

NEW BOOKS

ANTICOAGULANT PROPHYLAXIS AND TREATMENT: THE NEW EMPHASIS IN MANAGEMENT, by G. I. C. Ingram and Sir John Richardson (Charles C Thomas, Publisher, Springfield, Ill., 247 pp., \$8.75, 1965).

The editor's foreword, the authors' preface, and the systematic review of most facets of the modern rationale and uses for anticoagulants in medical practice all question, in the authors' words, "whether their administration does in fact do good." The various coumarins, indanediones and heparin preparations are initially tabulated as to chemical and trade names and usual dosage. The authors refer to the prior reviews by Hunter and Shepherd (1955), Montegel and Scheller (1962), Douglas (1962) and Poller (1962) for the chemistry of the anticoagulants. Little effort is made to examine the basic biochemistry which must underlie prothrombin synthesis and its interference by the coumarins and indanediones. In all fairness, it should be pointed out the recognition of the unique genesis of prothrombin in response to physiologic need, as well as its precise relation to vitamin K as a trigger, constitutes quite a different phase in the total knowledge of blood coagulation. Advances in fundamental knowledge of this type may be needed, however, before maximum intelligent use can be made of procedures which in the authors' words can now be considered "the anticoagulant ritual." The book ends with discussion of prothrombin and clotting tests and other laboratory procedures upon which the safe and effective control of anticoagulants depends.

This reviewer is not in position to evaluate the several books and symposia on the coagulation versus anticoagulation problems of recent years. This book in review will be of primary value to those concerned with the vast field of heart and vascular disease. The question of assessing the validity of claims and counterclaims regarding the true value of anticoagulants to preserve life will be of interest to many engaged in medical research and to some in practice. It seems doubtful that most readers of the *Journal of the American Oil Chemists' Society* will find the book of direct value to them.

Anticoagulants were first used therapeutically. The authors state: "The value of anticoagulants in the surgical management of vascular disease, except at the time of operation, is not therefore by any means established." The period of therapeutic use of anticoagulants was given as 1949-53. After 1953, they were also used prophylactically and this is the debatable situation. The matter of age of patients, whether they have had one or more infarcts, use of "control-in-series," "control-in-parallel," and "vicarious controls" all receive attention. The authors offer few conclusions of their own, merely presenting the data and conclusions of experimenters. In this regard the book seems well referenced, both sides of the debate being presented.

Anticoagulation presents a number of hazards, which are discussed. It also may place strain on hospital facilities not commensurate with advantages clearly gained. One author suggests, for instance, that only injured patients over 75 should be so treated, because they suffer most risk.

One may wonder now whether anticoagulants could have come into use in the United States under present statutes regarding proof of drug efficacy. Despite the 20 years in which anticoagulants have been used, final definitive answer has yet to be achieved as to their proven value in many situations. This is inherently true, as the authors point out, because of the inability to construct an analogous situation in animals or to do more than to learn by experience. The freedom to learn in this way should not be denied, even though it may take decades.

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Abbott Laboratories
North Chicago, Illinois



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STRUCTURE OF AQUEOUS ELECTROLYTE SOLUTIONS AND THE HYDRATION OF IONS, by O. Ya. Samoilov, and translated from Russian by D. J. G. Ives (Consultants Bureau, New York, 185 pp, 1965, \$15).

The book, paperback, consists of an introduction and five chapters. The titles of these chapters are: The Structure of Monatomic Liquids and Self-Diffusion; The Structure of Water; The Hydration of Ions in Aqueous Solutions; The Structure of Aqueous Electrolyte Solutions; and The Quantitative Treatment of the Hydration of Single Ions in Dilute Aqueous Solutions. The theoretical and experimental treatment of the subject can not be considered as a complete survey of the field as is pointed out in the Preface. The author goes into detail on the concept that short-distance energy changes near the particle (ion) are more important than the total energies of particle interaction in dilute aqueous electrolyte solutions. The discussion of the theory of "negative hydration" of ions and supporting radiospectrometric investigations will be of interest to workers in the field. Other topics treated include x-ray structure analysis of water and a thermochemical method of estimating the "co-ordination numbers" of ions in dilute aqueous solution.

The casual reader could gain much from the book due to the clarity of presentation, but the researcher or teacher will find it most useful in acquiring recent information concerning this field. Over 80% of the literature cited was published since 1945.

