than 80 North American and western European journals. The abstracts are concise and clear, and many of them are followed by brief editorial comments that help in interpreting the conclusions or the clinical significance of the parent articles. Interspersed in the test are various tables and figures.

The book covers a wide range of topics, organized into 23 chapters. A third of it is taken up by pharmacology, physiology and pathology; the other two thirds by practical aspects of anesthesia. Lists of recent review articles, a short quiz, and geneous and accurate author and subject indices enhance the usefulness of the book.

The volume is well produced, printed in clear and easily legible type, and well edited, except for a transposition of figures on pages 17 and 18. It should be particularly useful to the busy practitioner and to the trainee brushing up for board examinations. Its main virtue is that it brings to the attention of readers papers published in other than anesthesia journals, wherefrom more than four fifths of the abstracts originate.

FELIX G. FREUND, M.D.
Department of Anesthesiology
University of Washington
Seattle, Washington 98195

Mechanical Misadventures in Anesthesia. BY GORDON M. WYANT. Toronto, University of Toronto Press, 1978. Pages: 174. Price: $15.00.

The author reviews many of the misadventures that occur in anesthesiology secondary to problems with mechanical equipment. The first chapter deals with nonflammable gas pipeline systems. It covers the various problems associated with crossing of lines, mishaps with pressure-relief valves, and similar occurrences. In addition, the importance of testing new pipeline systems is strongly emphasized.

Another chapter deals with incidents related to anesthesia machines, and covers difficulties with cylinders, inoperable pin-index systems, improper pressure regulators, improper positioning of flowmeters, the use of nonapproved colors for control knobs for anesthesia gases, *et cetera*. In addition, the hazards and errors in the use of various vaporizers are stressed.

The next chapter deals with breathing circuits. Emphasis is especially given to carbon dioxide absorption and valves. A timely section on scavenging devices is also presented. Another chapter deals with anesthesia machine accessories such as ventilators and sphygmomanometers.

The last chapter deals with airways, endotracheal tubes and cuffs, epidural catheters, and the like. Although the first three chapters, which deal with the gas pipeline systems, the anesthesia machine, and the breathing circuit, provide fascinating reading, since most of the equipment is either of British or Canadian vintage, the anesthesiologist in the United States will have difficulty relating to his fellow anesthetists' problems. The last two chapters of the book, however, deal with equipment that is familiar to most anesthesiologists. There is an appendix with a "Suggested Anaesthetic Check List," which everyone who administers anesthesia would do well to follow.

JAMES F. ARENS, M.D.
Department of Anesthesiology
University of Texas Medical Branch
Galveston, Texas 77550

Manual of Surgical Therapeutics. Fourth edition. Edited by ROBERT E. CONDON AND LLOYD M. NYHUS. Boston, Little, Brown and Company, 1978. Pages: 511. Price: $10.95.

The purpose of this manual is to "present the general principles involved in the pathophysiological, pharmacological, and nonoperative aspects of the care of the surgical patient, in an outline format that is handy and, even, indispensable." Perhaps such a compilation could have general utility for the beginning surgical student and house officer. However, I found examples of generalities that were often inaccurate or confusing. For example, when discussing preoperative medication, atropine, 0.4 mg, was suggested for every patient whether under local or general anesthesia.

In discussing renal failure, the admonition is added that succinylcholine should be avoided because that muscle relaxant is "excreted primarily by the kidney." The syndrome of malignant hyperthermia is described but called "anesthetic hyperthermia," and the treatment proposes "paralysis of the muscles to curare to prevent further heat generation," a therapy that demonstrates a dangerous lack of understanding of the underlying pathophysiology. No mention is made of dantrolene.

In short, I did not find this manual useful.

ROBERT W. VAUGHAN, M.D.
Department of Anesthesiology
University of Arizona
Health Sciences Center
Tucson, Arizona 85724

Physiological Aspects of Anaesthetics and Inert Gases. BY A. G. MCDONALD AND K. T. WANN. London, Academic Press Inc. (London) Ltd., 1978. Pages: 308. Price: £17.50.

This is a book that promises much and delivers more. It presents a wealth of well-digested, well-organized information about the fundamental cellular and subcellular effects of anesthetics, seen from the viewpoint of general physiology. Incisive definitions cut through rampant confusion with unambiguous common sense: "A local anesthetic reversibly blocks axonal conduction and can thereby abolish the perception of pain without affecting the individual's consciousness. . . ." "A general anesthetic is a substance which can bring about general anesthesia," which, as the authors point out, is preferable to the broad embrace that includes detergents and the still broader "an anesthetic is a substance which, when injected into an animal, produces a scientific paper"!

