

anion gap). The derivations and limitations of the *in-vitro* indices are poorly and incompletely presented, necessitating rote application of nomograms or graphs with little or no real understanding. The pity of it all is that acid-base chemistry as it actually happens *in vivo* is not an unduly complicated subject and would be easier to learn without all of the encumbrances of the past.

The author touches only lightly on therapy in the volume, but such concepts as the use of vasopressors in the treatment of hypovolemic hypotension, the limiting of crystalloid infusions in such instances to not more than one liter over the first one to two hours for fear of cerebral or pulmonary edema, the immediate replacement of all blood loss at operation with blood, and the routine use of calcium with transfusions all seem at variance with current surgical thought.

Anesthesiologists who read the text will be surprised to see that general anesthesia is listed as an etiologic cause of metabolic acidosis, and that acute respiratory acidosis should be suspected when signs of shock occur during an operation. They should be even more surprised to find emergency tracheotomy as the first-listed therapy for suspected respiratory acidosis in the surgical patient.

There are a large number of factual errors in the text. For example, in a brief summary of muscle physiology the author states that depolarization is caused by movement of potassium out of the cell. Hyperpolarization of the cell is said to be caused by increased intracellular potassium and hyperpolarization by decreased intracellular potassium. Just the opposite is true. The explanation of the alkalinizing action of sodium lactate is chemically unsound. As the total protein in the blood decreases, a larger percentage of the serum calcium is ionized, not a smaller percentage as stated by the author. Hyperosmotic concentrations of mannitol are said to draw fluid from the extracellular fluid compartment into the blood. Mannitol actually diffuses rapidly throughout the entire extracellular fluid compartment and draws fluid into that compartment from the intracellular water. The author cautions against the too-rapid administration of hypertonic glucose solutions because of the risk of hemolysis. Hemolysis, of course, is caused by hypotonic and not hypertonic solutions. The sites and mechanism of action of the common diuretics are not totally in accord with recent investigations.

There are numerous other more minor errors that good editing should have prevented. For example, the symbol for alveolar oxygen tension ($P_{A_{O_2}}$) is used throughout the text when arterial oxygen tension ($P_{a_{O_2}}$) is obviously intended, oxygen content is given in mm Hg, as is bicarbonate concentration, and oxygen flow rates are given in percentage units. The laboratory values of an acid-base disorder used as an example (p. 216) are mathematically impossible.

This text provides interesting but superficial sketches of many water, electrolyte and acid-base syndromes and may prove helpful for nursing

and other paramedical personnel who are not directly responsible for patient care decisions in this area. But I cannot recommend the book for the medical practitioner or the serious student.

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Bulletin de physiopathologie respiratoire. Volume 11, numero 2. Paris, Editions Du Centre National De La Recherche Scientifique, 1975. Pages: 149. Price: \$45.00.

This bilingual journal (articles in French and English abstracts in both languages) is published six times a year.

The articles pertain predominantly to physiologic mechanisms and abnormalities in normal and disease states. The issue reviewed had a very large proportion of articles in French (six of nine). However, for those like the present reviewer whose knowledge of French stopped with *la plume de ma tante* (and they don't even call it *plume* these days), there is an abstract of each article in English. The topics of the articles are diverse, including CSF acid-base equilibrium, oxygen transport, a new bronchodilator drug, exercise tests, pulmonary mechanics in interstitial fibrosis, and purely technical reports. In general, the articles are well written, well referenced, and concise.

In addition, proceedings of national respiration-oriented meetings held in Europe are presented. These are in the form of fair-sized abstracts with good references—usually all the papers pertaining to one special area of interest. The present issue has a 40-page section on neurologic aspects of breathing and a 30-page section on regional lung function and the use of isotopes. Both of these are well worth reading for those interested in the areas.

The annual subscription rate is \$45, a relatively modest price considering the amount of information presented. In summary, a journal well worth looking at regularly for those interested in the clinical and investigational aspects of respiration.

