

BOOK REVIEWS

IONIZING RADIATION. AN OLD HAZARD IN A NEW ERA. By George Tievsky. 154 pages, 63 illustrations and 5 tables. Charles C. Thomas, Springfield, Ill., 1962. Price: \$ 8.

The physical, radiobiologic and genetical background to the understanding of various kinds of radiation hazards are first presented in a simplified and sometimes not too accurate manner. In the two chapters on fluoroscopy and radiography, the author stresses the importance to limit as far as possible, without jeopardizing the diagnostic results, the radiation doses received by patients and personnel. He gives the more important rules to follow for this end. These rules should already be well-known and applied, it is to be hoped, by all radiologists, but surgeons and others using roentgen radiation and without special training in radiology should study them closely. The author rightly advises non-radiologists to refrain from more specialized and difficult roentgen examinations; because of lack of experience, they will usually inflict unnecessarily high doses on their patients and themselves, and with inferior diagnostic result. There is no special chapter on radiotherapy.

The irradiation of human beings in general by natural radioactivity and by radioactive fall-out is then discussed, and some comparisons of magnitudes are presented in order to retain a sense of proportions. Some figures are contained in an appendix by G. M. Dunning. Legal considerations are stressed, such as the difficulty in many cases of deciding whether a workman's compensation claim for radiation injury is warranted, as well as the impossibility of founding a future policy in all questions of radiation protection solely on scientific facts. A judgment of values is also necessary to ensure that the positive consequences of a proposed policy weigh over the negative ones. Finally, some information is given on national and international bodies considering radiation hazards, on Handbooks of the National Bureau of Standards, and a glossary of terms is presented.

In short, the book constitutes a popular and readable presentation of a subject of great topical interest although parts of it should be taken 'with a grain of salt'. A study of the references quoted should be helpful in this respect.

Sven Benner

DIE WIRBELSÄULE IN DIAGNOSTIK UND THERAPIE. Verhandlungen der 2. Arbeitstagung der Gesellschaft für Wirbelsäulenforschung 1961 in Frankfurt am Main. 208 Seiten, 79 Abbildungen. Hippokrates-Verlag, Stuttgart 1962. Price: 39 DM.

This book reports on 35 congress papers. Some of the papers dealing with radiography of the vertebral arteries performed on cadavers, in the course of which the blood flow at different rotations of the spine was experimentally studied, are of particular interest to radiologists. The clinical significance of this mechanical influence is discussed in the light of similar studies in patients.

The lectures are of general and theoretical interest but they do not from the purely radiologic viewpoint provide much new information.

Folke Knutsson

I. INTERNATIONALER KONGRESS FÜR MEDIZINISCHE PHOTOGRAPHIE UND KINEMATOGRAFIE. Herausgegeben von H. Orbach. 362 Seiten und 275 Abbildungen. Georg Thieme, Stuttgart 1962. Price: 88 DM.

The first International Congress of Medical Photography and Cinematography was held at Düsseldorf in September 1960; the transactions have now been beautifully printed in a handy volume containing about 140 papers. Many subjects from the wide field of photography are of interest to a radiologist although some of them will be well known from recent radiologic meetings. Some technical papers, particularly those on modern roentgen films and their properties, and on processing machines, will also prove of value. Parts of the papers on image quality obtained with the image amplifier, and on problems connected with television and cinefluorography, 'memory' tubes and the microroentgen technique, have been published previously.

Of probably less account to the radiologist are the communications on endoscopic, ophthalmologic, dental, orthopedic and surgical photography. Fluorescence photography (for skin diseases) and electron microscopy are also dealt with, and general medical photography, educational films and the standardization of photography in hospitals are discussed. Cinematography in different connections is comprehensively covered.

The comments in the accompanying discussions, at least those that have been published, are surprisingly few. The reviewer regrets that the author of the paper on the possibilities of reducing dosage by increasing the development temperature seems to have overlooked certain important elementary physical facts.

Ove Mattsson

STRAHLENSCHUTZ IN FORSCHUNG UND PRAXIS. Band I. Jahrbuch der Vereinigung deutscher Strahlenschutzärzte. Herausgegeben von H.-J. Melching. 252 Seiten, 93 Abbildungen und 31 Tabellen. Rombach, Freiburg im Breisgau 1962. Price: DM 39.

