

and physiology of the respiratory system. Both are intended as review material and are necessarily very brief, but the author has managed to state the important points in a concise style that avoids the impression of superficiality.

A chapter on history-taking is adequate, and that on the physical examination is quite complete. The author notes the semantic confusion with the term "rale" and avoids it, but, at least in the United States, equal confusion surrounds "rhonchi," which he does use for wheezing sounds.

The chapter on pulmonary function testing emphasizes the information available from office-type instruments such as the Wright Peak Flowmeter and the Vitalograph Spirometer. However, the section on the rebreathing P_{CO_2} is unnecessary, and the discussion of acid-base abnormalities is greatly limited by its dependence on the Astrup technique and accompanying plots.

The clinical disease portion of the book begins with chapters on acute viral infections and the pneumonias. Discussions are brief and to the point, although some may differ with the author's specific recommendations, e.g., "*Klebsiella pneumoniae* demands treatment with streptomycin . . . together with co-trimoxazole." The book is written with the British audience in mind, so that certain terminology, and particularly drug names, may be unfamiliar to readers in the United States. An example of a transatlantic difference occurs in the notation that BCG vaccination remains the policy in the United Kingdom. For tuberculosis therapy the author still lists streptomycin, INH and PAS as the "standard regimen," even though acknowledging that Ethambutol in place of PAS "is now customary."

The chapters are not referenced, but a brief bibliography at the end of the book is organized by topic and includes a helpful one-line annotation of each entry (primarily books and monographs, with a few review articles). Curiously, the author has cited the 1964 edition of Bates and Christie rather than the 1971 revision, although contributions from the author's publishing house are cited in their 1975 edition.

In summary, Brewis has succeeded quite admirably in his goal: "to present a concise review of respiratory disease." Aside from occasional differences in terminology and local practice, it should serve the needs of American as well as British readers. The price of \$13.00, however, is a bit excessive for a 241-page paperback book with line-sketch illustrations only.

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Clinical Application of Respiratory Care. By B. A. SHAPIRO, R. A. HARRISON, AND C. A. TROUT. Chicago, Year Book Medical Publishers, Inc., 1975. Pages: 454. Price: PNS.

Intended as a "synopsis," the first section of this text gives an adequate summary of cardiopul-

monary anatomy and physiology. It is followed by a brief account of the rationales for and clinical applications of various therapeutic modalities employed by the "respiratory practitioner." The authors elect not to discuss the controversial but relevant question of the efficacy of treatment, but fail to provide a bibliography sufficient for independent pursuit of this topic. The discussions of oxygen delivery systems, and of humidifiers and aerosols, are excellent, in contrast to the often confusing presentation of these topics in other sources. Unfortunately, pulmonary oxygen toxicity and ARDS (adult respiratory distress syndrome) appear to have been used interchangeably in this section. Statements such as "Acute biochemical oxygen toxicity is a process that may occur with any hypoxic episode to Type II alveolar cells" do little to clarify the subject.

The last section of the book provides brief explanations of the physiologic impairment and appropriate therapy of common pulmonary disorders. The discussions tend to repeat earlier sections, and some duplication might have been avoided by careful editing. Evaluation of cardiopulmonary reserve is found in three different sections of the book. Discussions of deadspace ventilation and alveolar ventilation, which should logically appear in sequence, are separated by a section on cardiac evaluation. In the discussion of cellular metabolic requirements, it is unfortunate that the term "functional demand disparity" was chosen to describe the simple concept of failure of oxygen supply to meet tissue demands. The loose definitions of hypoventilation and hyperventilation as P_{aCO_2} 's of 30 and 50 torr, respectively, expand the normal P_{aCO_2} range of 35-45 torr, and may be misleading.

Although the style of writing is somewhat confusing, the book is well conceived and will serve as a useful reference guide for the "respiratory care practitioner." The illustrations are uniformly excellent and add much to the overall appeal of the book.

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Principles of Resuscitation. Second edition. By S. FELDMAN AND H. ELLIS. London, Blackwell Scientific Publishers, 1975. Pages: 384. Price: \$12.00.

