regarded as a pharmacologic model for the study of inaccessible nerve endings, since it has the ability to take up and metabolize biogenic amines.

This book provides interesting reading but may prove difficult for those unfamiliar with recent advances in the fields discussed. As the editors suggest, the book is intended for the hematologist, physiologist, pharmacologist and cell biologist.

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Clinical Aspects of Respiratory Physiology. BY CLARENCE A. GUENTER, MARTIN H. WELCH, AND JAMES C. HOGG. Philadelphia, J. B. Lippincott, 1977. Pages: 168. Price: $9.50.

The content of this book was extracted from the introduction to Part I one of the authors' major work, *Pulmonary Medicine*, and thus is intended to provide a physiologic basis for understanding pulmonary function in the context of pulmonary disease.

The book is divided into four chapters, each dealing with a relevant aspect of pulmonary physiology. Chapter one is concerned with concepts of environmental gases and conditions that will effect the composition of alveolar gas tensions. The second chapter is designed to present a rather standard review of the anatomy and physiology of the conducting airways. Chapter three considers methods of evaluating pulmonary function in the laboratory and attempts to correlate clinical findings with the laboratory results. The final chapter deals with concepts of oxygen transport, including blood-gas analysis, interactions of gas exchange, and the chemistry of carbon dioxide elimination.

The material is presented in a concise and readable fashion. The book is comprehensive, well organized, and provides the reader with a sufficient amount of information to appreciate the important mechanisms relating to pulmonary physiology. The references are both numerous and up-to-date.

The book is directed to a wide range of readers, including medical students, nurses, respiratory therapists, and physicians. It undoubtedly will provide an excellent experience for all of those groups; however, it may be a bit disappointing to the anesthesiologist, due to the lack of coverage of specific areas such as ventilation–perfusion relationships, changes in physiology relating to change in lung volume, and the relationship between alterations in cardiovascular and pulmonary physiology, etc. As a review of basic concepts of pulmonary physiology, however, this text undoubtedly succeeds particularly well.

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The Politics of Pain. BY H. NEAL. New York, McGraw-Hill, 1978. Pages: 222. Price: $9.95.

Ms. Neal has been a medical science writer and public relations specialist at the National Institutes of Health and is a founding member of the International Association for the Study of Pain and a charter member of the American Pain Society. Her treatise, addressed to the lay public—the consumer—is frankly tendentious; her work on the subject was precipitated by the deeply-felt personal frustration experienced while a close family member with terminal cancer suffered pain over the course of three years.

The author gives a brief summary of the history of pain control, from the shamans and witch doctors through the Melzack-Wall spinal-gate theory to endorphins. The major portion and thrust of the book, however, is devoted to her main thesis that the medical profession and research scientists have not had an interest in chronic pain (as distinguished from acute pain) since such an interest offers no important payoffs in cures, research grants, or Nobel Prizes. The recent identification of opiate receptors in the brain and the discovery that the endogenous substance enkephalin suppresses pain (that man is born with his own supply of narcotics) has given pain research a higher status in the "snob-ridden scientific hierarchy."

Ms. Neal describes some of the techniques now being used in pain clinics and the new options for pain management in hospitals. She argues that the passive attitude of the patient, especially concerning iatrogenic pain, should be changed and that the politics of drug addiction has prevented the medical use of LSD, heroin and marijuana, the administration of which could enhance the quality of remaining life for the terminally ill. She suggests that intelligent lobbying efforts in Congress could promote funding of research to develop techniques for measuring pain and regimens of drugs that change the perception of pain, in order to improve the management of chronic pain.

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Receptor Binding Studies in Adrenergic Pharmacology. BY L. T. WILLIAMS AND R. J. LEFKOWITZ. New York, Raven Press, 1978. Pages: 157. Price $16.50.

This is a very welcome and timely book, since it reviews, both in detail and with clarity, the current knowledge of the molecular properties of adrenergic receptors, and updates the reader on the recent rapid advances that have been made in this field.

The natural and synthetic catecholamines, and compounds that antagonize their effects, are among the most useful and versatile agents at our disposal is attested by the almost daily increase in knowledge of these compounds and their modes of action. Efforts to elucidate the way that catecholamines bring about their diverse actions date back to 1906, when H. H. Dale found that ergot alkaloids inhibit only some of the responses to catecholamines, indicating that these compounds interact in more than one way with the responsive tissue. In 1937, A. J. Clark postulated that there were specific structures on the cell surface through which catecholamines exert their action, and named them "receptors." In 1948, R. P. Ahlquist presented indirect evidence for the existence of two types of catecholamine receptors, which he called "alpha" and "beta." Within the last several years new methods of identifying and studying the adrenergic receptor sites have been developed, and recent studies have used these techniques to shed new light on the roles of receptors in physiologic responses and in disease (Jacobs S, Cuatrecasas P: Cell receptors in disease, N Engl J Med 297:1383–1386, 1977).

After an introduction and a brief review of the "Pharmacology of Adrenergic Receptors" and a "Theory of Ligand–Receptor Interactions," techniques using radioactive adrenergic ligands (radioligands) to study alpha- and beta-adrenergic receptors directly are described in detail. ("Ligand" is defined as an atom, group of atoms, or a molecule that binds to a macromolecule.) The authors lead one step-by-step through each technique and show how the receptors can be identified by specificity, stereospecificity, and saturability and the kinetics of their interactions with adrenergic ligands examined, and how knowledge about their role as transducer

of information from the catecholamine to the cellular machinery can be derived. The last two chapters, "Regulation of adrenergic Receptors" and "Clinical Studies of Receptor Alterations," review briefly the new knowledge about the physiologic regulation of adrenergic receptors, describe how such regulation controls tissue sensitivity to catecholamines, and touch on what implications alterations in number or characteristics of receptors have in physiologic or diseased states.

