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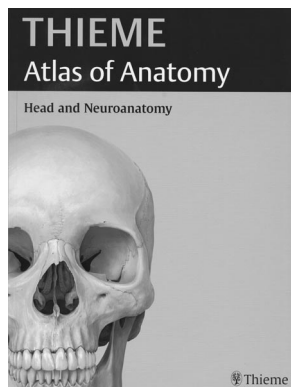
Imaging Science

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book undersells itself by simply naming it an “atlas.” A more energetic and eye-catching title would have been appropriate for this outstanding work.

The authors (Drs. Schuenke, Schulte, and Schumacher) have joined together the anatomy of the head (bony cranial muscles, blood vessels of the head and neck, cranial nerves, oral cavity, nose, eye and orbit,

ear and vestibular apparatus, and sectional anatomy of the head) with detailed neuroanatomy (meninges, ventricular system, cerebrum, diencephalon, brain stem, cerebellum, blood vessels of the brain, and spinal cord). However, that is not what makes this book special; rather, it is the interposed functional anatomy and clinical correlates to dysfunctional states in each of those anatomic areas. Throughout the book, the text is amplified with important summary tables and charts and, as warranted, histologic diagrams. Clearly, this work is more than an atlas.

A few examples will suffice to demonstrate the value of the book. In the section on functional neuroanatomy of the visual system is detailed functional anatomy of the geniculate, non-geniculate or cortical areas, the visual reflex system, and coordination of eye movement. In a similar manner, the functional aspects of the auditory and vestibular systems are beautifully illustrated and explained. The limbic system, frequently an arcane structure, is laid out both anatomically and functionally in a beautiful, simple, and understandable fashion. Furthermore, by using these 3 sections as examples, one can further coordinate these findings by going to earlier sections to see exquisitely detailed drawings of the eye or, even more stunning, drawings of the middle and inner ear with accompanying stylized histologic features of the small structures contained therein, or drawings of the allocortex (hippocampus and amygdala). It is virtually impossible to describe in words how impressive the drawings are throughout the book. As an aside, there are no radiographs, CTs, or MRs except for 1 set showing Alzheimer disease; please do not consider that a drawback.

The drawings are all in color and are superb. This excellently crafted atlas (and, as I said, it is much more than your typical atlas) should be on the shelves of all those in the clinical neurosciences. The next time you are attending a meeting, stop by Thieme Publishing and thumb through this book; its value will be immediately apparent. This atlas will be referred to often and will serve to clarify questions that arise frequently concerning the functional neuroanatomy of the brain and spinal cord. I will have this atlas on my desk immediately available for the review of many functional neurologic issues that arise daily. I highly recommend this book for all neuroradiologists, regardless of level, training, or experience.

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BOOK REVIEW

Imaging Science

P. Carter, ed. Malden, Mass: Blackwell Publishing; 2007, 240 pages, 73 illustrations. \$49.95.

Imaging Science, written by Peter Carter and published by Blackwell Science in 2007, provides a basic review of diagnostic imaging physics and equipment. Its content may be sufficient for the undergraduate diagnostic radiography student, its intended audience. The text may also be helpful for a radiologist interested in reviewing a very basic primer of x-ray imaging physics. It is not useful for the radiology resident preparing for the physics board examination or as a reference book for the general radiologist.

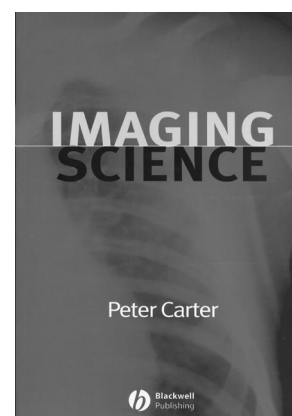
This book is concise, allowing the reader to finish the book in less than 8 hours. Combined with a 1- or 2-week lecture series, the content provides a good background of basic imaging physics appropriate for any undergraduate technology student to build on. The diagrams are well done, sophisticated, and yet easily understood. Their captions are also descriptive and concise.

The first 4 chapters include commentary that occupies every other page and continues in parallel with the text. The reader has to flip back and forth to read both commentary and text, as both continue to subsequent pages. This is both annoying and distracting and is the least appealing feature of this book. In addition, some information in the commentary was helpful as a supplement to the text, but other information was either too elementary or out of place. Examples include descriptions of the terms “heterogeneous” (page 42); “mode,” “mean,” and “median” (page 44); “fluctuation” (page 58); and “mathematical products” (page 74). The commentary did not provide insight into those terms that an average middle school student should not already know. Although much of the information in the commentary was useful, it would have been better to incorporate that information in the text. The items that do not naturally extend from the topic should have been left out.

