

Crystalline Olefin Polymers

Part 2. Edited by R. A. V. Raff and K. W. Doak. (High Polymers: a Series of Monographs on the Chemistry, Physics and Technology of High Polymeric Substances, Vol. 20.) Pp. xiv + 675. (New York and London: Interscience Publishers, a Division of John Wiley and Sons, Inc., 1964.) 169s.

VOLUME 20 of the well-known series on *High Polymers* supersedes Volume 11 which dealt only with polyethylene. The development of other crystalline olefin polymers, notably isotactic polypropylene, has led to a widening of scope and the division of Volume 20 into two parts. Part 1 will review the preparation and structure of crystalline polyolefines. Part 2, which has appeared first, deals with their technology and technological properties and is therefore largely concerned with polyethylenes and isotactic polypropylene since other crystalline polyolefines are not of great commercial importance.

Each chapter is contributed by a different author or authors. Five chapters are concerned with properties and deal successfully with brittleness, stress-cracking, electrical properties, permeability and miscellaneous properties and tests. A further five chapters deal with technology under the headings of "Chemical Modification", "Changes in Properties on Irradiation", "Degradation and Stabilization", "Processing" and "Applications". A brief statistical summary gives some statistics of production and use, producers of polyolefines and a list of trade names. In a short final chapter past and present uses are reviewed and suggestions made regarding research and development problems.

Fundamental concepts are emphasized throughout and each chapter is generally clear and authoritative with ample illustrative tables and diagrams. There is a good account of stress-cracking. The chapter on processing is detailed, occupying 151 pages. References are generally provided up to the end of 1962. Some more recent developments, such as the use of nucleating agents, do not seem to be mentioned, but these may be included in Part 1. The treatment of copolymers with other monomers in the chapter on chemical modification is somewhat brief and much of it is concerned with olefine-sulphur dioxide copolymers. Highly oriented structures are only briefly considered. Such shortcomings detract little, however, from the value of a book which provides a wealth of information for both the scientist and the technologist concerned with the properties and processing of crystalline polyolefine plastics and films.

W. R. MOORE

Annual Review of Medicine

Vol. 15. Edited by Arthur C. Degraff. Pp. 476. (Palo Alto, California: Annual Reviews, Inc., 1964.) 8.50 dollars.

VOLUME 15 of *Annual Review of Medicine* contains 25 thorough reviews by experts on very varied topics which impinge on the practice of medicine; many deal with the present growing points of research. Articles are presented on the lymphocyte, embryological development of the immune mechanism, and immunology of experimental tumours, and describe much recently acquired knowledge of the physiology and experimental pathology of the immune response. An article on "Production, Secretion and Availability of Insulin" encompasses and brings some order into a very difficult subject, and relates some of the findings to diabetes, while "Thromboplastin Formation attempts a similar task in a specialized branch of haematology. Reviews of atmosphere pollutants and geographical aspects of atherosclerosis indicate some ways in which the environmental factors in disease are being investigated.

There are also thorough surveys of the pathogenesis of disease entities such as rheumatoid arthritis, Graves's disease, acute and chronic pancreatitis and virilizing syndromes. The present-day interest in genetics is reflected in an article entitled "Familial Aspects of Diffuse Renal Diseases" and a catalogue of "Chromosome Abnor-

malities". There are interesting accounts of the aetiological mechanisms behind clinical phenomena such as ascites, pruritus and growth retardation. The new diagnostic techniques of visceral arteriography and lymphography and their use are described.

The recent advances in pharmacology and therapy which are reviewed range from the thiazide diuretics, and chemical psychoses (induced with D-lysergic acid diethylamide and other drugs) by way of the new penicillins and cephalosporins to the control of reproductive capacity, particularly by means of mixtures of progestins and oestrogens.

A reading of these and a few other articles could help a physician or medical scientist to keep up to date, or provide useful guides to the literature. Most of them can be understood by the non-specialist reader, but most readers will want to dip into the book—I tried to read it from cover to cover and failed.

D. A. J. TYRRELL

Semiconductor Thermoelectric Devices

By A. I. Burshteyn. Translated from the Russian by A. Tybulewicz. Edited by S. Chomet. (A Heywood Book.) Pp. 131. (London: Temple Press Books, Ltd., 1964.) 35s. net.

THE title of this book is rather misleading. It really has very little to do with semiconductors. In fact, the brief discussion of thermoelectric effects in semiconductors, in the introductory chapter, is quite unhelpful. It is really concerned with the solution of the steady-state heat flow equation for thermocouples in which the usual simplifying approximations are invalid. It is demonstrated that much better approximations can be made in some specific cases. Thus, the book is of some value to those engineers who are concerned with the design of thermoelectric modules for cooling or generation. Probably, however, most of these potential readers would prefer to obtain more exact solutions of the heat flow equation using a computer. In any event, the number of such readers must be so limited that one must question the wisdom of the publishers in having gone to the trouble of having the work translated; though the translation is very well done.

H. J. GOLDSMID

Nuclear Techniques in Analytical Chemistry

By A. J. Moses. (International Series of Monographs on Analytical Chemistry, Vol. 2.) Pp. vii + 142. (Oxford, London and New York: Pergamon Press, 1964.) 45s.

THIS recent volume of the *International Series of Monographs on Analytical Chemistry* is devoted exclusively to radiochemical techniques. It not only deals effectively with the general methods of activation by neutrons, positive ions or γ -rays, but it also covers in much detail the determination of the naturally occurring radionuclides. The textual approach is one which will prove palatable both to the novice and to the expert.

The application of the isotope dilution method is lucidly illustrated; the powerful methods of tracer investigations are clearly described, and the value of exchange reactions and radiometric measurements are demonstrated by reference to unique examples.

Much attention is directed to the outlining of the tenets appertaining to radioactive safety precautions. Counting equipment, including the use of the γ -spectrometer, receives ample coverage; and the general theoretical principles are succinctly outlined. The diagrammatic illustrations are excellent and the useful General Electric Co. chart of the radionuclides forms part of the book. The appendixes provide a wealth of useful activation data, together with a list of the monographs on individual elements available from the U.S. Department of Commerce.

This publication is a most comprehensive practical handbook, but it also possesses considerable didactic value and will undoubtedly be welcomed by many teachers of radio-chemistry.

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