

to Smith, Jones, and Lancaster sounds on his fine voyage in 1616, reported on his return that they were all enclosed bays and that there was no hope of a passage in this area.

These and other factual errors and omissions undoubtedly damage the book as an actual source of information, but do not affect its value as a bibliographical reference, in which respect it is first class.

MOIRA DUNBAR

### MAN IN A COLD ENVIRONMENT

By A. C. BURTON and O. C. EDHOLM.

London: Edward Arnold; Toronto: The Macmillan Company of Canada, 1955.  $8\frac{1}{2} \times 5\frac{1}{2}$  inches; xiv + 273 pages; maps, charts, and tables. \$5.00.

This book is greatly superior to most of those published in this field or any other field of physiology. The authors, besides being among the most active and best known workers in the subject of physiological and pathological effects of exposure to low temperatures have taken the time and the trouble to visit, personally, most of the laboratories working in the same sphere of interest in Canada, the United States and Great Britain; they were able to watch their immediate colleagues in action and discuss *in situ* the work in progress down to the finest details of technique and meaning, details that never appear in a satisfactory manner in the standard scientific papers. They were also able to have personal discussions with their colleagues "working in Scandinavia, Germany, Yugoslavia etc." The result is that the vast amount of information, compiled from other authors and presented in this book, is completely understood, assimilated, unified, and faithfully expressed. This book is, however, more than a well digested review: the latter is supported and preceded by a thorough exposé of all the fundamental problems involved, accompanied by a limpid discussion of the physical and physicochemical ideas necessary to understand how the cascade of experimental facts that are presented later are related to the problems to be solved—how all those little grains

of sand fit into the skyscraper under construction.

What is the purpose of this book? It attempts to give a unified presentation of the problem of man in low temperatures. In addition, it discusses certain aspects of the problems which have scarcely been touched on before "particularly those of tolerance when heat balance is not possible, the state of hypothermia, general and local, the pathology of cold injury, and resuscitation from cold."

All through this book, one feels that there is a well conceived general plan. The reader is first presented with the historical and physical background necessary to understand the problems, through chapters entitled: "Homeothermy and history", "The problem of the homeotherm, the heat balance and physical laws", "The thermal insulation of the air", "The thermal insulation of the clothing or fur", and "The thermal insulation of the tissues of the body". These chapters are not a mere shadow of material more thoroughly discussed in text books on physics and physical chemistry; they are original in concept and structure, understandable without any concession to the truth, clear without eliminating the necessary details, and are easy and interesting to read. This is true for all the following chapters in which the biological implications are explained and discussed under the titles: "The possibilities of maintaining a thermal steady state in the cold, and how Arctic animals do so", "The estimation of the thermal demand of the environment", "Vascular reactions to cold", "The metabolic response to cold", "Acclimatization to cold" (by far the longest chapter due to the popularity and importance of the subject, and hence of the great amount of work reported), "Hypothermia and resuscitation", "Local cold injury", and "Problems for future research". References are given at the end of each chapter, and the thirteen chapters are followed by an Author Index and a Subject Index.

So much for the general plan and development of the whole idea. As far as

the structure and the presentation of each chapter is concerned, it is obvious that the authors both have a clear mind and an acute sense of pedagogy; each chapter has many subtitles corresponding to the many general ideas related to the subject of the chapter; under each of those general ideas are grouped very definite particular ideas, to each of which one single paragraph is devoted: a good example indeed of "the art of the paragraph".

Every physiologist, not only those working in the realm of bioclimatology, will enjoy reading this book and will profit by it; those working in this particular field will find that it is essential to consult it repeatedly and for a long time to come, due to the permanent actuality of many of its chapters, although the authors state that this book

"is not really meant for those already working in the field".

The authors of such a book do not expect congratulations: they have attained their goal in writing a much-needed book which will be of great help to their colleagues, and they have done a splendid job. They must feel, for sure, that they have succeeded.

Without Dr. Morley Whillans of the Defence Research Board of Canada, this book might never have seen the light of the day: it is he who convinced Burton and Edholm to write it, who constantly encouraged them to continue it, and who made the arrangements for them to visit all the laboratories concerned in Canada and the United States. Dr. Whillans deserves our thanks and through him, the authorities of the Defence Research Board.

LOUIS-PAUL DUGAL

## INSTITUTE NEWS

### Award of Institute research grants

The following have been awarded research grants by the Institute for 1956: BLACK, WILLIAM F. Dept. of Zoology, McGill University, Montreal, Quebec, Canada.

Problems of the identification, relationships, and distribution of arctic Mysidacea. Laboratory and library research. Marine biological investigation along the coast of Boothia Peninsula, Northwest Territories, with special emphasis on the collection of littoral and benthonic animals, particularly crustacea and fishes.

DEANE, ROY E. Dept. of Geological Sciences, University of Toronto, Ontario, Canada.

Investigation of sedimentation in a pro-glacial lake, Barnes Ice Cap, Baffin Island, to determine if varved clays

may be diurnal rather than annual deposits.

DEYRUP, INGRITH J. Barnard College, New York, New York, U.S.A.

A study of water and electrolyte exchange *in vitro* in tissues of small mammals adapted to the arctic environment.

HUBLEY, RICHARD C. Dept. of Meteorology and Climatology, University of Washington, Seattle, Washington, U.S.A.

Glaciological research, Olympus Ice Field.

HURD, PAUL D., JR. Dept. of Entomology and Parasitology, University of California, Berkeley, California, U.S.A.

Analysis of soil invertebrates, Barrow, Alaska.

HUSTICH, ILMARI. Dept. of Botany, University of Helsingfors, Helsingfors, Finland.

Research on forest botany and tree