However, these papers have been foreshortened. The scientific details, including methodology and theory, have been eliminated. Since this background material is absent, it is quite difficult to assess the validity of the scientific results and their significance for general clinical practice.

The concluding round-table discussion illustrates the inherent problems in stress research. This exchange of ideas is frank and stimulating. However, the discussion clearly illustrates that a precise measure of surgical stress is still wanting.

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The Respiratory Functions of Blood. BY L. GARBY, AND J. MELDON. New York, Plenum Publishing Corporation, 1977. Pages: 282. Price: $21.50.

Greats of physiology, Joseph Barcroft, Lawrence Henderson, J. B. Haldane, D. D. Van Slyke, celebrities of the Fatigue Laboratory at Harvard, and more recently, F. J. W. Roughton, all have had a hand at writing on the subject of this book. This is not easy company to keep. Yet, Dr. Lars Garby, a physiologist at the University of Odensee, Denmark, and Jerry Meldon, a chemical engineer in Boston, have combined their talents to assemble a review in which variety and conciseness are eminently evident. Most clinically oriented physicians will not find the book inviting; that is regrettable, since the information is deserving of attention. Personal preference has drawn my attention to the late chapters, where physiologist and engineer have joined efforts to clarify in graphic format the principles of O_2 and CO_2 transport. Modelling of physiologic systems is a favorite pastime for the mathematically-minded with a flair for computer conversation. Unfortunately, models of O_2 transport have gained rapidly in complexity and are nearly beyond test by experiment, an example where machine defeats its own purpose. Drs. Garby and Meldon have chosen a simplified approach and describe the adaptation in terms of blood flow and arterial blood O_2 content required to satisfy the needs of O_2 demand when affinity (P_{50}), arterial blood P_{O_2} or Hill's 'n' (the slope of the log saturation/low P_{O_2} relationship) varies. The model may bring little new to those "in the know." For the uninitiated, the potential for new insights is substantial. More than one reading is not merely desired, it is mandatory, and with each, the puzzle will appear less formidable. One can only regret that the steps between mathematical formulations and graphs were not presented in detail for the novice. An appropriate appendix would have been of help.

Acid–base balance and O_2 and CO_2 transport, as well as hemoglobin function, have evolved to a niveau of sophistication understandable only by a thermodynamicist or physical chemist. The evolution has been so rapid that any presentation of the subject is apt to appear confusing or too highly specialized. Perhaps the best way to approach the book is to choose sections appropriate to one's level of mathematical sophistication. Chapter 4, "Hemoglobin and its Interaction with Ligands," provides an excellent review of the subject. Although personal prejudices run contrary to the authors' interpretations of some published data, their presence caused only minor irritation. Chapters 7, "Some Physiological Control Systems," and 8, "Disturbances of Respiratory Functions of Blood," are highly recommended. Hidden near the end is an all-too-brief discussion of capillary density and capillary recruitment, a subject we will all hear more about in the future when a standard of measure other than the microscope will become available.

Definition of the structure of hemoglobin represents an achievement whose importance is appreciated by only a handful of scientists. This monograph helps to bridge the gap and introduces a modicum of sense into a mechanism that most of us discuss but few of us understand: O_2 transport.

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Central Nervous System Pharmacology: A Self-Instruction Text. Second edition. BY DONALD E. MCMILLAN. Boston, Little, Brown, and Company, 1979. Pages: 167. Price: $12.50.

This soft-covered self-instruction manual was written five years after the publication of the first edition. The text is divided into 18 chapters, and the information presented in a narrative style. Although the book is primarily designed for use as a supplemental text in general pharmacology courses for dental, pharmacy, and medical students, and as a review text for psychiatry residents, the author includes chapter on general principles of pharmacology and synaptic transmission in this edition to . . . "enable students not exposed to those areas in a formal course to obtain at least an introduction to some important concepts necessary to the study of CNS pharmacology. . . ."

In general, the author succeeds in his objective to present a simple, easy-to-read, brief review of CNS pharmacology. The book's organization is straightforward and efficient, and the indexing is adequate for a text of this type. While the manual will be of little value to experienced students of CNS pharmacology, it probably will be useful as a review book for anesthesiology and psychiatry residents and pharmacology students not wanting to take the time to consult a more comprehensive pharmacology book.

The text suffers, as do most manuals of this type, from a lack of depth. In addition, some chapters are strikingly out of date. This is most apparent in the chapters on general anesthetics (chapters 13 and 14), where most of the space is devoted to anesthetics that have long since disappeared from clinical practice. Little mention is made of enflurane, ketamine, and the neurolept compounds, and none of nitrous oxide–narcotic anesthesia, enflurane, or any of the newer intravenous anesthetics, e.g. propanidid, althesin, or etomidate. The chapter on sedatives and hypnotics barely mentions the barbiturates, and an important concept such as barbiturate protection of ischemic brain is not addressed at all. In contrast, the chapter on neurotransmitters (chapter 3) is quite complete and up-to-date.

The book probably belongs in a general medicine library for medical, dental, pharmacy, and clinical psychology students, and perhaps in anesthesiology and psychiatry departmental libraries.

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Management of the Injured Patient. EDITED BY J. NORMAN AND M. MOLES. London, Macmillan Press, 1978. Pages: 128. Price: £4.95.

Manual of Emergency and Outpatient Techniques. Washington University Department of Surgery. EDITED BY ALLEN T. KLIPPEL

AND CHARLES B. ANDERSON. Boston, Little, Brown, and Company, 1979. Pages: 433. Price: $10.95.

