has destroyed this argument, not by setting out to disprove it, but simply by arraying all the data in an objective, orderly and interesting fashion.

If anything, the book errs in the direction of over-thoroughness, but it is never boring and always clear. Each chapter ends with a set of conclusions and a summary. Readers of ANESTHESIOLOGY of every degree will enjoy and profit from this book.

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Pharmacology of Adjuvant Drugs. Volume 10/1, Clinical Anesthesia Series. EDITED BY HOWARD L. ZAUDER. Philadelphia, F. A. Davis, 1973. Pp. 349, $15.00.

This book represents a thoughtful collection of review articles in areas of pharmacology especially interesting to the anesthesiologist. It is not a comprehensive pharmacology text, which would require far more than 349 pages; nonetheless, most of the contributors appear to have exercised admirable care in presenting "basic" pharmacology correlated with physiology and pathophysiology, and pertinent information relating to clinical anesthesia.

Chapters 2–7 are devoted to autonomic and cardiovascular pharmacology, including vasopressors in obstetrics, and constitute an excellent review of these topics for anesthesiologists. Especially impressive to the reviewer was the chapter on vasopressors and low-flow states by Hershey and Altura. The authors emphasize that the rational use of vasopressors must be based upon a clear understanding of the pathophysiology of shock and that the administration of vasoactive drugs must result in appropriate changes in pressure–resistance–capacitance relationships to improve and maintain tissue perfusion. These ideas are developed through a lucid discussion of microcirculation, including a provocative review of the possible application of vasoactive polypeptides in shock states. This class of drugs has yet to gain access to the pharmacologic armamentarium of the anesthesiologist. As the authors convincingly demonstrate, "the outlook for effective and precise pharmacologic manipulation of the cardiovascular system is very much alive and optimistic."

Interactions of drugs with various anesthetic agents are well presented in the discussion of adrenergic blocking agents. Many problems which frequently face anesthesiologists are discussed. For example, that the cardiovascular depressant effects of propranolol are intensified during the administration of many general anesthetics: beta receptors appear to lose some sensitivity to isoproterenol for as long as 48 hours after administration of propranolol; patients chronically maintained on such drugs as propranolol, reserpine, alpha-methyldopa and L-dopa require special anesthetic management. Drug interaction is an area to which the anesthesiologist must pay increasing attention, and information about it could well have been included in these chapters.

The second half of the book includes articles on phenothiazines by Lear and tranquilizers and benzodiazepines by Wulfsohn but, regrettably, nothing on narcotics and barbiturates, two of the most common classes of adjuvants used by the clinician. Chapters on hypoglycemic drugs (diabetes), steroids, diuretics, antibiotics, ecbolic agents, and drugs used in respiratory therapy are also included. Controversial subjects such as management of the diabetic patient and the use of steroids in shock and aspiration pneumonitis are nicely presented.

The contrasts in style are not disturbing, but there is regrettable variation in the depth of subject coverage. For example, biotransformation and elimination are discussed in the case of benzodiazepines but omitted for phenothiazines and other tranquilizers, although significant in the anesthetic management of the patient. The discussion on ecbolics (drugs that potentiate uterine activity) is disappointing: the interactions of such commonly used agents as halothane, methoxyflurane, and regional anesthesia with ecbolic agents are not discussed.

Figures and illustrations are unevenly distributed, and are noticeably lacking in a few difficult chapters where they could have been very helpful. The first chapter, on receptor concepts, may discourage readers through its free use of terms and expressions from realms of chemistry arcane to the occasional student. Difficult and controversial receptor theories are packed into concise and loaded sentences which will have little meaning for many clinicians and make the gap between basic and clinical pharmacology unduly evident.

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Muscle Relaxants. BY S. FELDMAN. Philadelphia, W. B. Saunders, 1973. Pp. 190, $14.00.

This book contains a considerable amount of information on the pharmacology of the muscle relaxant drugs, based to a large extent on recent experimental and human studies. The headings of the chapters give an indication of the scope: the history of curare; the anatomy and physiology of neuromuscular transmission; types of neuromuscular block; the site, magnitude and duration of action of muscle relaxants and their binding by proteins; the effects of changes in temperature, *p*H, and blood flow, and of various pathologic states; the actions of relaxants on several organ systems and on the fetus; the rational use of relaxants; and, finally, the pharmacology of specific

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muscle-relaxant drugs. At the end of each chapter there are many recent references.

