

TOMOGRAPHY: PHYSICAL PRINCIPLES AND CLINICAL APPLICATION. J. T. Littleton. Baltimore, Williams and Wilkins, 1976. 841 pp, \$57.50.

This book, written by one of the experts in tomography, places tomography in the category of special studies, where it belongs. It is recommended for diagnostic radiologists, radiotherapists, and radiologic technologists.

The book contains 15 chapters and all of them are well written. Chapter 1 (which is rather long) deals with historic aspects of tomography and Chapter 2 deals with terminology and definition. Chapter 3, Physical Principles, is very well written and provides the information necessary to avoid mistakes in planning and reading a tomogram. The portion that details the difference between fixed and adjustable fulcrum is a good example of the importance of knowing these principles. A practical application can be found in Chapter 11 that describes the sequential sizing of pulmonary nodules. The chapter on equipment is helpful in comparing the different instruments.

Chapter 5 discusses the technical aspects of tomography and is instructive for technologists and for radiologists. Armed with this knowledge, a radiologist should be able to limit the number of tomographic sections to only those necessary. With knowledge of the technical parameters, a radiologist can plan the study in advance and easily differentiate whether there is deviation from normal or whether an error in technique was made.

The clinical aspects of tomography for the different organ systems are discussed in Chapters 6-12. These sections are well written, adequately illustrated, and very instructive. Information is also provided on veterinary medicine, dosimetry, and new developments.

I disagree with the author on a few points, but this criticism does *not* decrease the value of the book. When he compares linear tomography against multidirectional movement (such as Figure 11-6) he ignores some factors (such as the lack of tough filter) which made the linear tomography appear less optimal than the hypocycloid one. Dr. Littleton, however, appears to be more enthusiastic about thin cut pleuridirectional tomography than about linear tomography. He employs thin cut tomography where others would try coned views instead (such as Figures 9-31 and 9-32). The author also prefers thin cuts in certain areas where some radiologists prefer thicker cuts, but this is a matter of preference.

In spite of these disagreements, the book is excellent, and is easy to read and understand. If there are difficult points raised, it is not the author's fault but rather that these

points are difficult to handle. Dr. Littleton is to be commended for such a fine work.

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INFORMATION PROCESSING IN SCINTIGRAPHY. Charles E. Metz, Stephen M. Pizer, and Gordon L. Brownell, eds. Oak Ridge, USERDA Technical Information Center, 1976. 209 pp, \$7.60.

This paperback volume contains papers presented at the *Third International Conference on Data Handling and Image Processing in Scintigraphy* held at the Massachusetts Institute of Technology, Cambridge, Mass., June 1973. The meeting was sponsored by the United States National Science Foundation and the United States Atomic Energy Commission.

The volume includes *Dynamic Function Data Processing Techniques* (Session I, 3 papers); *Computations for Tomography* (Session II, 2 papers); *Image Enhancement Techniques* (Session III, 5 papers); *Image Quality Measures, Theoretical and Empirical* (Session IV, 3 papers); *Speed Improvement in Image Processing* (Session V, 1 paper); and *Display Techniques* (Session VI, 2 papers). As a useful bonus, each session chairman has provided a summary of his session's papers and the discussions that followed their presentation.

Although the contributions were presented in 1973, even under 1976 standards they represent nearly state-of-the-art discussions and analyses in areas of static image processing, parameter extraction in kinetic analysis, and three-dimensional reconstruction.

The treatment of these topics is not exhaustive, as each deserves its own symposium; however, the conference proceedings contain important papers that do not appear elsewhere and is recommended for investigators in the field of image processing in nuclear medicine as well as investigators in radiology. Thus the proceedings stand as a highly scientific document of permanence; there is little discussion of ephemeral commercial equipment with the exception of a few pages on display hardware. The proceedings are well edited, without an index, but with an adequate table of contents.

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