

twelve. This appears by Antarctic standards to be an underestimate. The diet of the British polar expeditions of the early twentieth century must have been entirely free of Vitamin C, and the impression left with the survivors is that it was normally up to four months before symptoms recognizable as scurvy developed. Certainly six weeks of health is an understatement even with manhauling, which is the most severe kind of sledging and causes the most serious physical and nervous strain.

On p. 317 some injustice is done to the Scott Expeditions, certainly to Scott's Last Expedition, on which the writer served without ever, so far as he remembers, taking lime juice as an antiscorbutic. From 1910 to 1913 we, like Stefansson himself, relied upon fresh meat to keep scurvy away, and with good results. But unfortunately meat on the hoof is not available in the interior of the Antarctic Continent, hence the Scott tragedy, Evans's illness, and Shackleton's illness on the First Expedition. To the examples of carbon-monoxide poisoning, on the other hand, we can add our quota from the 1910-13 expedition, whether it be Browning fainting over a charcoal fire in Borchgrevinck's hut, or the whole Northern Party being within an ace of collapse and death in their snowdrift home.

Comment of this kind could be endless and would be a measure of the interest the books incite. The review should end with emphasis upon the wide scope of the *Manuals*, the general accuracy of their contents, their readability and their value for the purpose for which they have been written.

R. E. P.

*Manual of Ski-Mountaineering.* Compiled under the Auspices of The National Ski Association of America. Edited by DAVID R. BROWER. Berkeley and Los Angeles: University of California Press. 1942. \$1.50. Published in England by the Cambridge University Press; price 9s.

The invitation to review this book for this journal has given me an unusual task. I have already reviewed it elsewhere for the ski-runners and now a second review from the very different view-point of the explorer presents a new and fascinating problem; it is seldom that a reviewer is given the opportunity to look at a subject from two such different angles—and to indulge in after-thoughts.

Ski often form an essential part of the equipment of both the mountaineer and the explorer. Nevertheless, the demands made upon ski-ing practice are very different in the two cases. As its title implies, this book will be found to contain more matter of value to the former than to the man who intends to leave civilization for months or years, and he will have to delve into deeper sources than are here available. Nevertheless, it should provide useful hints and sometimes really valuable information, especially as more attention has been paid by the authors to what we would call ski-touring rather than ski-mountaineering.

As I see it, the problem of the explorer in snowy regions is twofold. He may have to be familiar with glacier and mountain technique similar to that of

the mountaineer or ski-mountaineer, or he may require merely to know how to progress with or without mechanical aid for long distances over more or less flat country. Common to both is the "technique of travel", and it is in this connexion that the manual will be of most use.

The *Manual of Ski-Mountaineering* was produced by a board of eight authors, all ski-ing members of the Sierra Club, under the chairmanship of a ninth, Mr Bestor Robinson of Oakland, California. Its original purpose was to provide a book of instruction for the ski-mountaineering tests of the National Ski Association of America, and more particularly for the ski troops of the then newly formed American Armies whose proficiency trials were based upon these tests.

To deal with some of the principal subjects:

*Warmth.* Under this heading the reader will find a good deal, especially in connexion with the scientific aspects of the matter, that is not generally known, and some of it is very interesting indeed, but the practical applications are of fairly common knowledge.

*Equipment.* Bearing in mind that the book was intended to deal with tours of comparatively short duration, this chapter is not deeply helpful to those who may have no contact with civilization for years. But many little hints will be found. From the ski-ing point of view an important omission is any mention of the dimensions of ski for ski-mountaineering; the length should be sensibly less than for racing and for really rough going this should be further reduced and the breadth increased—the extreme case being that of the very short, very broad "Racket Ski", which I have found invaluable for many purposes and which require no skill or even prior practice in use. In particular have I blessed them when access through deep snow had to be made to instruments mounted on tripod legs or to meteorological screens close to camp; for even the most skilled find it hard not to entwine the points of long ski in tripod legs or screens.

I think the explorer will gain useful advice from the section devoted to tents. The use of "headlights" is advocated for night work. I have used these with great success in some of my wanderings in the twilight of deep glacier crevasses; the advantage of having both hands free is considerable and I am surprised that they are not more generally in use for ordinary mountaineering.

*Water.* I found much here which I did not know, but perhaps ought to have known.

*Food and Cooking.* This chapter is particularly well written and sets out *inter alia* a useful daily ration of "pounds per man day" of starch, protein, sugar foods and so on, but is probably not adequate for large operations.

*The Technique of Travel.* A number of valuable suggestions will be found here to lighten the task on a long ski-ing trek. A fuller description of the ski-ing technique involved in travelling over fairly flat country will, however, be found in one of the modern dissertations on *Langlauf*. The notes on "storm, night and fire" should prove helpful.

*Selecting a Camp Site.* Rather an elementary chapter.

*Shelter.* The advice given here is of great importance, especially the instructions for the building of igloos and snow caves.

*Compass and Map.* Here again there is much of interest for the "short term" traveller, but the explorer will need to refer to more advanced work. The chapter loses somewhat through omission to recognize the existence of some of the modern European compasses, such as the excellent Swiss Büchi.

*First Aid and Transportation of the Injured.* The two chapters under these headings contain matter which everyone should master.

A brief appendix offers suggestions on "equipment to carry" and "equipment to wear".

The chapters describing "Wax and Skins" and "Snowcraft and Avalanches" are poor and give but a superficial idea of the problems involved and their solutions. This comment will still hold even if avalanches are not likely to be encountered, for there is really nothing to justify the title "Snowcraft". A thorough knowledge of this subject is nearly as important to ease the task of the hauler of a sledge as to ensure the safety and comfort of the climber on high hills.

Having completed this survey I am forced to the conclusion that I have been a little unfair. The manual was written for the ski-tourer and mountaineer and, even though it has shortcomings in its original purpose, it is perhaps a little hard to apply it to the needs of the explorer for whom it was never intended. In spite of this, it contains matter which the organizer of an expedition should be able to turn to useful account.

G. S.

*Ethnographic Bibliography of North America.* By GEORGE PETER MURDOCK. (Yale Anthropological Studies, Vol. 1.) New Haven, Conn.: Yale University Press; London: Oxford University Press, 1941. pp. xvi + 168. \$2.

This valuable bibliography covers the aboriginal population of the whole of North America, including Greenland. It is organized by areas and within each area by tribal groups arranged in alphabetical order. Under the areal headings are included regional studies, geographical and historical sources, travel accounts, and other works presenting little specific original information on individual tribes. Under the tribal headings are included works which deal directly with the particular group or its sub-groups. Standard monographs covering large segments of a tribal culture, or, in default of these, other general works of considerable scope, are placed ahead of the alphabetical list of other sources. An appendix includes references to works about North America in general or about a number of areas. A folding map shows, with approximate boundaries, the location of the various tribal groups at the period of their first extensive contacts with Europeans.

Arctic and sub-Arctic regions occupy some 20 to 30 pages of the bibliography. To compress a classified bibliography on a whole continent into a single volume requires considerable selection. This has been achieved by including such references as seemed likely to prove of value to an anthropologist wishing to discover what is known about a particular culture. Works