In the preface the author tells of his intention "to try to bridge the gulf between the pharmacologist, working with isolated animal organs and single fibre preparations . . . . and the anaesthetist administering the drugs to patients." To a considerable extent he achieves his purpose admirably, as when he relates the relaxant–receptor theory to drug levels in plasma and duration of action of relaxants, or when he makes a useful distinction between magnitude and duration of block. The chapter, "The Protein Binding of Muscle Relaxants," contributed by M. A. Skivington, is a model of organization, cohesion and clarity.

On certain other topics the book is less successful, as in the chapter on neuromuscular transmission and the discussion of the effects of relaxants on the brain. One is surprised to find claims for the indirect effects of curare on the human sensorium buttressed by evidence from experiments with C_{10} on rats. The author is at his best when commenting on his own work or stating his opinion on controversial issues. Unfortunately, not always is he as lucid as one would have wished, due to careless proofreading, peculiar construction, poorly supported statements, or omission of indispensable commas.

Some of the figures would have benefited from better labels and captions. Not all the errors are inconsequential: On page 11 the repeated use of the words *muscle spindles* makes the entire opening paragraph confusing and almost incomprehensible.

The book can be read with profit by experienced anesthetists, but residents and medical students should be advised to skip Chapter 2.

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Fetal Pharmacology. EDITED BY LARS O. BOREUS. New York, Raven Press, 1973. Pp. 487, $21.50.

Another new specialty was baptized at the Karolinska Hospital, Stockholm, in 1971 in a symposium organized by the Foundation of Child Development. The result, though not exactly a textbook, will be indispensable to anyone proposing to write one. It provides instructive and enjoyable browsing for any alert clinician whose practice includes the administration of drugs to pregnant women. It is certainly incumbent on every anesthesiologist to be aware of the burden his or her prescriptions place on the infant's ability to metabolize and eliminate foreign substances.

The first three sections of the book will have the greatest significance for the anesthesiologist. Mirkin leads off with an excellent survey of drug distribution in pregnancy, with several useful tables of the adverse fetal or neonatal effects of maternally administered drugs and their disposition in the fetus. Dawson contributes evidence showing that the blood–brain–CSF relationships characteristic of the adult are already present in the newborn and late fetal animal.

Boreus contributes an interesting article on cholinergic and adrenergic drug–receptor interactions in the cardiovascular system of the human fetus. The strength of the response, we learn, increases with gestational age over a 12-week span beginning at 12 weeks. Karczmar's review of cholinergic function in the developing fetus is excellent. In the discussion of this paper, Drabknova, a Czech anesthesiologist, has contributed an interesting observation on neonates born to myasthenic mothers treated with anticholinesterase inhibitors. The airways of these neonates contain a considerable amount of viscous secretion which is difficult to suck out during resuscitation. Scheffeili and Caldeupo-Barcia present a report on the effects of administering 2 mg atropine, iv, to pregnant women on the fetal heart rate: some of the irregularities in the fetal heart rate are reduced.

Drug metabolism in the human fetus is discussed by Raven and co-workers and drug metabolism in the rabbit fetus, by Fouts; drug effects in the special hormonal environment of the human fetus, formed from maternal, placental and fetal sources, are reviewed by Telegdy. On the other hand, nothing is said about the incidences of miscarriages and congenital malformations in pregnancies of female operating room nurses or doctors. Neither is there any reference to the effects of maternally administered glucocorticoids on fetal and newborn lungs. The syndrome of neonatal narcotic addiction in infants of addicted mothers is given only cursory attention despite the magnitude of the problem.

The inevitable models of placental drug transfer, with no experimental test of their accuracy, showed up. The chapter on ultrastructure of the placenta and its consequences for drug distribution hasn't a single illustration.

The reader is left to find his way to the goodies, and they are many, without help from the editor. In a clinical subject of such wide appeal as fetal pharmacology, it would surely enhance the value of the book to the general medical public if a little guidance on what to look for and how to find it were included, especially as some of the titles are quite misleading.

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Anesthesia and Uncommon Diseases: Pathophysiologic and Clinical Correlations. BY JORDAN KATZ AND LESLIE B. KADIS. Philadelphia, Saunders, 1973. Pages: 475. Price: $21.00.

This multi-authored text is devoted to the exposition of medical problems as seen from the

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