Biotransformation of General Anesthetics. By G. DAL SANTO. Boston, Little, Brown & Company, 1974. 182 pp. NPL.

The importance of research to the health of the anesthetized public could hardly be more convincingly demonstrated than in the Summer 1974 volume of the International Anesthesiology Clinics. It assembles judicious summaries of present knowledge about the chemical fate awaiting sundry anesthetics—inhalational and intravenous—we pump into our patients, written by some of the leading creators of that knowledge. Judging by this production they are also leading communicators, although, collectively, they indulge in rather a lot of repetition about pharmacokinetics and enzyme induction. The volume opens with Aston's "In Vivo Drug Disposition and Anesthetic Effects," a clear and useful refresher on fundamental principles, slightly marred by an erroneous solid curve in Figure 2 and the baptism of delta-aminolevulinic acid as an enzyme in the discussion of barbiturate toxicity. Incongruously in a book on general anesthetics, 25 per cent of the chapter is given over to local anesthetics. Brown contributes an impeccable brief, "Enzymatic Activity and Biotransformation of Anesthetics." After some historical grace notes by Van Poznak on diethyl ether and chloroform, useful if only for reminding us that preconceived notions about unbiotransformability apparently blinded early investigators to what their results were really showing, no less than four chapters are devoted to halothane. Rehder leads off with a review of current ideas concerning biotransformation of this xenobiotic; Sawyer restates the evidence for the view that hepatic metabolism of halothane and fluroxene occurs primarily at subanesthetic concentrations (in miniature swine); Cascorbi considers various factors that cause the rate of biotransformation to differ from individual to individual and Morley, more or less persuasively, debunks the clinical evidence for hepatic injuriousness.

Kelly's excellent chapter on trichloroethylene, the first inhalation anesthetic found to be metabolized, has a pleasantly atavistic flavor, and almost the same can be said of Mazze's piece on methoxyflurane, now that he has taught anesthesiologists to tremble for their patients' tubules. Notes by various authors on fluroxene, enflurane and isoflurane, thiobarbiturates, eugenol, methohexital, neuroleptanalgesics, and ketamine, close the book.

I hope the high command at the National Institutes of Health will get a chance to peruse this volume, for it gives a bird's-eye view of some of the most important basic yet highly utilitarian anesthesiologic studies performed under their patronage. Although a survey of biotransformation, drug by drug, by major investigators of each, is not necessarily the best way to secure detached practical advice for clinical readers, no anesthesiologist conscious that his drugs may be potential chemical time bombs can afford *not* to read and own this book.

B. RAYMOND FINK, M.D.
Department of Anesthesiology
University of Washington
Seattle, Washington 98195

Illustrated Diagnosis of Localized Diseases. By R. DOUGLAS COLLINS. Philadelphia, J. B. Lippincott, 1974. 216 pp. NPL.

This text attempts to blend graphics, color, texts, and tables to aid the physician in rapid diagnosis of localized diseases. (A previous volume applied the same format to systemic diseases.) The book is divided into two major sections. Part I consists of tables of differential diagnosis and alphabetical lists of appropriate laboratory tests and work-ups. Part II, "Profiles of Localized Diseases," is broken down into nine types of disorders: inflammatory, neoplastic, toxic, etc. Each disorder is illustrated by a simple color diagram of the involved organ system, accompanied by a black overlay indicating the location where the disease is likely to be found. For example, in a schema of the intracranial nervous system, chromophobe adenoma is located by a black dot on the pituitary gland.

Although the concept and presentation of the material are unique, I was disappointed by the sketchy and elementary nature of the result. It has little value for the anesthesiologist. It could be used to orient medical students or paramedical personnel to the differential diagnosis of localized disease. However, I believe that the standard medical texts more than adequately accomplish this.

JORDAN KATZ, M.D.
Department of Anesthesiology
University of Wisconsin
Madison, Wisconsin 53706

Intensive Care. EDITED BY G. GERSON. Philadelphia, J. B. Lippincott, 1973. 302 pp. $13.50.

According to the Preface, this multi-authored monograph is intended "to provide a practical guide for junior hospital doctors," while perhaps also of "interest and value to medical students and nurses" involved in the care of severely ill patients. These are wonderful goals, but the variety and complexity of problems we stir into the intensive-care cauldron make the end difficult, if not impossible, to reach. Among the nine chapters, heart, lung, liver, and kidney receive attention as individual organ systems. Endocrine problems, particularly diabetic coma, neurosurgical conditions, shock, poisoning, and parenteral nutrition make up the rest.

