

NMR TOMOGRAPHY AND SPECTROSCOPY IN MEDICINE: AN INTRODUCTION

Klaus Roth. Springer-Verlag, New York, Tokyo, 1984, 128 pp, \$18.00

Dr. Roth has chosen to write this book for the person who is an intelligent novice in both nuclear magnetic resonance (NMR) spectroscopy and magnetic resonance imaging (MRI), but feels he must inform himself to make intelligent judgements and intelligent viewing of MRI images, at least qualitatively. The book was originally written in German, but the English translation is excellent.

Using a nonmathematical descriptive approach, Dr. Roth largely succeeds in his limited objective. The person already familiar with NMR and MRI will not be satisfied. The book is probably most useful to medical students in their first introduction to nuclear medicine and radiology, new residents, and senior faculty who wish to learn at least the principles and directions of development of this fast evolving field. It might also be useful to medical administrators.

In his preface, Roth states he has sacrificed some accuracy in the interest of simplicity, but has made a well-rounded presentation nonetheless. As usual in a fast-breaking field, there are some humorous contrasts. The author quotes the fact that only water and fat can be seen in proton spectra from whole-body imagers on page 27, while in a summary update on page 115, he refers to data including much better spectral information than that.

Historically, most early developments in MRI are attributed to Dr. Paul Lauterbur. There might have been at least a mention of Dr. Raymond Damadian's 1971 Patent and FONAR Corp's imaging instruments. Nearly every other commercial instrument available is mentioned at least once. The subject has been one of somewhat bitter controversy.

The author presents the fundamental physics of NMR in MRI, then progresses to some of the results that have been obtained in mammalian and human systems with several different spectrometers and imaging systems. The author has restricted himself to gross organ level papers in reviewing contributions of MRI to organ physiology. Some mention might have been made of cellular level NMR work pertinent to some of those observations; though admittedly this would have enlarged the volume considerably. Not mentioned, though there is one reference, is the potential for investigation of joint articulations, especially cartilage and soft tissue.

Appendix B contains a glossary of MRI jargon which is useful by itself, especially to the initiate. Gross anatomic distributions are given as examples, with a reasonable list of re-

gional MRI anatomy literature citations.

The paper is good quality, printing is excellent, and figures are clear and appropriate. Some of the MRI images appear slightly "muddier" than the originals. Only two misspellings were found.

This book is highly recommended for medical students and senior medical faculty who wish to find out what MRI is about in as short a time as possible. Health physicists might also find it useful.

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Books Received

Radioactive Decay Data Tables. *K. C. Kocher, Oak Ridge, US Department of Energy, Technical Information Center, 1981, 221 pp, \$13.75*

Radiopharmacy and Radiopharmacology Yearbook. *P. H. Cox, Ed., New York, Gordon and Breach Science Publishers, 1985, 376 pp, \$47*

An Atlas of Normal Skeletal Scintigraphy. *J. J. Flanagan, M. N. Maisley, London, Wolfe Medical Publications, 1985, 69 pp, \$25.00*

Lymphatic Imaging. Lymphography, Computed Tomography, and Scintigraphy, Second Edition. *M. E. Clouse, S. Wallace, Baltimore, Williams & Wilkins, 1985, 526 pp, \$87.50*

NCRP Report #83—The Experimental Basis for Absorbed-Dose Calculations in Medical Uses of Radionuclides. *Bethesda, NCRP Publications, 1985, 109 pp, \$13.00*

NCRP Proceedings #6—Some Issues Important in Developing Basic Radiation Protection Recommendations. *Proceedings of the Twentieth Annual Meeting of the National Council on Radiation Protection and Measurements. Bethesda, NCRP Publications, 1985, 325 pp, \$19.00*

NCRP Report #82—SI Units in Radiation Protection and Measurements. *Bethesda, NCRP Publications, 1985, 64 pp, \$10.00*

NCRP Report #84—General Concepts for the Dosimetry of Internally Deposited Radionuclides. *Bethesda, NCRP Publications, 1985, 109 pp, \$12.00*