In July 1977, the *British Journal of Anaesthesia* published a collection of papers dealing with some aspects of the management trauma. These papers have been released as *Management of the Injured Patient* together with some other articles from the journal that deal principally with the problems of patients with brain damage.

The chapters of the book can be grouped into three sections. The first section deals with planning and training of paramedical personnel for major disasters, and includes chapters on immediate care, transport of the injured patient, and urban mobile resuscitation. The second section concerns immediate hospital care of the injured, with chapters on blood and blood substitutes, metabolic aspects of intensive care, the management of acute renal failure following trauma, and the hazards of anesthesia in the injured patient. The final chapters deal with the problems of patients suffering severe brain injury, including measurement of intracranial pressure, vasogenic cerebral edema, assessment of head injuries, and general anesthesia for neurosurgery.

Whenever this reviewer reads anything from the *British Journal of Anaesthesia* (regardless of authorship or country of origin), the inner ear hears the material being presented in an erudite, clipped British accent. The writing is crisp, the adjectives are unusual, and it all seems intelligently put together. This collection is no exception.

In 1973, in England and Wales, injuries caused the deaths of 11% of those who died before the age of 15 years and 48% of those who died between ages of 15 and 29 years. Head injuries accounted for 35% of these deaths. Similar statistics are presented for the United States. In patients who are not fatally injured, early skilled care can reduce the extent and duration of the damage. Anesthesiologists are becoming involved increasingly in the care of the acutely injured, the training of those administering this care, and the management of acute resuscitation and trauma units. The papers published in this volume will be of value not only to anesthesiologists, but to all who have the responsibility and interest in reducing the mortality, morbidity, and costs of trauma.

The editors are careful to state in their introduction that the *Manual of Emergency and Outpatient Techniques* was designed to *familarize* medical personnel with the techniques required for emergency and outpatient surgical management. The *Manual* meets this goal, and will help introduce surgical technicians, medical students and house officers to some of the procedures at which they are expected to assist. The *Manual* does not attempt to be a complete compendium of surgical techniques for the operating room and ambulatory care unit. The editors inject the caveat that the more sophisticated techniques, such as transthoracic pacemaker placement, are not intended to be performed by less than trained surgeons.

The editors, together with seven contributors, outline the surgical techniques involved in cardiopulmonary resuscitation, vascular catheterization, regional anesthesia, and biopsies. They also cover special procedures performed upon the nervous system, in otolaryngology, in the chest and abdomen, including obstetrics and gynecology, upon the anus and rectum, and upon the extremities.

The writing is clear and sparse, but quite plebeian. Many statements are controversial. For example, the recommendation to give a choking patient mouth-to-mouth resuscitation in the prone position; that cyanosis develops in proportion to respiratory effort; that narcotics decrease the depth of respiration; the recommendation to use amobarbital to treat local anesthesia-induced convulsions; the statement that the metabolism of lidocaine can give rise to the formation of methemoglobinemia; the statement that the maximum safe dose of lidocaine without epinephrine is 3 mg/kg, and the recommendation that intravenous regional anesthesia be performed using a single blood-pressure cuff. The section on obstetrics mentions the Apgar scoring system, but omits techniques of neonatal resuscitation. On the other hand, anesthesiologists would be pleased to read the strong recommendation that an intravenous infusion be started and resuscitation equipment be checked and available before the institution of regional anesthesia procedures. Much of the book is involved with advanced ambulatory techniques such as open-chest cardiac massage or the performance of liver or lung biopsy. The section on the insertion of chest tubes and the organization of chest suction bottles, and the chapter on basic surgical techniques, are particularly well written.

The editors must share the credit for this project with their artist and publisher. Line drawings, which appear on almost every page, are integrated with the text so that it is not necessary for the reader to turn the page to find which written material is associated with each drawing. The illustrations are simple, direct, and clearly reflect the pertinent point in the text. The text could almost be considered an extended legend for each illustration. The publisher has chosen a small size (5¼ × 8½ inches) format, with strong paper, a clear type style, and uncrowded pages. The book is bound with a large spiral binder so that each page can lie flat when opened. The soft cover aids in maintaining a reasonable price.

The book does serve its goal of familarizing the emergency room neophyte with emergency and outpatient techniques. However, the *Manual* has no particular value for practicing anesthesiologists.

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Shock Trauma Manual. BY WILLIAM GILL AND WILLIAM B. LONG, III. Baltimore, Williams and Wilkins, 1979. Pages: 283. Price: $18.00.

Science consists of putting numbers to art. Or at least applying the abstractions of mathematics to intuitive processes. One aim of science is precision. Clinical medicine has always presented the challenge of defining precision in terms of patient care. This book represents a positive step in this direction.

This manual was written with the aim of providing precise guidelines for the emergency resuscitation and initial treatment of major trauma victims. It devotes sections to techniques and to overall priorities, and also includes a technical appendix, a system for organization of an emergency operating room, and detailed lists of necessary emergency room instrumentation. The authors state in the preface that "The dogmatic style of the text is intentional because the contents are well worn in successful application." The writing is clear and precise, encouraging and forthright, but lacking in the superior tones that one associates with dogmatic fervor.

The authors were directors of the Maryland Statewide Emergency System. Their system of access, triage, communications, and ambulance and helicopter transportation is described in Chapter 1. Chapter 2 is concerned with problems of reception, resuscitation and evaluation. Chapters 3 and 4 deal with specific systems injury, and multiple organ failure. Then we come to the pièce de resistance of this manual, a series of more than 130 algorithms dealing with the management of trauma.

Most professions have already used the concept of "decision trees" (algorithms) in their management and operation. Medical