Lectures covering a survey of selected topics during a radiation protection course to German physicians in January 1961 are collected in this book. The interests of those actually working with radiation, of those exposed as patients during radiologic examinations and treatments, and of third parties, are considered. The report of H. HOLTHUSEN on the extensive investigation of patient doses in Hamburg, in which about 1.4 million examinations and treatments are analyzed, is of special interest. HOLTHUSEN and other authors stress the importance of improving methods in common use and the possibility substantially to reduce patient doses without sacrificing the medical value of examinations.

Other papers describe various forms of radiation injury and the treatment in such cases as well as waste disposal in atomic energy and medical isotope work. The German legal aspects of radiation protection appear to be of limited value to readers in other countries although questions of general interest are also discussed in these communications, e. g. the difficulty or impossibility of proving in a given case the causal relationship between irradiation and injury, especially when the latter is delayed. This naturally limits the chance of the injured party obtaining compensation from the responsible authority.

Sven Benner

WHOLE-BODY COUNTING. Proceedings of a symposium held by the International Atomic Energy Agency, Vienna, 12—16 June, 1961. 535 pages. International Atomic Energy Agency, Vienna 1962. Price: 3 £ (in North America, 10.00 \$).

The measurement of low-level radio-activity in the human body is a field of study requiring considerable skill and care in the design of apparatus, in the performance of measurements, and in the interpretation of the results. If these conditions are fulfilled, valuable information on radio-active fall-out distribution and metabolism may be obtained. It is further possible to perform several diagnostic radio-isotope studies with a much smaller quantity of radio-activity than in ordinary methods, or to follow the excretion of a given dose over a longer period of time. The measurement of natural radio-activity in the body is also often of clinical interest.

A debt of gratitude is therefore owed to the International Atomic Energy Agency for convening a meeting of prominent scientists from several countries and for publishing the proceedings in the present volume, containing 33 papers, mostly in English but 5 of them in French. Various types of detectors, calibration methods, typical measurement facilities, and data processing techniques are described. Some devices for measuring the activity in part of the body or for studying the activity distribution are also mentioned.

Certain papers concern the measurement of natural radio-activity, from which potassium content and lean body mass may be estimated; others, which cannot be reviewed in detail, give several examples of the advantages accruing from the use of low-level counting methods for various diagnostic tests.

The book should be of great interest to all workers in the field, and its value is enhanced by the summaries of discussions which give much useful supplementary information.

Sven Benner

MOLECULAR BIOPHYSICS. By Richard B. Setlow and Ernest C. Pollard. 545 pages, 258 illustrations and 52 tables. Pergamon Press, Oxford 1962. Price: 84 Sh.

This book gives an account of the various physical and chemical methods in use for studying the structure and properties of biologically important, complicated organic molecules (diffusion, sedimentation, birefringence, absorption spectra, roentgen ray diffraction, electron spin resonance). It further reviews cellular biology in general and commonly used methods such as light and electron microscopy, isotopic tracer methods, radiation effects on viruses, enzymes, cells and especially chromosomes). One chapter gives applications in muscle, nerve, and eye physiology. Most of the chapters end by a number of problems for the reader.

The book contains a wealth of factual matter and interesting discussions on important topics, especially from the physicist's point of view. It does not always provide easy reading but is well worth a thorough study by anyone who wants to penetrate the problems dealt with or who is already active in the field. The chapters dealing with radiation effects and isotopic tracer methods would seem to be of greatest interest to the readers of this Journal.

Sven Benner

Einführung in die Messtechnik der Kernstrahlung und die Anwendung der Radioisotope. 2. Auflage. Herausgegeben von H. Fassbender. 420 Seiten, 244 Abbildungen, und 26 Tabellen. Georg Thieme, Stuttgart 1962. Price: 49.50 DM.

The first edition of this book was described by the present reviewer as being probably of more interest to technical than to medical readers. The second edition has been considerably enlarged, and is the work of specialists in the various fields and now, no longer, written by one author. Medical questions are, however, still treated relatively briefly, emphasis being placed on radiation measurements and the design of the necessary instruments. The book seems to be of particular interest to instrument designers and those concerned with the technical uses of radioisotopes.

Sven Benner