The authors of this slim text, an anesthesiologist and a surgeon from the Westminster Hospital, London, have collaborated in a second edition, intended for physicians, dentists and nurses involved in the management of patients with cardiopulmonary arrest, and also for those who instruct medical and paramedical personnel. They make a serious attempt to describe the pathophysiologic disorders that result in respiratory arrest and then to discuss the management of these problems. Unfortunately, instead of concerning them-

selves with respiratory arrest and its management, the authors have entitled their chapters "Hypoxemia" and "Treatment of Hypoxemia." The likely result is that the reader will understand the classification of hypoxemia and the use of oxygen, but not the principles of management of the airway and breathing. The illustration of airway maintenance with the pillow still under the patient's head is cause for consternation. The use of a towel clip to pull the tongue forward instead of relying on the backward head-tilt maneuver is disconcerting, as is the use of the S tube, and bellows to aid ventilation. Airway management ends with a detailed, illustrated description of the operative technique for tracheostomy.

Causes of cardiac arrest are presented, followed by management, including cardiac compression or massage and electrical and chemical therapy, but cardiac arrest from coronary heart disease, this country's number one killer, is almost ignored in discussing etiology. Only two pages are given to external cardiac compression, while open-heart compression is fully described and fully illustrated, although probably beyond the scope of a text designed for both medical and paramedical personnel. The techniques, rates, and rhythms recommended for external cardiac compression are not consistent with those in current use in the United States and, if followed by the reader, are likely to inflict internal and chest-wall injuries. There is no effective attempt to integrate *Airway and Breathing with Circulation*. Indeed, the authors say it is almost impossible in practice to coordinate mechanical ventilation and external cardiac compression.

The chapters on defibrillation give equal space to D.C. defibrillators and A.C. defibrillators; the latter are considered outdated in the United States. The sequence and mode of administration of drugs for the treatment of cardiac arrest are unacceptable. The initial drug recommended is sodium bicarbonate, to be followed by injection of calcium into the right or left ventricle, and then epinephrine into the chambers of the heart if calcium is ineffective. However, the mode now current is not intracardiac injection but the intravenous route, accompanied by external cardiac compression to circulate the drugs. In the immediate post-arrest stage, the authors recommend isoproterenol, vasopressors, hydrocortisone, atropine, digoxin, blockers, and finally, lidocaine. Surely lidocaine is one of the most widely-used drugs given during and after resuscitation and should be featured much higher in the list of therapeutic agents.

The text devotes only four pages to neonatal resuscitation, and ends with a section on post-resuscitation care and organization of cardiopulmonary resuscitation.

The case histories scattered through the book relate to operating room scenarios and deal with acute anesthetic or surgical death rather than cardiac arrest in the street, emergency departments, or general wards.

The reviewer advises American readers not to follow the principles of cardiopulmonary resuscitation laid down in this text, because some are

inconsistent with the recommended Standards for Cardiopulmonary Resuscitation and Emergency Cardiac Care of the American Heart Association.

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Advances in Neurology. Volume 12: Physiology and Pathology of Dendrites. EDITED BY GEORG W. KREUTZBERG. New York, Raven Press, 1975. Pages: 495. Price: \$33.00.

This collection of 35 papers from the international meeting held in Munich in September 1974 is a superb, extensively detailed statement of current knowledge concerning normal and abnormal dendritic structure and function. Ever since the work of Cajal, Golgi, and Sherrington, we have known that dendrites receive synaptic input, but the research of the past decade has shown dendritic function to be vastly more complex than this.

Dendritic membranes not only sum incoming excitatory and inhibitory signals, they also integrate information and generate spikes. Some dendrites, such as those of interneurons, are presynaptic to other dendrites, cell bodies, or axons. They can form apical bundles in pyramidal cell zones that are electrotonically coupled for synchronous activity as occurs during seizures. Dendrites form growth cones and alter their shape or spine apparatus during development and in response to afferent input. They show severe malformations in some cases of mental retardation. They transport metabolites rapidly and slowly in orthograde and retrograde directions that contribute to neuronal homeostasis and perhaps neurotrophism. Finally, dendrites undergo degeneration under many abnormal conditions, including senile dementia, hyperbaric oxygen exposure, or respiratory acidosis. This volume clearly demonstrates that the principles of neuronal organization are vastly more complex than was believed 10 years ago, and that dendrites play crucial roles in information processing in the central nervous system.

Almost every article in this collection is well written, with clear presentations of data and many especially beautiful micrographs. Cogent summaries at the end of each paper facilitate the absorption of this wealth of information. Dr. Kreutzberg is to be congratulated on compiling a book that would be of great interest to neuroanatomists, physiologists, pathologists and neurologists. It would be especially valuable to anyone whose training in neurosciences occurred more than ten years ago. Finally, anesthesiologists might ask to what extent the mechanisms of general anesthesia depend upon inhibition of dendritic spike generation, dendrodendritic synchronization, dendritic intracellular transport, or other dendritic functions.

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