CLINICAL SCINTILLATION IMAGING, 2nd ed. L. M. Freeman and P. M. Johnson, eds. New York, Grune and Stratton, 1975, 820 pp, $55.00.

This text, devoted entirely to the imaging aspects of nuclear medicine, is the second edition of a previously well-accepted text. The list of authors reads like a *Who's Who in Nuclear Medicine.* Each chapter is entirely capable of standing alone as a complete monograph on the given topic. In general, the chapters are strong on both technical and diagnostic criteria. One of the fine points of the text is the intercomparison with other appropriate imaging techniques. This comparison should give the uninitiated reader a feeling for the comparative merit of nuclear medicine examinations.

The basic science material, presented traditionally in the first few chapters of this text, is of generally high quality and is sufficiently readable that both the novice and the nuclear medicine physician desiring some review can easily obtain the needed information. Also, the text contains two unusual features, both of which are excellent. The first is a chapter by Benedict Cassen which tells those of us who are not old enough to remember the origins of nuclear medicine where we came from and how we got to where we are now. This chapter should probably be required reading for every practicing physician in nuclear medicine as well as for most basic scientists. The other item, which is particularly helpful again to novices, is the glossary of terms at the end of the book. Nothing is more frustrating to the new entrant into nuclear medicine than not to understand the language spoken. Here he can quickly find what he needs to know.

The only constructive criticism that can be made is that the book does not deal sufficiently with the emerging computer technology and its applications to nuclear medicine. One would hope that for future editions the editors will consider an introductory chapter on computers under the instrumentation section and more extensive discussions of computer applications under the individual chapters.

Clinical Scintillation Imaging will make a valuable addition to any nuclear medicine library whether the practitioner be a full-time, part-time, or student nuclear medicine physician.

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BASIC NUCLEAR MEDICINE. Sheldon Baum and Roland Bramlet. New York, Appleton-Century-Croft, 1975, 270 pp, $13.75.

With the continued proliferation of texts on a variety of subjects in nuclear medicine, the authors should be commended for preparing a comprehensive synopsis of nuclear medicine for physicians who have only a limited knowledge of the field. To accomplish this objective, the book is divided into three sections: clinical scanning and external detector studies; in vitro laboratory techniques; and basic nuclear science, instrumentation, and radiation safety.

Compared to an earlier text of comparable size and composition, C. D. Maynard's *Clinical Nuclear Medicine* (Lea and Febiger, 1969), the contents of *Basic Nuclear Medicine* vary in the depth of presentation and are less relevant at times to the practice of nuclear medicine today. A prime example is encountered in Chapter 1 where, after a superb description of the technique and clinical utility of static brain imaging, no mention is made of the cerebral perfusion study. Only at the end of Chapter 6 is a description of the procedure offered. The relevancy of the book is to be questioned when, after an in-depth dissertation on the method and application of the BEI, conversion ratio, and PB^{131}I in thyroid evaluation, the authors fail to even mention the more practical techniques employed today, such as radioimmunoassay of serum T_4, T_3, and TSH. Similarly, time–activity curves generated from scintillation-camera renal images after the injection of ^{131}I-orthohippurate have long replaced the ancient method of dual-detector renogram curves, and yet the former were not presented as a present-day technique.

In the second section the descriptions of the more standard in vitro procedures are methodologic in their presentation and offer no clinical utilizations or results. Unfortunately, the brief discussion of radioassays does not differentiate the types (e.g., radioimmunoassay, competitive protein binding) or provide pertinent clinical applications. On the other hand, the basic nuclear medicine section is well composed, with succinct descriptions, vivid examples, and only minor omissions. The appendix has little usefulness except for its designations of critical organs and the absorbed radiation dose values.

Unquestionably, *Basic Nuclear Medicine* will stimulate some interest. However, I doubt that it will give significant impetus to the understanding or wider recognition of nuclear medicine. Predictably, the book should appeal to students of nuclear medicine and technologists, but its longevity is dubious.

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DIAGNOSTIC ULTRASOUND IN NEUROLOGY. METHODS AND TECHNIQUES. M. S. Tenner and G. M. Wodraska. New York, Wiley, 1975, 183 pp, $28.00.

Readers will recall that the simplest method of displaying ultrasound reflections is the A-mode tracing whereby the acoustic interfaces encountered by a single ultrasonic beam are displayed as deflections of varying amplitude on an oscilloscope. B-mode ultrasound refers to the process whereby each of these deflections is reduced to a dot which ideally varies in brightness with the strength of the acoustic interface. In the TM-mode used for echocardiography, this single ultrasonic beam, displayed with dots at each acoustic interface, is placed on a varying time base to record the movement of individual echoes. B-mode ultrasound is also the source of two-dimensional ultrasound, otherwise known as B-scan ultrasound, where an infinite series of ultrasonic beams are built up into a

cross-sectional view of the body by means of a persistence scope. Real-time scanning is based on numerous B-mode beams recorded so rapidly that one seems to see direct cross-sectional information from moving structures.

