

media showed no particular correlation with bottle feeding; however, breast feeding, currently in decline, emerges as an important factor in general infant health. Some 60 per cent of Inuit mothers breast-fed but only 30 per cent of Indians, and the decline was most noticeable in the larger settlements.

Indians seemed more adversely affected by social change than Inuit; on the whole more urbanized, they tended to use the health facilities less. Poor quality housing affected most native settlements (for example only 7 per cent of Inuit houses had indoor flush toilets, compared with 92 per cent for white families). Other environmental factors of importance were unemployment (affecting about half the natives of Northwest Territories) and alcoholism; 17 per cent of Indian fathers and nine per cent of Indian mothers were 'often' alcohol-intoxicated. Compared with whites, more than twice as many native mothers were at the extremes of the age range (under 20 or over 35 years); four times as many native mothers were single. Infants of teenage native mothers were especially at risk. The importance of hospital deliveries is documented. Some 70 per cent of Inuit infants were delivered in institutions, though only one in four by physicians. Inuit babies had the lowest birth weights, often below 2.5 kg; low birth weights were closely associated with maternal smoking and its accompanying malnutrition.

Many infant deaths were considered preventable, though not readily predictable by nursing and lay staff. The report makes a strong case for more qualified physicians to be employed, so that infants at risk might be detected and treated earlier. Whether there is justification for 'qualified medical professionals (pediatricians) in all settlements of any size' (one of the report's desiderata) is perhaps open to question. The high staff turnover rate (over 50 per cent each year among doctors and almost 100 per cent among nurses) may indicate a need, not for more physicians, but for a radical reorganization of frontline health services, in which professionals will come to play a less important role in the peripheral settlements.

This report has taken a long time to emerge. In the ten years since the survey was done much has changed in the Northwest Territories, and some of the report's findings may no longer apply. A follow-up study is now in progress, with results expected some time this year. One hopes for a smaller study, focussing perhaps on single factors that can actually be influenced by changes in practice or policy. This present report fails to take into account recent findings from comparable populations, which might have broadened its discussions and put them into better perspective; of the 95 items in its bibliography 55 are over ten years old, only two more recent than 1978. The Territories are in many respects a 'developing country', though one with the good fortune to be part of a rich nation. Comparisons with infant mortality studies in some tropical rural areas would have been fruitful; both problems and solutions are surprisingly similar. Closer to home there are more direct and no less interesting comparisons to be made with Inuit populations in Alaska and Greenland. The success of the Alaskan frontline health services is surely due to the employment of native auxiliary health workers—206 Eskimo girls provided with effective communications and transport—who establish trust and collaboration with native villagers. Here, where almost all infants are born in health centres or hospitals, an infant mortality rate about one third that of the Northwest Territories has now been achieved.

The report makes the important point, however, that infant health in developing populations is a multidisciplinary problem, requiring close cooperation of experienced professional workers in many fields; in this respect the Canadian team have led in a direction which others must follow. The multidisciplinary approach admits the possibility of non-medical solutions to medical problems; perhaps the first and most important step toward better health for both infants and adults in the Territories is improved standards of primary education for the native populations.

WHO DISCOVERED ANTARCTICA?

[Review by Morton J. Rubin* of A. G. E. Jones' *Antarctica observed*. Whitby, Caedmon, 1981, 130 p, illus. £7.95.]

This short book will interest anyone who is curious about the early exploration of the Antarctic. It analyses extensive original and later documentation concerning the probable first discoverer of the continent—James Cook, Thaddeus Bellingshausen, William Smith and Edward Bransfield, or

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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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