

Evaluation of the meteorological factors affecting ablation is discussed. In this connection it might be well to point out that some method is sorely needed for measuring ablation of snow and firn with an accuracy and reliability equivalent to that with which the meteorological factors are measured. This is not an easy task, but it is essential to an eventual balancing of the ablation equation.

A sound discussion of the lag between changes in regime and changes in behaviour of glacier snouts is offered. However, in a following section note is made of a synchronous and proportional relation between regimens and recessions of the snouts of the Kårsa and Stor glaciers in Swedish Lapland. Because of the lag factor, these relations cannot be those of direct cause and effect. Rather it seems that variation of some ablation factor or factors has had a simultaneous and corresponding effect upon total regime and upon wastage of ice at the snout. Eventually, perhaps, glaciers and the principles governing their behaviour will be well enough known so that a reasonable estimate or calculation of the lag factor for individual glaciers will be possible.

Mention is made of the fact that some glaciers seem to have a "threshold" response which causes them to undergo pulsational advances and recessions under conditions of essentially uniform nourishment. This is a matter warranting the serious attention of glaciologists and physicists because it involves the fundamental properties and behaviours of ice and the modes of flow in a glacier. Expressed in grossly oversimplified terms, the question is whether glaciers are essentially "plastic" or essentially "viscous" in their behaviour. In this connection it is well to keep in mind the possible differences of polar and temperate glaciers and also to evaluate the relative contributions to total movement provided by basal slip and by deformation within the ice body itself.

The results from the many lines of investigation bearing on recent climatic changes can be confusing unless placed in proper perspective. Dr. Ahlmann skill-

fully integrates and summarizes this dispersed material to support the conclusion that the so-called recent "climatic improvement" of the North Atlantic region came to an end between 1930 and 1940 with a return to conditions somewhat more favourable for glaciers. The success of Scandinavian researches in tracing the recent "climatic improvement" makes one wish that a more vigorous program of investigation might be launched on the corresponding "climatic deterioration" in the semiarid southwestern United States, another marginal area sensitive to climatic change.

Much of the data reported by Ahlmann is clearly summarized in two illuminating graphs on page 38. These are most useful for showing in relative amounts the great shrinkage of glaciers during the post-Wisconsin xerothermic period, their resurgence during the subsequent "climatic deterioration" culminating about 500 B.C. in a climate which, with fluctuations, has continued to the present day. These fluctuations caused a considerable glacial recession during the Roman period (A.D. 0-400) and also produced in many areas between 1650 and 1750 the greatest glacial advance of the post-Wisconsin period.

Dr. Ahlmann renders us all great service by bringing together in this little booklet a stimulating view of some exciting chapters in the history of recent climatic fluctuations. ROBERT P. SHARP

#### NORTH: THE NATURE AND DRAMA OF THE POLAR WORLD.

By KAARE RODAHL. *New York: Harper and Bros. 1953. 8½ x 5½ inches; diagrams; illustrations, and end-paper map. \$3.50.*

Dr. Kaare Rodahl is known on both sides of the Atlantic for his studies of human nutrition in cold climates. A decade ago his paper on "The vitamin A content and toxicity of bear and seal liver" aroused interest because of the clues it provided to the causes of poisoning from eating polar bear liver. Later technical reports by Dr. Rodahl discussed the sources of vitamins available in plant and animal tissues in the arctic regions.

'North', while not intended as a technical report about the high latitudes, includes in chapter seven "The human factors", a useful summary discussion of human physiology, both of Whites and Eskimo, under conditions of extreme cold. The author states that he is convinced that there is a difference between Eskimo and Whites in their tolerance to cold, possibly due to differences in the anatomical structure of the skin and the blood circulation through the exposed parts. He makes it clear that Eskimo are certainly not immune to severe frostbite. In an extended discussion of other "human factors" influencing life in the far north, the author discusses the psychological effect of the arctic night. The reviewer wonders whether some of the cases of unusual behaviour quoted might not have occurred without the influence of extended darkness. Being chased by a companion with a knife during "a dispute about drink" is not unknown in less gloomy latitudes.

The author of 'North' has apparently endeavoured to make his book serve a dual purpose. Part of it deals with broad aspects of the far north, especially the Polar Basin. There are chapters on "The biology of the Polar Basin", "Ice", "Pioneers of the Polar Basin", and "Arctic resources". Here, except when the author is writing on topics which he has made his special field of study, the book has no particular contribution to make, unless it is to summarize in one place the better known material on the topics.

