

This leads to speculation that Greenland had been circumnavigated, if not by the Scandinavian settlers then by Eskimo and their information transmitted — eventually to Europe. We know that Eskimo sometime went around northern Greenland with boats. The umiak discovered by Knuth at the eastern tip of Peary Land appeared to date from less than three hundred years ago and contained iron nails. At that time we believe climate and ice conditions were worse than at present — in the eleventh century they should have been much better, and circumnavigation with or without dragging boats over the ice might have been achieved. Several Dorset culture sites have been found in far northern Greenland but these are the people most historians (excepting Tryggvi Oleson) believe the Scandinavians did *not* meet but whose relics they found in Greenland.

But Vinland is also marked as an island, so it may be pure convention that led our map maker to draw Greenland as insular. As stated earlier, the outline of this further *island* does not help us greatly in elucidating the much argued points in the Sagas — we have only the three promontories with bays between, and the latter are probably given a conventional outline. Baffin Island, Labrador, Newfoundland? — or could the southern bay be Hamilton Inlet? We are not greatly helped.

A lengthy legend in very minute calligraphy appears in the northwest corner of the map above Vinland which relates not only the voyage of Leif and Bjarni southward through the ice — “ad austru inter glacies byarnus et leiphus erissonius” (their names look queer in Latin), but the visit there of Bishop Erik in a year that from papal reference must be 1117. The latter trip has already been recorded in the Icelandic Annals but a date of 1121 was ascribed to it.

These two pieces of land and the legend make up the sum total of our Arctic information in this book. But it's the stuff that dreams are made of.

**RUSSIAN SETTLEMENT IN THE NORTH.** BY TERENCE ARMSTRONG. *Cambridge University Press (Macmillan of Canada)*. 1965. 9¼ x 6¼ inches, xii plus 224 pages, 16 plates, 12 maps. \$8.50.

Dr. Armstrong has been recognized as a leading authority on the Soviet north since the appearance of his book *The Northern Sea Route* in 1952. In turning his attention to the history of human settlement he has produced a work of no less scholarly value but more general appeal, since people generally are more interested in people than in ice and economics.

The book deals with Russian expansion in the north and particularly in Siberia, and traces the settlement pattern first in the Tsarist era and then under the Soviet regime. The longest and most fascinating sections of the book deal with the types of people — fur traders, cossacks, peasants, civil servants, miners, exiles and convicts, not to mention some most original religious sects — who opened up and to some extent peopled this vast area of northern forest. And an interesting assortment of characters they are.

It is interesting to compare the pattern of development described here with that in the Canadian North. One striking difference is the fairly large numbers of peasant settlers who followed the fur traders into at least the southern fringes of northern Siberia. Nothing of this kind happened in Canada until the opening up of the farming lands in the clay belt of northern Ontario and Quebec, and in the Peace River country, in the present century. This movement of peasants was possible in feudal Russia, where serfdom was not abolished until 1861, because on the one hand state-owned serfs could be and were deliberately re-settled in remote areas, and on the other the peasant himself was attracted by the absence of serfdom in Siberia. It is largely to this peasant settlement that Dr. Armstrong attributes the stability of occupation in Siberia, in contrast to Alaska, where there was little or no peasant settlement. It is an interesting point and no doubt an important contributing factor, though

surely the distance and inaccessibility alone are enough to account for the failure to hold Alaska, combined with the pressure of competition from other nations, whereas Siberia was not only closer but no one else wanted it very much.

Other interesting points that emerge are the astounding speed with which the Russians extended their occupation to the Pacific, a mere sixty years between the first crossing of the Urals by Yermak and the founding of Okhotsk in 1641, and the relatively large numbers of Russians who followed this expansion. Yakutsk, founded in 1632, had a cossack garrison of over 500 in 1676 and in the early years after its establishment was visited annually by about 1000 Russian fur traders. This is trading on a far different scale from the operations of the Hudson's Bay Company, and in itself it partly accounts for the speed of expansion, as the first flush of plenty was quickly exhausted in any one area and the traders moved on.

The second half of the book deals with the Soviet regime and the tremendous development that has taken place since 1917, by comparison with which, as the author says, the preceding period becomes no more than an introduction to the story. Some idea of the scale of this development is given by the population figures quoted for 1926 and 1959, which show a roughly four-fold increase in the total population of the north. Maps show the remarkable extension of the northern limit of crops (though to what extent agriculture is actually practised within this area, which stretches almost to the treeline, remains uncertain) the distribution of mines, and the transportation network. This last map, while not particularly impressive in roads and railroads, points up the tremendous advantage the Russians have in the magnificent network of navigable waterways which penetrate deep inland, some of them to the trans-continental railway and even south of it, and which has done so much to make possible the development of the north. Imagine northern Canada with two more Mackenzie rivers, Mackenzies from which

the rapids had been smoothed out and which were navigable as far south as Calgary and Saskatoon.