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Fluids for Anesthesia and Surgery in the Newborn and the Infant. BY E. J. BENNETT, Springfield, Ill., Charles C Thomas, 1975. Pages: 232. Price: \$18.50.

At the present time, there is no comprehensive book on fluids for the neonate and infant during anesthesia and operation. This book is an attempt to fill this void. Its object is to enable the practicing anesthesiologist to understand the patho-

physiology of fluid and electrolyte disorders of the neonate and infant and the rationale for therapy. It sharply illustrates how a delay between writing and distribution, and medical progress in the interim, can result in publication of well-meaning but unfortunate misinformation. As an example, under techniques of induced hypotensive anesthesia, hypovolemia is recommended as an adjunct. This can only be condemned in today's practice. A perusal of the extensive bibliography reveals that there are very few references as late as 1973.

On the positive side, there is an excellent discussion of pyloric stenosis. The best chapter in the book is concerned with fluid balance in infants receiving respiratory therapy. However, on the negative, there are several incomplete sentences (on pages 54 and 69). Symbols and abbreviations are used without explanation of what they stand for. There is no longer any justification for using stones, pounds, or any system of measurement other than the metric system. In Chapter 1 the neonate is defined as a child in the first 24 hours of life,

and eight pages later, as a child as much as 28 days old. There are variable values given for the percentage of body weight of interstitial fluid volume. In the chapter on blood replacement, a 20 per cent blood loss is said to be "allowable if the clinical conditions so indicate," but no details of the clinical conditions are given. Another difficulty is that many of the sentences are awkward and often excessively long, and facts are often difficult to separate from opinion.

There is no question that there is a need for a book on fluids for the newborn and infant during anesthesia and operation. This book may be the first step in that direction. However, the lack of relatively recent references, the awkward and confusing literary style, and the many errors and inconsistencies in the text do not recommend it.

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Literature Briefs

Peter J. Cohen, M.D., Editor

Literature Briefs were supplied by Drs. A. R. Boutros and P. J. Cohen. Briefs appearing elsewhere in this issue are part of this column.

Neuromuscular Physiology

MYASTHENIA GRAVIS Previous data developed by the authors indicate that myasthenia gravis results from a defect in the acetylcholine receptor. This may be caused by binding of an antibody to the receptor. In order to test this hypothesis, mice were injected daily (for 14 days) with an ammonium sulfate-precipitated aminoglobulin fraction of sera from patients with myasthenia gravis. Pooled blood from normal patients was used for control experiments. The average number of acetylcholine receptors per neuromuscular junction was reduced by 42 per cent in the experimental animals. These mice also showed reduced amplitude of miniature endplate potentials. Some of the animals showed decremental responses with repetitive nerve stimulation, a finding reversed by neostigmine. The authors believe that "this represents the first evidence of a circulating factor in the serum of patients with myasthenia gravis which on passive transfer reproduces features of the disease in experimental ani-

mals." (*Toyka KV, and others: Myasthenia gravis: Passive transfer from man to mouse. Science 190:397-399, 1975.*)

Hepatic Function

HALOTHANE AND FETAL LIVER Eight pregnant rats were exposed to 10 ppm halothane 8 hours a day and 5 days per week throughout pregnancy. Control animals were housed in adjoining chambers. Twenty-four hours after delivery, electron micrographs were made of the livers of four randomly picked infants from each litter. The histology of the control liver was normal. On the other hand, degenerative changes (myelin-figure formation, focal cytoplasmic degradation), fatty changes and cellular necrosis were observed in the halothane-exposed animals. Since the concentration of halothane was similar to that found in ambient air of an operating room, the authors suggest that this may represent an occupational hazard to operating room personnel. (*Chang LW, and others: Ultrastructural evidence of the hepatotoxic effect of halothane in rats following in-utero exposure. Canad Anaesth Soc J 22:330-338, 1975.*) **ABSTRACTER'S COMMENT:** Until other agents are studied, there is no reason to claim that fetal hepatotoxicity is specific for halothane.