There is an understandable tendency to stress the contribution of Norwegian scientists and explorers, but even such cultural nationalism can be carried too far. One would expect a book on the Polar Basin to include reference to the work of the better known United Kingdom and Canadian contributors, and at least some acknowledgment of the work of Danes, if only in Greenland. There can be no objection to the appearance of a popular work on the far north, particularly from such an authority as Dr. Rodahl, and the demand for such books is a healthy sign of public interest in this vital area. It is all the more important to ensure that such

books are completely accurate and the material included in them reasonably representative. On these grounds 'North' is open to some criticism. The Index does not include the name of Nares, although he and his colleagues of 1875-6 were certainly "Pioneers of the Polar Basin", and Knud Rasmussen surely deserves better than a passing reference in the form of an allegation that he founded the Thule trading station in 1910 in order to forestall Peary! The cache found in north Ellesmere Island in 1952 had been left by Godfred Hansen, not Peary. Only oversight can account for the reference to Port Radium as being on Great Slave Lake, and to mineral production of the Yukon and Northwest Territories as including "valuable harvests from arctic resources of coal, copper, silver, lead, uranium and nickel" but excluding gold. The extended reference to Greenland cryolite is not entirely accurate, and it is surely hardly correct to attribute exploration in the Point Barrow petroleum reserve as being due to "a serious oil shortage in California during 1943."

The "general" chapters of 'North', despite such minor shortcomings, are useful but they need to be read with care and discernment.

Of perhaps greater interest to the non-specialist reader are chapters reporting on the occupation of Ice Island T3 by the United States Air Force. These form the second part of the book. Eight chapters cover the discovery of ice islands over the years, the initiation of "Project Icicle", the flight from Alaska across the Canadian Archipelago to Thule in Greenland, the flight to T3, the landing there, and the establishment of a three-man camp preliminary to a more permanent base. The book ends with a description of the "permanent" establishment there and the type of work being carried on.

Much of the account of these events is familiar to readers of popular weeklies, since "this thing was not done in a corner", but Dr. Rodahl has provided a useful and well-written account from the viewpoint of a civilian observer. Readers unfamiliar with modern military

aerial exploration in the far north will be interested to learn of the elaboration with which such modern enterprises are carried on. At one time there were more than thirty persons "grounded" on T 3. This astonishing settlement so near the north pole was partly the result of failure of a U.S. Navy aircraft to take-off after having arrived on a trip from Alaska. The author gives the impression that at this time there was a lack of identity of interest, if not of objectives, between the U.S. Air Force and the U.S. Navy concerning title to the island. Rodahl describes how, earlier, the release of news that Navy aircraft were on their

way to T 3 led the Air Force at Thule to step-up their own plans. Shortly before the speeded-up take-off, the General in charge of the base there urged his men to new endeavours with these stirring words: "If the Navy can fly over the central Polar Basin on March 19, I can see no reason why the Air Force should not be capable of doing the same thing". When faulty radar seemed likely to make a delay inevitable, he is reported as adding "Radar, or no radar . . . let's go." They went. Kaare Rodahl gives a play by play description of subsequent events until his return to Alaska some weeks later.

TREVOR LLOYD

## INSTITUTE NEWS

### Election of Honorary Members

At the Annual Meeting of the Board of Governors held in New York on 17 November 1953 His Excellency Professor Hans W:son Ahlmann, Swedish Ambassador in Norway, and Dr. Harald U. Sverdrup, Director of the Norsk Polarinstitut, were elected Honorary Members of the Arctic Institute.

This brings the number of Honorary Members elected since the start of the Institute to seven.

### Resignation of Mr. P. D. Baird in July 1954

At the Executive Meeting on 16 November 1953 Mr. P. D. Baird, Director of the Montreal Office, announced that he would be returning to Scotland in July of 1954. His resignation from this date was accepted with much regret, and the Institute is now looking for a worthy successor.

### Copies of Vaino Tanner's work on Newfoundland-Labrador

The Montreal Office of the Institute has received from Mrs. Tanner the remaining stock of Vaino Tanner's 'Outlines of the geography, life and customs of Newfoundland-Labrador' for disposal on this continent. This two-volume work

is still the major text on the area. Copies, separately-bound, of the massive bibliography are also available. The details are as follows:

OUTLINES OF THE GEOGRAPHY, LIFE AND CUSTOMS OF NEWFOUNDLAND-LABRADOR. By V. Tanner. *Acta Geographica* 8. Helsingfors: 1944.

Vol. 1 pp. 1-436 (paper cover)

Part I: The land, its structure and surface forms

Part II: The Labrador Sea and the Labrador Current

Part III: The meteorology and the climate

Part IV: The plant life

Part V: The animal life

Vol. 2 pp. 437-826 + 83 pp. of bibliography (paper cover)

Part VI: The human life  
Bibliography

The two volumes together are offered at \$6, separate volumes at \$3. Thirty-five sets are available and thirty extra copies of Volume One.

A BIBLIOGRAPHY OF LABRADOR. By V. Tanner. Helsingfors: 1942. 83 pp. (Paper cover). Contains 1,127 items and 116 maps or charts. Offered at \$1.50. One hundred and forty copies available.