

Book review

RADIOLOGICAL PHYSICS. Second edition. By M. E. J. Young. 601 pages, 244 figures and numerous tables. H. K. Lewis & Co, London 1967. Price £4 4s.

The first edition of this book which appeared in 1957 has now been considerably enlarged and modernized. It is however scarcely updated to its year of printing (1967) and a passage on p. 254 relegates that part of the book to 1965; the references are mostly from the forties and fifties, with only a few from 1965—1966 and none from 1967. Some examples of recent development that have been omitted are mentioned below. However, for the stated purpose of the book (to serve as a textbook for student radiologists and radiographers as well as for physicists commencing hospital work) these deficiencies do not seem to be of serious consequence. The value of the book for teaching basic radiologic physics is enhanced by a number of examination questions appended to most chapters.

There are the usual introductory chapters on fundamental concepts and on various electronic devices. The two chapters on the production of roentgen rays illustrate the general trend in allotting more than three quarters of the space to roentgen rays below 400 kV. Chapters on radioactivity and on photon-matter interaction follow traditional lines and seem to be quite adequate, but a column on specific gamma-ray constants is absent from the isotope table on pp. 148—153. The reviewer has been unable to detect more than two such data in the whole book.

Much the same may be said about the two chapters on the measurement of ionizing radiation, about the chapters on its therapeutic uses, on the diagnostic uses of radioisotopes, and on health hazards and protection. The emphasis in the measurement chapters is on ion chambers and on various counting devices, while calorimetric and chemical dosimeters are omitted (although the Fricke dosimeter is mentioned briefly later on), and thermoluminescent dosimeters are given only a page and a half. The kerma concept is lacking, although the considerations that led to its establishment are mentioned. The therapeutic chapters include a number of instructive dose distribution diagrams for various treatment methods, and descriptions of devices for e. g. beam direction, but only manual dose planning methods are described. Computer methods are omitted. No simulator, nor the use of roentgen TV methods (which appear only in the diagnostic chapter) are described. Too little attention is paid to the advantages of electron beams and exciting new possibilities (energetic protons, negative π mesons, neutrons) are left undiscussed. The most common diagnostic radioisotope procedures are well covered but only half a page is given to the Anger gamma camera and other types are completely omitted. The chapter on diagnostic roentgenology physics is good. The most advanced chapter is perhaps the one on certain chemical and biologic radiation effects.

The fact that the book is not altogether modern should not preclude it for teaching purposes; it will certainly prove a useful handbook in less advanced routine work.

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