

# The Anesthesiologist's Bookshelf

Edited by MEREL H. HARMEL

**Spinal Acuology.** By C. NORMAN SHEALY. Springfield, Illinois, Charles C Thomas, Publishers, 1969. Pp. 173. \$10.50.

Spinal acuology, as defined by the author, is the practice of diagnostic or therapeutic insertion of a needle into the spinal canal or near it. The substance of this book reflects the author's experience with this technique in treating a variety of patients who have neurosurgical problems.

The chapters on Anatomy, Lumbar Puncture, Pneumoencephalography, Myelography, Discography, Intrathecal Corticosteroids, Percutaneous Cordotomy, Miscellaneous Intrathecal Injections, and Arachnoiditis, are interesting and well documented. The roentgenographic reproductions are excellent and the bibliography valuable, especially in its historic references.

The chapter on corticosteroids is informative and worthy of perusal by anesthesiologists interested in the management of pain.

In contrast, however, the chapter, Spinal and Paraspinal Blocks, most of which has been taken almost verbatim from the work of noted authorities, is frequently undocumented, out of date, taken out of context, and incorrect. For example, the description of the technique for performing continuous spinal anesthesia is presented in continuity and within the same paragraph as the description of the technique of single-shot spinal anesthesia. Metycaine is recommended as the anesthetic of choice for caudal anesthesia, and the reader is cautioned about the possibility of transverse myelopathy and death following paravertebral injections of Efoceaine. The author documents a statement to the effect that other vasoconstrictors are less effective than epinephrine in prolonging spinal anesthesia by the statement that "epinephrine (1:1,000) prolongs spinal anesthesia 50%, and 1% phenylephrine prolongs it 100%." There is virtually no bibliographic substantiation for most of the statements presented as fact in this chapter. This is in direct contrast to the other chapters, which deal with subjects within the author's field, where the bibliography is extensive.

This glaring deficiency makes it difficult for this reviewer to recommend this volume as an authoritative treatment of "spinal acuology."

ALON P. WINNIE, M.D.  
Cook County Hospital  
Chicago, Illinois

**Gas Chromatography in Biology and Medicine.** A Ciba Foundation Symposium. EDITED BY RUTH PORTER. London, J. & A. Churchill, Ltd., 1969. Pp. 213.

This volume is an edited version of a CIBA Foundation Symposium on the above subject held in London in February 1969. Under the chairmanship of Professor Payne, Research Department of Anaesthetics, Royal College of Surgeons, England, 24 experts in the field, representing many countries and disciplines, met "to promote the exchange of ideas about gas chromatography and its application."

Gas chromatography, less than 20 years old, has already won for itself an indispensable place in the armamentarium of the analytical chemist, and in more recent years it has figured prominently in medical research, as both a qualitative and a quantitative instrument. However, the subject of gas chromatography remains an esoteric one, and the proceedings of this Symposium are no less so. In this light it is particularly gratifying that the majority of the physicians invited to participate were anesthesiologists, a tribute to the part played by the specialty in developing and utilizing this technique for both clinical and research purposes.

Following the introductory papers, including one on historical background by Professor A. J. P. Martin, the father of both paper and gas chromatography, the presentations were grouped under Design, Biological and Medical Applications, and Trends and Developments.

The sections on Design and Trends and Development are of interest mainly to those with some background in chromatography. Some papers summarize available information, while others present new experimental work or philosophize on the direction which chromatography and analytical techniques should take in the future.

The section on Biological and Medical Application holds the most of general interest to the physician, and especially the anesthesiologist. The presentation by Dr. Lowe of the University of Chicago describes the use of chromatography to measure anesthetic agents in blood and to compute their lipid partition coefficients. For the first time comparative and complete data on anesthetic solubility and partition coefficients in terms of human and other species are made available.

This is an intriguing combination of clinical and research application.

In medicine, as in industry, progress must oft-times await the appearance of requisite instrumentation. On occasion, however, the type of instrumentation developed directs subsequent progress. The introduction of the Clark electrode led us away from saturation as the standard of oxygenation and made tension measurements the prime arbiter instead. Although knowledge of blood oxygen content is also important to the clinician, this variable is not commonly measured because simple, reliable direct techniques are not readily available.

