

## BOOK REVIEWS

**RADIOIMMUNOASSAY AND RELATED PROCEDURES IN MEDICINE, 1982.** International Atomic Energy Agency, Vienna, Austria, International Atomic Energy Agency, 825 pp, \$104.00

This book contains the proceedings of the International Symposium on Radioimmunoassay and Related Procedures in Medicine held by the IAEA in Vienna from June 21-25, 1982. Included are the texts of 76 presentations (nine of which are review papers, 23 of which are posters) together with edited summaries of the discussions. These presentations are divided into sections based on the topics of the sessions. References are provided at the end of most of the chapters, but there is no index.

The section on reagents and separation procedures includes a wide variety of papers covering recent advances in the immunoassay field, descriptions of specific assay systems (human growth hormone, aldosterone,  $T_3$  and  $T_4$ ), and discussions of various separation systems. There are also several papers on procedures for the iodination of tracers in RIA. These give suggestions for methods to use for various classes of compounds and describe techniques for purification of the iodination mixture. Since this book has been published so soon after the meeting, these methods are very up-to-date and include HPLC processes for tracer purification.

Free hormones and receptor assays are discussed in reference to their physiological significance, theoretical basis, and clinical evaluation. There are sections on free  $T_4$ , salivary estriol, progesterone and estradiol, and receptor assays for testosterone-estradiol binding globulin growth hormone, and TSH. The reports on assays for biological substances and drugs are timely and cover both assay methods and clinical findings.

The remainder of the book deals with data processing, quality control, automation (including some systems not available in the U.S. market), and specific problems involved in providing assay services for developing countries.

The section on nonisotopic assays ("Alternatives to Radioassays") contains an excellent introduction with brief discussions of several of the various nonisotopic labels. Luminescent assays using an isoluminol derivative are described as are assays for various specific substances.

Although this book is an excellent compendium of the papers presented at the IAEA meeting, it is hard to define for whom it is intended. The lack of an index precludes its use as a general reference text, and the variety of subjects and lack of in-depth discussion on any one topic make it unsuitable for the specialist. For those who wish an overview of the topics discussed or who want an update of state-of-the-art immunoassay, this book may be of interest.

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**APPLICATIONS OF NUCLEAR AND RADIOCHEMISTRY.** R. M. Lambrecht, N. Morcos, Eds. Elmsford, NY, Pergamon Press, 1982, 582 pp, \$85.00

As discussed in the introduction, the editors' intention was to focus on contemporary applied research with radioactive isotopes. The book is divided such that 70% covers the area generally de-

scribed as "Radiopharmaceutical Chemistry," 20% covers an area called "The Impact of Radiochemistry in China," and the remainder deals with a topic entitled "Nuclear Probes." The section on radiopharmaceutical chemistry is based on a symposium held in 1980 at the Second Chemical Congress of the North American Continent, but some of the work described appears to be of more recent origin. Although much of the information has appeared elsewhere, the publication of these 29 chapters in one text provides a comprehensive review of the field of radiopharmaceutical chemistry. Because much of the material presented here has been described in review format elsewhere, it would be difficult to recommend this current publication over other reviews. Nevertheless, this publication will be of particular interest to those researchers involved with generators, halogens, or short-lived, positron-emitting radiopharmaceuticals.

For a publication prepared using camera-ready copy, the chapters are of uniformly high caliber. The editors should be congratulated for convincing all of their contributors to conform to the required format. The first part of the book will be useful to advanced students studying radiopharmaceutical chemistry as well as to nuclear medicine residents and fellows with a particular interest in the field of radiopharmaceutical development. This reviewer has some concern as to whether the last third of the book will be of interest to the audience to which the first is addressed. The chapters by the authors from China are interesting since they shed some light on the science being carried out there. It is difficult to assess whether this work is typical, however, since all the references to the first two chapters are to western publications. Again, the sections on the assaying of polonium and airborne radionuclides to determine the fallout from Chinese nuclear weapons tests are interesting, but whether an investigator concerned with the topics in the first part of the book would find use for this information is questionable. The final section of the book dealing with the general area of nuclear probes discusses in particular the application of hot-atom chemistry as an indicator of solute, solute interactions in waters, the improvement of underexposed radiographic images, and studies on the solar system. These topics would be of little interest to those engaged in radiopharmaceutical work.

If published separately, the first part of the book would be a very useful textbook for advanced students interested in radiopharmaceutical chemistry. It is somewhat unfortunate that no doubt the cost reflects the inclusion of the final third of the book, which will have less appeal.

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**MEDICAL RADIATION BIOLOGY, 2nd EDITION.** D. J. Pizzarello, R. L. Witcofski. Philadelphia, Lea & Febiger, 1982, 164 pp, \$18.50 (Canada \$22.25)

This book is an excellent introduction to radiation biology and as such will be of particular interest to medical students, technologists, residents in nuclear medicine and radiology, and their teachers. There are fifteen chapters covering the basic physical events associated with ionizing radiation, its effects on the genome, cells, and tissues, and the risks of exposure of the whole body. The

information is accurate, up-to-date, carefully and concisely explained, the index complete, and the references in each chapter current and representative of the field. The graphics are easy to understand and complementary to the written text.