No one will argue with the need for a practical compendium, and the serving is abundant, with a moderate helping of illustrative material. Although

the scientific rationale for therapy is reasonably up-to-date, it is far from faultless. A major step forward in intensive care has been the recognition of disparate right and left ventricular function as commonplace despite absence of a past history suggestive of heart disease. It is disheartening to find the central venous pressure touted as an indicator of pulmonary edema, particularly when use of the floating (Swan-Ganz) catheter is described in the opening chapter on Acute Coronary Care. Myocardial function is, more often than not, abnormal following extensive trauma or in sepsis, regardless of whether or not we can detect acute respiratory failure. The highest price for ineffective intensive care is paid by the young, in whom it is assumed that the previously sound myocardium seldom requires attention or pharmacologic support. It is even more unfortunate that a majority of patients arrive in the hospital with good kidney function and progress to renal failure only because pharmacologic support of myocardial function (I do not mean with digitalis) is considered end-stage therapy. We have been quick to recognize that prophylactic mechanical ventilation is a therapeutic crutch, but if properly implemented, life-saving; in fact, our success rate with acute failure of pulmonary function has improved immeasurably as we have crystallized our criteria for early recognition of the patient at risk. Unfortunately, the same cannot be said of myocardial performance, except for the patient in shock, and it is disappointing to find that much of the sound advice found in this book does not integrate hemodynamic performance with organ function. Whether a patient recovers from acute respiratory failure is closely dependent upon the quality of right and left ventricular function. The mortality from disrupted pulmonary function is low in experienced hands; it mounts forbiddingly when associated with acute renal failure. Thus, to teach the young house officer that the kidney is the most important organ to protect when treating acute respiratory failure is supremely sound, because he is reminded that the pump must remain at the center of attention. Early combined use of mechanical and pharmacologic support requires good judgment and need not be viewed as a sign of defeat. However, if the reader adopts this advice from the book I do not recommend he begin with 3 to 15 micrograms of isoproterenol per minute.

MYRON B. LAVER, M.D.
Department of Anesthesiology
Massachusetts General Hospital
Boston, Massachusetts 02114

Problems in the Performance of Anesthetic and Respiratory Equipment (International Anesthesiology Clinics, Fall 1974, Volume 12, No. 3). EDITED BY GORDON M. WYANT. Boston, Little, Brown and Company, 1974. 226 pp. NPL.

This issue of the International Anesthesiology Clinics contains interesting information on the performance of various equipment used by the anesthesiologist. None of the chapters goes into much depth but, as stated in the preface, an exhaustive review of the entire field is outside the scope of this work. Many of the chapters are written by distinguished leaders such as John Adriani, Lucien Morris, Leslie Rendell-Baker and Meyer Saklad. The title may suggest that the book would be of interest to those involved in extra-operating-room respiratory care. With the possible exception of one or two chapters, the book is mainly concerned with the equipment used in the operating room.

The chapter on performance of anesthesia machines describes features of currently available machines and also outlines what changes should be made in the anesthetic machines of the future. The second chapter describes interrelationships of respiratory flow, pressure, and volume in the presence of changes in compliance and resistance of the anesthetized patient. The chapter on carbon dioxide elimination is an excellent review of the basic chemical and mechanical principles involved. Another chapter briefly reviews the physical principles and physiology of humidification. From discussion of the equipment available for humidification, the impression that inspired gases are not humidified in routine clinical practice because of lack of reliable humidification systems is gained. The chapter on suction apparatus describes the physical principles involved and outlines useful performance criteria for medical suction systems. The section on tracheal cuffs reviews development of the currently used high-volume, low-pressure tracheal tube cuffs. It contains two excellent appendices with practical recommendations for proper clinical use of tracheal cuffs and performance criteria for tracheal tubes, cuffs, and cuffed tube units. This is one chapter which will be of particular interest to the intensivist and the anesthesiologist involved in respiratory care.

The chapter on performance of pediatric equipment reviews briefly some of the anesthetic equipment problems peculiar to the pediatric age group. Although few anesthesiologists work in hyperbaric chambers, the chapter on this subject succinctly outlines how the performance of respiratory and anesthetic equipment is altered by high atmospheric pressure. Problems arising in both patient and apparatus used during compression and decompression are discussed. The chapter on the Circulator Concept provides the inside story of a piece of equipment introduced almost 30 years ago, the Revell Circulator. This circulator was designed to keep anesthetic gases moving continuously in the patient circuit of the anesthetic circle, thereby decreasing the work of breathing and eliminating rebreathing of expired gases. The relevance of the circulator to current anesthetic practice is unclear, however. The final chapter is mainly discussion of the Copper Kettle, written by its developer, Lucien Morris.