

Book Reviews

Blood-Brain Barrier in Physiology and Medicine. By S. I. RAPOPORT. New York, Raven Press, 1976. Pages: 316. Price: \$25.00.

The title of this book may suggest that it would be of only limited usefulness to students and practitioners of anesthesia who, for one reason or another, have an interest in the blood-brain barrier. In actuality, this book provides authoritative information that should be of wide interest to our specialty. Indeed, the blood-brain barrier is the subject, but in dissecting his subject, the author lucidly describes (first two chapters) the microanatomy of membranes and barriers, the principles of membrane permeability, the theories relating to transport mechanisms, and a variety of useful laboratory methodologies. The descriptions of and distinctions between passive diffusion, active transport, facilitated diffusion, and vesicular transport are clear and well illustrated by appropriate figures and mathematical expressions. At our present stage of understanding, this information is potentially applicable to all cell membranes.

In subsequent chapters, the author applies the above information specifically to the blood-brain barrier in health and disease. Of particular and obvious interest is the chapter on drug entry into the nervous system. The author, of course, deals with many non-anesthetic drugs, but the principles are immediately applicable, not only to the blood-brain barrier, but generally to the placental barrier as well. The final two chapters are of a more specialized nature, dealing in one with transport of amino acids and monosaccharides into the brain, and somewhat unexpectedly in the other with the physiology of the barriers and the humors of the eye.

Readability of each chapter is improved by an opening summary of the contents of that chapter and by the relegation of technical material to appendices. The bibliography is extensive and reasonably current and is followed by a detailed subject index. The book has all of the strengths of a single-authored volume, including cohesiveness, continuity, and a uniform style. It perhaps suffers at times from the author's bias and emphasis of those areas of particular interest to him.

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Illustrated Manual of Fluid and Electrolyte Disorders. By R. DOUGLAS COLLINS. Philadelphia, J. B. Lippincott, 1976. Pages: 180. Price: \$22.50.

Dr. Collins has undertaken the task of presenting material that will allow the physician to diagnose and treat electrolyte disorders using the serum electrolytes as the point of departure. Dr. Collins has apparently found that the bar graph depiction of electrolyte composition in the intravascular extracellular, tissue extracellular, and intracellular compartments developed by Gamble is a useful way to remember and teach electrolyte disorders. A full-color rendition of this bar graph, with the various organs that contribute to the metabolism and regulation of water and electrolytes shown around the outside, is reproduced more than 60 times. Each time a different "overlay" of labels is used to represent the particular abnormality, and a very brief discussion is presented on the opposite page. In addition, some useful calculations and tables are presented. The book seems rather expensive for what it presents. The illustration(s) soon become a blur to this reviewer. In fact, while the serum

electrolytes are nice numbers to have available, they are but one element in an array of clinical and laboratory information that is essential to correct diagnosis and treatment of disorders of electrolyte and water management. It does not seem possible to do justice to this area with so heavy an emphasis on the electrolyte values themselves, even if a greater variety of illustrations were used.

The one-page discussion of surgery and trauma is certainly inadequate for the needs of anesthesiologists and is dated in its approach to fluid management. Some of the phraseology used in an attempt to simplify for teaching purposes was irritating. In other places the statements are wrong; thus, the author lists hyperventilation as part of the clinical picture in compensated and uncompensated respiratory acidosis. The book does not appear to offer much to anesthesiologists; however, an individual who likes a pictorial approach might do well to peruse a copy and see whether the diagrams speak to him as well as they obviously do to Dr. Collins.

"Renal and Electrolyte Disorders," edited by Robert W. Schrier, M.D., published by Little, Brown and Company, Boston, 1976, pp 500, \$16.50, is a multi-authored book with many excellent chapters. For the anesthesiologist interested in a concise review of water and electrolyte physiology and renal function in normal and disease conditions, this book would be an excellent choice. The book by Emanuel Goldberger, "A Primer of Water, Electrolyte and Acid Base Syndromes," Lea and Febiger, Philadelphia, 1975, pp 604, \$12.00, offers sound advice in a traditional format.

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Clinical Pharmacology in Dentistry. By R. A. COWSON AND R. G. SPECTOR. Edinburgh, London, Churchill Livingstone, 1975. Pages: 254. Price: \$13.50.

The authors of this text have based their writing on several assumptions. The first is that "some basic knowledge of pharmacology is necessary to use the drugs relevant to dentistry to best advantage and to protect the patient." The second assumption is that a somewhat wider knowledge of drugs is needed to understand how these drugs act and how some of the reactions or interactions can develop. The third is that a more detailed knowledge is needed to deal with various emergencies that can happen in the dental surgery. The fourth is that it is useful ". . . to have some understanding of the nature of the threats which hover over the dental patient under medical treatment." In order to achieve these goals in a short book the authors have had to make several compromises. It is unfortunate that many of these compromises have adversely affected the usefulness of the final product both as a text for dental students and as a reference source for the dental practitioner.

The chapter on the general principles of pharmacology contains little or no mention of basic concepts such as graded and quantal dose-response curves, indexes of relative safety of drugs such as therapeutic index or standard safety margin, time-action relationships, potency, and effectiveness. Although the effect of ionization on the ability of drug molecules to cross cell membranes is mentioned, the nonquantitative approach used in this book resulted in not mentioning the relationship between ionization, pH , and pK_a . Without this understanding students can be misled by statements such as "Thus, basic