BOOK REVIEWS

Selection of books for review is based on the editors' opinions regarding possible reader interest and on the availability of the book to the editors. Occasional selections may include books on topics somewhat peripheral to the subject matter ordinarily considered acceptable.

JOLLY GOOD SHOW

Title The Radiochemical Manual, Second Edition

Authors The Radiochemical Centre Staff, Ed. B. J. Wilson

Publisher The Radiochemical Centre, Amersham, 1966

Pages 327 including numerous charts

Price 50 Shillings

Reviewer A. F. Rupp

Dr. W. P. Grove, in his foreword to this volume, pretty well characterizes its contents when he says: "This book is intended as a guide for all who use radioactive substances professionally. Its aim is to help the individual user—the scientist, doctor, engineer, or technologist—to choose the right material for his particular purpose and to make effective use of it."

The Radiochemical Manual, now in its second edition, is written and revised by a dozen members of the staff of the Radiochemical Centre at Amersham, England. I have known Dr. Grove and his associates since the earliest days of the radioisotope business. I can assure potential readers of the competence of this group to write on the preparation and characterization of radioisotopes.

While this book is a general reference in the field, it is of course oriented toward British radioiostope work and particularly the activities of The Radiochemical Centre. Short sections on basic nuclear and chemical processes, important definitions, and tabulated and graphical data on radioisotopes are quite useful; one would have to search through a number of books and papers to find data that are made readily accessible in this volume.

An outstanding feature of the book is the treatment given to the synthesis of labelled inorganic and organic compounds. A section is devoted to graphic flow sheets for the preparation of labelled compounds with ^{14}C, ^{35}S, ^{32}P, and ^{36}Cl. I believe many people will find this very useful.

Quite a number of references are given, and one chapter is devoted to sources of information in the literature. Here again, my observation is that the references are heavily oriented toward the British literature, and, quite naturally, toward work in which Amersham products have played a prominent role.

I believe that many radioisotope users will find this to be a handy reference, and I recommend it for this purpose. One slight criticism: Along with the rest of the bifocal set, I like the large, bold type, but I don't like 8½- × 11½-in.-sized reference books; they just don't fit on the shelf.

Arthur F. Rupp (BS ChE Purdue University, 1933) was assigned by the DuPont Company in 1943 to the Manhattan Project, working at Clinton Laboratories and Hanford on the original graphite reactor and plutonium separations processes. Returning to Oak Ridge in 1946, he organized the radioisotope development and production program and now holds the positions of Director, Isotopes Development Center, having responsibility for research, development, and production of radioactive and stable isotopes, and ORNL Services Superintendent, with responsibility for the Laboratory reactor operations, waste disposal, plant facilities operations, shops, field engineering, and maintenance.

ZEALOUSLY UNCLUTTERED

Title Corrosion and Its Prevention in Waters

Author G. Butler and H. C. K. Ison

Publisher Reinhold Publishing Corporation, 1966

Pages 281

Price $12.00

Reviewer H. P. Leckie

As the authors themselves state in the Preface, this book emphasizes the practical aspects of corrosion problems in waters, while keeping theoretical explanations of the various corrosion phenomena to a minimum. In this respect, the book should provide an adequate background for the engineer finding himself introduced to problems in plant or equipment corrosion. The first chapter gives a brief introduction to the basic principles of corrosion, while in the succeeding chapters a considerable amount of

information is given concerning the actual corrosion behavior of metals and alloys in various types of waters. Several chapters on methods of preventing or reducing corrosion are included. In the light of a series of books on corrosion published in the past few years and directed more towards the university student or research worker, *Corrosion and Its Prevention in Waters* is useful as a guide to the practical engineer.

Considering its function and nature, the authors are to be congratulated on not allowing the text to become littered with endless tabular data on the quantitative corrosion behavior of metals and alloys in a multitude of specific environments. Instead, the large amount of information is well presented with good continuity and in very readable form. A major omission, however, is a consideration of corrosion in sulfide-containing waters; this problem is particularly serious in the US with oil-well equipment corrosion.

