

Proceedings of the First International Photobiological Congress

(4th International Light Congress), Amsterdam, August 23-28, 1954. Pp. 472. (Wageningen: H. Veenman en Zonen.) 61s.; 8.50 dollars; 3,100 French francs; 37.50 Swiss francs; 36 D.M.

PHOTOBIOLOGY covers a multitude of complicated and fascinating subjects: photosynthesis, vision, photoperiodism in plants and animals, the erythral action of ultra-violet on the skin, and many others. This width of scope might at first sight appear to be a disadvantage, yet the seeming heterogeneity of these topics does in fact give an opportunity for fruitful comparative studies when, as here, they are investigated from a fundamental point of view, based on photochemistry and general physiology. The quantum theory forms a link throughout the whole field, while technical methods of producing and measuring radiation are of common interest to all photobiologists.

The first International Congress of Photobiology of which this volume forms the published Proceedings consisted largely of three symposia and three sections. The subjects of the symposia were photoperiodism, the effect of non-ionizing radiations on the genetic elements of cells, and the effect of the same radiations on the skin. The sections dealt with biological and medical problems, and with the physics, chemistry and climatology of non-ionizing radiation. Two hundred papers of various lengths were presented. Many of them are published only in abstract form, but there are valuable summaries of the discussions which followed, and critical reports by the chairmen of symposia and sections. The Proceedings are beautifully produced with many illustrations in line and half-tone. There is an author-index. Both the participants to the Congress and others interested in photobiological problems will find this volume a mine of valuable and often unexpected information, ranging from measurements of the ultra-violet penetrating into the sea to discussions of the very complex influences which induce the flowering of plants.

M. H. PIRENNE

Progress in Nuclear Energy

Series 2: Reactors. Edited by R. A. Charpie, D. J. Hughes, D. J. Littler and M. Trocheris. Vol. 1. Pp. x+492. (London: Pergamon Press, Ltd., 1956.) £5 net.

THE first five chapters are devoted to research reactors. Chapters 1, 4 and 5 are reviews, written especially for the volume, describing the functions of the various reactors and giving in some detail their performance and characteristics. Chapter 4 is particularly valuable in containing details of the experimental work carried out with the European reactors. Chapters 2 and 3 are the American and Russian papers presented at the Geneva conference in 1955 and rewritten for the book. Five important Geneva papers on power reactors make up the second part of the book. It is valuable to have these grouped together, but an improvement would have been achieved by including, at the beginning of this section, at least one integrating paper reviewing the claims and potentialities of the several systems described in chapters 6 to 10.

A critical discussion of the relative merits and possible difficulties of the various power reactor systems, coupled with a broad indication of the direction and extent of research and development

required to establish each system as a competitive power station, would fulfil a real need. The last chapter is a valuable review of the Geneva paper on fast power reactors. The catalogue of reactors, which completes the book, is very interesting and will be greatly used. It is hoped that the editors will be able to make some attempt to keep the catalogue complete and up to date for at least the next few years. Adequate line diagrams have been included, although some of the photographs of reactor installation could have been omitted. In general, the volume is well produced and is a worthwhile addition to most science libraries.

D. R. CHICK

Small-Angle Scattering of X-rays

By Prof. André Guinier and Gérard Fournet. Followed by a bibliography by Kenneth L. Yudowitch. (Translated by Christopher B. Walker.) (Structure of Matter Series.) Pp. xi+268. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1955.) 60s. net.

THIS very comprehensive book, by two recognized authorities, should prove especially valuable to anyone actively interested in the applications of small-angle X-ray scattering. The main criticism of the book is that some chapters, though not all, are very mathematical, but this is to some extent inevitable due to the nature of the subject. In the first part of the book, the general theory of small-angle scattering is developed, its dependence on such factors as the shape, the dispersion and the distribution of sizes of the scattering particles being considered. This is followed by a section on experimental equipment which should be particularly useful to anyone contemplating work in this field. The principles underlying the design of slit systems and bent-crystal monochromators are worked out, and many experimental arrangements are described in detail, the discussion of such points as slit dimensions and exposure times being severely practical. The authors then proceed to what they call the real problem, namely, the interpretation of the experimental results in the light of the general theory developed earlier. The book ends with a critical discussion of much of the experimental work already published on small-angle X-ray scattering, and considers possible future applications of these techniques. The classified bibliography includes more than five hundred references.

I. G. EDMUNDS

Report of the Conference on Recent Developments in Cloud-Chamber and Associated Techniques

Comprising collected papers of the conference held under the joint auspices of the Physical Society of London and University College, London, in March 1955. Edited by N. Morris and M. J. B. Duff. Pp. vi+227. (London: University College, 1956. Distributed by Pergamon Press, London.) 30s.

THE spectacular developments that have taken place in recent years in means of rendering visible the tracks of individual charged particles prompted the decision of Prof. H. S. W. Massey to organize a conference at University College, London, during March 1955 to discuss these techniques. The papers delivered at this conference, which have now been collected and published, provide a comprehensive account of these developments.

In the organization of the conference the term "Associated Techniques" was interpreted very broadly. Articles in this volume deal with the diffusion cham-