A brief introductory chapter describes the environment, and in this Dr. Armstrong is guilty of misleading his reader a little. He dismisses the delightful if small-scale variety of tundra vegetation as "only lichens, sphagnum moss and occasional shrubs", an unimportant point perhaps in a book which does not purport to be about the physical setting. Rather more serious, to my mind, is the following, which is the opening statement of the book: "From the point of view of supporting human life, conditions in the Russian north are almost everywhere severe. In places, they are among the most severe of any inhabited part of the earth's surface; only in the Antarctic are they surpassed." I would have no quarrel with this if he had left out the last statement, which leaves the reader with the wholly misleading impression that the climate of the Russian north is worse than that of the rest of the Arctic and Subarctic. We all know that in northeastern Siberia the lowest temperatures recorded in the Northern Hemisphere are found, but temperature is not the only factor involved in supporting human life. The windchill factor in these deep cold valleys tends to be relatively low, and I am sure the winter there would be easier to take than for instance at Baker Lake on the Keewatin barrens, and certainly easier than on the Greenland Ice Cap. Possibly in the true Arctic of the Soviet Union there may be places comparable to Keewatin, though it is doubtful, as the tundra areas lack the continentality of Keewatin, but such places, in the USSR as in Canada, are very thinly populated. I do not wish to detract from the splendid achievements of the Soviet Union in the North or to suggest for a moment that we can match them in Canada or even Alaska, but it should be emphasized that the environment in which they have taken place, with one or two notable exceptions, is subarctic rather than arctic, comparable to Schefferville, Whitehorse or Fairbanks rather than Coppermine or Chesterfield Inlet. This is a small

quibble in relation to the excellence of the book, but not without importance. Too often in comparing the Russian and American North insufficient allowance is made for the very much less favourable natural conditions in North America, and although the author of this book makes no such comparisons he by implication supports this attitude.

In his introduction Dr. Armstrong states that the book cannot be a fundamental work of scholarship owing to the inaccessibility of much of the archive material. This may be so, but we may be sure that he has searched as deeply as is possible to a westerner. He had the rare opportunity to work for a time in the library of the Arctic and Antarctic Institute in Leningrad, and his fluent command of Russian enabled him to make the most of this experience. No doubt there are archive sources he was unable to tap, but he does present a wealth of information not previously available in English, information that has been evaluated and interpreted by an extremely well qualified scholar, and if the result is not a fundamental work of scholarship it is as near as we are likely to get to one for some time. Furthermore it is written in such a way as to be accessible not only to scholars but to anyone with a general interest in the subject. Some good clear maps and interesting and informative appendices round out the work, and a fine long list of references will help those who seek to dig more deeply into the subject.

MOIRA DUNBAR

**SOUTH: MAN AND NATURE IN ANTARCTICA.** By Graham Billing and Guy Mannering. *Seattle: University of Washington Press. 1965. 9 x 11¼ inches, 207 pages, 207 photographs, 155 in colour. \$15.00.*

In this contribution of the New Zealand Government to antarctic exploration, regional geography and the natural and physical sciences are almost equally divided between pregnant words and "live pictures". The text comprises

twelve chapters; each chapter heading sets a theme beautifully and convincingly backlighted by the illustrations, grouped under the same motif. The reader is led easily through the sequence of events described. A mere repetition of the chapter titles conveys the force of events which provoke the imagination and the desire to look more closely at what here is being said. The first chapter identifies Antarctica and particularly New Zealand's Scott Base and serves to introduce the reader to the chapters that follow: The Elements, the Ice, the Land, the Day, the Night, the Sea, the Animals, the Journeys, the Machines, the Men, and the Future. It is not easy to discuss these subjects in the limited space allotted them, from five to eight pages for the most part, without losing sight of their real meaning or a respect for facts presented; but the authors manage well and in the process they bring out the fascination of travel to and in the vast polar region. They vividly portray the beauty and particular charm of Antarctica and effectively review the recent, remarkable scientific activities which have brought about a renaissance in antarctic exploration and which set this White Continent apart from the great polar ice fields at the other end of the earth. It is overwhelmingly apparent in the photographic section that this is, as yet, a man's world. The photographs are largely in colour and for the most part, well reproduced and include a number of pictures by "Antarcticans" whose principal off-duty occupation appears to be "kodachroming". The effectiveness of the colour reproductions is greatly enhanced by the use of choice black and white photographs. The lily-pad ice of plate 106 should have been in non-colour film; but admittedly, plate 104 reveals a delicate colouring which black and white photography could never have captured. At any rate, the combination gives contrast, pleases the eye, and provokes exciting imagery.

It is obvious that much of the knowledge that has been laboriously extracted from Antarctica by painstaking and serious research has furnished the grist