Echoencephalography only uses the simplest of these techniques: A-mode. After the first 6 months of life, the bones of skull generally become too thick to permit B-scan views of the brain and the TM-mode is rarely used because practically no moving structures exist with the head. The simple concept of echoencephalography is now almost 30 years old: A-mode echoes are recorded from a transducer placed on the side of the skull in relation to the pinna of the ear and directed into the brain. Until the publication of this book, my impression was that the information value of this basic technique had plateaued and that no fresh developments had occurred for several years. *Diagnostic Ultrasound in Neurology,* however, introduces several new applications and variants in technique.

The book consists of ten chapters. Chapter 1, by Lew Fillisti, is a simple well-illustrated account of the basic physics of ultrasound. Chapter 2 consists of a detailed review of the anatomy of the normal third ventricle, correlating the ultrasonic echoes with the normal structures in the plane of the third ventricle, including the dura and pia mater. A helpful description is given of how to get the best results by using the instrument's time-gain compensation and gain controls. Chapter 3 describes abnormal findings involving the third ventricle: in particular, midline shift, herniation, and distortion by adjacent tumors. Chapters 4 and 5 describe the normal anatomy of the lateral ventricles and the ultrasonic findings associated with hydrocephalus, cerebral atrophy, hemiatrophy, and agenesis of the corpus callosum. Chapters 6 and 7 concern the brain stem and aqueduct of Sylvius and describe the diagnosis of solid and cystic masses in the hypothalamus and quadrigeminal plate areas. Chapter 8 describes the ultrasonic findings in trauma, focusing on contusion and epidural and subdural hematomata and stressing the value of echoencephalography in the follow-up of such lesions. Chapters 9 and 10 deal with the use of echoencephalography in the management of cortical tumors and cysts.

Diagnostic Ultrasound in Neurology is well illustrated, especially with regard to anatomy, and it is written at a level which technologists will find helpful without being so basic that physicians will be annoyed. For those accustomed to thinking of echoencephalography as a fairly reliable way of diagnosing midline shift, of following changes in lateral ventricular size in hydrocephalus, and occasionally of diagnosing and following subdural hematoma, many fresh ideas are given. It represents the best of the five books now published on the subject of echoencephalography.

Reviewing a book such as this, however, raises the question of the future of echoencephalography. The vast majority of requests for echoencephalography involve the question of midline shift. A simple ultrasonic computer device, the Midliner, is available for this purpose. This device can be used by technologists with very limited training, and it estimates the midline accurately enough to exclude false negatives to all intents and purposes. The few false positives (1.6%) can be further investigated with CAT scanning or ateriography. One wonders if it is not misguided to devote time and energy to echoencephalography now that this simple gadget and the CAT scanner are with us. When a technique is complex and sophisticated, it should give complex and sophisticated results. Such lesions as agenesis of the corpus callosum or intracranial hematoma can be studied using echoencephalography, but the information cannot be obtained without a great deal of time and effort and the overall reliability depends on the operator's skill and conscientiousness. Echoencephalography remains a simple method of following the size of the lateral ventricles in patients with known hydrocephalus to assess the viability of a shunt, but this is almost the only indication that I can see for traditional echoencephalography. Other noninvasive techniques, such as CAT scanning and brain scanning, provide information on other lesions that is more extensive and more reliable because it is less dependent on operator manipulation. My own feeling is that for those physicians owning a Midliner, echoencephalography must resemble the renogram, a technique with an interesting past but little future.

In sum, for those technologists studying for the American Society of Ultrasound Technologists Registry, *Diagnostic Ultrasound in Neurology* represents a good buy. No doubt the average medical practitioner involved with ultrasound will buy it to complete his library since this is the most authoritative book on this technique.

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TEXTBOOK OF RADIOLOGY, 2nd ed. David Sutton and Ronald G. Grainger, eds. New York, Churchill Levingstone, 1975, 1,376 pp, $79.50.

The second edition of this popular text on diagnostic roentgenology has just been published after the book has been out of print for nearly 2 years. Once again, the entire field of diagnostic roentgenology is presented in one volume. Each discussion of the major organ systems includes information concerning normal radiologic appearances and techniques. A brief description of disease states precedes the delineation of abnormal radiologic images. Most sections provide a good overview of the subject, although some chapters stand out for their excellent presentation by well-known experts in the field: the sections on skeletal trauma by Murray; the sections on disease of the pleura and pulmonary infections by Grainger; the cardiovascular section by Steiner, Dow, and Sutton; the section on the gastrointestinal tract by Somme and Laws; and the section on the head and neck by Sutton and Lewtas.

Despite the multiauthor treatment of the subject, the book is surprisingly uniform in its approach and succeeds in presenting the voluminous material without major omissions. Its weaknesses include a lack of bibliographic references, line drawings, and arrows to identify abnormalities discusssed in the text. Overemphasis is given to pneumography in the section on the central nervous system, which at the same time lacks a more elaborate discussion of CT scanning.

Overall, the book is well written and skillfully edited. *Textbook of Radiology* is likely to become as popular as the first edition, especially with medical students and young radiologists in training.

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