

ject. The first four chapters discuss the causes, assessment, and significance of abnormalities of ventilation, of ventilation-perfusion ratios and of membrane permeability. Following these introductory chapters is a discussion of simple methods of pulmonary function testing suitable for office use, such as measurement of tidal volume and maximal expiratory flow, and a chapter on arterial blood sampling and arterial blood gas analysis. The author next discusses the clinical management of pulmonary insufficiency and respiratory failure, with particular emphasis on the use of modern intermittent positive pressure breathing devices. He advocates use of the endotracheal tube in preference to tracheostomy in management of acute respiratory failure, for periods of as long as a week. Also included is an explanation of the symbols used in respiratory physiology and a chapter of tables and formulas. This book is on a rather elementary level for the modern anesthesiologist; it will be more suitable for the general practitioner or internist who wants to be brought up to date.

DARIO B. DOMIZI, M.D.

Respiratory Therapy. EDITED BY PETER SAFAR, M.D., Professor and Chairman, Department of Anesthesiology, University of Pittsburgh. *Volume 1/1965 of Clinical Anesthesia Series.* JOSEPH F. ARTUSIO, M.D., EDITOR-IN-CHIEF. Cloth. \$7.50. Pp. 419, with illustrations. F. A. Davis Company, Philadelphia, 1965.

A few years ago, when this reviewer was starting a school for inhalation therapy technicians, he was dismayed to discover that very little coherent reference material existed. The subject matter of the curriculum had to be constructed almost entirely from lecture notes. The picture has changed, fortunately, and Peter Safar's volume, *Respiratory Therapy*, constitutes one of the more useful sources for assigned reading. The book is organized into 15 relatively disconnected chapters on topics ranging from anatomy and physiology to organization of an inhalation therapy service and school, and an intensive care unit. Among the eighteen authors who individually or jointly produced the chapters, are two registered inhalation therapists, Mr. James F. Whitacre, who is Editor of the journal, *Inhalation Therapy*, and Mr. Gilbert Davis. This is an encouraging sign of development of this young paramedical specialty. Included among the chapters on therapy are: Management of Airway Obstruction, Emergency Resuscitation (a favorite topic of Dr. Safar), Prolonged Artificial Ventilation, Inhalation of Oxygen (with notes on oxygen toxicity), Nebulization Therapy (a very welcome article superbly written

by Ivan Cushing and William F. Miller), Intermittent Positive Pressure Breathing, Management of the Comatose Patient, Post-operative Respiratory Complications, The Management of Chronic Respiratory Insufficiency and Management of Newborn Resuscitation and The Respiratory Distress Syndrome. There is also a chapter on Sterilization and Care of Equipment, and an Appendix of "Useful Data" which contains an assortment of tables, charts and nomograms relating to pulmonary function and therapy.

Most of the articles have been authoritatively executed by well-selected authors. It is not surprising that there are some errors of omission in a single volume which is dedicated to so large a subject. These tend to be covered by the generous lists of references at the end of each chapter. *Respiratory Therapy* is written to be a practical guide to treatment, and will be useful to all students of inhalation therapy. It should be considered a "must" for the library of those physicians who only occasionally are responsible for the management of a patient in respiratory failure and find themselves without adequate support of a specialist in this area or a competent technician team.

DUNCAN A. HOLADAY, M.D.

Respiratory Care. BY H. H. BENDIXEN, L. D. EGBERT, J. HEDLEY-WHITE, M. B. LAVER AND H. PONTOPPIDAN. From the Respiratory Unit & Anesthesia Laboratory of Harvard Medical School at Massachusetts General Hospital, Boston. Foreword by John H. Knowles, M.D. Cloth. \$15.00. Pp. 252, with illustrations. The C. V. Mosby Co., St. Louis, 1965.

"The aim of this book is improved patient care through the clinical application of the principles of respiratory physiology." A giant step forward is anticipated such as that which followed the development of the Drinker respirator, where primary interest was centered on a clear airway contributing to active pulmonary function interpreted principally in terms of lung volume, gas exchange and diffusion. This text goes beyond these parameters to include discussion of factors such as arterial oxygen content and tension, cardiac output and pulmonary circulation, permitting geographical matching of alveolar ventilation and pulmonary capillary perfusion. The discussion is extended to such topics as pH, temperature, buffer and electrolyte content, membrane permeability and tissue metabolism.

Part 2 discusses diagnosis in relation to oxygenation, ventilation, physiologic shunts, the work of breathing, blood gas measurements and acid-base balance. Emphasis is placed on the dead space and shunt equations.

