources, and transport systems of Greenland and its neighbours. An especially useful section of this part of the book is the summary of Greenland's own resources, including energy; this is up-to-date and must be considered authoritative. But there are one or two misleading phrases in sections dealing with other

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parts of the Arctic: for instance, Soviet nuclear icebreakers of 150 000 hp have been spoken of but not, as far as is known, ordered; and there is no Canadian production of hydrocarbons in the high Arctic yet.

These sections serve as an introduction leading up to three chapters on strategic matters. Much has already been written about the importance of the North Atlantic in east–west relations, but the focus of this presentation is the effect of the changing political relationship between Denmark and Greenland (Greenland remains part of the Danish kingdom despite the home rule it has had since 1979). In particular, the authors underline the need for more action by Denmark, if Danish rights are to be protected and international obligations met in such matters as pollution control, fisheries regulation, and provision of weather and ice forecasting services. Special attention is given also to the possible effects of changes in the law of the sea.

BRITONS IN ANTARCTICA

[Review by Ann Savours* of Sir Vivian Fuchs's *Of ice and men: the story of the British Antarctic Survey 1943–73*. Oswestry, Anthony Nelson, 1982, 383 p, illus, £13.95.]

There can be no better beginning to this review than to quote the author's own first paragraph:

This book is an account of the first thirty years of an Antarctic expedition which has been continuously at work since 1943, first as a rather impromptu naval operation, then as a politico-scientific exercise, and finally dedicated solely to the interests of science. Yet the men who have served in it have found great adventure. For them it was exploration in its true sense, new lands, wild country and extreme conditions. Whatever part they played, every individual has enjoyed the sense of battle with nature, the wonder and beauty of an unknown world, and the achievements of survival and success. There are few places left today where young men can experience these things and learn the art of self-reliance. But Antarctica is one of them. There both a man's character and his physical strength are tried to the full and, having survived the test, each looks back and remembers with nostalgia only the enjoyable experiences.

Sir Vivian's largely chronological account could not be bettered. It is broad in its scope and yet careful of detail. With considerable literary skill and historical perception, he has spun a thread of strong narrative which runs clearly through the book—no mean achievement when covering a period of 30 years, and involving 1 250 men.

The present British Antarctic Survey, now based in Cambridge, is a scientific body working under the 'umbrella' of the Natural Environment Research Council. In the Antarctic it operates between the meridians of 80°W and 20°W, including South Georgia, the South Shetlands, South Orkney and the South Sandwich islands. The Survey began in the wartime naval Operation Tabarin of 1943–45 (mounted to deny harbours to enemy vessels). It later developed into the Falkland Islands Dependencies Survey (FIDS), 1945 to 1962, which in turn became the British Antarctic Survey (BAS). The author writes (needless to say) with great knowledge and authority from his own experience with FIDS and BAS, both in the field and as scientific and administrative director. Drawing on BAS archives and on personal diaries, Sir Vivian offers the book to his readers as a 'polar odyssey'. The emphasis is naturally on operations in the field: the ships and their masters, the setting up of the various shore establishments, sledging journeys and their objectives, transport by dog, vehicle and aircraft. However, the development of the administrative and scientific organization in Great Britain and the Falklands is not forgotten. The appendices summarize work done to 1973 (when the author retired) in the earth, life, and atmospheric sciences and in medical research; they also provide a list of stations and of wintering parties. There is an interesting last chapter entitled 'Isolation', which tells of selection procedures and of the stresses and strains to which isolated groups are subject in the Antarctic. 'Despite every care in selection, in the end it is the quality of the man himself which makes him a success or failure as a Fid. They are all ordinary chaps. We do not seek, or find, supermen. To be acceptable a

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