A chromatographic technique for the rapid determination of blood oxygen, carbon dioxide, carbon monoxide and nitrous oxide, with the further capability of measuring blood nitrogen if so desired, is described in this section of the Symposium. Similar techniques have previously been described and utilized. However, the instrument industry has failed to show any enthusiasm for making instruments for this commercially available, presumably because they are well served by the present demand for electrode systems. As was pointed out at the Symposium, the impetus for such commercial development will have to come from the physician, especially the respiratory physiologist, for whom the measurement of blood nitrogen is so important. The intensivist might also be expected to add his voice to the demands for a rapid, accurate measurement of oxygen and carbon dioxide content. Unfortunately, this is a small, rather select, group and its influence in the large world of commerce is likely to be proportional to its numbers rather than their importance.

To the "Perry Mason" generation the ability of the forensic pathologist comes as no surprise. However, the papers by Dr. A. S. Curry of the British Home Office Central Research Establishment and D. J. Blackmore of the R.A.F. Institute of Pathology describing the use of gas chromatography, and other techniques, in this field are fascinating and should give pause to those who demand instant diagnosis in poisoning cases. The final paper in this Section, dealing with chromatography of the benzodiazepines, is of interest not only because of the current popularity of valium (Diazepam) but because, in demonstrating different breakdown products in rats and mice, it yields a possible explanation for the species variation seen with so many drugs.

In summary, this volume is not a "must" for the average clinical anesthesiologist, although he may find the second section of interest, nor need it be fitted into the busy schedule of the student for the Anesthesia Boards. For the medical researcher who is fortunate enough to have a qualified chemist in his laboratory and prefers to leave technical problems entirely to him, it will provide an excellent, up-to-date reference source for him to check. For the man who, due to circumstance

or desire, takes an interest in technique as well as results, there is much of value, especially in the discussions, and for the chromatography aficionado the presentation by Professor Martin in itself makes the book worthwhile.

BERNARD WOLFSON, M.D.  
Mercy Hospital  
Pittsburgh, Pennsylvania

Research and the Individual. Human Studies.  
By HENRY K. BEECHER. Boston, Little, Brown and Company, 1970. Pp. 538, no illustrations. \$15.50.

A patient is a human is a human, and not a patient is a patient is a patient best describes the message in this book by the distinguished Dr. Beecher, Professor of Anesthesia at Harvard University. The ever-increasing scope of experimentation on human beings is a crucial aspect of medicine, and the author has admirably defined its guidelines, restraints, and degrees of freedom. Undoubtedly, the use of humans in experimentation reached its most objectionable and clamorous climax with the Nazis in World War II. The Nuremberg Trials that followed drew worldwide attention to these atrocities; the Nuremberg Code that evolved listed criteria to be followed when clinical experimentation is proposed.

Although in early times criminals were subjects for medical experimentation (*cf.* Ptolemy in Egypt, Fallopius in Pisa, Galen in Rome, etc.), other segments of society have also become involved. Involvement frequently reaches the bedside of ill patients, where new drugs, new diagnostic techniques, new operative procedures, or the transplantation of various organs must be investigated. The author describes many experimental situations where humans have been used with varying degrees of success and failure, and varying degrees of acceptable ethics.

So intense has been the impetus and interest in medical research that only gradually has an awareness of ethical problems arisen and been given consideration. Indeed, the first symposium on this subject, involving the multidisciplinary approach of the scientist, physician, lawyer, and administrator, was held as recently as 1948! Subsequently, the injection of live cancer cells into patients who were not informed as to the nature of this injection, the Kefauver drug legislation, the U.S.P.H. requirement (1966) that a local committee must pass judgment on any grant application involving humans, and the writings of Dr. Beecher have gradually, with other events, focused the public's attention on this problem. In this milieu have developed probing questions of ethical and moral and legal considerations for research when human subjects are used. The author carefully develops the concept of consent, informed consent—and how does one really inform a patient of all possible risks, complications,