Downloaded from <http://asa2.silverchair.com/anesthesiology/article-pdf/27/6/875/61536000000542-1966100000040.pdf> by guest on 18 April 2024

Part 3 deals with prevention in reference to patients with normal and abnormal lungs, before and after operation. Physical therapy and the use of humidification and aerosol therapy are discussed at some length.

Part 4 discusses therapy through maintenance of the airway by intubation and tracheostomy. Emergency resuscitation and oxygen therapy with management during prolonged ventilation are given special consideration.

Part 5 copes with special problems such as chest injuries, intracranial lesions, myasthenia gravis, acute poisoning and other entities deserving special consideration. Respiratory management in thoracic and cardiac surgery warrants a chapter but pump management is not discussed in detail. The final chapter is on the special problems of obesity in relation to respiratory care.

This text contains a wealth of information that many will find difficult to read and absorb. More will find application in their hospitals difficult or almost impossible. One remembers the chilling information in the Foreword that "the Respiratory Unit at the Massachusetts General Hospital costs the patient \$150 a day." It is hoped that with more experience, procedures can be simplified and costs reduced to a practical level. It has been done before and likely can be done again. This reviewer is old enough to remember the heyday of pneumococcal typing and the corresponding complexities of treatment, fortunately all superseded by simpler and improved methods giving better results. It is hoped that the technique of respiratory care will soon undergo a parallel change in the direction of simplification, with reduction in cost, and improvement in the incidence of prevention and the results of therapy.

R. M. TOVELL, M.D.

Überlebens- und Wiederbelebenszeit von Gehirn, Herz, Leber, Niere nach Ischaemie und Anoxie. (Functional and Structure Survival Time of Brain, Heart, Liver and Kidney after Ischemia and Anoxia). By PROF. DR. MAX SCHNEIDER, Director of the Institute for Normal and Pathologic Physiology of the University of Köln. Paper. 14 D.M. (\$3.50). Pp. 29, with 7 illustrations. Westdeutscher Verlag. Köln & Opladen, 1965.

After careful definition of the terminology, the author of this short monograph summarizes the results of his observations on the tolerance of various organs to ischemia and anoxia. He differentiates between "Überlebenszeit," i.e., the time between the total interruption of blood supply to, and the cessation of all functional activity of an organ, and "Wiederbelebenszeit," i.e., the maximal duration of interruption of blood flow to an organ that is compatible with survival and restitu-

tion of function. On the basis of his own animal experiments, he points out that the limiting factor for the survival of the whole organism is the inability of the heart to function adequately to satisfy the circulatory requirements of the brain after more than three to four minutes of arrest. The survival time of the brain at 37° C. is eight to ten minutes, that of the liver three to four and that of the kidneys three hours. Cell damage occurs, to about the same extent, within a few minutes in all organs tested. The great difference in the survival time of the brain on one hand and that of the liver and kidneys on the other is due to the greater regenerating capacity of the latter organs. The author states that lowering the body temperature to 15° to 17° C., because of the marked decrease of the metabolic rate and the utilization of energy-rich phosphates, increases survival time by a factor of 6. He also points out that the aggregation of thrombocytes associated with ischemia and hypoxia, after the restoration of circulation, will interfere with the microcirculation and thereby decrease the chances for survival. The reading of this little volume should be profitable for anesthesiologists who participate in surgical procedures involving the temporary interruption of the blood supply to the whole organism or to isolated organs.

FRANCIS F. FOLDES, M.D.

Coagulation and Transfusion in Clinical Medicine. By SHIRLEY A. JOHNSON, PH.D., Associate Professor of Physiology, Marquette University, School of Medicine; AND TIMON J. GREENWALT, M.D., Professor of Medicine, Marquette University School of Medicine; Medical Director, Milwaukee Blood Center, Milwaukee. Cloth. \$9.50. Pp. 203, with 9 figures and 16 tables. Little, Brown and Company, Boston, 1965.

This book is intended to present, in a brief and interpretable form, the complex mechanism of blood coagulation and management of disorders thereof. This reviewer is not qualified to judge the accuracy or completeness of this presentation. It is my impression, however, that this book serves as a useful source of information for anesthesiologists. We have long been bypassed by current, and perhaps not so current, findings and by complexities of nomenclature and classifications which characterize this area of medical knowledge. Those of us who find ourselves inadequately informed and rather completely confused by the present situation, will find this book a source of information as to type of abnormality with which we may be dealing and its background and management. For those who wish more detailed information, an extensive bibliography is included.

This book is well organized, beginning with the

Downloaded from http://ajph.gapub.org/ by guest on 18 April 2024