BOOK REVIEWS

Carol A. Hirshman, M.D., Editor

The Pulmonary Circulation and Gas Exchange. By Wiltz W. Wagner, Jr., and E. Kenneth Weir. Armonk, Futura Publishing Company, Inc., 1994. Pages: 424. Price: $75.00.

From the title of this book, one might anticipate another of the many books describing state-of-the-art research, or at least what each of the many authors consider that to be. However, this is decidedly not the case. *The Pulmonary Circulation and Gas Exchange* is more of an autobiographical history book than a scientific compilation of current research. As such, it provides unique and fascinating accounts by 21 pioneers in the fields of gas exchange and pulmonary circulation. The format is clearly laid out in the book's preface, "Instead of the usual dry science, they [the authors] were requested to write about how they got started, who influenced them, and what troubles they had; in other words to tell it like it was."

Each of the authors chose their own format, creating a wide variety of styles among the chapters. Several include some relevant current work, many provide a concise overview of their own scientific careers, others simply detail the facts and acquaintances of their illustrious careers without showing data, and most emphasized personal events in their lives that led to major career events. The reader can appreciate the authors' personalities in these formats and writing styles far more than in their scientific papers. Often the authors are quite frank in their writings. For example, Ewald Weibel describes two incidents of scientific misconduct that were personally very distressing to him as a young investigator. Fortunately for the rest of us, he was able to transcend this nastiness and continue to pursue his scholarly activities. The book is replete with pictures of individuals, including all of the authors: turning through the pages and looking at all the pictures is itself educational and illuminating.

One thing pervasive in most of the stories is the workings of serendipity, not only in directing the authors into specific research areas but also in determining the successful outcomes of experiments. This point is highlighted in the chapter by Grant de J. Lee. Here we learn that Horace Walpole coined the term "Serendipity" in 1754 based on the fairy tale, "The Three Princes of Serendip," the heroes of which were always making happy discoveries by accident. Even more interesting is the fact that Serendip was an island in the Indian Ocean whose name was subsequently changed to Ceylon and, more recently, Sri Lanka. Lee was born on that island and thus considers himself a true Child of Serendip.

Other common threads among the stories are the authors' intense curiosity about and interest in their respective fields and the spirit of congeniality and helpfulness among their mentors and colleagues. This is succinctly summed up by Y. C. Fung: regarding why he entered the field, he wrote, "I found the subject more interesting than others and the people in the field nice." One wonders in how many fields such a statement can honestly be made.

Just two things temper my general enthusiasm for this book. The first is the absence of an index. Given the historical nature of the book—its scientific history and its many referrals to other senior and junior scientists—an index would have allowed this book to be used more easily as reference. Given the ease with which indexes can be generated in modern publishing, this seems a curious but serious omission. The other concern is more psychological in that the book has a certain obituarial feeling, not with regard to the still very active authors but rather for the field. The authors describe an almost idyllic period in physiologic research. The structure/function work on which the authors spent their lives is currently overshadowed by cellular and molecular investigations. It remains to be seen how well the creative and productive approaches to physiology described in this book sustain themselves over the next 40 yr. In the meantime, the book will serve as a reminder, and it is highly recommended reading to all current investigators with interests in pulmonary circulation and gas exchange.

Wayne Mitzner, Ph.D.
Professor and Director
Division of Physiology
Department of Environmental Health Sciences
The Johns Hopkins University
School of Hygiene and Public Health
615 North Wolfe Street
Baltimore, Maryland 21205

Mechanisms of Drugs in Anaesthesia. Second Edition. Edited by Stanley A. Feldman, William Paton, and Cyril Scurr. London, Hodder & Stoughton, 1993. Pages: 444. Price: $125.00.

The second edition of *Mechanisms of Drugs in Anaesthesia* is comprised of two sections. The first covers basic principles of clinical pharmacology and drug action, and the second reviews mechanisms of actions of various classes of anesthetic drugs and other drugs used in anesthesia and critical care. Most of the contributing authors are from the United Kingdom; the rest are from either Australia or the United States.

The first two chapters comprise an excellent overview of receptors and how they alter cellular function *via* effects on membrane ion channels and transmembrane signalling. The molecular structure of receptors that are linked to intracellular guanine nucleotide-binding proteins, so called G-proteins, is reviewed. The new concept of a receptor superfamily is presented: although adrenoceptors and muscarinic cholinocepters produce different, and often opposite, effects, these receptors have many similarities in structure and in how they bring about changes in cellular function. Although the chapter on the pharmacokinetics of inhaled anesthetics presents few principles not discussed in Eger's classic monograph, it is written in an unusually clear and concise fashion. The chapter on drug biotransformation and elimination contains an excellent brief review of the current understanding of the cytochrome P450 superfamily of drug-metabolizing enzymes. Other topics covered in the first section include pharmacokinetic principles for drugs administered intravenously, drug interactions, and toxicity.

The second section covers anesthetic agents and adjuvants such as neuromuscular blocking drugs. Other classes of drugs encountered in anesthesia also are discussed: calcium antagonists, antihypertensive drugs, inotropes, adrenoceptor agonists and antagonists, and histamine and its antagonists. The chapters in this section vary widely in scope. Only the mechanisms of action of inhalational anesthetics and