

## The Anesthesiologist's Bookshelf

Edited by MEREL H. HARMEL

**Electronic Measurement Techniques in Anesthesia and Surgery.** By D. W. HILL. London, Butterworths, 1970. Pp. 358. \$13.50.

**Electrical Impedance Plethysmography.** By JAN NYBOER. Springfield, Illinois, Charles C Thomas, 1970. Second edition. Pp. 390. \$22.00.

Intensive care has come of age as an interdisciplinary subspecialty dependent on the surgeon, the anesthesiologist and the internist almost equally. Occasionally impeded by jurisdictional disputes, its maturation has rested squarely on the contemporary electronic revolution in medicine, and the bedside collaboration of an enthusiastic band of instrumentation scientists and physicians. To this pool of skills anesthesiologists have made and continue to make prominent contributions, so much so that in many centers a major responsibility for the intensive care unit has devolved on their departments. The anesthesiologist has been able to bring to the bedside the understanding and skills in measurement and mechanized care acquired at the head of the operating table. It is obvious that only these skills and this knowledge give him a claim to membership, let alone to priority, in the team. Measurement of physiologic variables in surgical and other patients has developed to the point that specialist-examining bodies appropriately require of their candidates a working knowledge of clinical instrumentation. Several books on the subject are now available. Dr. D. W. Hill's new book is one of the best.

Dr. Hill is a professional medical physicist whose field is anesthesiology. He presents in this text an excellent account of the principles and operation of the intensivist's measuring instruments. The survey is reasonably comprehensive, and the explanations clear and simple, yet sufficiently detailed for a fair assessment of the advantages and limitations of available alternatives. The opening chapter, dealing with recorders, is perhaps not as successful as the others, because it assumes in physicians a degree of understanding of electronic circuitry which few of them are likely to possess. But the subsequent sections are less demanding, taking the reader step by step through the essentials of theory, design and function in pleasantly uncluttered language. There are chapters on pressure transducers, ventilatory measurements, measurement of blood flow, recording electrodes, gas and vapour analysis, blood gas electrode systems, measurement of cardiac output, defibrillators, pace-

makers, surgical diathermy and safety precautions, colorimeters, measurement of temperature, radioactivity assay, and an accomplished section on scintillation counting. Dr. Hill has not written a "troubleshooting" manual, but rather a guide to the principles and mode of operation of instruments used in advanced anesthesia practice. As such, the book is eminently successful. Dr. Hill is obviously an experienced teacher, adept at seasoning dry descriptions with practical asides that help to imprint the whole on the mind of the reader.

Unfortunately, the same cannot be said of Nyboer's monograph on electrical impedance plethysmography. The appearance of a second edition of this book should have been an important event, giving a dispassionate account of the original promise and subsequent disappointments of the method. The promise arises from the fact that the technique is essentially noninvasive, using surface-to-surface impedance (resistive, capacitive and negligibly inductive) in various regions of the body to diagnose aspects of the physiologic state of the intervening tissues. The disappointment is due to uncertainties over the precise source of the perturbations and the difficulty of calibrating them by other methods. Dr. Nyboer's text is certainly comprehensive, readable and, to a degree, critical. But single-minded devotion to a particular type of methodology diverts him from a rational assessment of its capabilities in relation to proven alternatives. Thus, while the book is an extremely useful guide to the history of impedance plethysmography and the many measurements attempted with it, Nyboer leaves to the reader's critical acumen the essential conclusion that the attempts have pretty much met with failure. It is an interesting case history, interestingly written, and those who choose to labor in this field will find their preparations greatly lightened by Dr. Nyboer's beautifully produced monograph.

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**Introduction to Hospital Dentistry.** EDITED BY BRUCE L. DOUGLAS. St. Louis, C. V. Mosby, 1970. Pp. 186. \$12.85.

This is a revised edition of *A Guide to Hospital Dental Procedure*, coedited by Dr. Gerard J. Casey

and Bruce L. Douglas, published in 1964 by the American Dental Association.

The text thoroughly covers various aspects of hospital dentistry, such as outpatient and inpatient services, the operating room, and general anesthesia.

This revised edition is recommended as a reference text for undergraduate dental students, dentists, and physicians who have an interest in hospital dentistry.

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**Birth and Brain Damage.** By CYRIL B. COURVILLE. Pasadena, California 91103, Margaret Farnsworth Courville, 1971. Pp. 408.

This is an important book, completed by the author shortly before his death in 1968 and since published by his widow in elegant form. It is the epitome of the case history method of analysis of pathogenesis of cerebral problems in the perinatal period. Courville is at times anecdotal, at times stubbornly opinionated, and he touches base frequently with the other also well deserving pioneers of a period that is coming to an end: Schwartz, Towbin, Benda, Becker, and others.

Courville was also contemporary with and makes reference to Windle and his co-workers, especially with regard to experiments on "anoxia" and failure of vascular perfusion. On the other hand, it is clear that Courville failed to recognize the important distinction between conclusions based on assumptions and descriptive data and inferences drawn from experiments developed to answer specific questions.

The case descriptive method is limited by several considerations: a) lesions are isolated in time, giving a nonsystematic view of the progression of the changes described; b) underlying mechanisms are often empirically derived, confirmed by opinion, and are in reality unwarranted assumptions; and c) the clinical situation generally limits the variations possible in conditions which might give rise to a clearer picture.

In his connection, the style of work of Windle, Myers, Becker, and others should in time permit a pathogenetic scheme of classification of lesions. The sweeping use of "anoxia" to explain such a wide variety of lesions (chapter II, part II; chapter III; chapter IV, in part) and the use of gross descriptive terms, e.g., "acute paranasal cerebral softening," should convey to the experimentally inclined neuropathologist or neonatologist that all is not well with the effort to date to understand these complex problems.

But these are in summary complaints about the state of the subject at the time of writing, not about Professor Courville, who made numerous

important contributions to an understanding of these problems. His efforts toward laminar cortical necrosis, its definition as an express entity or signal lesion, would probably gain his admission to the halls of the recognized. This book, which must represent the high-water mark of the classical method, will guarantee Professor Courville's place in the history of perinatology, and we may be thankful that he was blessed by Providence to the degree that he brought it to completion in his own style and out of his enormous experience—a whole professional career devoted to a subject of enormous importance. All students of the subject would profit by a close reading whether they agree with the author or not. Combining the book with Schwartz's *Birth Injuries of the Newborn*, the reader would have reference to the pooled wisdom of the two giants of their age.

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*From time to time books are received which may have general interest but do not warrant review. Where indicated the editor may make short comments. The following are representative of such volumes.*

**Drugs 1960-1970.** EDITED BY GRAEME S. AVERY. Seaforth, NSW Australia, Australasian Drug Information Services Pty. Ltd. Distributed in U. S. A. by Williams and Wilkins, Baltimore, 1969. Pp. 280. \$8.75.

A limited reference on drugs and disease—of general interest.

**Principles and Practice of Intravenous Therapy.** BY ADA LAWRENCE PLUMER. Boston, Little, Brown and Company, 1970. Pp. 262. Cloth \$9.00; paperback \$3.50.

A manual for nurse or technician. Really not sophisticated enough for the medical student or house officer.

**Respiration and Circulation.** EDITED BY PHILIP L. ALTMAN AND DOROTHY S. DITTMER. Bethesda, Maryland, Federation of American Societies for Experimental Biology, 1971. Pp. 930. \$30.00.

This standard reference of tables, graphs, diagrams, charts, and monographs verified by 400 authorities in biology and medicine has been revised and updated for the researcher and those interested in specific data on biologic organisms, including man.