Although the authors' stated intention is to keep theoretical aspects to a minimum, at times this policy has been followed with such zeal that some of the mechanistic sections are too depleted to be of much value. To state, for example, that "the criterion of pitting is the oxidation-reduction potential" and to quote some arbitrary value for this, is so out of context and so limited in scope as to do more damage than good. The new venturer into the field of corrosion would find himself both at once intrigued and confused, and would be well advised to obtain a sound background in corrosion principles from some other source before attempting to use the practical information given in *Corrosion and Its Prevention in Waters.*

As a whole, the book is to be praised as serving a genuine need. It is recommended for plant and field engineers, and the student or research worker may find the practical approach to corrosion a pleasant and enlightening change from the usual theoretical texts. At a cost of $12, both the library and private individual will find the purchase of this book a worthwhile investment.

H. P. Leckie graduated from London University with a BSc (Honors) degree in Metallurgy in 1961. He obtained his PhD in 1964 from the same university, having studied the formation kinetics of oxide films on titanium in electrolyte solutions and coauthored a paper on this subject. In 1964-65 he spent a year at MIT, where he lectured in Corrosion Science and Electrochemistry to graduate students. Since joining US Steel in 1965, he has been studying the electrochemical properties of alloy and stainless steels and is presently in charge of the electrochemistry section of the Corrosion Technology Division at the US Steel Applied Research Laboratory.

A SIGNAL SERVICE OF SIGNIFICANCE

Title Technological Innovation and Society

Editors Dean Morse, Aaron W. Warner

Publisher Columbia University Press

Pages vi + 214

Price $6.00

Reviewer Lloyd V. Berkner

This new book is an important addition to the growing list of significant discussions of the impact of the present technological revolution on society, and of specific problems inherent in that impact, The basic thesis is derived from the now almost limitless power of technology toward either good or evil. "The shift from the industrial age to the cybernetic age is as big as the shift from the agricultural to the industrial. . . .the former is taking place over a generation or less. . . the latter took centuries to work out." How can our institutions cope with such rapid rates of change; how can man "control unlimited power, something he has never really been forced to do." Will the unlimited capability to do good be warped by man to generate unlimited evil. What, indeed, is *good* in an era when new value judgments can and must be made.

The book consists of eight essays presented before the Third Columbia University Seminar on Technology and Social Change, together with the ensuing seminar discussions of those essays. The editors have done an unusually effective job in editing the discussion, so that the central ideas emergent from the discussions are clearly elaborated.

The first four essays by Wiesner, Land, Hershey, and Piore (scientists with both substantial industrial and government experiences) deal primarily with the derivation of technological innovation from science. The second four essays by Sebrell, Michael, Vallard, and Clark are concerned with the major social problems raised by the new technology. Each group of essays is introduced separately (and knowingly) by the editors.

The participants agree on Wiesner's basic premise that "if we had not done a great deal of *basic* research, and thus created the scientific knowledge on which our technology is based, we would not have our growing industrial society." But there is equal agreement on the ever more widely accepted observation that scientific research, however successful, does *not automatically* lead to new technologies. There must be a series of intermediate steps between scientific discovery and the consequent emergence of new products and services—new technologies useful to mankind.

While the symposium participants refer to the various intermediate steps between science and a successful technology, there is nowhere an attempt to organize these ideas systematically. That this important information and knowledge remains unorganized becomes apparent when Piore remarks, "I have yet to see one case in which there has been a profound growth of a company by means of the procedures which are being taught in the nation's business schools these days."

Yet one can cite instances of science-based companies, whose average growth of 30% per year over two decades or more, has arisen from systematic and institutionalized translation of science into new technologies—so certainly the institutionalized process of innovation has been and can be rather precisely defined. This leads a listener to ask Wiesner, "Is a new institutional development coming to