

transition and the binding properties of polynucleotides. Besides the main text are included some seventeen appendixes which outline the experimental procedures for the isolation of nucleic acids and the analysis of their degradation products, and for the preparation, assay and use of some nucleotide-polymerizing enzymes.

The authors are certainly justified in writing a book on a subdivision of the nucleic acid field as no one or two people could possibly review every aspect of the subject critically. Such is the scope of this book that, if anything, they have tried to cope with too much for two people, although it is certainly very useful for workers in the polynucleotide field to have all this material collected in one volume. For the latter reason, Dr. Steiner and Dr. Beers are to be thanked for sorting out such a vast amount of the present-day literature.

However, it might have been wiser for the authors to have co-opted specialists to write the chemical chapter in the beginning of the book and help with the accounts of some of the other areas to which they themselves do not appear to have contributed. I would single out the chapter on the chemistry of the nucleotides for the greatest criticism. This contains formula, chemical, and factual errors and some important omissions, but it is nevertheless an adequate account of this aspect. Perhaps the only other adverse criticism of this very useful book is that it is not always written in a clear and concise style. The appendixes are a good idea and should be useful. The printing and layout are good with the exception of some of the chemical formulæ. On the whole, this book can be recommended as being of considerable value to workers in the polynucleotide field, for whom it is designed, and to other people interested in this important subject. C. B. REESE

TECHNOLOGY OF ETHYLENE POLYMERS

Polythene

The Technology and Uses of Ethylene Polymers. Edited by A. Renfrew and Philip Morgan. Second edition. Pp. xxi+781+93 plates. (London: Iliffe and Sons, Ltd.; New York: Interscience Publishers, Inc., 1960.) 165s. net.

THE growth of polythene production has been one of the major features of the plastics industry in recent years. The interest aroused by the development of newer types of polythene and the many recent technological developments in the field of ethylene polymers have necessitated a considerable revision of the text of this well-known book. The present edition—the second—contains approximately 300 more pages than the previous one; chapters have been so revised that the original text has been largely re-written in order to bring the book in line with rapid developments, particularly in relation to materials of higher density. In fact, it has been so changed and enlarged that it may be regarded as virtually a new book.

The most important additions are as follows: The chapter "Manufacturing Processes" now appears as four contributions describing high-pressure, Zeigler, Phillips, and Standard Oil Co. polymerization processes; the chapter on the theory and mechanism of ethylene polymerization now becomes two chapters to cover, respectively, polymerization by free radicals and by ionic growth. Additional chapters are "Ethyl-

ene Copolymers and Polymer Blends", "Vacuum Forming", "Reprocessing" and two chapters on packaging which describe those varied and useful applications not classified as films. Valuable appendixes are a table of world manufacturers of polythene and their production capacities, and a list of world proprietary names for ethylene polymers.

The thirty-six chapters of this book deal with every aspect of polythene, its manufacture and properties (structure, mechanical, electrical, chemical, testing, radiation treatment, and modification); processing techniques (compounding, pigmentation, extrusion as applied to extruder design, cable covering, tube, rod and profile, film and sheet, injection and blow moulding, centrifugal cast, coating and laminating, dip and spray coating, vacuum forming and reprocessing), and applications (cables, film, coated packaging products, pipes, chemical plant, household goods, textile yarns and fibres). Each of the chapters, written by an expert either from Europe or the United States, provides a most complete and authoritative account of the technology and uses of this important polymer. The book remains the standard work on the subject. C. E. H. BAWN

GAS DYNAMICS IN THE U.S.S.R.

Physical Gas Dynamics

Edited by A. S. Predvoditelev. Translated from the Russian by Dr. R. C. Murray and D. R. H. Phillips. Pp. v+183. (London and New York: Pergamon Press, 1961.) 50s. net.

THIS book is a translation from the Russian of a symposium of twelve papers covering a wide range of topics under the general heading of the title.

Five of the papers cover the field of gas kinetics, the longest being concerned with calculating the properties of air in the temperature-range 1,000° K.–12,000° K., and the pressure-range 0.001–1,000 atmospheres. Two of the other papers calculate the changes across normal shock-waves in air considered as a real gas.

The next two papers consider experimentally the supersonic flow at an oblique-cut nozzle and an oblique-cut base. These are related to the flow in turbine nozzles and blades.

The next three papers again present a sharp contrast, the subject under discussion being the pressure field resulting from electrical discharges under water, while the last two papers in the book discuss shock waves associated with flames. Four of these five papers discuss experimental work.

One of the difficulties encountered by publishers of a book of this nature is that of making the information available sufficiently quickly after completion of the work on which it is based. The references to the various papers indicate that most of the work presented at the symposium was done prior to about 1956, so in this sense the book is not up to date; but, despite this, there is no doubt that it gives some of the most up-to-date information in English on the work being carried out in the U.S.S.R. in the field of gas dynamics.

It is fair to say that the translation into technical English is in general excellent, though it is noted that in some references which were originally in English, but have been translated into Russian, the authors' names are not correctly translated back into English. The printing is in non-letterpress type