L. M. CHAMBERS
The Procter & Gamble Company
Cincinnati, Ohio

SULFONATION AND RELATED REACTIONS, by Everett E. Gilbert (Interscience Publishers, John Wiley & Sons, 605 Third Ave., New York, N.Y. 10016, 529 pp., \$16.50). This Interscience Monograph, by Dr. Gilbert of the Allied Chemical Corporation, who is a well-known authority on the subject, is a timely book and fills a real need. There has been no general work devoted primarily to sulfonation and sulfation since Suter's book of 1941.

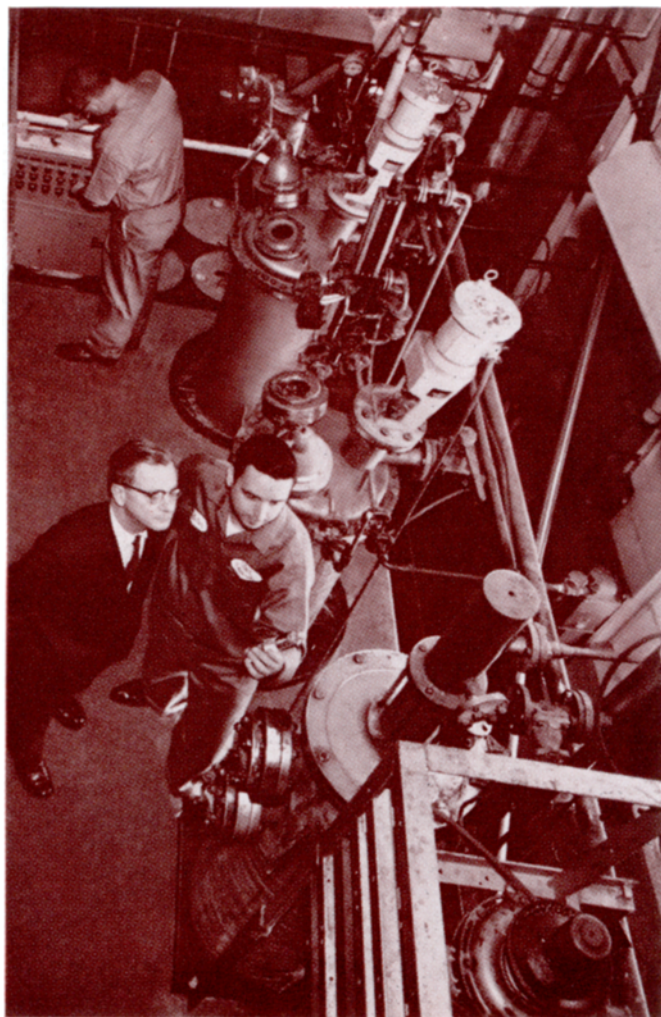
The subject is presented under eight chapters, as follows: The Reagents; Sulfonation with Compounds of Sulfur Trioxide; Sulfonation with Compounds of Sulfur Dioxide; Sulfonation by the Oxidation of Organic Sulfur Compounds; Sulfoalkylation, Sulfoarylation, and Similar Procedures for Indirect Sulfonation; Sulfation; Sulfamation; Desulfonation. The book is well documented with about 3000 references, has an author and subject index, and contains 70 tables and many formulas and equations. The references are quite up-to-date and include Japanese and Russian publications, handy for the reader because Chemical Abstracts references are supplied for these, and for patents also.

Matters of both practical and theoretical interest are discussed including the mechanism of reactions such as alkane sulfochlorination, alkene sulfation, aromatic sulfonation, the Bucherer reaction, and desulfonation. The reader with a special interest in fats and oils, detergents, and surface active agents will find new and interesting information on topics such as the following: alkanesulfonates (e.g., Mersolates), alkylbenzenesulfonates, sulfated and sulfonated oils, the sulfation and sulfonation of α -olefins, the Strecker reaction, α -sulfonation of fatty acids and ketones, alcohol sulfates and ether alcohol sulfates, and sulfoalkyl esters and amides (e.g., Igepon A and Igepon T).

The author discusses the use of the more common reagents SO_3 , H_2SO_4 , oleum, ClSO_3H , dioxane- SO_3 , pyridine- SO_3 and $\text{NH}_2\text{SO}_3\text{H}$; and many less well known, mostly other types of SO_3 adducts which may have special applications and advantages.

The book is, to a degree, a small encyclopedia and some information can be found on the sulfonation of almost any type of organic compound. It is recommended for frequent use or occasional reference.

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