James C. Eisenach, M.D., Editor

Foundations of Anesthesia: Basic and Clinical Sciences. Edited by Hugh C. Hemmings, Jr., Philip M. Hopkins. London, Mosby, 2000. Pages: 748. Price: $129.00.

In busy operating rooms throughout the world, as anesthesiologists rush to get the next case started and make their way through the operating room schedule, the basic sciences are seldom given a thought. The art of anesthesia is what most veteran anesthesiologists strive to achieve and take great pride in accomplishing. However, this art of anesthesia is only possible by thoroughly understanding the scientific principles of the human body, the pharmacologic agents used, and the myriad techniques used. Unfortunately, the preclinical basic science classes are often viewed as only something to endure before the really important clinical material. *Foundations of Anesthesia: Basic and Clinical Sciences* is an attempt to bring together in one text the basic scientific principles that form the foundation of the practice of anesthesia.

An international collection of authors contributed to the 70-chapter text, including many well-recognized authorities. The book is divided into eight sections (General Principles, Neurosciences, Cardiovascular System, Respiratory System, Pathological Sciences, Renal System, Gastrointestinal System and Metabolism, and Adaptive Physiology). Each section contains from 3 to 17 chapters, with the largest sections being General Principles and Neurosciences. The individual chapters are self-contained and provide the specific scientific principles necessary to understand the "why" of most aspects of anesthesia practice. A very brief list of key references is included with each chapter, along with suggested further readings. Several of the chapters are strictly basic science, with no specific reference to anesthesia, but the majority either have specific relevance to anesthesia or contain sections describing relevance to anesthesia.

The aim of the text is to present in a conceptual manner the scientific principles of anesthesia and the clinical applications of these principles. It should be noted the text does not provide explanations of techniques because these are readily available in other anesthetic texts.

The text is visually appealing and extremely easy to use. The individual sections are color coded so that the headings on each page of a section are the same color, allowing for easy visual reference. There are extensive full-color illustrations on almost every page, which greatly aids in understanding the concepts being reviewed. These illustrations are excellent, and their presentation makes the text a pleasure to use. Despite the often highly technical material, the illustrations convey the concepts in a pleasing format, which is distinctly different from the usual dry anesthetic textbook style.

The basic science nature of the text would suggest students of anesthesia as the primary audience. Certainly, the text will be helpful to students as a single volume that presents the basic science principles of anesthetic practice. However, experienced practitioners will find the text to be a convenient source of concise information that reviews the most recent scientific basis for the practice of anesthesia. I found myself reading the chapters on molecular biology and physiology in an attempt to understand the rapidly changing information in these areas. Reviewing these basic scientific principles is more enjoyable when your perspective allows you to focus on the reason why you do what now comes naturally, and I believe this renewed integration will make for better anesthesia providers.

Foundations of Anesthesia: Basic and Clinical Sciences would be an excellent addition to any anesthesia library. The price of the text is consistent with that of other major anesthetic texts, and the large volume of color illustrations is refreshing. This easy-to-use text will serve the student as well as the experienced practitioner and should be strongly considered by both.

Stephen Tarver, M.D., University of Kansas School of Medicine, Kansas City, Kansas. starver@kmuc.edu.

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The Brain and Cardiac Surgery. Edited by Stanton P. Newman and Michael J. G. Harrison, with David A. Stump, Peter Smith, and Ken Taylor. Amsterdam, Overseas Publishers Association, 2000. Pages: 351. Price: $112.00 (cloth).

The editors should be congratulated for providing us with a comprehensive review of neurologic complications related to cardiac surgery. Their book is organized into four sections, relating to pathophysiology, monitoring devices and techniques, surgical and perfusion techniques, and a final pair of chapters devoted to cardiac transplantation and circulatory support and correction of congenital heart disease. The 19 topical chapters reflect the main themes of research in this area and are generally authoritative as of the publication date.

The book reflects the strengths and weaknesses of this field's knowledge base. For example, the multiple scoring criteria that investigators have used to identify adverse neurobehavioral outcomes (typically referred to as "deficits") result in nearly half of the chapter about that topic being consumed by methodologic considerations. The lack of a consistent definition for a neurobehavioral "deficit" certainly contributes to the latent skepticism that many clinicians have about using the incidence of "deficits" as an outcome measure comparable to stroke, myocardial infarction, or death.

Most chapter authors have been appropriately unwilling to endorse freely the many maneuvers and therapies that have seemed to improve outcome in a single center or in a single clinical trial. This trait was particularly apparent (and welcome) in the chapters about neuroprotection and about hypothermia.

I wish that off-pump coronary artery bypass techniques, with a burgeoning literature about neurobehavioral outcomes, had received greater attention. A chapter detailing how best to design and conduct clinical trials in this area would also have been useful. Nevertheless, I greatly enjoyed this text, and I suspect that all those with an interest in the topic would, after reading it, come to similar conclusions.

John Butterworth, M.D., Wake Forest University School of Medicine, Winston-Salem, North Carolina. jbutter@wfubmc.edu

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