After a brief, perhaps too brief, foray into theories of anesthesia, (omitting any mention of calcium), the authors settle down to a description and discussion of individual cellular and subcellular phenomena affected by these agents.

First considered are effects on cellular structure, movement and division. Here, as throughout the book, many of the principal facts of observation are marshalled with economy and clarity, and in logical sequence. Regrettably, however, the discussion of teratogenicity is skimped and immunologic effects are not mentioned at all, and readers thirsting for a molecular understanding of the observed facts are likely to be somewhat disappointed. Perhaps this is unavoidable, since the target molecules are unknown and their relationships to the visible effects obscure. But not so, as the very next chapter on biochemical effects admirably demonstrates. Here the authors survey hydrophobic interactions and hydrate formation, effects on membrane-bound enzymes, including those of mitochondria and of microsomes, and the interaction of anesthetics with bioluminescence. The treatment is somewhat mathematical, and requires acquaintance with elements of reaction theory, some of which are thoughtfully supplied in a brief introductory outline of enzyme kinetics. Effects observed on inexcitable membranes, synthetic membrane, and the erythrocyte membrane, in that order, follow, and once again one can only thank the authors for their

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firm guidance through a field that would otherwise closely resemble a morass.

The second half of the book deals with excitable membranes, and synapses. Here one discovers important differences between the viewpoints of the authors, who are physiologists, and of anesthesiologists such as this reviewer. Local anesthetics are lumped with barbiturates, and throughout there is a lack of recognition that the mechanisms of local and general anesthesia have much that is different as well as much that is common. Transmitter release, microtubule involvement, uptake of transmitter, and postsynaptic actions are well catalogued and illustrated, but it is painfully evident that we are still far from understanding the molecular basis of the specific "side effects" of different classes and species of anesthetics. A minor obstacle to better understanding is the inconsistent use of units: mg kg^{-1}, mg ml^{-1}, mM are taken over lock, stock and barrel from the original publications without any attempt at unification.

The last chapter is devoted to macroscopic phenomena: mechanical effects on ventilation, distribution of inert gases in the body, and thermal balance, regarded as illustrations of principles of general physiology. This is a refreshingly original and stimulating approach, but also of limited practical usefulness, since the specifics of individual agents are for the most part omitted. The thermal balance of mammals in helium–oxygen environments is a notable and valuable exception.

Hitherto no book has reviewed in orderly, scientific, and intelligible fashion the multitudinous cellular effects of anesthetics and inert gases. The gap exists no longer. In the hands of McDonald and Wann, the study of anesthetic actions is shown to be a proper subject for undergraduate and postgraduate, for the physiologist, pharmacologist, biochemist and cell biologist, and not least for the anesthesiologist.

Anesthesiology, a relatively recent addition to the independently governed clinical specialties, is now clearly emerging as one of the major frontier areas in basic science. One can only envy those who have the good fortune of gaining entry to it with the help of this excellent guide.—*B. R. F.*

Books Received

Title & Edition	Author/Editor	Publisher: Address, Name, Year	Pages	Price
Physician's Handbook, 19th edition	M. A. Krupp N. J. Sweet E. Jawetz E. G. Biglieri R. L. Roe C. A. Camargo	Los Altos, Cal. Lange Medical Publications 1979	758	$ 9.00
Triennial revision of core information in the daily practice of medicine and other fields of health.				
Artificial Lung Ventilation in Acute Respiratory Insufficiency	A. P. Silber	Moscow "Medicine" 1978	200	PNS
Physiologic principles and techniques for ambulance physicians, resuscitologists, internists and others.				
Cardiovascular Effects of Mood Altering Drugs	B. Stimmel	New York Raven Press 1979	290	$23.00
Alcohol, barbiturates, tranquilizers minor and major, antidepressants, marijuana, hallucinogens, narcotics, stimulants.				
Manual of Pulmonary Function Testing Second edition	G. Ruppel	St. Louis C. V. Mosby 1979	162	$ 9.95
A concise review for students and practitioners.				
Cardiac Anesthesia	J. A. Kaplan (Editor)	New York Grune & Stratton, Inc. 1979	530	$44.75
Thirteen authors cover pharmacology and monitoring, disease entities and anesthesia, support of the circulation, postoperative care of the patient.				
Critical Care Medicine Manual	M. H. Weil P. L. DaLuz (Editors)	New York Springer-Verlag New York, Inc. 1978	370	$22.50
Symposium discussions of respiratory, neurologic, cardiovascular, and renal crises, shock and trauma.				

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