clay, and Burton cover observations made during sledge journeys. The first part provides a description of the environment and factual information on snow accumulation measurements. This covers the accepted methods of stake and pit measurements, with a discussion of seasonal and daily variations. Recordings of the wind profile immediately above the ice shelf and measurement of the actual temperature of the ice shelf are also included in the first part.

The second part, a review of sledge journeys made by MacDowell, Barclay, and Burton on the ice shelf, describes snow accumulation, ice-hill investigations, and surface features. This is followed by a short, attractively illustrated paper, "Snow surface studies" by Tribble.

Space does not permit details on other parts of the appendix. With a few exceptions, these are largely operational or logistic in nature and provide an additional valuable record of personal experience and initiative in antarctic research.

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Radiation Chemistry

Introduction to Radiation Chemistry. I. V. Vereshchinskii and A. K. Pikaev. Translated from the Russian (Moscow, 1963) by J. Schmorak. Gabriel Stein, Scientific Editor. Israel Program for Scientific Translations, Jerusalem; Davey, New York, 1964. viii + 335 pp. Illus. $15.25.

This is a good, well-written book that covers the literature of all radiation chemistry, rather lucidly and selectively, through 1960. There are several references to 1961 publications and, surprisingly, an occasional reference to a 1962 publication. But the abrupt advances of the last 4 years are not discussed—despite the false impression, created by the publisher of the translation, that this is a 1964 book. Furthermore, the price seems extraordinarily high for a book printed by photo-offset (even for a book so well printed as this one). However, the important fact is that every serious worker in radiation chemistry should be aware of this book and its utility.

Vereshchinskii and Pikaev appear to have worked separately on chapters close to their particular areas of specialization, but, very likely because of the excellent work of the translator and particularly of the scientific editor, Gabriel Stein, the style and manner of presentation are consistently smooth.

I do not pretend that this book is without minor inaccuracies, irritations, inelegancies, or confusions. They are there—but only to a minimal degree. The figures are adequate. The word "obviously" (the flag of danger ahead) appears too often, "recombination" is employed when "combination" is clearly meant (a misusage common among kineticists), the words "reverse reaction" are used when the more inclusive "back reaction" is intended, and there is no author index. The treatment of the radiation chemistry of water and aqueous solutions seems to be complete (as of the time that the book was written), and the theory is well handled. However, in this volume, as in the other treatments of the radiolysis of water, the subject (even with present knowledge of the solvated electron) is so involved that one cannot expect to learn a lot in hasty reading. On the other hand, meaning, in any portion of this book, is rarely obscure.

Introduction to Radiation Chemistry, like other publications from the U.S.S.R., reveals that the Russians remain consistently aware of the problems created by the existence of chemical effects of high-energy radiation (as in nuclear power technology) and of the technological possibilities of radiation chemistry (as in polymers and organic synthesis).

A beginner in radiation chemistry can read this book, learn the fundamentals, and not be led astray. He also will obtain valuable information on dosimetry which is not otherwise available in such a succinct or informative collection. An advanced worker will find a good review and comparison of different points of view regarding both theory and experiment, well-documented and very useful tables and charts, and an extraordinary bibliography of information (particularly on the Russian literature). An investigator entering a new field in radiation chemistry is well advised to consult the pertinent portions of this book first. I recommend it highly, and I congratulate all those involved in this exceptionally well-done job.

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Advanced Plasma Theory. M. N. Rosenbluth, Ed. Academic Press, New York, 1964. xiv + 266 pp. Illus. $9.75 (contributors: W. B. Thompson, Russel Kulsrud, G. Ecker, M. N. Rosenbluth, H. P. Furth, P. A. Sturrock, C. Mercier, B. Bertotti, and M. Kruskal).

This book is Course 25 in the Proceedings of the International School of Physics, "Enrico Fermi," sponsored by the Italian Physical Society. It covers the principal series of lectures given at Varenna during July 1962. The director of the course was Marshall Rosenbluth of the United States. The main emphasis of the book is on the plasma theory that has been developed in connection with controlled thermonuclear research, and the faculty was drawn primarily from the controlled fusion laboratories of the United States and Western Europe.

Although each chapter is written by an independent author, the arrangement is good in that the more basic and more fully developed subjects appear at the beginning and are followed by several shorter chapters on newer areas of research or special problems.

The first chapter is devoted to plasma kinetic theory. The author emphasizes the physical processes involved rather than seeking the most general formulation of kinetic theory. Transport processes in the presence of a magnetic field are discussed, and methods of obtaining the transport coefficients are given. This section contains a useful list of the important relations and coefficients. The Fokker-Planck equation for a plasma in a magnetic field is discussed in detail. There has been considerable research in this field in recent years, and an important feature of this chapter is that these results are brought into perspective.

In the second chapter three energy principles for the stability of static equilibria are derived. These correspond to three models that are useful in describing a plasma. The first is the set of magnetohydrodynamic equations for one fluid with a scalar pressure and infinite conductivity. The second is the collisionless limit described by the Vlasov equations, and the third is the infinite conductivity fluid theory, but with a tensor pressure. The derivation of comparison theorems between the energy principles adds to the value of this chapter. The