

## BOOK REVIEWS

**PROGRESS IN RADIOPHARMACOLOGY—Volume 2.** P. H. Cox, Ed. Amsterdam, Elsevier/North Holland Biomedical Press, 1981, 339 pp, \$48.75

This book covers the proceedings of the Second European Symposium on Radiopharmacology held in the Netherlands, November 6–8, 1980, under the auspices of the Joint Committee on Radiopharmaceuticals of the Society of Nuclear Medicine (Europe) and the European Nuclear Medicine Society. "The objective was to review the state of the art with regard to the basic knowledge of the biological behavior of radiopharmaceuticals with special attention to European activities in the chosen fields." The topics were limited to cardiology, thrombosis, and lymphatics, and were organized accordingly: an initial discussion of the pathophysiology of the biological system involved, a presentation of the pharmacological behavior of related radiopharmaceuticals, and finally, a discussion of the clinical relevance.

The first chapter is a useful review of myocardial metabolism and pathophysiology. The next chapter addresses the question of the comparative radiopharmacology of Tl-201 and potassium. The author puts forward the controversial proposal, based on ion exchange and electrophoresis behavior, that the chemical state of Tl-201 as used clinically is the thallic +3 ion, which is bound as the anionic-tetrachloro complex. Since this point is important and contrary to the widely held general understanding of thallium chemistry, more discussion and supporting data would have been required to substantiate the contention. Personal communications with several who work with Tl-201 indicate that Tl-201 is supplied as the thallos +1 ion, at least in the United States. The remainder of the heart section included an exhaustive review of radiolabeled fatty acids, some clinical data on radioiodinated fatty acids, and a review of infarct agents. Unfortunately, only a few images of fatty acid myocardial studies are shown.

The next section, on thrombus localization, includes a review of the pathophysiology of thrombosis and papers on Tc-99m fibrinogen, Tc-99m plasmin, Tc-99m plasminogen, Tc-99m heparin, In-111 thrombocytes for thrombus localization, and In-111 and Tc-99m platelets for use in monitoring thrombotic depositions in transplanted kidneys. The final section deals with lymphoscintigraphy and contains useful reviews of the lymph system and the phagocytosis process of the reticuloendothelial system. Other papers cover the basic and clinical studies of lymphoscintigraphy, the use of Tc-99m-labeled neutral liposomes, the measurement of phagocytic and proteolytic lymph macromolecule transport kinetics, and Tc-99m gluconate in the staging of lymph node metastases.

The quality of the print and reproduced images in the book is good. Unfortunately, few of the images include arrows or other aids that would have been helpful in several cases in which the radioactivity localization patterns are not clearly obvious. Several comparative radiologic images include information not obvious to those unfamiliar with them, and aids to designate important features would have been helpful in these cases also.

I was somewhat troubled by the presentation of results contrary to general understanding, such as those dealing with thallium properties and oxidation level, without giving the necessary chemical detail. In addition, two papers on Tc-99m plasmin in which the biological behavior seems to be at significant variance

appear. In these cases the inclusion of questions and answers following the presentations might have been useful for clarification of certain points.

In general, the book contains a number of papers with useful review or recent research information, and the emphasis on myocardial- and thrombus-localizing radiopharmaceuticals is timely. The section on lymphoscintigraphy suggests that interest in this field may be greater in Europe than in the United States currently. This text is recommended as a useful addition to the field of radiopharmacology but with some reservations as indicated.

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**LIGAND ASSAY. ANALYSIS OF INTERNATIONAL DEVELOPMENTS ON ISOTOPIC AND NONISOTOPIC IMMUNOASSAY.** John Langan, Jeremy J. Clapp, Eds. New York, Masson Publishing USA, Inc., 1981, 286 pp, \$37.50

This book is loosely based on an international symposium on isotopic and nonisotopic ligand assays held in Toronto in May 1979. Eleven of the 21 topics covered at this symposium (plus one new one) have been expanded into 12 well-written chapters.

The main focus of the book is on nonisotopic immunoassays. In these days of political maneuvering over which hospital department should control radioimmunoassay, the nonisotopic assays are seldom performed in nuclear medicine departments. However, due to the emotive bias (and paperwork) surrounding the use of radioisotopes and the expense of radioactive waste disposal, nonisotopic immunoassays are becoming more and more widely used in clinical chemistry laboratories. Today, the bulk of therapeutic drug monitoring (TDM) is done by nonisotopic techniques (primarily enzyme immunoassays), and kits for other high volume, high concentration assays are being sought intensely by a number of manufacturers.

In addition to covering several of the basic nonisotopic assays, such as homogeneous and heterogeneous enzyme immunoassays (EIAs) and fluorescence immunoassays (FIAs), this book also discusses assays using other nonisotopic techniques. These include bioluminescence and chemiluminescence, nephelometry, and bacteriophage immunoassays. There are also chapters on the mathematics of ligand assays and the use of immunoassays for drugs. Additionally, the problems of standardization for the measurement of pituitary hormones are discussed, as is the use of polypeptide hormone receptors as binding agents.

The chapters do not go into the depth that would enable someone with no experience to develop assays using these different techniques. The introductory chapter is excellent and gives an overview of the various methods that are discussed later in the book, including a discussion of automation. Other chapters vary in quality, but all are written by leaders in the field and are informative and well referenced.

This book is not intended for the neophyte in immunoassay