

BOOK REVIEWS

HANDBOOK OF RADIATION MEASUREMENTS AND PROTECTION Section A, Volume II. Biological and Mathematical Information. A. Brodsky, Ed. Boca Raton, FL, CRC Press, Inc., 1982, 720 pp, \$94.00, U.S., \$105.00, outside U.S.

This hefty volume is itself part of a larger handbook series of undecided length with a proposed range as large as public health itself, from basic mathematics to legal and public information. Considering the enormity of the overall project, it is a pleasant surprise to find such a thorough and well-organized volume. The book is not just a collection of tables, but contains a wealth of explanatory material and even examples of applications of the material to many important areas in radiation protection.

This particular volume contains extensive biological data, including well-illustrated material on anatomy, microbiology, physiology, ecology, radiation toxicology, and human isotope distribution. Following this segment is a mathematics section covering radioactive decay, statistics, internal dosimetry, standard mathematical and statistical tables, Monte Carlo methods, kinetics, and even programming for minicomputers. The final section of appendices gives a short discussion of the causes and results of the incident of March, 1979, at Three Mile Island.

The biology section contains detailed anatomic drawings of the human organ systems, with functional descriptions relevant to radiological health. The section on ecology contains a brief but important discussion of the emerging field of quantitative toxic chemical and biological "dosimetry" as well as a very useful collection of radiotoxicity data. Everything you ever wanted to know about man's intake, output, composition, size and shape is tabulated along with radionuclide characteristics (short of decay schemes).

The sections on radioactive decay and statistics are particularly satisfying. They comprise a clear and thorough text on applied statistics in radiation measurements, complete with numerical examples. This is one area where radiation scientists must excel and where many who are studying such matters as cancer risk and cosmic radiation risk find their background lacking. These handbooks take the approach that the reader is not necessarily trained in all areas and successfully give the interested, but perhaps rusty, professional an opportunity to fully understand and utilize the techniques and tables in the handbook. Nowhere is this philosophy more successfully applied than in the section on statistics.

The volume includes, perhaps unnecessarily, the complete table of integrals, which is found in several other books. Of course, much of the tabular information in this volume is available elsewhere, but the completeness of this handbook is one of its attractive features. It will be an often-used and well-worn reference for teachers and researchers alike.

In order for a handbook to be useful, it must have a good indexing system, and this volume fulfills that requirement. The table of contents is rather spartan, however, and the page headings are useless, since each of the 700 pages has the same vague heading, "General Scientific and Engineering Information." This format makes the organization of the book unclear to the casual observer and is a minor frustration in an otherwise well-organized, educational, and useful handbook of biological, ecological, and mathematical data for the radiation scientist.

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RADIONUCLIDE BRAIN IMAGING. D. Front. E. Norwalk, Connecticut, Appleton-Century-Crofts, 1982, 141 pp, \$32.50

This book is one in a series entitled *Current Practice in Nuclear Medicine* edited by Sheldon Baum. If the others in the series are as well written and illustrated as this one, the collection should be well worth having. Dr. Front points out in the preface that the number of brain scintigraphy studies have significantly declined since the introduction of computed tomography (CT). The author and four other contributors have attempted to fill in a gap that nuclear medicine physicians may have felt because of the weakened ties between their specialty and neurology and neurosurgery. Each of the six chapters has a basic background with this goal in mind.

This atlas-type book is of high quality. Most of the figures are clear but a few, such as the image of herpes simplex encephalitis, have lost some definition in the process of reproduction. The excellent ultrastructure figures would have been more helpful with the addition of a few arrows for those of us with a faltering knowledge in microscopic anatomy. There are very few typographical errors in the text, but I was confused by the illustration of a subdural hematoma in Fig. 4-3 in which one set of images appears to show a right-sided lesion and others a left-sided one.

In the first chapter on brain tumors, several newer concepts are introduced. One is the use of a "permeability agent" such as Tc-99m glucoheptonate and a "vascularity agent" such as Tc-99m labeled red cells for imaging. When the views are evaluated separately, four different behavior patterns can be distinguished. The chapter on the radionuclide imaging of the cerebrospinal fluid is especially well organized.

It is difficult to rationalize the future sphere for conventional brain imaging. The recent advent of CT and the almost breathtaking clarity of nuclear magnetic resonance images have introduced a new age for diagnostic neuroradiology. This fact is apparent by the rarity of CNS topics discussed in the Nuclear Medicine chapter meetings and in the reduced number of recent publications. Nevertheless, this book does cover its subject well and is a necessary part of the series planned to cover current practice in Nuclear Medicine.

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QUALITY CONTROL AND DATA ANALYSIS IN BINDER-LIGAND ASSAY. R. P. Channing Rodgers. Scientific Newsletters, Inc., 1981, Vols. 1 and 2: 355 pp, Vol. 1, \$36.00, Vol. 2: \$38.50

Rodgers has compiled a thorough and lucid guide to the statistical evaluation of ligand assays. Written as a programmed text, it has enough repetition to reinforce new material and makes effective use of illustrations and tables. These volumes systematically and succinctly explore aspects of assay performance, data analysis, and quality control. The sections are brief (one or two pages) and never pedantic, drawing the reader's attention to key words and phrases with underlining. Questions at the end of each section review major points. These two volumes will be most useful to the less-experienced technologist, but there is much for the researcher as well.

Volume 1 presents most of the more basic material, touching on types of error, the implications of the law of mass action, and basic binder-ligand reactions. In a quest for completeness, some