

BOOK REVIEW

Review: Manuel TUBIS and Walter WOLF, "RADIOPHARMACY", John Wiley and Sons, 1976. 911+ xiv pages - US \$49.40

The reviewer's first thought, on putting down this interesting and substantial book, was to query the scope and limits of the subject. The idea prevalent in the 1950's, that isotopic tracer techniques are a scientific discipline in themselves, lingers on in the selection of subject matter for this book.

There is good cause for the handling of radioactive materials administered to patients, for diagnosis or therapy, to be done by pharmacists trained in the special skills which are needed. This is the first text of substance on these collective skills, and the Editors have made their case persuasively. "Radiopharmacy" provides twenty-seven chapters, the work of thirty-four distinguished workers in special fields, and these give painstaking treatments of basic physics, measurements, interaction of radiation with matter, instruments, radiation biology, dosimetry, principles of safety, preparation and quality control of materials, legal aspects, and many other topics. The chapters vary in bulk and in merit, as is common in such compilations. At best, as with Dr. Marcus on Radiation Biology, and Drs. Siemen and Telfer on Nuclear Medicine (a difficult assignment in 112 pages!), they are excellent both in matter and in manner. No-one interested in the subject can afford to leave this book unread.

But what, properly is the subject? The editors have chosen to include competitive binding assays, radionuclides in pharmacology, radionuclides in space biology and space medicine, radionuclides and radiation in the pharmaceutical industry, tracer methods with stable nuclides, and even sealed sources for brachytherapy. Many of the contributions on these topics are most interesting; they could hardly be otherwise from such contributors. But the present reviewer believes that most of this is out of place in the present book, and makes it bulkier than it need have been, with the consequent penalties of higher cost and greater delay in production.

Thus, of Chapter 22, only ten pages out of fifty-five seem rightly included; the rest, excellent though it is, is pharmacology. Dr. Tubis indeed uses, perhaps coins, the term "radiopharmacology" (p.406), but this should not logically be extended to mean more than "the pharmacology of radiopharmaceuticals". If it is accepted for "isotopic tracer methods in pharmacology", we must be prepared for spectropharmacology, fluoropharmacology, chromatopharmacology; and similar terms.

Discussions of static elimination (p.611), thickness gauging (p.611), and package fill (p.613), have nothing to do with radiopharmacy. Chapter 24 (Stable Nuclides in Pharmacology) is, again, pharmacology. Competitive binding assays have little or nothing in common with radiopharmacy. They are properly to be treated in texts on clinical chemistry. Dr. Tubis's Chapter 15 on "Radiopharmaceuticals" gives them only eight pages out of fifty-nine; but his list of 435 literature citations on "Radiopharmaceuticals", Chapter 15, is headed by six items of "General Bibliography", all six concerned only with assay methods. This may have arisen from an oversight in assembling the text, but there is in addition a whole chapter on assays.

There are some points of detail which might be improved. The "Do-it-Yourself" preparation of iodine-labelled compounds is one of the most significant sources of exposure of operators to radiation and deserves more specific comment, not overlooking the value of thyroid surveys in controlling exposure (pp. 163/4). A rather fuller treatment of liquid scintillation counting would help the student. One source of low yields from generators, not mentioned (p.284), is the failure of the user to adhere strictly to the operating instructions. The statement that ^{14}C -organic compounds "can be obtained readily" (p.287) will give food for thought to anyone with experience of the purification, identification, validation, supply and costs for longer-lived materials. A reference to "accelerated spoilage tests" (p.581) needs some discussion of the limitation of any such tests. An explanation of metastable or isomeric states should be included in Chapter 2, if only because $^{99\text{m}}\text{Tc}$ will puzzle the enquiring student reading the book. An "actual use test in determining the blood volume in a dog" (p.441) is also open to misunderstanding. The reviewer supposes that a test for rapidly-excreted impurities is meant; if not, the criterion used for the true blood volume of the dog ought to be stated.

The interesting and diplomatic treatment of legal requirements (Chapter 23) is valuable; this will be seen to be a historic development in radiopharmacy, which is already bringing about profound changes. Radiopharmaceuticals have come of age, and "Radiopharmacy" is a valuable and timely book, printed and produced to high standards. A careful search will reveal a few misprints and oversights in proof reading, but they are few and unobvious.

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