charming and informative biographical introduction. This introduction when read together with Laura Fermi's "Atoms in the Family" gives a fairly complete picture of Fermi. Good though the introduction may be, it is brief, about 25 pages, and one is left with the impression that Segrè has much more to say. How tantalizing it is to have him raise an interesting subject and then have to leave it before it is exhausted. It is clear that the introduction could easily be filled out to a complete biographical volume, and it is hoped that such will eventually be forthcoming. In the second place, the editors have written introductions to nearly every paper explaining the setting of the particular paper, something about how it came to be written, perhaps a few critical remarks, or whatever just seems to be relevant to the paper. This reviewer was fascinated by these remarks. I learned no end of details that either enlightened or amused me. For example, Amaldi, in one of his comments on the papers dealing with the absorption of slow neutrons, informs us how the expression "age," used by Fermi and later by all of us to represent the quantity $\overline{r^2}/6$ of the diffusion of neutrons, came about. It stemmed from the joke that as the captain's age can be determined from the length of the ship's mast so the energy of the neutron group can be determined by the distance it travels as it slows down. It is exciting to find the expression "età del capitano" actually used in a facsimile of a page of one of Fermi's notebooks that is used as an illustration. Also we learn in a letter from Rutherford to Fermi that in 1936 Dirac was actually experimenting! Segrè informs us in another note that Fermi had made calculations in 1935 of the behavior of neutrons in hydrogenous material using what we call today the Monte Carlo Method, invented nearly 10 years later. The notes of the editors are so vivid in places that one has a feeling of almost participating in the remarkable developments in Rome in those exciting years in which the properties of slow neutrons were discovered.

With the exception of Fermi's books and articles for the Italian Encyclopedia, all of his writings up to his departure from Italy in 1938 are contained in Volume 1. Although most of the papers are in Italian, it is still very worthwhile for a physicist without Italian to browse through the book. The introduction and most of the comments are in English. English is used in about one-fifth of the articles including nearly all of the work referring to neutron physics. A few of the papers are in German. Even one such as this reviewer, whose knowledge of Italian is rather elementary, found little difficulty in reading Fermi's pellucid style.

Although the book will be invaluable to the historian of science, it can also be strongly recommended to any nuclear physicist who would know something of the origins and traditions of nuclear physics. Perhaps in the "Great Books" tradition a student might refer to this work in order actually to learn physics. He could do worse; for example, I am not familiar with a better exposition of statistics than given by Fermi in one of his review articles, and there are many other examples. However, this method is not the style of physics, and it is rather for pleasure or inspiration that I would advise a student to delve into this treasury of physics.

We owe a debt of gratitude to the editors for having turned out such an excellent volume. It is a fitting tribute to an inspired and inspiring man so beloved and respected for what he brought to and gave to the world of physics.

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Radiation Chemistry of Polymeric Systems. By ADOLPHE CHAPIRO. Interscience, Wiley, New York, and London, England, 1962. 712 pp., $21.00.

This book is Volume XV of "High Polymers," a series of monographs on the chemistry, physics, and technology of high polymeric substances, published under the guidance of an editorial board consisting of H. Mark, Brooklyn, New York; C. S. Marvel, Urbana, Illinois; and H. W. Melville, Birmingham, England. The author of this particular volume is associated with the Physical Chemistry Laboratory of the Faculty of Sciences of Paris, Paris, France, and with the Radiation Chemistry Laboratory of the National Center of Scientific Research, Bellevue, France.

The expressed objective of this book is to attempt to correlate the various results available in the radiation chemistry field of polymeric systems and to present their various aspects in a logical framework. To achieve this objective, the author has divided his work into twelve chapters. The first two chapters consist of an elementary survey of the interaction of radiation with matter while the third chapter is devoted more specifically to the development of the radiation chemistry of hydrocarbons. Using these three chapters as a basis, polymerization processes which are initiated by radiation are treated in Chapters IV through VII. Chapters VIII through X discuss the effects of radiation on solid polymers in considerable detail, and Chapter XI describes the irradiation of polymer solutions. In the final chapter, Chapter XII, the preparation of graft copolymers by radiation-chemical techniques is described in detail.

Each of the twelve chapters is quite well referenced, and a total of 1,187 references have been cited by the author in writing this book. Although there are some errors in literture citation, an unusually fine job has been done in documenting this work. The detailed nature of the references and the fact that they are international in scope should make this book a very handy reference volume for anyone interested in any phase of the radiation chemistry of polymer systems.

One aspect of this book will undoubtedly cause comment and some areas of disagreement. Due to the paucity of our basic knowledge of the mechanisms of chemical reactions induced by radiation, the author has been forced by necessity to judge, select, and even reinterpret data from numerous experimental results, some of which frequently appeared to be conflicting. The author recognizes this potential area of disagreement, and in the preface of his book, he states

"It is hoped that the reader will recognize the value of such a treatment for what it is, namely an expression of the present views of the author, which are not necessarily those of others and which may change with future developments." Considering the state-of-the-art of this particular field, his approach is not only basically reasonable, but it also makes his contribution more worthy even if it arouses considerable controversy.

The outstanding feature of this book is its organization. Considerable planning is evident throughout the book. Contents of each chapter are well introduced and interrelated not only within a particular chapter but also among the various pertinent chapters. Some experts in various facets of the field covered might feel that this type of approach results in too much wordiness, but the end result is certainly a coherent picture of the present knowledge of the radiation chemistry of polymeric systems.

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(About the Reviewer: Dr. Vincent P. Calkins is currently Manager, Nuclear Materials at the General Electric—Nuclear Materials and Propulsion Operation in Cincinnati (Evendale), Ohio. He worked on the Manhattan Project at Iowa State University under Dr. F. H. Spedding and on the NEPA Project at Oak Ridge. His fields of interest include: selection of materials for nuclear reactors; the chemistry, ceramics, and metallurgy of high temperature materials; and basic phenomena of physics.)