

Arctic and Antarctic: the Technique of Polar Travel, by COLIN BERTRAM.
Cambridge: W. Heffer and Sons, Ltd., 1939. 7s. 6d.

This book is notable as a pioneer effort in a new field of polar literature. It is only a slight study, and it is to be hoped both that its author will travel further along the path on which he has set foot and that others will be stimulated to follow him. Especially would one wish to see a similar study by an explorer of the previous generation which was faced—when the present wave of polar exploration commenced at the beginning of the twentieth century—with problems that are not likely to be met again if the Scott Polar Research Institute and other similar organisations survive as repositories of polar lore and equipment.

To those of us who served our apprenticeship in those days it is interesting to compare the methods of to-day with those of forty years ago. The polar explorer of to-day has two assets that no previous explorer possessed—aeroplanes and wireless. Both have proved most valuable, even if both have brought to the polar leader embarrassments of their own. The great cost of the aeroplane must be an embarrassment to the leader of small means: the problem of occupying and keeping mentally fit the large servicing staff required to maintain several planes of different types must bulk large in the mind of the leader of a large expedition wintering in polar regions. Recent polar history has shown clearly that there are limitations to what can be done from the air without ground support, and dangers in deducing too much from air observation. The frustration of Rymill's plans due to over-reliance upon Wilkins's observations is comparable, though it had no tragic outcome, with the trouble caused to the Franklin expedition by deficient maps of the islands and channels off the North American coast. Just as, in spite of technical advance, the infantry still remains an essential part of the modern army, so in exploration the sledge party must remain not only the essential but the chief means of adding to our accurate knowledge of new territory.

Even more has wireless complicated the polar leader's task. He dare not ignore it and, indeed, he finds it a potent weapon and a valuable safeguard. Yet the leader on the spot is now liable to interference from the committee at home and criticism by the public as he never was in pre-wireless days. Gino Watkins rescued Courtauld in the ordinary course of events and, but for wireless, no one would have known anything about the adventure until it was all over. Again, Byrd's account of his first

expedition showed that the effect of broadcasting on the psychology of a wintering party may be anything but good. On balance, both aeroplanes and wireless help the polar leader, extend his range of operations, and add to his safety, but they are not without their reverse sides.

The most interesting changes in the polar explorer's technique and equipment are, however, far less spectacular than these products of the modern scientific age. The revolutions most interesting to the explorer and historian are those small changes in diet and technique that have gone far to convert cold-weather sledging from purgatory to something much more like paradise—if we are to believe the stories of the present generation, as I think we may. One gallon of oil a week for a two-man party with double-walled tent has replaced a gallon a week for four men in a single-walled tent, and the whole atmosphere of the polar scene has changed. In the writer's day a week or two's sledging in winter temperatures meant a sleeping bag doubled in weight with rime, and nights of shivering in which one hardly knew one slept at all. To-day the explorers "spend the evening talking, sewing and mending harness, perhaps reading for a while by candlelight, before snuggling into warm eiderdown sleeping bags. Then, *the stove at last put out, . . . sleep.*" Here is a revolution that to anyone who shared in pre-war polar exploration transcends the introduction both of wireless and air-travel. The obsolescence of the Nansen cooker is by itself sufficient to convince any old-time explorer of this fact. Even in those days we clung to our windproofs and woollens in preference to furs. To-day the explorer is comfortable in similar clothes in conditions under which we found life only tolerable at best. He has even replaced our reindeer finnesko with slippers of "duffle or thick blanket cloth over woollen socks".

As regards food, the author emphasises his contrast by choosing as his foil the ration of the McClintock-Nares days. There has been in fact no great change in total weight of daily ration between the early nineteenth-hundreds and to-day. The change has been in the substitution of fat for biscuit, and the Scott and Shackleton expeditions were already working towards that. In 1912 raw pemmican was a favourite sweetmeat of Scott's northern party: Wilson, in the winter journey of Scott's last expedition, tried out a ration heavily weighted with fat. Increase in fats, greater variety, and the introduction of vitamin extracts, are notable contributions of the moderns to polar sledging diet.

The problem "men versus dogs" is a major theme of Dr Bertram's book. It would be interesting to have a book written on this subject

alone. Ample material exists, and a comparison of dog-sledging and man-hauling records over long periods of time and considerable variations of surface would be illuminating, and somewhat surprising too. On balance, the writer believes, the dogs have it, but the margin is not so great as is sometimes made out. And there are places and times when the man-hauling party would win.

The author records one instance, at least, in which in his opinion the modern explorer has slipped back. The packing of food in plywood boxes instead of canvas tanks would, indeed, appear to his predecessors also to be a retrograde step. Shackleton in 1908 armoured his sledges with plywood floors to prevent the ripping of the food tanks by projecting spikes of ice. After that precaution was taken, we had no further trouble. The additional ease of packing and handling and the additional protection that may come from having the rations in boxes appear too dearly bought at the expense of the extra weight.

The book gains a great deal from the happy thought that has caused the author to group his illustrations in pairs, one picture of each pair illustrating today and one yesterday. There are word-pictures that the reader will not soon forget whether he has polar experience or not: of musk-ox "with hair so long upon its belly that by repute it rubs out its footprints in the snow so that you cannot see where it has passed"; of the downwind shores of Arctic lakes with potential barrel-loads of "the floating skins of countless hordes of tiny gnats"; of the brown mare on Bear Island "browsing over the kitchen refuse heap, devouring old bones, dead birds and fish remains"; of Iceland ponies living on puffins "as a matter of course". And there is nothing in it more true and more important than the dictum that "the duty of the leader is to lead and there is more in leadership than planning and directing and physically advancing in the forefront". We need more books of this kind written from different points of view.

R. E. PRIESTLEY.