

Misprints occur in all books, and in this one not oftener than the average; but the erroneous formula for picryl iodide on p. 174 and the mistake in equation (8) on p. 220 are examples of rather serious slips. What is much more serious is that the writing abounds in loose phraseology such as, "the four valencies of a carbon atom form a tetrahedron" (p. 89), or the "equation ( $A = A_{sol}^+ + e^-$ ) is the electrode potential" (p. 70). Again, to write of associated compounds on p. 65 that the "association increases the solubility in water" is surely to suggest a false causality. In a single paragraph on p. 60 the phrase "degree of association" is used in two distinctly different senses. Furthermore there are some misleading statements: "the chief use (of X-rays) to organic chemists has been with crystalline powders" (p. 82), and "electron diffraction is the principal type of diffraction studies being made now" (p. 83) are opinions that could not long survive a glance at any recent volume of the "Structure Reports". In several places (for example, pp. 22, 144, 159) the inexperienced reader will gain the impression that the molecular orbital treatment is merely a part of the resonance concept, instead of being an alternative and independent method of approximation.

When another American author has written of "the electronic theory of the English school", it is surprising to find the names of Ingold, Lapworth, Robinson and Sidgwick together accounting for only 14 entries in Prof. Ferguson's author-index, while several Californian or mid-Western authorities individually exceed this total. (On the other hand, two well-known American workers appear as "R. B. Core" and "J. Donahue" in both text and index.)

Most of these defects are superficial and could be easily remedied, and to have pointed them out at this length is to have emphasized them unduly unless it is also emphasized that this book has many virtues. A large quantity of current information is brought together in a useful way, and offered in a readable form. Those able to read the book with judgment will find it valuable. After every few pages there is a list of books and review articles for supplementary reading. These lists are up to date and well chosen; and they are by no means confined to American publications. With due safeguards, this book should be made accessible to advanced students of chemistry; it can be recommended to any of their seniors who may be concerned with physical organic chemistry.

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variables are involved and a vast amount of work remains to be done. This has become even more evident since the comparatively recent discovery of the phenomenon of cocatalysis and the fact that the true chain initiators may be complexes between catalyst and trace impurities, solvent, or even monomer.

In this present state of the subject a normal type book would be premature. I believe, however, that Dr. Plesch has succeeded in the present volume in satisfying the intense interest in the subject by producing what is in effect a progress report by the most eminent workers in the field. There is reported here, with copious references to earlier work, a good deal of representative material which has been published in recent years together with some which will shortly appear. Most valuable of all, however, are the comments and suggestions made in discussion. The whole has been arranged, presented, and printed in a most attractive and readable fashion.

After a foreword by Sir Eric Rideal, the preface by Dr. Plesch gives a historical survey and puts the later discussion in perspective by showing in particular the economic and industrial aspects of the subject and also its relationships to modern theories of organic chemistry. Thereafter the book is divided into two main sections approximately equal in length. The first is devoted entirely to papers on complex formation with a direct bearing on the initiation process, while the second includes papers on the polymerization process itself. These are summarized by Prof. D. D. Eley and Prof. F. S. Dainton respectively.

Adverse comment is of a trivial nature and detracts not at all from the value of the book. It is concerned only with minor points of inconsistency in presentation. For example, Ph and  $C_6H_5$  are used, even in the same equation (p. 76), to represent the phenyl group and the appearance in the text sometimes of [ ] while at other times "the concentration of" is written in full. These points may be rather difficult to avoid, however, in a publication of this nature where the original material has come from a number of authors.

This book gives an authoritative account of the state of our knowledge of cationic polymerization at March 1952. It is of particular value to all interested in the general fields of high polymers and complex formation and must be indispensable to workers in the more restricted field which it covers.

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## CATIONIC POLYMERIZATION

### Cationic Polymerisation and Related Complexes

Edited by Dr. P. H. Plesch. (Proceedings of a Conference held at the University College of North Staffordshire, 24th-26th March, 1952.) Pp. xii + 166. (Cambridge: W. Heffer and Sons, Ltd., 1953.) 20s.

THE experimental investigation of cationic polymerization was initiated in the early 1930's, as Dr. Plesch points out in his most admirable preface to this book, when it was recognized as a distinct type of polymerization reaction by reason of the fact that it could not be fitted into the general theory of free-radical chain reactions. Since that time, spectacular advances have been made in the understanding of the fundamental nature of the reaction. While a fair measure of agreement on general detail has been reached it is quite clear that a very large number of

## TECHNIQUE OF ORGANIC CHEMISTRY

### Technique of Organic Chemistry

Vol. 8: Investigation of Rates and Mechanisms of Reactions. S. L. Friess and A. Weissberger (Editors). Pp. xxiii + 760. (New York: Interscience Publishers, Inc.; London: Interscience Publishers, Ltd., 1953.) 12.50 dollars.

THIS volume surveys the broad domain of chemical kinetics. The editors have sought to present theoretical as well as practical techniques, and topics outside the scope of formal kinetics are treated when relevant to the problems of reaction mechanism. The initial chapters are relatively general and are devoted to the theory of chemical kinetics, to experimental methods of measuring