

NUCLEAR RADIATION PHYSICS by Ralph E. Lapp and Howard L. Andrews, 4th, Prentice-Hall, Inc., Englewood Cliffs, New Jersey 1972. 447 pp, \$13.95.

Rarely have two authors who pioneered in a new field of science kept a textbook covering it in its entirety up-to-date over a quarter of a century. This by itself is a remarkable accomplishment. At the same time Lapp and Andrews have developed such a refined form of presenting an ever-increasing variety of topics that the number of pages of each consecutive edition has remained almost the same.

When *Nuclear Radiation Physics* was first published in 1948, only about two years had passed since artificial radioactive nuclides had become generally available from nuclear reactors. Now 24 years later the same two authors have taken again a fresh, new look at this still rapidly expanding field of physics which in the intervening years has found so many important applications. For medicine it has opened completely new horizons including the development of nuclear medicine.

The material presented in this latest edition is divided into 21 sections starting with ionization and ionization chambers followed by three other types of radiation detectors. Section 4 is concerned with classical mechanics, relativity, and quantum theory, topics which are covered by many textbooks several times the size of the whole book under consideration. Therefore, it appears doubtful what service the reader will get from the present 22 pages devoted to these three large fields of modern physics.

The following three sections cover particle-wave relations, atomic structure, and structure of the atomic nucleus. Only when one reaches Section 8 are the various types of ionizing radiation and their properties presented although the radiation detectors were described 150 pages earlier. Since the response of different types of radiation detectors depends very

much on their interaction with the radiation field, one of the most important aspects concerning radiation detectors has been completely ignored by the authors.

Nuclear reactions, charged-particle accelerators, neutron physics, nuclear fission, reactors, and fusion are the topics of the following five sections. Finally, the last two sections are devoted to cosmic and terrestrial radiation and transuranium elements.

At the end of each of the 21 sections, reference is given to pertinent articles and textbooks which cover each of the many topics in depth to which only a few pages are devoted in this fourth edition of *Nuclear Radiation Physics*. Therefore, depending on his interest and knowledge, the reader may have to regard the present text more as a guide to, rather than a guide through, the field of nuclear radiation physics. If he stops reading and tries to solve the problems given for each section he will find some stimulation to test his own skills.

Nuclear radiation physics is without any doubt one of the important corner stones of nuclear medicine, and within the last 25 years advances in the former usually were followed by progress in the latter. Nevertheless, it appears doubtful whether the practice of nuclear medicine is enhanced by some knowledge of the rather esoteric nuclear particles involved in the emission of radiation from a particular atomic nucleus, or some other remotely connected topics. Even nuclear reactors as a tool for producing radio-nuclides have to be taken for granted by most nuclear medicine physicians. In general only the radiation physicist is expected to be familiar with nearly all topics summarized in this recent edition of *Nuclear Radiation Physics*.

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NUCLEAR MEDICINE. 2nd, Edited by William H. Blahd, McGraw-Hill, New York, 1971, 858 pp, \$33.50.

This reasonably comprehensive textbook of nuclear medicine represents the most recent effort to provide a general reference source for the physician and other individuals interested in this field.

This second edition has been divided into three major sections: (A) fundamentals, (B) diagnosis, and (C) therapy, with good overall balance. There is an appropriate emphasis upon diagnosis (536 of 858

pages) which does represent the area of primary impact of nuclear medicine today. Many of the presentations in this diagnostic section deserve special comment for their general excellence of organization and content (e.g., those dealing with the thyroid, central nervous system, and disorders of hemato-poiesis, to specify only a few). Without further specific reference it can be emphasized that a review of this section should provide the reader with an unusually complete overview of the diagnostic appli-

cations of nuclear medicine along with substantial factual information relating to each technique.

Although there is this emphasis upon diagnosis, there is an adequate, although not as extensive, review of the fundamentals of radiation, its detection and accurate measurement, the radiopharmaceuticals employed, a traditional, rather than a MIRD approach, to dosimetry, an informative discussion of the biomedical effects of radiation, and a concise effective presentation of the principles of radiation safety.

In the section devoted to therapy, there are authoritative, practical, and well-written presentations of all therapeutic applications. While the most comprehensive discussions are devoted to the treatment of hyperthyroidism, thyroid cancer, and malignant hematologic diseases, fundamental facts and procedures for virtually all therapeutic applications using radionuclides are included.

Blahd has called upon many excellent, well-qualified contributors who are acknowledged experts in their particular fields. As a result, the quality of the individual presentations is generally high. As in any treatise with multiple authors, there are some less satisfactory discussions due either to the nature of the topic, the state of the art, or to the contributor himself. But these deficiencies, along with certain omissions, which reflect the rapid developments in nuclear medicine (e.g. new radionuclides, kit devel-

opments, etc.), do not detract significantly from the overall excellence. Blahd and his contributors are to be congratulated on the pertinence of the vast majority of their material and the clarity of its presentation.

Certain technical features of the book deserve comment. The figures are clear and relatively simple. Most illustrations are well produced. Legends are consistent with figures, tables, and illustrations. There are many useful tables containing an abundance of information. References for each chapter are generally adequate in number, carefully selected, and useful for a reader who may wish to pursue a topic in more detail. The index is well-organized and functional. There are remarkably few errors (typographical and other) considering the magnitude of the effort.

While this text does not provide the complete reference source for nuclear medicine (particularly not in the fundamental section), it does represent a major contribution in this direction. It should be a standard and extremely useful reference book for the physician or student in training and a continual review source for the experienced nuclear physician and educator.

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**TECHNOLOGIST SECTION
THE SOCIETY OF NUCLEAR MEDICINE
20th ANNUAL MEETING**

June 12-15, 1973

Americana Hotel

Miami Beach, Florida

CALL FOR SCIENTIFIC EXHIBITS:

NUCLEAR MEDICINE TECHNOLOGISTS' PROGRAM

The Technologist Scientific Sessions Committee announces that abstracts of exhibits are now being reviewed for the 20th Annual Meeting. Abstracts of exhibits are welcomed from technical affiliates.

All exhibits will be illuminated by available room light. There will be no provisions for transillumination, e.g., view boxes. The exhibit should be mounted on poster board not exceeding 30 in. X 30 in. No more than two boards may be entered for a subject. Exhibits should be clearly titled.

Abstract format: Exhibitor's name; title of exhibit (10 words maximum); abstract (100 words); dimensions (A maximum of two boards not exceeding 30 in. X 30 in.).

Exhibit Awards: The section is pleased to announce the presentation of 1st, 2nd and 3rd place awards for the three most outstanding scientific exhibits. These are judged on the basis of scientific merit, originality, display format, and appearance.

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