The material in the book is inevitably technical and places particular emphasis on the methodology of radioligand-binding studies. This will be of limited interest to many anesthesiologists, but makes the book almost indispensable for investigators in the field of adrenergic pharmacology.

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Relief of Intractable Pain. Second edition. BY MARK SWERDLOW. Amsterdam, Netherlands, Elsevier/North Holland Biomedical Press, 1978. Pages: 338. Price: $16.50.

The first edition of this book, published in 1974, was a welcome addition to the more comprehensive literature on chronic pain. The second edition is a more polished and better edited volume, with new type face, improved chapter headings, and sequential organization, placing theoretical considerations before treatment. It suffers, however, from the lack of new material in most of the chapters. Those on Intrathecal and Extradural Blocks, Percutaneous Cordotomy, Neurosurgery and Radiotherapy, Anticancer Drugs, and Hormones are virtually unchanged from Volume 1.

Mersky, writing on the Psychological Aspects of Pain, has added sections on psychodynamics, behavioral approaches and biofeedback that are useful additions to his earlier material.

Foldes has added to his previous chapter a short section on narcotic receptors and endogenous ligands, and has expanded his chart on tranquilizers useful in the treatment of pain. While the chapter discusses the pharmacology of the various classes of pain-relieving drugs, it fails to present an organized approach to the treatment of chronic pain itself. The section on anti-anxiety drugs is inadequate in its discussion of the liability for addiction potential and the depressant effects of some of the benzodiazepine derivatives.

The chapter on peripheral nerve blocks, by Churcher, is a definite improvement over the earlier work. There is over-emphasis, however, on the use of neurolytic agents, and a preoccupation with cancer pain. The treatment of the more common benign pains, particularly low-back pain, is inadequate despite the extensive body of literature available on the subject.

While the first portion of the chapter on blocking of the sympathetic nervous system has been reorganized into blocking of afferent and efferent systems, it is still lacking in regard to the afferent mechanisms.

The chapter on Stimulation, by Donlin Long, probably the best reason for purchasing this book, is a comprehensive and unbiased review of the use of stimulation as a modality of therapy of chronic pain. Included are the uses of the various forms of stimulation, factors determining the choice of method, and expected results. It is unfortunate, however, that the lead time required for publication precluded inclusion of information now available on the mediation of pain relief by stimulation via the endogenous opiate system.

Section II of Lipton's chapter on Pituitary Injection of Alcohol is new, and discusses primarily the technique and complications of chemical pituitary adenolysis in the author's own patients. Only briefly does he allude to the spread of alcohol via the pituitary stalk to the hypophysis and the possible relationship to the production of enkephalin.

In general, this is a useful text on the management of chronic pain for the anesthesiologist, as it suggests alternatives to the nerve-blocking methods of treatment to which he is oriented. It is lacking, however, in adequate information about a multidimensional approach to the management of chronic pain, particularly in regard to psychological techniques.

The price seems somewhat high.

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Outline of Human Anatomy. Revised edition. BY SAUL WISCHNITZER. Baltimore, University Park Press, 1978. Pages: 404. Price: $9.00.

This revision of an original work first published in 1963 is presented specifically for the student of anatomy. It utilizes a regional approach rather than the conventional organ-system format. The text is arranged so that, wherever appropriate, the illustrations always appear on the left-hand page with descriptive text on the opposite page. The contents include the following regions: head, neck, upper extremities, thorax, abdomen, pelvis, lower extremities, and back.

As the title states, the book is an outline, and therefore can only address the fundamental features of anatomy in concise terms. Each major region is subdivided into four sections with lists of the structures in groups such as muscles and nerves. The index of 27 pages seems adequate.

While the book generally meets its objectives, it has some inconsistencies and inaccurate statements.

The author is not consistent in his use of the nomenclature of either the Birmingham revision or that which was adopted by the 7th International Congress of Anatomists in New York; for example, he refers to the piriform fossa as a recess. The statement that the blood supply to the face is, "principally the facial artery," is misleading when one considers that the terminal branch of the external carotid artery assisted by the supraorbital and supratrochlear branches in reality supply at least half, if not more, of this area. The movements of the eyeball are described in Latin terms, and the expressions, "up" and "down" are used when referring to the rotatory movements around the horizontal axis.

The pen-and-ink illustrations are generally adequate to portray anatomic structures, but those containing much detail are too small and lack clarity. In Plate 56, on page 206, the artist has attempted to compare the blood supply on one side of the thorax with the nerve supply on the opposite side. Since the artist has chosen a solid line for the blood supply and a hollow, or double line, for the nerve supply, a non-critical glance by the reader would tend to transpose the functions of the two structures. On page 228, Plate 63, a diagram illustrating the bronchopulmonary segments depicts the carinal bifurcation as having equal angles, an impression one should surely try to avoid in a student text.

Outline of Human Anatomy cannot be recommended, either, as a companion to standard texts or as additional reading for anesthesiologists. The book falls short of the clear visual presentation of the systematic and regional anatomy that is so important to the resident in anaesthesiology, as well as the practicing physician, and can be gained from the many excellent text–atlases currently available. I would also add that, by its very nature, anatomy is not a