Stationary Processes and Prediction Theory. Harry Furstenberg. Princeton University Press, Princeton, N.J., 1960. x + 283 pp. $5.

There are several books which discuss the topic of this title and give salient analytical results dealing mainly with linear prediction. In this volume Furstenberg treats the concept of predictability—that is, what sequences are predictable in a specified sense—without limiting himself to the linearity assumption. Because of the general nature of the discussion, the results are mainly theoretical, and practical computational methods are mentioned only in passing. This book is strictly for the pure mathematician, and it will be difficult reading for all but a very few.

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Polythene. The technology and uses of ethylene polymers. A. Renfrew and Phillip Morgan, Eds. Iliffe, London; Interscience, New York, ed. 2, 1960. xxi + 781 pp. Plates. $25.75.

Man's scientific and technical knowledge of ethylene polymers and copolymers is presented here in a well-organized and well-written manner. The topics considered range from the theory and kinetics of ethylene polymerization through the chemical engineering aspects of manufacture, structure, properties, testing, specifications, processing techniques, and formulation to areas of specific application. The full gamut of ethylene polymers with respect to molecular weight, melt index, and density is treated. It is a monumental and extremely valuable treatise. The editors have done a particularly commendable job in maintaining a high degree of uniformity in style and readability.

Some topics are not treated in detail or as thoroughly as might be expected from the general quality of the book. For instance, the treatments of the tear, puncture, impact, and clarity properties of film and sheeting and of the bursting strength and working stresses of pipe are relatively incomplete and thus are apt to be misleading. The material on processing equipment is mainly concerned with British machinery, although the text is in general written around the principles concerned; thus American, German, Italian, and other foreign counterparts can be identified by experts in this phase of plastics engineering.

The editors emphasized the basic scientific aspects of ethylene polymers; this is fully justified because the technological aspects are based on the principles. It is this area that is given the most thorough treatment. The plastics engineering aspects embodied in the chapters on processing techniques are second in thoroughness of treatment, although a few of the topics are not developed as thoroughly as they might be. The majority of the topics covering applications could be treated more extensively, but in most cases, this would not be warranted. In general, the editors have arrived at a reasonable balance in the amount of space devoted to the four areas: basic science, chemical engineering, plastics engineering, and technology.

I did not note any factual errors. However, some chapters in the sections on techniques and applications do not have literature references. It is difficult to feel confident that a topic has been considered adequately when no literature citations are provided. To the scholarly reader this must be exasperating.

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New Books

Mathematics, Physical Sciences, and Engineering

Adaptive Control Processes: A Guided Tour. Richard Bellman. Princeton Univ. Press, Princeton, N.J., 1961. 271 pp. $6.50.

Advances in Polarography. vols. 1–3. Ian S. Longmuir, Ed. Pergamon, New York, 1960. 1235 pp. Illus. $45. Proceedings of the second international congress, 1959.

Aerosols: Science and Technology. H. R. Shepherd, Ed. Interscience, New York, 1961. 562 pp. Illus. $22.50.

Applied Statistical Decision Theory. Howard Raiffa and Robert Schlaifer. Graduate School of Business Administration, Harvard Univ., Boston, Mass., 1961. 374 pp. $9.50.

Applied Thermodynamics. Stanley H. Bransom. Van Nostrand, Princeton, N.J., 1961. 237 pp. Illus. $6.

Avionics Research: Satellites and Problems of Long Range Detection and Tracking. E. V. D. Glazier, E. Rechtin, and J. Voge, Eds. Pergamon, New York, 1960. 267 pp. Papers presented at the AGARD Avionics Panel Meeting, held at Copenhagen in October 1958.

Boolean Algebra and Its Applications. J. Eldon Whitesitt. Addison-Weseley, Reading, Mass., 1961. 192 pp. Illus. $6.75.

The Chemistry of the Terpenes. A. R. Pinder. Wiley, New York, 1960. 230 pp. $8.25.

Complex Variables and the Laplace Transform for Engineers. Wilbur R. LePage. McGraw-Hill, New York, 1961. 492 pp. Illus. $12.50.

The Continuous Casting of Steel in Commercial Use. K. P. Korotkov, H. P. Mayorov, A. A. Skvortsov, and A. D. Akimenko. Translated from the Russian by V. Alford. H. T. Profheroe, Ed. Pergamon, New York, 1960. 181 pp. Illus. $8.50.

Cumulus Dynamics. Charles E. Anderson, Ed. Permagon, New York, 1960. 220 pp. $12. Proceedings of the first conference on cumulus convection, held in May 1959.

Dictionary of Mechanical Engineering. Alfred Del Vecchio. Philosophical Library, New York, 1961. 354 pp. $6.

Electronics in Engineering. W. Ryland Hill. McGraw-Hill, New York, ed. 2, 1961. 350 pp. Illus. $8.

Elements of Physics. For students of science and engineering. George Shortley and Dudley Williams. Prentice-Hall, Englewood Cliffs, N.J., ed. 3, 1961. 957 pp. Illus. Trade, $13.35; text, $10.

An Engineering Approach to Gyroscopic Instruments. Elliott J. Siff and Claude L. Emmerich. Robert Speller and Sons, New York, 1960. 134 pp. $7.50.

Essentials of Dielectromagnetic Engineering. An introduction to the thinking in and the use of ferrites and high-permittivity dielectrics. H. M. Schlicke. Wiley, New York, 1961. 264 pp. Illus. $9.50.

Field Emission and Field Ionization. Robert Gomer. Harvard Univ. Press, Cambridge, Mass, 1961. 195 pp. Illus. $6.75.

Homology Theory. An introduction to algebraic topology. P. J. Hilton and S. Wylie. Cambridge Univ. Press, New York, 1960. 499 pp. Illus. $14.50.

General College Chemistry. Charles William Keenan and Jesse Hermon Wood. Harper, New York, ed. 2, 1961. 758 pp. Illus. $3.25.

Die Geologie Mittelamerikas. Richard Weyl. Borntraeger, Berlin, 1961. 241 pp.

Hyperstatic Structures. An introduction to the theory of statically indeterminate structures. vol. 2. J. A. L. Matheson and A. J. Francis. Academic Press, New York; Butterworths, London, 1960. 293 pp. Illus. $11.

Large Elastic Deformations. And nonlinear continuum mechanics. A. E. Green and J. E. Adkins. Oxford Univ. Press, New York, 1961. 361 pp. $8.80.

Linear Systems Analysis. An introduction to the analysis of discrete-parameter time-invariant linear systems. Paul E. Pfeiffer. McGraw-Hill, New York, 1961. 555 pp. $12.50.

Modern Chemical Processes. vol. 6. By the editors of *Industrial and Engineering Chemistry*. Reinhold, New York, 1961. 120 pp. Illus. $6. Seventeen articles reprinted from 1958 and 1959 issues of the journal.

Modern Fundamentals of Algebra and Trigonometry. Henry Sharp, Jr. Prentice-Hall, Englewood Cliffs, N.J., 1961. 349 pp. Trade, $8.65; text, $6.50.