

ARCTIC RESEARCH. The current status of research and some immediate problems in the North American arctic and sub-arctic. Edited by DIANA ROWLEY. Arctic Institute of North America, 1955. (Special Publication No. 2 of the Arctic Institute of North America. Reprinted from *Arctic*, Vol. 7, Nos. 3-4, 1954, p. 113-375.) 261 pages, illus., maps. 26 cm. Price \$3.50.

THIS volume, which covers an enormously wide field in the physical, biological and social sciences, presents very clearly both the current status of research and the immediate problems of the North American Arctic and sub-arctic. When one considers the size of the territory, the difficulties of accessibility, the shortness of the summer season, the arduous nature of the work and the relatively small number of research workers available, it is remarkable that so much has been accomplished thus far.

In many respects the mode of presentation of *Arctic Research* is similar to that of *Problems of Polar Research* (American Geographical Society Special Publication No. 7, 1928), but the scope of the present work is more specific in that it deals only with North American Arctic matters. Also, greater attention is paid to the lesser but nevertheless important details and to placing the subject in its correct perspective. It is, however, a pity that so broad a title was chosen for this book, because no mention or reference (except in the chapter on Sea Ice Studies) is made to the work of the Russian scientists, who *must* be actively engaged on research in the Siberian wastes.

Careful reading of the individual sections tends to whet one's appetite for further information and consequently the desire for a more lengthy dissertation on that specific topic. It is apparent that the real object of this book is to place before the younger generation of scientists the pressing need for further detailed research on the multiplicity of problems in Arctic and sub-arctic regions. In achieving this object, it is clear that the editor has been able to draw upon the foremost authorities on the specific subjects, who in each case discuss the main arguments with remarkable clarity.

The joint authors of the *glaciology* section not only review the whole history of the science but also discuss in general terms the present state of specific aspects of research in a mere ten bulging pages. Glacier velocity (at the surface and at depth), the structure of glaciers (including planar structures and crystal fabrics), phase relations in glacier ice, oxygen-isotope studies in snow, firn and glacier ice, and the significance of micrometeorology and the regime of glaciers are all discussed in turn. It seems that Arctic glaciological research is advancing along the same lines as it is in Europe.

From the standpoint of the future exploitation and development of Arctic Canada and Alaska it has become increasingly important to understand more about *permafrost*, the physical and mechanical properties of frozen soils and associated problems. The clearing of vegetation for road construction or the erection of a building with a heated basement brings with it a host of new problems, which must be solved either in the field or laboratory. Without this vital information the civil engineer cannot proceed further than his present knowledge allows.

The respective states of the solid and drift geology, geomorphology and geophysics are adequately summarized.

In the appendix an imposing list indicates that the Arctic Institute of North America has already sponsored 177 research projects in these regions and is still fostering further research in the various fields of science ranging from Anthropology and Ethnology to Ornithology and Permafrost.

Arctic Research is beautifully printed, well-illustrated and carefully indexed. Each article is adequately referenced or possesses an appended bibliography for those desirous of deeper detail. This book should do much to stimulate interest in the various branches of Arctic research and to encourage the further development of these territories.

R. J. ADIE