

## The Anesthesiologist's Bookshelf

Edited by MEREL H. HARMEL

**The Neurophysiological Background For Anesthesia.** EDITED BY MARY A. B. BRAZIER. Springfield, Illinois, Charles C Thomas, 1972. Pp. 130. \$13.75.

Mary Brazier has written another eminently readable little book for the expert and non-expert alike. There has been a need for some time for such a current review of the neurophysiologic mechanism of anesthesia to bring up to date the earlier work of Wyke. Written in the easily readable style that she used so successfully in *The Electrical Activity of the Nervous System*, the book is well produced, with clear type, good illustrations, and a commendable list of references at the end of each chapter for those who require greater scientific depth than may be found in the book.

When trying to reach a large audience, simplicity must be the aim, and Mary Brazier is adept at making the difficult appear quite easily understood. In doing so, however, it is necessary to guard against not being sufficiently comprehensive. In this respect, there are a number of omissions in the five main sections of the book which cover the physiology of pain as followed from the receptor through the spinal cord to the brain; general and local anesthesia; the brain mechanisms involved in the memory process as learned from pathology and surgery; electrical stimulation and innervation of muscle and its action; to relaxants and finally, the electrical signs of the effect of anesthetics on the electroencephalogram and on sensory evoked responses at both cortical and subcortical levels.

A great deal of the chapter on local anesthesia is devoted to the classic work of Hodgkin and Huxley on neuronal propagation, and a very clear exposition of the action of analgesics in blocking sodium permeability through nerve membrane. This chapter would have been considerably enhanced by reference to the work of Narahashi in regard to the site of action of local anesthetics on the internal surface of the nerve membrane, more information on the effects of calcium and magnesium ions on transmission, and details of the effects of volatile anesthetics on such propagation.

The chapter on electrical changes of the brain in anesthesia gives a broad, but not necessarily deep, review of the role of the EEG, covering the early history, scalp and depth recording, evoked potentials, neuronal effects, and the relationship of EPSP's and IPSP's to the mechanism of anesthesia and the important role of the ascending reticular activating system, including contemporary criticism of the specific role of the latter as invoked by

Moruzzi and Magoun. Although the reference list does include papers published in 1971 and the odd 1972 paper, the importance of sensory evoked potentials and their relatively small value in quantification of anesthesia, as brought out by the work at University of Pennsylvania in 1971, are not included. The possible value of power spectra analysis techniques is not dealt with, either.

Since so much of this book is devoted to the electrical signs and mechanisms of anesthesia, it is a pity, too, that more attention is not given to possibilities of quantification of the depth of anesthesia in relation to servo-anesthesia and the monitoring of depth of anesthesia. The problem of time lag between addition of anesthetic and EEG changes is stated, but the difficult problems caused by changes in the EEG similar to those of anesthesia produced by changes of acid-base balance, blood flow, and temperature are not discussed.

The deficiencies do not detract, however, from the usefulness of this volume. In a small book of 130 pages, including some 24 pages of valuable references and 45 figures plus a full subject and author index, it is obviously not possible to be either detailed or comprehensive, and this is a book that every Anesthesiology library should have on its shelf. It will be of considerable value to nurse anesthetists, residents, clinical anesthesiologists, and those interested in an introduction to research in this important area. Mary Brazier is to be commended for contributing this lucid and valuable monograph to assist understanding of what can be a very complex and difficult area.

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**Anesthesia Equipment.** EDITED BY PETER SCHREIBER. Berlin, Springer-Verlag Publishers, 1972. Pp. 219. \$15.30.

In this age of electronic and mechanical devices, it is becoming increasingly important that the anesthesiologist understand the technology involved in the equipment he uses. In this book an extremely detailed description of anesthesia machines, including circuits and ventilators, is given. The author has gone to great length in preparing this text to ensure its accuracy. It is slightly unfortunate, however, that the bias of the book is towards the manufacture of anesthesia equipment rather than the practice of anesthesia. It seems better suited for the gadgeteer who wants to build his own