Every chapter has an introduction and a summary providing orientation and review and is self-contained so it can be read independently of the others with the help of the index for looking up unfamiliar terms and concepts. When the chapters are read in sequence, there is a certain amount of repetition of material, which reinforces learning. The least successful chapter is the last entitled "Risks of Diagnostic Ultrasound." It falls short of the detailed self-explanatory text to which the reader has become accustomed.

The book is not an exhaustive treatment of medical radiation biology but rather is a compact, well-integrated introduction to the field. It is characterized by unambiguous, succinct definitions and a simplified nonrigorous treatment of a potentially confusing subject. It presents a clear view of radiation biology to the uninitiated reader. In short, this is an excellent text for those of us who like to be spoon-fed but don't expect to leave the table with a full stomach.

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**URORADIOLOGY: AN INTEGRATED APPROACH, VOL I and II. S. W. Friedland, R. Filly, M. L. Goris, D. Gross, R. L. Kempson, M. Korobkin, B. D. Thurber, J. Walter, Eds. New York, Churchill Livingstone, Inc., 1982, \$190.00**

We have become accustomed to two-volume texts in uroradiology, but this one is different. Eight editors draw upon 17 distinguished contributors to prepare a novel treatise on urographic imaging. The text is oriented toward symptom complexes or problem resolution. For example, there are chapters on pain, urinary incontinence, hypertension, injuries, hematuria, etc., in addition to the thorough treatment of specific problems; e.g., infections and infestations, or tumefaction. The chapter on tumefaction occupies some 388 pages and is without a doubt the best treatment of that subject I have ever seen. In addition to problem orientation, the authors do present routine chapters on the various modalities; e.g. angiography, ultrasonography, computed tomography, and scinographic techniques. A chapter by Dr. Pfister on percutaneous procedures is particularly noteworthy.

The value of the book, however, seems to be in its fledgling efforts to bring to bear on uroradiology the problems of patient care and decision strategies in resource allocation. There are brief chapters on cost-containment and medical-legal risks. A particularly insightful discussion by Dr. Fishman of cooperation and patient perception of radiographic techniques foretells an interest in further understanding of the contribution that radiology can and does make toward the care of patients. While the authors use the decision-tree type system approach in many instances, there are other places where it could perhaps be used. In the chapter on pain, these decision strategy methods do not seem to have been thoroughly inculcated into the value system of the various contributors. In addition to approaching uroradiology from a patient-oriented point of view, the authors have sought to base this innovation on substantial underpinnings of the more traditional approaches toward the preparation of books of this type. Particularly impressive is the chapter on anatomy of the urinary tract, which is

extremely well done.

My only concern with the book is that it has not completely attained its promise of integrating patient-oriented decision strategies with the multidisciplinary approaches in the imaging and evaluation of urologic disorders. However, it clearly represents a milestone in attempting to bridge the many special interests and expertise of individuals contributing to this diverse field. It is a laudable goal and represents a significant contribution that will be appreciated by radiologists, urologists, and students.

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**BIOMEDICAL THERMOLOGY. M. Gauthrie, E. Albert, Eds. New York, Alan R. Liss, Inc., 1982, pp 942, \$176.00**

*Biomedical Thermology* is the proceedings of an international symposium on the study of heat in biology and medicine. It is an expensive text but is well edited and represents a collection of many short papers in the field. These include papers on thermobiology of tumors, temperature biorhythms, bioelectromagnetics, use of thermology in skin and body surfaces disorders and pain syndromes, responses to drugs after thermology, thermometry, hyperthermic and cancer treatment, crys-(cold)surgery, thermal imaging of breast disease and cancer, and the socioeconomic implications of medical thermology. The book presents the work of clinicians, engineers, physicists, biologists, and social scientists who describe the practical applications of heat or cold in diagnostic and therapeutic problems of medicine. The variety of studies reported by the wide, international distribution of authors, the theoretical and practical topics presented, the advantages and disadvantages of hot (43°C)-to-cold (e.g. double freezing to 0°C), and the discussions of microwaves, of ultrasound, radiofrequency, total body hyperthermic to local heat, and thermographic imaging to thermologic biorhythmology offer the reader a diversity of subjects to ponder.

The practical problems for medical thermology include: tumor blood flow and heat patterns; thermographic imaging of breast cancers; bone neoformation by pulsed magnetic fields; hyperthermic treatment of cancer; thermal dosimetry; and methods of clinical application of localized and total body hyperthermia, surface, intracavitary, and interstitial systems for delivering body heat. Some of the systems and the results of trials in several clinics are described. Discussions of extremity perfusion by chemotherapy along with heat therapy of, for example, sarcomas and melanomas, and the use of radiotherapy and heat therapy constitute a large section of the book. The authorships of the various reports are multidisciplinary consistent with those of the numerous other texts now available on the subject of heat in cancer therapy. The reader may find this approach refreshing and some of the contributions very interesting.

The text will be valuable to oncologists, heat therapists, and medical physicists and will be useful to clinicians in radiology, surgery, medical oncology, and thermal biology. It belongs in the reference library.

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