sure the book has succeeded. It is by no means an "easy-to-read" text. Because of the large amount of information presented in a relatively few pages, the physical descriptions necessary to understand the mathematical results are far too brief. To be a good introductory text, the book requires far more in depth discussions of the physical meaning and implications of the equations. I, who mistakenly thought myself well versed in the subject matter, found the book difficult reading for this reason. The author does, however, provide sufficiently detailed references to that the reader could, with patience, fill in the descriptive gaps.

In summary, the author has done an outstanding job in collecting and organizing his material. I know of no other work that contains as thorough a collection of material so specifically relevant to the evaluation of nuclear medicine images. It is not, however, an elementary text, but rather, it is an excellent reference work. The author has selected, organized, and concisely summarized all the important results in the field. A mathematically oriented reader could find no better guide to the relevant topics in medical image processing.

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NUCLEAR MEDICINE TECHNOLOGY AND TECHNIQUES. Donald L. Bernier, James K. Langan, L. David Wells, Eds. St. Louis, C. V. Mosby Co., 1981, 538 pp

The editors of this text stated that a prime objective was to compile information by and for nuclear medicine technologists. Although a physician collaborated with a technologist in preparing each chapter, the technologist is the primary author. This approach indicates to this reviewer that the editors seek to make the information available on a level for technologists and relevant to the special areas of knowledge necessary for them to maintain high performance levels. The text goes beyond presenting a clinical, or even a strictly technological, approach to the field by including chapters on pediatric imaging and patient care in general. Such a simple, technical "how-to" approach is generally the manner in which texts of this kind are prepared, specific chapters on topics that are usually assumed to be "common sense" are welcomed and long overdue. They are an aid in reminding us that good technology does not stop with basic imaging of a radioactive source, but also requires the recognition of that source as a human being with needs that change from patient to patient if not from one moment to the next in the same person.

The book is separated into two sections approximately equal in length. Basic sciences are well represented with chapters on mathematics, physics, instrumentation, laboratory sciences, radiopharmacy, radiation safety and computer science. The section on clinical nuclear medicine contains 12 chapters, ranging in length from 5 to 37 pages and covering all organ systems, the previously mentioned patient care and pediatric imaging chapters, radioimmunoassay, and a chapter devoted to inflammatory disease and tumor imaging.

The section on basic sciences contains information and equations necessary to deal with radiation in general and also with the use of specific radiopharmaceuticals including a discussion of preparation and quality control. Tables, graphs, and miscellaneous illustrations are extensive and are excellent additions to the written material.

The section on clinical imaging contains chapters that are written in a technical but easily read manner and contain discussions of anatomy and physiology as well as specific disease processes that can affect the quality of imaging. The entire section is very well illustrated with anatomical drawings, tables, graphs, and a description of the method of reproducing clinical images and radiographs that is so necessary in a book of this kind. The high quality of these images augments the already well presented written material in a notable manner. As an aid to the understanding of the technical presentation of material, a glossary of terms is provided. The references are listed at the end of each chapter and range from few to extensive (93 that pertain to the endocrine system alone).

This text is a valuable resource for students of nuclear medicine and a reference for the clinically employed technologist. It also describes the wide range of abilities necessary to be a competent, nuclear medicine technologist including the ability to present written material in a concise and educational manner, which the contributors to this book have done extremely well.

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APPLIED THERMOLUMINESCENCE DOSIMETRY. M. Oberhofer, A. Sharmann, Eds. Bristol, Adam Hilger, Ltd., 1981, 414 pp, $87.50

This book is a collection of lectures given at the Joint Research Center in Ispra, Italy, in 1977 and 1979 during two courses on thermoluminescence dosimetry sponsored by the Commission of European Communities. The intent of these courses was to develop and publish a new standard reference on the subject, and in this the editors have succeeded admirably. Thermoluminescence Dosimetry (TLD) has taken on a significance in radiation protection that rivals the introduction of the G.M. counter 40 years ago. Its use in personnel and environmental monitoring alone has earned TLD a premier status among dosimetry systems, while new applications in medicine, biology, industry, and archeology continue to expand its importance. There is, therefore, a need for such a reference book for all those current and potential users with a wide variety of backgrounds and interests.

Part I contains chapters on the historical development of TLD, theory, instrumentation, materials and their properties, measurement, and comparison of TLD to other solid state methods in dosimetry. Part II covers areas of application of TLD personnel dosimetry, environmental monitoring, neutron dosimetry, glowcurve analysis, medicine, biology, industry, reactor engineering, archaeology, and dose standardization and intercomparison. An appendix is also included that explains the system of units adopted recently in radiation and dosimetry. There are 20 lectures by 16 experts in the field of theoretical and applied TLD. There is a minimum of overlap in the lectures, consistent with the continuity of the subjects presented, and there is generally a concise presentation throughout the 400 page book, which makes it very convenient to use as a reference book. There is no overall bibliography as there was in the original TLD "bible" by Cameron et al. (*1*), but this different approach tends to emphasize the expansion of thermoluminescence into many diverse areas, each with its own bibliographic subset.

Part I (roughly 160 pages) deals with the history and fundamentals of thermoluminescence (TL) along with a discussion of the basic instrumentation and techniques used in the readout. The historical introduction is short, but not because the history is short. Experiments reported to the Royal Society of London by Sir Robert Boyle date back to 1663. There follows an extensive review of the milestones in the development of modern day TLD and some interesting insights into the thought processes that accompanied them. The history ends with a graphic representation of the publication rate of papers on TL and related phenomena, with a doubling time of one to two years, a striking indication of the need for a book to follow.

The theory section is well written and suitable for teaching