

portional counters, Geiger-Müller counters, scintillation counters, and photographic, solid state, and activation devices are presented, together with some discussion of the appropriate fields of application for these various measuring systems. The third section, concerned with the choice and use of instruments suitable for different purposes, is subdivided into surveying, area and environmental monitoring on the one hand and individual personnel monitoring on the other. The fact that more than half of this section is concerned with protection measurements related to neutron sources and charged particle accelerators indicates the relative difficulties implicit in such measurements as compared with those associated with normal x-ray equipment and radioactive materials. The final fourth section of the Report deals with the calibration of all types of instruments used for protection measurements involving x rays, gamma rays, beta rays, alpha rays, and neutrons.

The Report will be warmly welcomed by a wide range of readers who have technical or administrative responsibility involving radiation measurements in all branches of radiological protection. It fills a gap which had existed hitherto in providing authoritative, practical guidance on the choice of the most appropriate measuring systems for radiological protection purposes and in giving realistic advice on the accuracy and significance of the resulting measurements.

S. K. STEPHENSON

Materials and Clothing in Health and Disease.

By E. T. Renbourn (with *The Biophysics of Clothing Materials*. By W. H. Rees). (Pp. 599; 8 graphs; 16 tables; 75 illustrations; £9.50) London: Lewis. 1972.

Both the author and Mr. Rees are widely known as authorities on the problems of clothing man. They worked together for many years on research at the Army Physiological Research Establishment into clothing for many different tasks in a variety of climatic conditions.

The book is in seven parts. The first is an historical survey of early clothing materials of prehistoric man, the uses of woven fabrics in classical times, and the early concepts of clothing hygiene held by the textile biophysicists of the 18th and 19th centuries to the relatively recent work of the new breed of clothing physiologists. Early customs, beliefs, misconceptions and superstitions are discussed. The second part written by W. H. Rees of the Shirley Institute, Manchester, a recognized authority on textile biophysics, covers the origin, basic structure, uses, and biophysical properties of clothing materials in the widest sense. Much technical information is given on the physical and functional properties of materials and much of the information on thermal insulation, radiation factors, and moisture in clothing are from his own research work. The most generally used terms in the British and Continental systems of measuring the functional properties of materials are employed. Conversion factors are given.

Part 3 refers to the relevant anthropological aspects of man's evolution, the modern concepts of body heat distribution, storage, and regulation, and the effects on the body surface of environmental changes, while

part 4 provides a historical review of the evolution of clothing, discusses the physiological important properties of materials, garments and clothing systems, and the assessment of thermal insulation. It reviews the techniques and methods used by the author in his researches.

Part 5 deals with the basic purposes of clothing, the practical application of new knowledge of the properties of materials, and the health implications of variations of design and tailoring. Footwear is given an appropriate amount of attention in view of the importance of disorders of the feet which are discussed in a later chapter. Clothing for a variety of purposes including protection from occupational hazards is briefly covered.

The medical practitioner views clothing in part 6, outlining the ills arising from inadequate, badly fitting or badly designed, and unhygienic clothing, and those which clothing may prevent, or indirectly cause, through infection, infestation, irritants, sensitizers, and cleaning agents. Interesting views are expressed on clothing material which could restrict bacterial dissemination in the operating theatre. The last part is devoted to the psychology of dress. The influence of behaviour patterns on clothing and of clothing on behaviour are analysed in dealing with a multiplicity of psychological factors involving magic, ritual, ornamentation, modesty, sex, and fashion.

Dr. Renbourn mentions in this book practically every known association between clothing and man's performance, health or illness, and so draws attention to the complexity of the science of clothing. Except in essentially technical parts the author has intentionally used language which can be widely understood. The hope is expressed that the book will appeal to Human Factors Scientists such as medical graduates, para-medical workers (such as nurses, hospital technicians, and those who help the aged and handicapped), clothing materials technologists, physiologists, biophysicists, psychologists, and students of fashion. This it should certainly do. Selective readers will easily find the subjects in which they are interested, and although it is a textbook for scientific groups, well indexed and supported by references, large parts of it provide interesting historical and up-to-date reviews of clothing fashions, customs, and beliefs. The book is full of facts and critical assessments and comments, and the author passes on the benefit of his experiences, pointing out the pitfalls to the inexperienced and explaining why apparently logical assumptions prove false. It will be of value to clothing scientists and could be to all who are concerned with what people wear.

J. S. WILSON

The Stress of Hot Environments. By D. McK. Kerslake. (Pp. x + 316; illustrated; £6.00). London: Cambridge Press. 1972.

This book is the most recent addition to the Monographs of the Physiological Society. It more than upholds the very high standards set by its predecessors and is likely to be of interest to a much wider audience than the title suggests. In his preface the author begins by pointing out that air temperature alone is not an adequate indication of environmental warmth. Although there have been