Subtracting the commentary, the book essentially dedicates approximately 80 pages to basic x-ray physics, only 1 page of which covers fluoroscopy, 15 pages to CT, 10 pages to nuclear medicine, 15 pages to sonography, and 20 pages to MR. The abbreviated coverage of nuclear medicine, sonography, and MR are insufficient for anyone hoping to gain minimal depth in their understanding of those modalities.

Information this book is missing that would provide more value to a radiology resident or general radiologist follows.

- 1) More in-depth explanation of x-ray physics, including all aspects of image acquisition, film



development/processing, fluoroscopy/spot film radiography, etc.;

- 2) More information on nuclear medicine, including radiopharmaceuticals, image acquisition, and therapy;
- 3) Expanded explanation on ultrasound and MR physics;
- 4) An expanded discussion of digital and computed radiology, including all modalities and their interface with RIS/PACS;
- 5) Discussion on the types of contrast media, its uses, contraindications, and cost;
- 6) Radiobiology, explaining the genetic basis for radiation damage, the proposed theories explaining what happens, and the necessary safety precautions to protect patients, staff, and the public;
- 7) Objectives at the beginning of each chapter, or questions at the end of each chapter to reinforce key learning points.

Review of Radiologic Physics by Huda and Slone, most recently published in January 2003, has been used successfully by radiology residents to prepare for the physics board examination and includes much, though not all, of the information that this book lacks. Its coverage of some of the topics is minimal, and for a more thorough explanation one should turn to a dedicated text. It is also used by radiology technologist students in preparation for their boards, suggesting that *Imaging Science* lacks information essential to the technology student.

In summary, *Imaging Physics* is a basic text appropriate for an entry-level undergraduate radiography student and is not very useful for the radiology resident or general radiologist. Although adequate for its intended audience, the book may not be sufficient to help the aspiring technologist pass his/her board examination.

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BOOK BRIEFLY NOTED

Taybi and Lachman's Radiology of Syndromes, Metabolic Disorders and Skeletal Dysplasias, 5th ed.

R.S. Lachman. St. Louis: Elsevier-Mosby; 2007, 1408 pages, 2160 illustrations, \$279.00.

The value of a book devoted to an alphabetic listing and description of syndromes, metabolic disorders, and skeletal dysplasias can be debated. To this reviewer, there is some benefit in such a compilation because it can serve as a quick review of well-known diseases or it can serve to let you know that there are diseases out there that you will never encounter.

In the fifth edition of this text (first edition published in 1975), there are roughly 1000 different entries that are either only briefly mentioned or are described in more detail and illustrated with imaging, as appropriate. The book has 3 sections (Section 1, "Syndromes and Metabolic Disorders"; Section 2, "Skeletal Dysplasias"; Section 3, "Gamuts and References") and 2 appendices ("Classification of Genetic Bone Disorders" and "A Teaching Approach to Skeletal Dysplasias").

Starting with the A's, you encounter Aarskog syndrome in Section 1 and end with the Yunis-Varon syndrome as the last entry in Section 2 (with the Kabuki make-up syndrome along the way); you quickly get the idea that there are zebras galore in the book. Then you stagger into 167 pages of gamuts. Did you know, for example, that there are 34 syndromes associated with diaphragmatic hernias (more important, do you care?), or from a neuroradiology standpoint, there are about 150 syndromes/diseases associated with external ear malformations, including the Antley-Bixler syndrome and the Bloom syndrome? I suppose it is worthwhile that someone has catalogued all these syndromes and dysplasias, but I do not figure one is going to learn much radiology here. Concerning the imaging, the quality in general is poor, with MR images in particular looking, in some cases, like they came from one of the world's first MR imaging units. To be fair, the authors are dealing in many instances with *raris avis*, so they were undoubtedly limited in the imaging they could display. On the other hand as just 2 examples, a case of diabetes insipidus is windowed so poorly that the reader has no way of knowing whether there was or was not absence of the posterior pituitary bright spot and a case of Dandy-Walker malformation is from at least 20 years ago. Neither of these 2 diseases is so unusual that the authors could not have gotten modern images. An even more absurd example is that of dermatomyositis; it is shown as basically a big white blob. This problem of very poor image quality abounds and detracts from an otherwise entertaining and at times a curious book.

In summary, this publication could serve as a quick reference for many of medicine's more bizarre and rare syndromes. It may have a place in a departmental library.

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BOOKS RECEIVED

Monoaminergic Modulation of Cortical Excitability. K.-Y. Tseng, M. Atzori, eds. New York: Springer; 2007, 330 pages, \$179.00.

Methods in Molecular Biology: Neuroprotection Methods and Protocols. T. Borsello, ed. Totowa, NJ: Humana Press; 2007, 263 pages, \$99.50.